European Union Aviation Safety Agency

Comment-Response Document (CRD) 2020-03

RELATED NPA: 2020-03 — RELATED ED DECISION: 2021/008/R — RMT.0400 (OPS.090)

1.8.2021

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1. Summary of the outcome of the consultation

Please refer to Section 2.4 *What are the stakeholders' views* of the Explanatory Note to ED Decision 2021/008/R[1].

[1] https://www.easa.europa.eu/sites/default/files/dfu/explanatory_note_to_ed_decision_2021-008-r.pdf

2. Individual comments and responses

In responding to the comments, the following terminology is applied to attest EASA's position:

(a) **Accepted** — EASA agrees with the comment and any proposed change is incorporated into the text.

(b) **Partially accepted** — EASA either partially agrees with the comment or agrees with it but the proposed change is partially incorporated into the text.

(c) **Noted** — EASA acknowledges the comment, but no change to the text is considered necessary.

(d) **Not accepted** — EASA does not agree with the comment or proposed change.

Note:

During the finalisation of the proposed amendments, some points and paragraphs were introduced, some others were deleted, and some others were renumbered. Unless otherwise specified, the numbers of points and paragraphs in the responses to the comments refer to the points and paragraphs as they appear in the Annexes to ED Decision 2021/008/R. If a response refers to the text of a proposed amendment as shown in NPA 2020-03, it includes reference to the section of NPA 2020-03 that contains the text of this proposed amendment.

(General Comments)	-

comment	*110* comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)* Sweden support the proposals in EASA NPA 2020-03.
response	Noted EASA thanks you for your support.

comment	*125* comment by: *CAA-NL* In general, we are supportive of these proposals; however, we are missing clarity on the follow-up actions when a false or undesirable system activation has occurred and is notified to the relevant ATS unit.
response	Noted

The alerting service is provided in accordance with ICAO Annex 11, Chapter 5, by the air traffic service (ATS) unit. It includes informing the competent rescue coordination centre (RCC) that an emergency situation no longer exists. Refer to ICAO Annex 11 (Amendment No 52, adopted on 9 March 2020), Chapter 5, Section 5.2.3.

ICAO Annex 11 is already applicable to all EU-based ATS units according to point ATS.TR.100 of Annex IV (Part-ATS) to Commission Implementing Regulation (EU) 2017/373 ('ATM/ANS Regulation').

comment | *161* | comment by: *ICAO*

ICAO welcomes the opportunity to comment on this NPA. EASA developed provisions are referenced by many States and, should be harmonized with ICAO Standards. ICAO welcomes EASA participation in the Standard development process and is willing to work closely with the agency to achieve globally interoperable provisions.

It is apparent from the NPA that there is concern that the 6NM radius accuracy (referred to only in the 'Purpose and Scope' of Appendix 9 to Annex 6 Part I) is not adequate for SAR purposes. These organizations are used to receiving the information from ELTs and the COPAS/SARSAT system, however in many cases it was proven that although ELTs provide good position information when they function correctly, they are not able to accurately determine the position of the aircraft in distress prior to an accident. Also, in the case of high impact accidents and aircraft into water events, position information is often not provided at all. This is the background for introducing the distress tracking and flight recorder data recovery provisions in Annex 6. The NPA in general is focused on SAR aspects and thus misses out on the Annex 6, Part I, 6.18 provisions. It also does not address recovery of flight recorder data.

response | Noted

This comment is focused on the historical performance of the conventional emergency locator transmitter (automatic fixed) (ELT(AF)) and does not seem to take into account the capabilities of new ELT-based solutions, such as the automatic deployable flight recorder (ADFR) or the emergency locator transmitter (distress tracking) (ELT(DT)). This comment indicates that the ICAO Annex 6, Part I, Section 6.18 'Location of an aeroplane in distress' creates a concern for all RCCs worldwide, but it does not propose any solution. ED Decision 2021/008/R addresses the intent of those ICAO provisions, while maintaining the conditions that are important for an efficient search and rescue (SAR) service (refer to Section 2.2).

In addition, the scope of ED Decision 2021/008/R is limited to locating an aircraft in distress and does not include the recovery of flight recorder data.

comment	*257* comment by: *DGAC France* In all the NPA, wordings like "on the ground" and "to the ground" should be avoided/clarified.
response	Partially accepted Apart from the amendments where 'on the ground' or 'to the ground' are used in the context of data transmission by the communication infrastructure, there is no need to clarify these terms in the other amendments. However, the following changes were introduced: 1. in GM2 CAT.GEN.MPA.210, the explanation of the 'communication infrastructure' was improved to be consistent with the distinction between communication infrastructure and distribution service as described in Appendix 3 of NPA 2020-03; 2. points (b)(3) and (b)(4) of AMC1 CNS.OR.100 were amended (please see reply to comment No 283); 3. in CS ACNS.E.LAD.010, the definition of 'communication infrastructure' was harmonised with the explanation of that term in GM2 CAT.GEN.MPA.210; 4. AMC1 ACNS.E.LAD.320 was reworded to remove 'to the ground'; 5. in CS ACNS.E.LAD.410, 'on the ground' was replaced by 'from the communication infrastructure'; and 6. in CS ACNS.E.LAD.420, 'on the ground' was replaced by 'from the communication infrastructure'.

comment	*258* comment by: DGAC France **To harmonize the implementation of GADSS at the global level :** specifically targeting the long-haul commercial aircraft fleet, the ICAO GADSS concept is a global concept. France is responsible for airspaces and SAR regions in Europe and in other regions of the world. In this respect, the compatibility of European regulations with those of neighbouring countries is of the utmost importance, particularly when it comes to the capacity to process information and the sharing of information and related coordination procedures between adjacent operational bodies Therefore as a matter of principle, the convergence of international regulations (including ICAO and European regulations) and therefore of the associated necessary

equipment, is necessary to maintain SAR response capabilities that are uniformly applicable to all airspace users regardless of their nationality.

response

Noted

The scope of ED Decision 2021/008/R (Rulemaking Task (RMT).0400) does not include amending point CAT.GEN.MPA.210 of Annex IV (Part-CAT) to Regulation (EU) No 965/2012 ('Air OPS Regulation'); it is limited to defining the acceptable means of compliance (AMC) to that point. Hence, differences between ICAO Annex 6, Part I, Section 6.18 and point CAT.GEN.MPA.210, such as those regarding applicability, could not be addressed through that Decision.

The AMC adopted through ED Decision 2021/008/R are meant to ensure that the SAR response capabilities are not impacted and that RCCs need no special equipment to process the data stemming from a system compliant with point CAT.GEN.MPA.210. Refer to common performance objectives (CPOs) Nos 10, 12, 19, and 22.

More specifically:

— If a French-registered aeroplane is equipped with a system compliant with point CAT.GEN.MPA.210 and this system is activated, the RCC competent for the SAR concerned will automatically receive data (as it is the case for an ELT today) in an international format recognised in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual (refer to AMC1 CNS.OR.100). Hence, there will be no negative impact on that RCC or on the sharing of information with other RCCs.

— If an aircraft is not registered in an EASA Member State (MS) and has an accident in a SAR region for which France is responsible, the operational rules applicable to that aircraft are not the EU Air OPS rules. In such a case and based on Regulation (EU) No 452/2014 ('Third-Country Operator Regulation'), the third-country operator cannot be required to meet conditions that are more stringent than those set by ICAO standards. Unfortunately, the standards of ICAO Annex 6, Part I, Section 6.18 and Appendix 9 do not address the format of the data to be provided to RCCs. The need for a harmonised format is supposed to be addressed through the functional specifications of the ICAO Location of an Aircraft in Distress Repository (LADR), but the LADR was still a project at the time this reply was written.

comment | *259* | comment by: *DGAC France*

To support systems designed to improve airacrft tracking, inflight alerting and accident site location : France is in favour of any evolution of on-board equipment designed to activate in flight (automatically, manually or remotely) or at impact,

	allowing to optimise the responsiveness of each of the actors involved in the localisation of an aircraft, and then in a possible conduct of a search and rescue operation. Thus, France supports the installation on board aircraft of technical solutions such as Autonomous Distress Tracking (ADT) systems designed to trigger or be triggered in flight in order to improve the responsiveness of each of the actors (airline operations centre, air traffic service unit, rescue coordination centre). In order to improve the location of the point of end-of-flight under the ICAO GADSS concept, France supports the reintroduction of a standard in Annex 6 to provide an "automatic-fixed ELT"-type capability in addition to ADT systems.
response	Noted No change is introduced.

comment	_260_ comment by: _DGAC France_ **To manage impact on RCCs :** A performance-based approach is fostered for systems and data servers/repositories, but standardisation is required for data processing by RCC/RCS whatever systems or solutions are in use, including interfaces between distribution networks and RCC/RSC, message formats, human-machine interfaces, and associated software.
response	Noted EASA concurs with the need to standardise the data that is provided to RCCs. This is why the CPOs on which the proposed amendments of Section 3.3.2 of NPA 2020-03 are based include the minimum information to be found in transmitted data (see CPO No 20), and the conditions for the format of the data that is transmitted to a SAR point of contact (SPOC) (see CPO No 19). Those CPOs were incorporated into the following amendments: — in AMC1 CNS.OR.100 (AMC and GM to Annex VIII (Part-CNS) to the ATM/ANS Regulation); and — in CS ACNS.E.LAD.140, CS ACNS.E.LAD.150 and CS ACNS.E.LAD.160 of the Certification Specifications for Airborne Communications, Navigation and Surveillance (CS-ACNS).

comment	_284_ comment by: _UK CAA_

General

Comment: Many of the AMC items proposed in this NPA regarding the requirement for location of an aircraft in distress appear to impose additional requirements that are not relevant to compliance with CAT.GEN.MPA.210.

Justification: CAT.GEN.MPA.210 Location of an aircraft in distress only requires a robust and automatic means to accurately determine, *following an accident during which the aircraft is severely damaged*, the location of the end point of the flight.

We recommend a review of the AMC and CS requirements for applicability against the IR.

response Partially accepted

The AMC proposed in Chapter 3 of NPA 2020-03 do not impose additional conditions to those contained in point CAT.GEN.MPA.210 already.

AMC1 CAT.GEN.MPA.210 is a means of compliance with point CAT.GEN.MPA.210. It includes conditions on the performance of the airborne system, conditions on the transmission service that is used by that airborne system, and operational procedures to ensure the appropriate management of that airborne system. AMC1 CAT.GEN.MPA.210 refers to new Section 3 of Subpart E of CS-ACNS regarding the conditions on the performance of the airborne system, and AMC1 CNS.OR.100 to Part-CNS regarding the conditions on the transmission service.

Operators may submit alternative means of compliance (AltMoC) to their competent authority.

However:

— a few necessary corrections were made to points (d) and (e) of AMC1 CAT.GEN.MPA.210 (see the response to comment No 78);

— to further clarify the AMC and GM to point CAT.GEN.MPA.210, ‘system’ was replaced by ‘airborne system’ throughout them; and

— point (d) of GM1 CAT.GEN.MPA.210 was slightly reworded for clarity.

comment *419* comment by: *ATR*

ATR thanks EASA for having the opportunity to review NPA 2020-03.

NPA 2020-03 only applies to "aeroplanes with an MCTOM of more than 27 000 kg and an MOPSC of more than 19, and aeroplanes with an MCTOM of more than 45 500 kg."

As such, it does not apply to ATR aircraft.

response

Noted

The statement in this comment is correct.

comment

427 comment by: *DGAC France*

Paragraph 4.3 : Among the 3 options proposed by EASA:

- Option 0: Maintain current regulations with specification carriage of at least one fixed automatic ELT (ELT-AF) that activates at ground/sea impact.
- Option 1: adoption of ICAO standards and adherence to the Global Aeronautical Distress and Safety system (GADSS) concept of operation,
- Option 2: NPA proposals specifying the means of compliance with the European regulation CAT GEN MPA 210 relating to the location of an aircraft in distress;

It appears that the optimal response to an event in flight that could lead to a distress situation is obtained by convergence of options 1 and 2:
- Option 1 favouring the early detection of an event in flight despite a lower statistical location accuracy (6NM) of the accident aircraft ; and
- Option 2 which favours accurate determination (200 m) of the accident site.

This convergence can only be ensured by systematically distinguishing in the NPA:
- systems designed to activate in flight (systems or functionalities for autonomous tracking of aircraft in distress defined by ICAO in the framework of the GADSS), from those materialising the point of impact with the ground/sea;

- distribution service relating to data transmitted in flight from the distribution service relating to data materialising the point of impact with the ground/sea.

In parallel, ICAO should be encouraged to amend Annex 6 to the Chicago Convention to include a post-crash localization standard compatible with the work of EASA (initial localization accuracy of 200m, post-crash signal transmission and maintaining a homing capability on 121.5 MHz).

response

Not accepted

Option 2 is defined as follows (refer to Section 4.3 of NPA 2020-03):

'Define common performance objectives (CPOs) that address both the intent of ICAO standards and the needs of SAR and safety investigation authorities.'

Hence, Option 2 addresses the ICAO objectives, while going beyond on some aspects to ensure that the needs of SAR and safety investigation authorities are addressed as well. For example, CPO No 8 requires locating the point of end of flight in case of a survivable accident with a position accuracy of 200 meters, and CPO No 9 requires locating the point of end of flight in case of a non-survivable accident with a position accuracy of 6 NM.

In addition, point CAT.GEN.MPA.210 only requires means for locating the point of end of flight and not in-flight distress tracking.

comment *428* comment by: *DGAC France*

About responsibilities of SAR operators : RCC operators act under their responsibilities within a SRR or Sub-SRR (a territory or a sea surface). Since they are not in charge of an airspace, there could be a legal (regulatory framework) and operational risk of putting them in a position where they have first access to data transmitted by an aircraft in flight, these data having to be sent as a priority to the bodies in charge of aircraft tracking. In any case tracking an aircraft in flight is out of the scope of SAR responsibilities

Therefore, inflight position information data are of primary interest to ATS (and airlines in some oceanic airspaces) which must receive them without delay given the immediate interactions with the surrounding air traffic. The integration of in-flight data into ATS systems should be more accurately described by EASA.

The RCC/RSC may receive these data in a second phase to prepare, if necessary, a search and rescue operation. In addition, the automatic transmission of inflight position information data to the RCC/RSC could lead to a saturation of SAR operators, which would have an impact on their ability to perform their main missions.

Consequently, regardless of the current ground architecture where some RCCs perform the function of SPOC (SAR Point of contact) for the COSPAS SARSAT system, RCC/RSC shall not be the first receiver of the data triggered in flight (automatically, manually on board, or remotely).

response Not accepted

As explained in the rationale of point (b) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03:

‘The transmission service is expected to be compatible with the current legal framework applicable to SAR and ATS and particularly, to the distribution of tasks and responsibilities between SAR centres and ATS units in case of a distress situation.’ The SPOC that is designated by States will directly receive the data for efficiency purposes, as it is currently the case when an ELT is activated.

The RCC operator should coordinate with the relevant ATS unit, and this is already addressed by ICAO Annex 12 standards (see ICAO Annex 12, Sections 4.1.1, 5.2.1, and 5.2.3).

In addition, the rationale of point (b) of AMC1 CAT.GEN.MPA.210 states the following:

'According to the proposed CS-ACNS (see Section 3.3.2 of this NPA), the airborne system is designed to activate only if an accident or distress situation occurs or is likely to occur within minutes. This is a very seldom event for aeroplanes within the scope of CAT.GEN.MPA.210. Therefore, an individual SAR centre […] will seldom receive data corresponding to activated airborne systems.'

CPOs Nos 13, 17, and 18 of Option 2 are there to ensure the high reliability of the solutions that are implemented to comply with point CAT.GEN.MPA.210. Moreover, RCCs will need no additional equipment to provide the SAR service (refer to CPOs Nos 19 and 22). All those CPOs were incorporated into the amendments adopted by ED Decision 2021/008/R to keep the impact on RCCs very limited.

comment | *429* | comment by: *DGAC France*

Impact on Copsas-Sarsat SAR Point of contact (SPOC) : The operational and technical impact of the NPA on SPOCs is not neutral. SPOCs equipment and their information processing interfaces are not sized to receive updated messages at high frequencies, such as air traffic management systems. French civil aviation directorate draws EASA's attention on the impact on technical systems and the sustainability of the induced costs which are not assessed at this stage.

If the transmission of Cospas-Sarsat (C/S) data between a MCC and a SPOC is automatically taken into account, the retransmission to another RCC/RSC is subject to manual manipulation. Thus, any increase in the reception of alert data would clog up or saturate the retransmission to the relevant RCC/RSC. When a SPOC is not the competent or interested RCC/RSC, it does not have to exchange with other interlocutors than RCC/RSC. In addition to having sometimes different tasks and competences, increasing the number of interlocutors would require increased training for operators.

Therefore, if the changes proposed in the NPA for ELT-DT (or for any Autonomous Distress Tracking system/function data which would be sent to SPOC) were to alter the primary mission of the RCC operators performing the SPOC function, the definition of SPOC should be reviewed and consideration should be given to having the RCC/RSC in charge of an aeronautical SRR or SAR area directly served by the MCC. Such modification would deeply change the role of SPOC and the French civil aviation directorate does not support it. Indeed, the ground segment of C/S is designed for the transmission of a fixed point corresponding to a ground/sea accident site, and there is no consistency in extending this concept to systems or functionalities designed to transmit in flight.

response

Noted

According to Section 3 of Subpart E of CS-ACNS, the airborne system is designed to be automatically activated only if an accident occurs or is likely to occur within minutes. This is a very seldom event for aeroplanes that are within the scope of point CAT.GEN.MPA.210. Therefore, an individual SAR centre will seldom receive data stemming from activated airborne systems. CPOs Nos 13, 17, and 18 of Option 2 are there to ensure the high reliability of the solutions that are implemented to comply with point CAT.GEN.MPA.210, to keep the impact on RCCs very limited.

comment

430 comment by: *DGAC France*

French Civil Aviation Directorate position on remote activation/deactivation of the distress beacon of an aircraft :

In general, the implementation of new equipment and associated functions triggered in flight, including remote activation/deactivation of a distress beacon, must be carried out without impacting the responsibilities of the RCC/RSC and its operators (see PART 2 §2.2.A of this comment on NPA). The remote activation/deactivation functionality of a distress beacon is outside the scope of SAR responsibility for an aircraft in flight.

Collecting information resulting from the remote activation of an on-board tracking device might be of interest to the Air force, in France, as part of its mission of permanent air security posture.

When an aircraft is assumed to be on ground/at sea after an accident, remote activation/deactivation of the distress beacon, or of any other on-board system, should not involve any action from a RCC operator who is not empowered to activate (or alter the condition of) any aircraft system. Without a legal study on the responsibilities related to the remote activation of a beacon, the RCC operators, and in particular within the SPOC which interact with the FMCC, cannot be integrated into this procedure.

response

Noted

EASA thanks you for sharing your views on the remote activation/deactivation of the system. See the response to comment No 191.

comment	*431* comment by: *DGAC France* **Carriage requirements and waivers for State aircraft:** French armed forces wish that EASA make clear that there is no requirement for State aircraft (with MTOW above 27 T and 19 passengers or with MTOW above 45T) in view of : - preserving their operational capability (no access restrictions to airspaces) when not equipped; - preserving, for aircraft which are to be equipped, the confidentiality of their missions by not allowing remote activation of any on-board device by stakeholders outside the French MoD. For confidentiality and cyber security considerations, the French armed forces maintain their unfavourable opinion on the remote activation of on-board equipment until a concept of operation validated by the French MoD has been clearly developed.
response	Noted Point CAT.GEN.MPA.210 is only applicable to aircraft that are operated for commercial air transport (CAT). State flights are outside the scope of point CAT.GEN.MPA.210.

comment	*471* comment by: *FOCA Switzerland* FOCA CH comment: We support the proposed changes. Pleas find below our general remarks: - Data flow shall be clearly defined. The use of RCC and/or ATS is not always clear. Sometimes it states “should”, sometimes it is a mix-up between ATS and RCC. - Manual activation and deactivation by crew shall be more clearly defined or not be possible (deactivation) without clear procedures (Lead RCC). - Reporting and analyses of false alarms and undesirable system activations needs to be clearly defined. False alarms is a major problem with the current ELT system and should not be reproduced with the new systems. - Certification questions regarding internal antennas of ELT’s shall be solved. Failure of antenna connection after crash is a major technical problem with the current system.

	- No requirements found for life rafts with portable beacons. - Arming and disarming signal for ELT(DT) before the aircraft becomes airborne seem to be additional requirement which will imply higher cost to the industry. Even if accident occurs in airport perimeter, ELT signal is highly useful (fog, large area, confirmation of crash). - Impact on other rules (ICAO Annex 10,11,12) and Cospas-Sarsat procedures need to be coordinated. Cospas-Sarsat will provide feedback to this NPA. - Out of scope of the this NPA but important for SAR authorities and RCC's: PLB's as replacement for automatic ELT's are not supported by SAR stakeholders as there is no automatic activation and lifes might be lost due to poor regulation (current EASA regulation regarding PLB's for NCO).
response	First comment: not accepted It is acknowledged that NPA 2020-03 does not contain graphics that explain the data flows. However, it is not necessary to change the proposed amendments in that respect. The conditions for data transmission are included in point (b) of AMC1 CAT.GEN.MPA.210 and in AMC1 CNS.OR.100, and 'should' is always used for AMC. As explained in the rationale of point (b) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03, the data flow is as follows: — detection of signals sent by the airborne system; — processing of those signals into data through a communication infrastructure; and — sending this data to the SPOC that is designated for the SAR region(s) where the aeroplane is indicated to be by the data. Second comment: not accepted Point (c) of AMC1 CAT.GEN.MPA.210 sets the conditions for the use of the manual activation capability by the flight crew. Third comment: partially accepted AMC1 CAT.GEN.MPA.210 was amended to entitle the competent authority to check the analyses by the operator of undesirable system activation (see the response to comment No 237). Fourth comment: not accepted EUROCAE Working Group (WG) 98 and RTCA SC229 worked to improve external antenna resistance to crash conditions. This effort resulted in the adoption of EUROCAE ED-62B that is referred to by ETSO-C126c, and in the release of EASA Certification Memorandum CM-AS-008. However, the acceptance of radio-frequency characteristics remains defined in the COSPAS-SARSAT documentation. COSPAS-SARSAT did not develop criteria for specifying and accepting internal

antennas for fixed ELTs. As a result, there are no criteria for accepting internal antennas for fixed ELTs, hence, such technologies cannot be required.

Fifth comment: noted

The rationale of AMC1 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 is not accurate. Life rafts on board aeroplanes that are operated for CAT are not required to be equipped with a survival emergency locator transmitter (ELT(S)) (refer to point CAT.IDE.A.285 and AMC1 CAT.IDE.A.285). However, this does not affect point (b) of AMC1 ACNS.E.LAD.170, as the justification for that point remains valid.

Sixth comment: partially accepted

The arming/disarming logic is already part of the industry specifications applicable to an ELT(DT) (refer to EUROCAE Document ED-62B, Section 2.9.5).

However, there seemed to be an inconsistency between the text of point (a) of CS ACNS.E.LAD.210 (requiring automatic arming no later than when the aircraft becomes airborne) and the text of point (b) of AMC1 ACNS.E.LAD.210 (permitting that the 'airborne status' is delayed as long as the aircraft is 'still above the airfield') in Section 3.3.2 of NPA 2020-03. Therefore, point (a) of CS ACNS.E.LAD.210 was revised to be less prescriptive, now requiring automatic arming while the aircraft is still above the departure airfield, and point (b) of AMC1 ACNS.E.LAD.210 was deleted.

Seventh comment: noted

Eighth comment: noted

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comment | *74* comment by: *Airbus-Regulations-SRg*

Airbus Commercial Aircraft is pleased to comment on NPA 2020-03.

Our matter Specialist and Experts have carefully reviewed this NPA resulting in 49 comments.

We would be pleased to answer any resulting or additional question.

response | Noted

EASA thanks you for your review of NPA 2020-03.

comment	*249* comment by: *THALES*
	THALES support the content and objective of the NPA2020-03 by addition of AMC/GM to the Air OPS and by creation of a dedicated CS-ACNS section. THALES support the volunte to have coherency between the Air ops and airworthiness material (CS-ACNS and CS-MMEL). No major Thales comments – THALES comments are proposed for the sake of clarity.
response	Noted EASA thanks you for your review of NPA 2020-03.

comment	*421* comment by: *MITSUBISHI AIRCRAFT CORPORATION*
	[Page, Chapter]Page 1 of 150, Title [Comment] Title is misleading the NPA subject [Reason for Change] The title refers to flight recorders and underwarter locating devices, but the NPA is related to Location of an aircraft in distress [Change Proposal] Change title to "Amendment of the requirements for Location of an aircraft in distress"
response	Noted The title on page 1 of NPA 2020-03 is the title of EASA Rulemaking Task (RMT).0400, which started in 2012, and under which the requirements for flight recorders and underwater locating devices (ULDs) were previously adopted. The EASA rulemaking process does not allow to change the title of an RMT. The content of NPA 2020-03 is provided by the subtitle on the cover page: 'Certification specifications, acceptable means of compliance, and guidance material for locating an aircraft in distress'

2. In summary — why and what	p. 6-8

comment	*162* comment by: *ICAO* While the NPA refers to “Certification specifications, acceptable means of compliance, and guidance material for locating an aircraft in distress”, the objectives ("What we want to achieve") are all stated from the perspective of identifying an aircraft accident site post-accident. A distress phase in Annex 11, however, is defined as a situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance. This inconsistency in the title of the regulation, and subsequently, risks confusion.
response	Not accepted NPA 2020-03 proposes acceptable means of compliance (AMC) to point CAT.GEN.MPA.210 ‘Location of an aircraft in distress’ (refer to Sections 2.1 and 4.1.2). However, since point CAT.IDE.A.280 ‘Emergency locator transmitter (ELT)’ allows the replacement of an ELT by means that meet the requirements of point CAT.GEN.MPA.210, the scope of NPA 2020-03 is not limited to locating an accident site (refer to Section 4.1.2). In addition, there is no contradiction with the definition of ‘distress phase’ in ICAO Annex 11 (definition applicable to the notification by an ATS unit to an RCC, based on the ATS unit’s assessment of the gravity of the situation). SAR mobile facilities are only deployed after the aircraft concerned has reached the point of end of flight, and are deployed within a zone that is determined using the estimated location of that point. As stated in ICAO Annex 6, Part I, Appendix 9: ‘Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.’ Hence, ICAO Annex 6 Part I clearly states that the purpose of the provisions in its Section 6.18 is not to locate the aircraft as soon as it is in distress, but to locate it after it had an accident. Therefore, there is no inconsistency in the subtitle of NPA 2020-03. Note: Point CAT.IDE.A.280 incorporates the flexibility that is provided in ICAO Annex 6, Part I, Section 6.17.3 to replace an ELT by ‘a capability that meets the requirement of 6.18’.

comment	*163* comment by: *ICAO* Wherever an accident occurs to an aeroplane within the scope of CAT.GEN.MPA.210, the aeroplane or its wreckage is quickly located in order to retrieve evidence and identify accident causes without significant delay **<u>Comment:</u>**

	In an accident investigation context, one would refer to causes "and contributing factors".
response	Noted

comment	*474* comment by: *IATA*
	IATA General Comment: We would like to thank EASA for extending the initial deadline for comments given the worldwide circumstances. In the EPAS 2020 simplified consultation - EPAS planning cycle 2020 - COVID-19 - RMT.400 is foreseen to continue as planned. However we belive that the Covid-19 crisis will still have an impact on the distress tracking mandate. Commercial aviation gets through its heaviest crisis in modern times and it is very difficult to foresee how the next months and years will unfold. It is possible that some of the assumptions generated during the development of the present NPA are no longer valid - and various shortcomings in the development, certification and production of the deliverables to meet the mandate 2023 will have a significant impact. We would suggest that EASA makes a specific analysis given the realities of today and the most recent forecasts. IATA Members have informed us that because of the crisis and the new realities and constraints they had not sufficient time to comment on the present NPA.
response	Noted This comment rightly points out that RMT.0400 is a complex rulemaking task, that implementing point CAT.GEN.MPA.210 requires the development and certification of new systems, and that the COVID-19 pandemic posed challenges that could not be foreseen when NPA 2020-03 was being drafted. However, point CAT.GEN.MPA.210 is already adopted with a set applicability date (1 January 2023) and the objective of RMT.0400 is only to provide acceptable means of compliance (AMC) and guidance material (GM) to facilitate compliance with it. Delaying the issuance of the CSs and the AMC/GM that were proposed in NPA 2020-03 would not have changed the applicability date of point CAT.GEN.MPA.210. Furthermore, this comment does not specify which fundamental assumptions that support NPA 2020-03 could become invalid in the near future. It is considered that the overall objectives of NPA 2020-03 (summarised in its Section 2.2) and the assumptions underlying the CPOs of Option 2 of its impact assessment (refer to Appendix 3 of the NPA) are not affected by variations in air traffic.

With regard to the service necessary for the transmission of signals to SPOCs that are designated by States (in accordance with ICAO Annex 12), the international COSPAS-SARSAT programme is already operational and is funded by State contributions. Hence, the transmission of signals by ELT-based solutions (ADFR, ELT(DT)) is not expected to be significantly impacted by the economic crisis. At the time this reply was written, the space segment of the Medium-altitude Earth Orbiting Satellite System for Search and Rescue (MEOSAR) capability of the international COSPAS-SARSAT programme was fully deployed, and it was expected that full operational capability of MEOSAR (including local user terminals for the Medium-altitude Earth Orbiting Satellite System (MEOLUTs) and mission control centres (MCCs)) would be achieved before 1 January 2023.

As point CAT.GEN.MPA.210 is only applicable to aeroplanes that are first issued with an individual CofA on or after 1 January 2023, the airborne equipment necessary to comply with that point is expected to be installed by the manufacturers of the aeroplanes concerned before their deliveries. In January 2021, intelligence indicated that the certification projects of large aeroplane manufacturers to implement systems compliant with point CAT.GEN.MPA.210 were still on track. The main risk for these manufacturers seemed to be the reduced notice time, which was caused by the slightly delayed publication of ED Decision 2021/008/R adopting the amended CS-ACNS.

Moreover, in addressing comment No 480, the objectives related to the transmission service were reduced compared to NPA 2020-03: only transmission to the relevant SPOC is now required, which is already achieved for 406-MHz ELT signals. It is not required anymore that the data is additionally made available to the ATS unit. Transmission of data to the operator is not required (and not forbidden either), so that ELT-based solutions that have been developed by aircraft manufacturers may be used to meet point CAT.GEN.MPA.210, even if the ICAO LADR project is not successful or ready on time.

Finally, the content of AMC1 CAT.GEN.MPA.210 was simplified and it now only requires EU-based operators to establish flight crew procedures for using the airborne system.

3. Proposed amendments and rationale in detail — 3.1. General approach to the definition of CSs, AMC and GM p. 9

comment 235 comment by: *The Boeing Company*

Page: 9

Paragraph: 3.1 (e)

THE PROPOSED TEXT STATES:

If a technical condition addresses an aspect of the airborne system, draft a corresponding certification certification in CS-ACNS.

REQUESTED CHANGE:

If a technical condition addresses an aspect of the airborne system, draft a corresponding certification ~~certification~~ ***specification*** in CS-ACNS.

JUSTIFICATION: Typographical error due to repeated word, 'certification' which we believe should be 'specification'.

response Noted

comment 264 comment by: *DGAC France*

Paragraph 3.1 : The 4th paragraph describes "mature solutions".

In the future when other technical solutions will become "mature solutions", how will they be approved and included in CSs, AMC, and GM?

What are the solutions which have been deemed not mature enough for the time being, but which could prove efficient in the longer run?

response Noted

Section 3 of Subpart E of CS-ACNS provides the means to approve airborne systems for the purpose of complying with point CAT.GEN.MPA.210. As explained in GM1 ACNS.E.LAD.001, Section 3 includes 'common' acceptable means of compliance (AMC) and guidance material (GM) (applicable to any solution), as well as 'specific' AMC and GM (applicable only to a particular type of solution).

If solutions are based on technologies other than ADFR, ELT(DT), or high-rate tracking (HRT) emerges in the future, CS-ACNS will be amended accordingly to allow for the use of such solutions.

3. Proposed amendments and rationale in detail — 3.2. Draft AMC and GM (Draft EASA decision) — 3.2.1. Draft AMC/GM to Definitions	p. 10

comment	*126* comment by: *FNAM* Evolution of the definition. Position: FNAM assesses this point with a neutral impact.
response	Noted

comment	*265* comment by: *DGAC France* **GM2 Annex I Definitions Rationale:** Activation of an ELT-DT (or of any ADT system or ADT function) does not necessary mean that a crash is going to occur. An ADT activation only means that the aircraft encounters a distress condition.
response	Not accepted The definition of an ELT(DT) in EUROCAE Document ED-62B, Section 1.3.1 is as follows: ‘Distress Tracking (ELT(DT)) This type of ELT is designed to be activated prior to a crash upon detection of a distress condition by logic such as that defined by EUROCAE MASPS ED-237. This type of ELT is intended to provide information prior to the crash to aid in locating a crash site and/or survivor(s).’

comment	*434* comment by: *Leonardo DRS* 'automatic activation' is the terminology traditionally used for G-switch, water sensor or impact activation of distress beacon signal for an Automatic ELT. Would 'autonomous activation' be a better term for distress triggering per ED-237 and in-line with ED-62B terminology?

response

Not accepted

The term 'autonomous' is used in ED-62B to only designate the power source of an ELT, and in ED-237 in the term 'autonomous distress tracking system'. There is no such term as 'autonomous activation' in those EUROCAE documents.

In addition, when considering possible activation conditions, 'automatic' is considered a more appropriate term than 'autonomous'.

comment

492 comment by: *Transport Canada Civil aviation*

Representation 10

3.2.1 (g)/page 10

Comment Summary

The definition of ELT as given is so generic that a strict reading would make it applicable to any broadcasting equipment (at designated frequency). The "various conditions" for activation of an ELT are not random and all have a common reason: the detection of a distress or crash situation. Using "various" and etc in addition to the few examples opens the list to any type of activation, strictly speaking

Suggested resolution

We suggest a slight rewording to "…may be activated by various condition …*with the intent of indicating a distress situation*", or similar wording.

response

Partially accepted

The definition of an ELT in GM1 Annex I 'Definitions' of GM to Annex I (Definitions) to the Air OPS Regulation is harmonised with the definition of an ELT in ICAO Annex 6 Part I. The EU definition of an ELT is equally accurate with the ICAO definition. In addition, the purpose of an ELT is not only to indicate a distress situation, but also to assist in locating the aircraft in distress (hence the word 'locator' in the term).

Point (g) of GM1 Annex I was reworded to include the notion of signals that are meant for detection by the COSPAS-SARSAT programme as well as of homing signals.

3. Proposed amendments and rationale in detail — 3.2. Draft AMC and GM (Draft EASA decision) — 3.2.2. Draft AMC & GM to Part-CAT p. 11-21

comment	*25* comment by: *Airbus-Regulations-SRg* AMC1 CAT.GEN.MPA.210 (c) Flight crew procedures / Page 11 Airbus request: Replace "...system..." by "...distress signal transmission..." to rad as follows: (c) Flight crew procedures The operator should establish flight crew procedures for using the system, including manual activation and manual deactivation of the system distress signal transmission. These procedures should require manual activation only when the flight crew needs to declare a state of emergency to the ATS, and they should highlight the implications of unjustified manual activation for search and rescue authorities. Rational: To avoid misunderstandings regarding the required flight crew procedures since the manual disabling of the system in flight shall not be possible as per proposed CS ACNS.E.LAD.350.
response	Partially accepted There was indeed a risk of misinterpreting 'activation' and 'deactivation' of the system. To address this comment as well as comments Nos 28, 436, 297, 423, 441, and 372, the following changes were made to the explanations of the terms in GM2 CAT.GEN.MPA.210: — an explanation of 'activation signals' was added; and — the explanations of 'deactivation' and 'the system is activated' were amended. In addition, the definitions of 'activation signals', 'activation of the system' and 'deactivation' in CS ACNS.E.LAD.010 were harmonised with the explanations in GM2 CAT.GEN.MPA.210.

comment	*26* comment by: *Airbus-Regulations-SRg* AMC1 CAT.GEN.MPA.210 (b) Transmission service / Page 11 General Comment The proposed AMC1 CAT.GEN.MPA.210 (b)(1) is unclear for Airbus: First item:

The proposed AMC considers that the operator should ensure that the international COSPAS-SARSAT programme meets specific targets.

In our opinion a single operator, who needs to declare compliance with CAT.GEN.MPA.210 for his aircraft or fleet, will not be in the position

to ensure that the international COSPAS-SARSAT programme in general meets these targets.

Second item:

It's also unclear, in case of an ELT-based LAD solution, what are the operator's responsibilities in terms of transmission service in general.

The rationale for the proposed AMC1 CAT.GEN.MPA.210 (b) on page 13 clarifies that performance of the distribution service of the COSPAS-SARSAT programme up to the competent SAR centre is considered as sufficient and needs to be extended to the relevant ATS unit. It is proposed that this could be achieved by sending a copy of the ELT message to a global repository.

As per COSPAS-SARSAT C/S A.001 Data distribution plan it is already foreseen to send the received LAD data to the 'Autonomous Distress Tracking Data Repository'. As this will be done most likely automatically the intent of AMC1 CAT.GEN.MPA.210 (b)(1) will be fulfilled without any additional operator involvement.

This raises the question if there is a need to define specific AMC related to the transmission service for operators using an ELT-based solution needed.

Airbus request:

Please revise the wording of "AMC1 CAT.GEN.MPA.210 (b) Transmission service".

response

First sub-comment: accepted

Point (b)(1) of AMC1 CAT.GEN.MPA.210 was deleted (see the response to comment No 480).

Second sub-comment: accepted

See the response to the first sub-comment.

comment

27 comment by: *Airbus-Regulations-SRg*

GM1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes OBJECTIVES, / page 15

Airbus request: Please revise the wording to read as follows:

	(d): If other equipment than an ELT is used for transmitting information sufficient to comply with CAT.GEN.MPA.210, **then** AMC1 CNS.OR.100 to Part-CNS of the ATM/ANS Regulation contains conditions **to be consider** for the provider of the transmission service used by that equipment. Rational: Clarification of content (clear wording).
response	Partially accepted Point (d) was reworded: see the response to comment No 284.

comment	_28_ comment by: _Airbus-Regulations-SRg_ GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS / Page 16/17 Airbus comment There is no definition of 'activation signals' in CAT.GEN.MPA. Airbus proposal: To amendt the definition of 'the system is activated' to read as follows: - 'the system is activated' refers to the system transmitting activation signals **as defined by CS-ACNS Subpart E Section 3** Rational: Improve the clarity of the content (clear wording).
response	Partially accepted See the response to comment No 25.

comment	_29_ comment by: _Airbus-Regulations-SRg_ GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS / Page 16 Airbus comment:

	The definition 'accident during which the aeroplane is severely damaged' as introduced by ICAO Annex 13 distinguishes clearly between kind of failures and exceptions to this by using a dedicated formatting. Airbus proposal: To use the same formatting as per ICAO Annex 13 or revise the wording to read as follows: - 'accident during which the aeroplane is severely damaged' refers to an accident during which the aeroplane sustains damage or structural failure that adversely affects its structural strength, its performance or its flight characteristics, and would normally require a major repair or replacement of the affected component, except for an engine failure or damage to the engine, when the damage is limited to a single engine (including its cowlings or accessories), **or damages** to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aeroplane skin (such as small dents or puncture holes), or for minor damage to the landing gear, and **or damages** that resulting from hail or bird strike (including holes in the radome); Rational: Improve the clarity of the content (clear wording).
response	Partially accepted The explanation of 'accident during which the aeroplane is severely damaged' in GM2 CAT.GEN.MPA.210 was reworded using a bulleted list, to improve clarity.

comment	*30* comment by: *Airbus-Regulations-SRg* AMC2 CAT.IDE.A.280 (b) Emergency locator transmitter (ELT) TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS / Page 17 **AND** AMC2 NCC.IDE.A.215 (b) Emergency locator transmitter (ELT) TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS / Page 21 **AND** AMC2 SPO.IDE.A.190 (b) Emergency locator transmitter (ELT) TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS / Page 26 Airbus comment:

	The NPA text proposes that ELT(AF), ELT(AP), ELT(AD), and ELT(DT) should be rigidly fixed to the aircraft structure. This is in contradiction to the intent of ELT(AP) and ELT(AD) Airbus proposal: Revise wording in accordance with EUROCAE ED-62B Chapter 1.3.1. The ELT(AP) and ELT(AD) needs to be rigidly attached to the aircraft before a crash only.
response	Not accepted AMC2 CAT.IDE.A.280 specifies that an ELT(AP) and an ELT(AD) should be 'rigidly attached to the aircraft before the crash'. As NPA 2020-03 did not propose any change to this part of AMC2 CAT.IDE.A.280, no change was made.

comment	*33* comment by: *Airbus-Regulations-SRg* GM2 CAT.IDE.A.280 Emergency locator transmitter (ELT) ADDITIONAL GUIDANCE / Page 19 Airbus request: Please add "CHG 1" to read as follows: Quote Guidance material for inspection of the ELT system is found in FAA Advisory Circular 91-44A **CHG 1** 'Installation and Inspection Procedures for Emergency Locator Transmitters and Receivers', dated February 2018 unquote. Rational: To clearly identify the current version of the AC issued by the FAA.
response	Accepted Point (b) GM2 CAT.IDE.A.280 was amended to include 'Change 1'. See also the response to comment No 494.

comment	*35* comment by: *Airbus-Regulations-SRg*

	GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS / Page 16/17 Airbus proposal: To harmonize the definitions of ‘transmission service’ with AMC1 CNS.OR.100 (a). Rational: Harmonization of definitions
response	Accepted The explanation of ‘transmission service’ in GM2 CAT.GEN.MPA.210 was corrected (see the response to comment No 480). AMC1 CNS.OR.100 was amended to be consistent with the explanation of ‘transmission service’ in GM2 CAT.GEN.MPA.210 and to incorporate comments No 283, 433, and 480. The notion of ‘competent SAR point of contact (SPOC)’ was introduced to designate the recipient of the transmitted information that is contained in activation signals and deactivation signals. This is the SPOC that is designated by a State to comply with ICAO Annex 12, and that is competent for the SAR region(s) where the aircraft is indicated to be by the transmitted information. In addition, ‘SAR centre’ was replaced by ‘competent SPOC’ throughout AMC1 CNS.OR.100. In addition, the condition that the processing and transmission processes should be automatic was moved from point (a) to point (b) of AMC1 CNS.OR.100. Finally, an additional condition was introduced in point (b) of AMC1 CNS.OR.100 to specify that the provider of the transmission service for the location of an aircraft in distress should establish a list of airborne systems that can be used to comply with point CAT.GEN.MPA.210 and that are compatible with that transmission service. This is because the performance of the transmission service in detecting and processing the activation signals and deactivation signals depends on the content and characteristics of these signals, which in turn depends on the airborne system.

comment	*36* comment by: *Airbus-Regulations-SRg* GM3 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes DISTRIBUTION SERVICE / Page 17 General comment: Airbus concurs with the intent of the GM 3 *but* CAT.GEN.MPA.210 defines the requirements for the operation of the aircraft.

	The mentioned distribution service is under responsibility of the service provider. Airbus proposal: To shift this guidance to the relevant requirements section for the LAD service providers.
response	Partially accepted Point CAT.GEN.MPA.210 is not only a requirement to install equipment. It also requires that the equipment used allows to determine the point of end of flight, i.e. it implies that there is a recipient on the ground that uses the position information. In addition, unlike ICAO Annex 6, Part I, Section 6.18, point CAT.GEN.MPA.210 does not specify who that recipient is. As the recipient of the transmitted information may depend on the airborne system that is elected by the operator to comply with point CAT.GEN.MPA.210, the related GM can assist the operator in making an informed choice. However, the term ‘distribution service’ did not appear in the AMC and GM proposed in Section 3.2.2 of NPA 2020-03, except in GM3 CAT.GEN.MPA.210. Therefore, that term was deleted for clarification. In addition, GM3 CAT.GEN.MPA.210 was merged with GM1 CAT.GEN.MPA.210.

comment	*76* comment by: *US Federal Aviation Administration* **Page 11 AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES** **Comment 1**: The title of the rule this section is referring to, CAT.GEN.MPA.210, is misleading. CAT.GEN.MPA.210 ONLY addresses aircraft that have crashed, those that have reached the point of end of flight. The title of CAT.GEN.MPA.210 should be changed. **Recommend 1**: rename this section CAT.GEN.MPA.210 Location of downed ~~an~~ aircraft — Aeroplanes Recommend 1b: If the title of cannot be changed a note should be added stating this MPA stating “NOTE: This MPA does not address Autonomous Distress Tracking, (ADT)”
response	Not accepted Amending point CAT.GEN.MPA.210 is not within the scope of RMT.0400, which is limited to CSs, AMC, and GM, to facilitate the implementation of that point.

In addition, Section 3 of Subpart E of CS-ACNS contains CSs, AMC, and GM for solutions based on an ELT(DT) and for solutions based on HRT (refer to GM1 ACNS.E.LAD.001). Both solutions help meet the standards of ICAO Annex 6, Part I, Section 6.18 and Appendix 9.

comment | 77 | comment by: *US Federal Aviation Administration*

Page 11 AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

Comment 2: The title of **AMC1** CAT.GEN.MPA.210 is misleading. Title implies this the topic is location of an aircraft in distress when it is discussing the location of a downed aircraft (which can occur after a distress situation). MPA.210 clearly covers 'following an accident' and knowing the 'point of end of flight' Knowing the location where an aircraft has crashed or landed implies it is no longer in distress, it has crashed.

Recommendation 2: Rename this section, **AMC1** CAT.GEN.MPA.210 Location of ~~an~~ downed aircraft ~~in distress~~ — Aeroplanes.

response | Partially accepted

The scope of point CAT.GEN.MPA.210 includes locating an aircraft in distress, as stated in Section 2.1 of NPA 2020-03. This is because a means compliant with point CAT.GEN.MPA.210 may replace an automatic ELT according to point CAT.IDE.A.280 (which is similar to ICAO Annex 6, Part I, Section 6.17).

In addition, based on the EASA rulemaking process, the titles of the AMC or GM must be the same as the titles of the related regulations.

The subtitle of AMC1 CAT.GEN.MPA.210 was changed to better reflect its content, i.e. the performance of the airborne system and of the transmission service as well as the operational procedures.

comment | 78 | comment by: *US Federal Aviation Administration*

Page 11 AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

Comment 3: (found on page 12) AMC1 CAT.GEN.MPA.210 (d), "Handling of a potential distress situation" should be removed since it addresses distress

	situations. As stated above, distress situations are not discussed in CAT.GEN.MPA.210. **Recommendation 3**: Delete the following: ~~(d) Handling of a potential distress situation~~ ~~(1) The operational control over the flights should include procedures for assessing whether an aircraft is likely to be in a distress situation and informing without delay the relevant ATS unit.~~ ~~(2) If the operator can remotely deactivate the system, it should only use this capability when it has established with certainty that the aircraft is not in a distress situation.~~
response	Partially accepted — Points (d)(1) and (e) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 were reworded, because the assessment by the operator should not be limited to distress situations, but should include as well other states of emergency, such as those described in ICAO Annex 11 Chapter 5. — In addition, point (d)(2) of AMC1 CAT.GEN.MPA.210 was deleted (see the response to comment No 191). — Point (i) of AMC1 CAT.GEN.MPA.205 was amended to specify that 'competent ATS unit' designates the ATS unit responsible for providing the alerting service in the airspace where the aircraft is believed to be. This change makes AMC1 CAT.GEN.MPA.205 more consistent with the AMC and GM to point CAT.GEN.MPA.210.

comment	_79_ comment by: _US Federal Aviation Administration_ **Page 15 GM1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes OBJECTIVES** **Comment 4:** GM1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes OBJECTIVES title is misleading. Title implies this the topic is location of an aircraft in distress when it is discussing the location of a downed aircraft (which can occur after a distress situation). Knowing the location where an aircraft has crashed or landed implies it is no longer in distress, it has crashed. **Recommend 4**: Rename this section "GM1 CAT.GEN.MPA.210 Location of downed ~~an~~ aircraft — Aeroplanes
response	Partially accepted

See the response to comment No 77.

The subtitle of GM1 CAT.GEN.MPA.210 was changed to better reflect the content of that GM, i.e. guidance regarding the objectives and the implementation of CAT.GEN.MPA.210.

comment | *80* | comment by: *US Federal Aviation Administration*

Page 15 GM1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes OBJECTIVES

Comment 5: GM1 CAT.GEN.MPA.210 states the purpose of CAT.GEN.MPA.210 is to "increase the likelihood that an accident site will be accurately and quickly located, anywhere in the world and irrespective of the accident survivability (hence, the terms 'automatic', 'robust', and 'accurately' are used in CAT.GEN.MPA.210)" Knowing the location of an accident means the aircraft are no longer in distress.

Recommendation 5: The stated purpose of GM1 CAT.GEN.MPA.210, is to "increase the likelihood that an accident site will be accurately and quickly and quickly located…" If the title of GM1 CAT.GEN.MPA.210 cannot be changed, a note should be added stating something like "NOTE: This MPA does not address Autonomous Distress Tracking, (ADT)"

response

Not accepted

Point CAT.GEN.MPA.210 may be complied with by using an ELT(DT) or an HRT system.

In addition, knowing the location of an aircraft following an accident does not mean that the aircraft is no longer in distress. The distress phase is defined in ICAO Annex 11 (Amendment No 52, adopted on 9 March 2020) as 'a situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance'.

Hence, the state of distress is not determined by the knowledge of the aircraft position or the fact that the aircraft is flying or not, but by the probability that the aircraft occupants are exposed to grave and imminent dangers. After an accident, this could be hostile environment, the risk of drowning, etc.

See also the response to comment No 77.

comment | *81* | comment by: *US Federal Aviation Administration*

	Page 16 GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS **Comment 6:** GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS title is misleading. Title implies this the topic is location of an aircraft in distress when it is discussing the location of a downed aircraft (which occur after a distress situation). Knowing the location where an aircraft has crashed, or landed, implies it is no longer in distress, it has crashed. Bullet 11 states "'point of end of flight' refers to, depending on the nature of the accident, the point where the aircraft crashed into land or water, or landed on land or water, or was destroyed". This makes it clear regulations surrounding this topic do not apply to Autonomous Distress Tracking as the title states. It applies to crashed aircraft. For this reason the title should be changed. **Recommendation 6:** rename title GM2.CAT.GEN.MPA.210 Location of downed ~~an~~ aircraft — Aeroplanes
response	Not accepted Please see the responses to comments Nos 77 and 80.

comment	*82* comment by: *US Federal Aviation Administration* **Page 16 GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS** **Comment 7:** Although the title states the subject is Location of aircraft in distress, no indication is given that this is actually discussing crashed aircraft **Recommendation 7:** Add a bullet stating: "— this does address Autonomous Distress Tracking as required per ICAO Annex 6 Pat I section 6.18."
response	Not accepted ICAO Annex 6 Part I does not require 'autonomous distress tracking', as this term is not used at all therein. In addition, GM does not necessarily specify whether an EU regulation is harmonised with an ICAO standard. Such information can be obtained by querying the ICAO Electronic Filing of Difference (EFOD) system.

comment	*83* comment by: *US Federal Aviation Administration*

Page 16 GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS

Comment 8: (found on page 17) the word organized misspelled, correct spelling.

Recommendation 8: change text as follows: — 'system' refers to the ~~organised~~ organized set of airborne applications and airborne equipment that meets CAT.GEN.MPA.210;

response

Not accepted

'Organise' and 'organize' are different spellings of the same word. 'Organize' is the preferred spelling in USA and Canada, and 'organise' is more common outside North America. UK English spelling is used in EASA publications.

comment

84 comment by: *US Federal Aviation Administration*

Page 17 GM3 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes DISTRIBUTION SERVICE

Comment 9: GM3 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes DISTRIBUTION SERVICE title implies this the topic is location of an aircraft in distress when it is discussing the location of a downed aircraft (which can occur after a distress situation). Knowing the location where an aircraft has crashed or landed implies it is no longer in distress, it has crashed. The title should be changed to reflect its purpose, accident crash site and point of end of flight

Recommendation 9: rename title GM3 CAT.GEN.MPA.210 Location of downed ~~an~~ aircraft — Aeroplanes

response

Not accepted

See the responses to comments Nos 77 and 80.

comment

85 comment by: *US Federal Aviation Administration*

Page 17 GM3 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes DISTRIBUTION SERVICE

Comment 10: To aid operators working to meet these regulations a sentence should be added indicating the service used to make data available to the operator could

	also be the same service used to support the Autonomous Distress Tracking Requirement stated in ICAO Annex 6 Pt I section 6.18 **Recommendation 10:** Add a sentence stating this could be the same service and data used to meet ICAO requirement 6.18 found in Annex 6 Pat I. "A distribution service that is capable of making the data available to the operator is advisable. If properly implemented, this could be the same service used to comply with ICAO Annex 6 part I section 6.18.
response	Not accepted The ICAO Annex 6, Part I, Section 6.18 standards prescribe solutions based on systems that transmit signals in flight, such as an ELT(DT) or an HRT system, while an ADFR-based solution may also be acceptable to comply with point CAT.GEN.MPA.210.

comment	*112* comment by: *MCA* AMC1 CAT.GEN.MPA.210 (b) (1) The relevant Authority should ensure…, not the operator. (b) (1) (i) This procedure is not how current alerting for ELT's, using the Cospas-Sarsat system, works. The alerts are transmitted to the RCC, by the MCC. (ELT**(DTs)** is due to be different) (b) (1) (ii) as (b) (1) (i) (d) (2) ELTs cannot be remotely deactivated and this should not be allowed to occur by the aircraft operator. Only RCCs/MCCs should do this. (e) This process will need better clarification. There is the possibility that ATS may not be aware of an active ELT. (e) (1) If the aircraft is to remain in service, disabling the system will not be permitted (if that is what is meant). (e) (3) Reference Cospas-Sarsat document A.003, section 4. Accurate reporting to interested parties is also needed.
response	First comment on point (b)(1) of AMC1 CAT.GEN.MPA.210: partially accepted Part-CAT does not contain any authority requirements; therefore, the proposed correction cannot be accepted. However, point (b) was corrected (see the response to comment No 26).

	Second comment on points (b)(1)(i) and (b)(1)(ii) of AMC1 CAT.GEN.MPA.210: not accepted Conventional ELTs(AF) and ELTs(S) cannot comply with CS-ACNS and are de facto excluded. Third comment on point (d)(2) of AMC1 CAT.GEN.MPA.210: noted See the responses to comments Nos 400 and 191. Fourth comment on point (e) of AMC1 CAT.GEN.MPA.210: not accepted Since the information is also automatically transmitted to the SPOC that is competent for the SAR region(s) where the aircraft is indicated to be, the SPOC will contact the relevant ATS unit in accordance with ICAO Annex 12, Sections 4.1.1, 5.2.1, and 5.2.3. In addition, whether or not the relevant ATS unit is aware does not change anything as regards the obligation of the operator to inform that unit when an aircraft, for which a state of emergency was declared, is not any more in a situation requiring the alerting service. Fifth comment on point (e)(1) of AMC1 CAT.GEN.MPA.210: not accepted Refer to CS ACNS.E.LAD.270: an automatically activated system cannot be manually deactivated. Therefore, it must be disabled in case the automatic activation was undesirable. Disabling is always possible using circuit protective devices (see CS ACNS.E.LAD.350). Sixth comment on point (e)(3) of AMC1 CAT.GEN.MPA.210: partially accepted The competent authority of the operator should be entitled to request copies of the analyses of cases of undesirable system activation. Point (e)(3) was reworded: see the response to comment No 237.

comment	_113_ comment by: _MCA_ AMC1 CAT.GEN.MPA.210 (e) - operational procedures to quickly inform the relevant RCC and ATS, that an aeroplane is not in distress… - monitoring and reporting of recurrent undesirable … (As per (e) (3) above.
response	Not accepted The alerting service is provided in accordance with ICAO Annex 11, Chapter 5, coordinated by the ATS unit. It includes informing the competent RCC that an emergency situation no longer exists; refer to ICAO Annex 11 (Amendment No 52,

	adopted on 9 March 2020), Chapter 5, Section 5.2.3. Therefore, there is no need for the operator to contact the competent RCC in addition to the relevant ATS unit.

comment	*114* comment by: *MCA* AMC2 CAT.IDE.A.280 4. This type of ELT is intended to provide information, and track the aircraft position, prior to the crash…
response	Not accepted The explanatory text for the ELT(DT) is taken from EUROCAE ED-62B, Section 1.3.1, which does not specify whether the ELT(DT) is intended to track the aircraft position.

comment	*127* comment by: *FNAM* AMC1 CAT.GEN.MPA.210; GM1 CAT.GEN.MPA.210; GM2 CAT.GEN.MPA.210;GM3 CAT.GEN.MPA.210: "These associated AMC / GM provide precise criteria to be respected on the system which makes it possible to determine the last flight point before an accident (certification, data transmission to ATS organizations, the procedures to be followed for technical flight personnel, the management of operator crisis and control of on-board systems to limit false distress alerts). Position: FNAM assesses this point with a positive impact as it provides assistance to the operator for the choice and implementation of the system which makes it possible to determine the last flight point before an accident."
response	Noted EASA thanks you for your comment.

comment	*128* comment by: *FNAM* AMC2 CAT.IDE.A.280; GM1 CAT.IDE.A.280; GM2 CAT.IDE.A.280; AMC2 CAT.IDE.A.285(f)

The modification of this AMC integrates the ELT (DT) and describes the only ELT types that can be used.

Position: With regard to the studies proposed, the FNAM agrees with EASA on the strengthening of Search and Rescue measures in the event of an accident for aircraft manufactured after 2023.

Nevertheless, the results of the implementation of its measurements will be difficult to see over the next few years as the majority of aircraft in service will not be affected by these regulations. Thus, in the event of an accident, the probability that an aircraft will be equipped with the devices indicated by option 2 will be low, which will not allow SAR / ATS teams to act more quickly. Of course, the FNAM understands that in terms of aircraft accident statistics, the cost of installing the equipment indicated in option 2 on all aircraft (before January 1, 2023) requires a financial cost in comparison to the probability that an accident (similar to AF447 or MH370) will occur.

FNAM assesses this point with a neutral impact since it provides clarifications for operators."

response Noted

EASA thanks you for your comment

comment *129* comment by: *FNAM*

AMC2 CAT.IDE.H.280;GM1 CAT.IDE.H.280; AMC1 CAT.IDE.H.300(b)(3) & CAT.IDE.H.305(b):

"The modification of this AMC integrates the ELT (DT) and describes the only ELT types that can be used.

Position: FNAM assesses this point with a neutral impact as it provides clarifications for operators."

response Noted

comment *164* comment by: *ICAO*

Subpart A: General Requirements

AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

...

(b) Transmission service

(1) If the system relies on ELTs for transmitting information sufficient to comply with CAT.GEN.MPA.210, the operator should ensure that the international COSPAS-SARSAT programme meets the following: (i) the data corresponding to ELT signals transmitted by the system is automatically made available to the ATS unit providing the alerting service in the airspace where the aircraft is indicated to be by this data (the 'relevant ATS unit');

Comment:

There are currently no ICAO provisions that specify how information is to be made available to ATS units. This regulation would require global Standards in the ICAO Annexes which currently do not exist. The Location of an aircraft in distress repository is designed to allow operators to meet the requirement to "make the information available" without imposing additional procedures on ATS. It also does not meet the requirements of Annex 6 Part I, 6 Appendix 9, which requires that the operator be informed of any aircraft which is in a distress condition but no requirement to notify ATC is specified. A system which is operated through the airspace of other States, or to another State as final destination which does not meet the requirements of Annex 6 Part I may not be accepted by that State.

response

Partially accepted

Point (b)(1) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was deleted (see the response to comment No 480).

The information provided in this comment with regard to ICAO Annex 6, Part I, Appendix 9 is incorrect:

ICAO Annex 6, Part I, Section 6.18.3 prescribes: 'The operator shall make position information of a flight in distress available to the appropriate organizations, as established by the State of the Operator.'

ICAO Annex 6, Part I, Appendix 9, Section 2.4 prescribes: '2.4 The State of the Operator shall identify the organizations that will require the position information of an aircraft in an emergency phase. These shall include, as a minimum:

a) air traffic service unit(s) (ATSU); and

b) SAR rescue coordination centre(s) (RCC) and sub-centres.'

comment | *165* | comment by: *ICAO*

AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

...

(b) Transmission service

...

(2) If the system relies on other equipment than ELTs for transmitting information sufficient to comply with CAT.GEN.MPA.210: (i) this equipment should use a transmission service provided by a surveillance provider that is certified in accordance with the ATM/ANS Regulation; and (ii) the communication infrastructure used by the transmission service that is designated in accordance with (i) should satisfy the assumptions about performance of the communication infrastructure (as a minimum the assumptions regarding availability, integrity, and coverage) that were part of the approval of the system installation.

Comment:

Inconsistent. This regulation is technology specific. It imposes the requirement to systems other than ELTs for "a transmission service provided by a surveillance provider" that is not based on any International Standard. The rationale for this text refers to ELT based solutions sending data to the ICAO repository (LADR), which is supported. However with no requirement on non-ELT applications to do the same there is a possibility that some position information might not be included.

response | Not accepted

The CS, AMC, and GM that are adopted with ED Decision 2021/008/R are performance based and do not require that data corresponding to activation signals be sent to a specific repository, such as the ICAO LADR.

AMC1 CAT.GEN.MPA.210 specifies that 'the provider of the transmission service should be a surveillance service provider that is certified in accordance with Regulation (EU) 2017/373 (the 'ATM/ANS Regulation')' i.e. the provider of the transmission service should comply with Part-CNS of that Regulation. This in turn means that AMC1 CNS.ORO.100 applies to the provider of the transmission service, if the transmitting equipment is not an ELT. AMC1 CNS.ORO.100 contains detailed conditions regarding the transmission of position information, which must be met by the provider of the transmission service.

comment | *166* | comment by: *ICAO*

AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

...

(c) Flight crew procedures

The operator should establish flight crew procedures for using the system, including manual activation and manual deactivation of the system. These procedures should require manual activation only when the flight crew needs to declare a state of emergency to the ATS, and they should highlight the implications of unjustified manual activation for search and rescue authorities.

Comment:

Flight crew procedures for manual activation are strongly influenced by the implementation of the solution used to meet the requirements to CAT.GEN.MPA.210. In some cases, it may not be practical or desirable to require such procedures as they may distract the crew from the primary purpose of safely operating the aircraft. The determination of the need for such procedures should therefore be made by the operator, who may determine there is no additional safety benefit and a potential safety impact from such a procedure. Furthermore, the proposed text implies that activation of the system could be a means of declaring a state of emergency to an ATS unit; current systems will not in fact accommodate this function

response

Partially accepted

To address this comment and comment No 395, point (c) of AMC1 CAT.GEN.MPA.210 was reworded to clarify that flight crew procedures should ensure that the flight crew manually activates the airborne system only in the case where an SAR is needed or anticipated, and that the flight crew informs the relevant ATS unit in a timely manner when they manually deactivate or disable the airborne system to stop data transmission.

comment

167 comment by: *ICAO*

AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

...

(d) Handling of a potential distress situation

(1) The operational control over the flights should include procedures for assessing whether an aircraft is likely to be in a distress situation and informing without delay the relevant ATS unit.

Comment:

No requirement is included in the NPA for notification to the operator of an aircraft in distress, therefore it is not clear how the system of operational control is supposed to assess if the aircraft is in a distress situation.

response

Partially accepted

Point (d) of AMC1 CAT.GEN.MPA.210 specifies that when an operator is informed or suspects that one of their flights is potentially in a state of emergency, the operator should use all means at its disposal to verify whether the emergency is genuine and, if confirmed, to quickly identify and inform the relevant ATS unit.

With regard to notifying the operator, refer to the rationale of point (d) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03:

'The transmission service is not required to transmit signals from the system to the operator. However, the communication and coordination principles established in ICAO Annex 11 (Air Traffic Services), Chapter 5 (Alerting Service), and ICAO Annex 12 (Search and Rescue), Chapter 5 (Operating Procedures) are such that in case an aircraft is in a state of emergency, whoever receives the information first, will share it with the operator concerned.'

CS ACNS.E.LAD.140 requires that the activation signals contain sufficient information to identify the aircraft from which the activation signals are sent, which will allow authorities to quickly identify the operator of the aircraft that is transmitting the activation signals. Regarding ELT-based solutions (ADFR and ELT(DT)), CS ACNS.E.LAD.140 is considered met by including in the ELT messages information that allows the unique identification of the aircraft that is carrying the ELT, regardless of the protocol used (refer to COSPAS-SARSAT C/S T.001, Annex A 'Beacon coding' and T.018, Section 3.2 'Beacon message content').

In addition, to help the ATS unit notify the operator about an emergency situation (uncertainty, alert, or distress phase), GM6 CAT.GEN.MPA.205 was corrected to recommend registering to the global OPS Control Directory of ICAO.

In case of undesirable automatic activation, the operator may be informed by the flight crew that should receive an indication of when the system is activated, according to CS ACNS.E.LAD.280. In that case, the operator should then inform the relevant stakeholders that there is no emergency situation, which is addressed in point (d) of AMC1 CAT.GEN.MPA.210.

comment | *168* | comment by: *ICAO*

AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

...

(d) Handling of a potential distress situation

...

(2) If the operator can remotely deactivate the system, it should only use this capability when it has established with certainty that the aircraft is not in a distress situation.

Comment:

Annex 6, Part I, Appendix 9 paragraph 2.5 states that the system shall only be deactivated by the same mechanism that activated it, therefore a system which is activated in flight which the operator could remotely de-activate would be considered inconsistent with the provisions of the Annex.

response

Noted

See the response to comment No 191.

comment | *169* | comment by: *ICAO*

AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES

...

(e) Limiting the effects of undesirable system activation

The operator should establish procedures for informing without delay the relevant ATS unit(s) when an aircraft on which the system is activated is not in a distress situation (e.g. in the case of nuisance activation of the system or successful recovery from a distress situation). In addition, to reduce the frequency and effects of undesirable system activation, the operator should:

Comment:

No requirement is included in the NPA for notification to the operator of an aircraft in distress, therefore it is not clear how the system of operational control is supposed to assess if the aircraft is in a distress situation.

response	Noted There is no need to introduce additional requirements, as the international regulatory framework and the tools for notifying the operator are already in place (see the response to comment No 167).

comment	_170_ comment by: _ICAO_ Rationale Draft AMC1 CAT.GEN.MPA.210 addresses the following aspects: (a) The purpose of CAT.GEN.MPA.210 is to increase the likelihood that an accident site will be accurately and quickly located, anywhere in the world and irrespective of the accident survivability (hence, the terms 'automatic', 'robust', and 'accurately' are used in CAT.GEN.MPA.210). This also implies that the stakeholders concerned are quickly informed that an accident occurred. **Comment:** A stated objective is for the stakeholders to be quickly informed, however there are no requirements, in line with the provisions in Annex 6 Part I, to notify the operator.
response	Not accepted In case of an accident or a distress situation, the stakeholders that need to be informed as a matter of priority are the ATS unit that provides the alerting service in the airspace where the aircraft is indicated to be, and the competent SPOC (the SPOC that was designated by a State to comply with ICAO Annex 12 and that is competent for the SAR region(s) where the aircraft is indicated to be). In such a situation, the operator is only expected to support those stakeholders in fulfilling their mission. In addition, the communication and coordination principles that are established in ICAO Annex 11 Chapter 5 and in ICAO Annex 12 Chapter 5 are such that in case an aircraft is in a state of emergency, whoever receives the information first, be it the ATS unit or the SPOC, they will share it with each other and with the operator concerned in a timely manner. Therefore, it is not required to transmit the data corresponding to an activated system to the operator; it is only advisable for quicker coordination. For this reason, GM1 CAT.GEN.MPA.210 states that this capability is advisable.

comment	_171_ comment by: _ICAO_

GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS

'accident during which the aeroplane is severely damaged'

Comment:

Inconsistent use of terminology. The title of the regulation is the 'Location of an aircraft in distress', however no definition of *distress* is included. Additionally it is not actually referred to in any of the material presented in the NPA, which instead focusses on accidents during which the aeroplane is severely damaged - this is not a *distress* condition.

response

Not accepted

'Distress situation' should not be confused with 'distress condition'. The definition of 'distress situation' was introduced in CS ACNS.E.LAD.010 for clarification (see the response to comment No 89).

Note: While the title of Section 6.18 of ICAO Annex 6 Part I is 'Location of an aeroplane in distress', Appendix 9 to ICAO Annex 6 Part I states the following:

'*Location of an aeroplane in distress* aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.'

Hence, as for EU regulations, the scope of the Standards and Recommended Practices (SARPs) in ICAO Annex 6, Part I, Section 6.18 and Appendix 9 is locating an accident site, and not a flying aircraft that is in distress.

comment

172 comment by: *ICAO*

GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS

'accurately' refers to the accuracy being sufficient for safety investigation purposes, and, in addition, for SAR purposes when the accident conditions are survivable

Comment:

The definition of *accurately* does not provide any real meaning to how accurate the system needs to be. *Sufficient accuracy* is subjective.

response

Not accepted

GM2 CAT.GEN.MPA.210 only provides explanations of terms and, therefore, does not need to specify an accuracy number. Specific position accuracy objectives are provided in CS-ACNS, and in particular in CS ACNS.E.LAD.410 and CS ACNS.E.LAD.420.

comment	*173* comment by: *ICAO* GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS 'robust' refers to being designed to work properly under the possible circumstances of survivable accidents, and under the possible circumstances of most non-survivable accidents; **Comment:** This requirement has no link to an ICAO Standard. Furthermore, the term is defined to mean that the equipment has to continue to operate in cases of survivable crash, and also most non-survivable crashes. This may be very challenging to achieve.
response	Noted EU regulations may be more stringent than ICAO standards, when considered necessary. ELTs that are currently required to be installed on aeroplanes already locate survivable accidents. The scope of CAT.GEN.MPA.210 extends beyond survivable accidents (see also the objectives in Section 2.2 of the Explanatory Note to ED Decision 2021/008/R).

comment	*174* comment by: *ICAO* GM3 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes DISTRIBUTION SERVICE A distribution service that is capable of making the data available to the operator is advisable. **Comment:** Inconsistent with the requirements of Annex 6 Part I, which require operators to be notified (i.e., alerted). Additionally, requirements for operator monitoring and notification to ATS units would seems to imply that they are receiving this information, so it is not clear how this can be optional.
response	Not accepted With regard to the difference with ICAO Annex 6, Part I, Section 6.18 regarding the recipient of data, see the response to comment No 170. With regard to informing the operator, see the response to comment No 167.

comment | *175* | comment by: *ICAO*

AMC2 CAT.IDE.A.280 Emergency locator transmitter (ELT)

TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

...

(c) Unless an automatic ELT is installed, the ELT(DT) should have capability C (crash survivability) and capability H1 (121.5-MHz homing signal) as specified in EUROCAE ED-62B 'Minimum Operational Performance Standard for Aircraft Emergency Locator Transmitters', dated December 2018, or any later equivalent standard produced by EUROCAE.

Comment:

This text is unclear; ED-62B does not specify that ELT(DT) should have capability C and H1. In fact, ED-62B states "A 121.5MHz homing transmitter is mandatory for all ELT types, **except ELT(DT)s"**.

response

Not accepted

'as specified' refers to the C and H1 capabilities, not to the ELT(DT).

ED-62B does not forbid capability H1 for an ELT(DT); refer to ED-62B, Section 3.8:

'If fitted, an ELT(DT) shall inhibit the 121.5 and 243 MHz homing transmitters in flight (see § 2.9.5.1) when automatically activated.

When a homing capability is declared, the following corresponding paragraphs apply including for ELT(DT)s.'

comment | *176* | comment by: *ICAO*

AMC2 CAT.IDE.A.280 Emergency locator transmitter (ELT)

TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

...

(3) Automatic deployable (ELT(AD))a. An ELT that is rigidly attached to the aircraft before the crash and that is automatically ejected, deployed and activated by an impact, and, in some cases, also by ~~hydrostaticwater~~ water sensors. ~~Manual deployment is also provided.~~ This type of ELT should float in water and is intended

to aid SAR teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or may be an inseparable part of a deployable recorder.

Comment:

In Annex 6 the definition for ELT (AD) refers to "hydrostatic" sensors. There would be an inconsistency in these definitions. If it is the case that the reference should rather be to "water" sensors an proposal for an amendment to Annex 6 will have to be made.

response

Not accepted

Refer to the rationale for AMC2 CAT.IDE.A.280 in Section 3.2.2 of NPA 2020-03:

'In regard to the sensors of the ELT(AD), the term 'hydrostatic sensor' refers to a particular type of water sensor that uses pressure to detect immersion, while EUROCAE document ED-62B allows for the use of other kinds of water sensors to detect immersion.'

EUROCAE document ED-62B defines a hydrostatic sensor as follows:

'A type of water sensor using pressure to detect immersion.'

EUROCAE document ED-62B defines a water sensor as follows:

'A sensor detecting immersion, including at low depth.'

Therefore, the term 'hydrostatic sensors' was replaced by 'water sensors' in point (a)(3) of AMC2 CAT.IDE.A.280.

comment

236 comment by: *The Boeing Company*

Page: 11

Paragraph: 3.2.2 (AMC1 CAT.GEN.MPA.210) (c)

THE PROPOSED TEXT STATES:

The operator should establish flight crew procedures for using the system, including manual activation and manual deactivation of the system. These procedures should require manual activation only when the flight crew needs to declare a state of emergency to the ATS, and they should highlight the implications of unjustified manual activation for search and rescue authorities.

REQUESTED CHANGE:

The operator should establish flight crew procedures for using the system, including manual activation and manual deactivation of the system. These procedures should require manual activation only when the flight crew needs to declare***, to the ATS,*** a state of emergency ~~to the ATS~~***in which search and rescue is anticipated to be required.***~~, and they~~ ***The procedures*** should highlight the implications of unjustified manual activation for search and rescue authorities.

JUSTIFICATION: The clarification is requested in order to distinguish between typical emergencies and emergencies that require Search and Rescue (SAR) involvement. Some level of discretion with regards to which emergency declarations require manual activation of the system is necessary. Flight crews may declare emergencies for situations which do not require SAR assistance (ex. Single engine out, sick passenger, etc.).

response

Partially accepted

The intent of this comment is considered valid. Point (c) of AMC1 CAT.GEN.MPA.210 was reworded: see the response to comment No 166.

comment

237 comment by: *The Boeing Company*

Page: 12

Paragraph: *3.2.2 (AMC1 CAT.GEN.MPA.210) (e)*

THE PROPOSED TEXT STATES:

…In addition, to reduce the frequency and effects of undesirable system activation, the operator should:

(1) establish procedures for disabling the system after completion of the flight;

(2) consider the system inoperative if nuisance activation occurs several times during a flight or if the system is disabled because of nuisance activation after flight completion; and

(3) analyse undesirable system activation to determine the probable cause, and retain records of such analyses for at least 12 months.

REQUESTED CHANGE:

…In addition, to reduce the frequency and effects of undesirable system activation***, after completion of the flight***, the operator should:

(1) establish procedures for disabling the system ~~after completion of the flight~~;

(2) consider the system inoperative if nuisance activation occurs several times during a flight or if the ***automatic activation*** system is disabled because of nuisance activation; and

(3) analyse undesirable system activation to determine the probable cause, and retain records of such analyses for at least 12 months.

JUSTIFICATION: Adjusting wording to ensure it is clear the system should only be disabled after the completion of the flight.

response

Partially accepted

The first proposed change does not seem appropriate, as points (e)(1) and (e)(2) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 are applicable regardless of the completion of a flight.

However, point (e)(1) was corrected to permit disabling the automatic activation of the system in flight to avoid continuous nuisance activation throughout a flight, as it could result in multiple RCCs being unnecessarily alerted all along the route of the aircraft. According to CS ACNS.E.LAD.350, disabling the system in flight is only possible by using circuit protective devices. In addition, point (e)(1) was renumbered '(d)(1)'.

The intent of the second proposed change is considered valid, but the end of point (e)(2) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was deleted, as disabling the system is not appropriate for reducing the frequency and the effects of false alerts, and because when a function performed by equipment is disabled, that equipment is considered inoperative. Point (e)(2) was renumbered '(d)(2)'.

In addition, comments Nos 286 and 356 were taken into account.

In addition, an explanation of the 'required functions of the airborne system' (as corrected following review of the comments) was introduced into the explanations of the terms in GM2 CAT.GEN.MPA.210.

comment

250 comment by: *THALES*

AMC1 CAT.GEN.MPA.210: In (a) (2) compliance with CS-ACNS is mentioned. The expected compliance is not for the full document but only for the (location of an aircraft in distress section'. Indication of the section in the text would help to avoid confusion.

THALES proposal:

To precise the section of CS-ACNS in AMC1 CAT.GEN.MPA.210 (a) (2) with the text ' comply with the 'LOCATION OF AN AIRCRAFT IN DISTRESS AND EMERGENCY LOCATION' section of Certification Specifications — Airborne Communications, Navigation and Surveillance (CS-ACNS) issued by EASA, or equivalent'

response

Partially accepted

Subpart A of CS-ACNS contains general conditions that must be also met by the airborne equipment that is used to comply with point CAT.GEN.MPA.210. Those conditions include instructions for continued airworthiness (ICA), aircraft documentation, and deviation from equipment standards. Therefore, a general reference to CS-ACNS, and not only to its Subpart E, is provided in AMC1 CAT.GEN.MPA.210. However, GM1 CAT.GEN.MPA.210 was amended to clarify this.

comment

251 comment by: *THALES*

GM2 CAT.GEN.MPA.210 : The terminology 'robust' is not used the same way it may be used in other document like Arinc 680 (loss of normal electrical power for example). It may be confusing. Thus it is nice to have introduced the definition of 'robust' in GM2 CAT.GEN.MPA.210 to clarify the use of the word in Air Ops 965/2012 but the definition has to be introduced the same way in the CS-ACNS.

THALES proposal:

To insert in the CS-ACNS the same definition of the terminology 'robust' as in the Air ops 965/2012.

response

Not accepted

GM2 CAT.GEN.MPA.210 does not contain definitions; it only contains explanations of terms to help operators better understand point CAT.GEN.MPA.210 and AMC1 CAT.GEN.MPA.210. There is no need to introduce a definition of the airborne system into Section 3 of Subpart E of CS-ACNS.

comment

266 comment by: *DGAC France*

AMC1 CAT.GEN.MPA 210 :

Concerning Transmission service:

	- Item (b)(1) is not clear enough about inflight transmission or on ground transmission at and after impact. There is a loophole regarding SPOC and RCC. Even for data related to an aircraft on the ground/at sea, Cospas-Sarsat does not send the data to all relevant RCCs/RSCs in every case. For data transmitted in flight (ADT systems or ADT function of solutions), ATS must receive these data without any delay. Thus these data should be sent automatically to ATS and Airlines, while they are made available to RCC). - There should be an item (b)(1)(III) to require the operator to get the data and be consistent with ICAO/Annex 6/ Appendix 9 §2.4. - Item (b)(2): in a top-down approach, the transmission to the operator shall not be excluded. In case of a problem, the flight crew will report to its OCC especially in airspaces where aircraft tracking is required. Concerning Flight crew procedure (c): - Rationale in item (c) highlights the coordination between ATS and the flight crew. That is the reason why it is of upmost importance to streamline data transmission to ATS and Airline. - Regarding data sent in flight, EASA should align with ICAO standards and rationales. Item (d)(2) mentions “remote deactivation” whereas there is no mention of “remote activation” by the operator. Will the flight crew be able to activate again the system if needed afterwards? Item (e): It seems related to in flight situations only. In this frame, what are the expected impacts on RCCs in case of automatic transmission to RCCs/RSCs?
response	First sub-comment, on point (b)(1) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03: not accepted The transmission service is compatible with the current EU legal framework applicable to SAR and ATS and, particularly, to the distribution of tasks and responsibilities between RCCs and ATS units in case an aircraft is in a distress situation. The competent SPOC (the SAR point of contact competent for the SAR region(s) where the aircraft is indicated to be) directly receives the data for efficiency purposes, as it is currently the case when an ELT is activated. Hence, the data should be transmitted to the competent SPOC as a matter of priority. It is not required, it is only advisable, that the transmission service provide the operator with a copy of the data corresponding to an activated system (see the response to comment No 170). Second sub-comment on points (b)(2) and (c) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03: not accepted

It is not required, it is only advisable, that the transmission service provide the operator with a copy of the data corresponding to an activated system (see the response to comment No 170). In addition, 'aircraft tracking' (required by point CAT.GEN.MPA.205) should not be confused with 'locating an aircraft in distress' (point CAT.GEN.MPA.210).

Point (c) of AMC1 CAT.GEN.MPA.210 is only about flight crew procedures regarding the manual use of the system and it does not justify transmitting the data of an activated system to the operator.

Third sub-comment on point (d)(2) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03: noted

EASA did not propose in NPA 2020-03 AMC and/or GM on remote activation, as the intent was to collect the views of stakeholders on that concept. Therefore, Section 4.3.3.2 of that NPA contains questions for stakeholders about remote activation and remote deactivation. This comment is addressed by the response to comment No 483.

Fourth sub-comment on point (e) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03: noted

The impact on RCCs is similar to that of inadvertent ELT activation. Point (e) was, therefore, reworded (refer to the response to comment No 78).

comment | *267* | comment by: *DGAC France*

AMC1 CAT.GEN.MPA.210 Rationale

Item (b) transmission service :

- refers to in flight transmission

- aeronautical SRR shall be the geographical reference to identify the competent RCC (the one in charge of receiving the emergency phase by the relevant ATS unit).

- the mention of the operator is missing to be consistent with ICAO standards.

response

First sub-comment: partially accepted

Point (b)(1) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was deleted (see the response to comment No 280).

'competent SAR centre' was deleted from the AMC and GM to point CAT.GEN.MPA.210 as the transmission service only needs to be addressed in AMC1 CNS.OR.100, and only when the transmitter of the airborne system is not an ELT.

In AMC1 CNS.OR.100, ‘competent SAR centre’ was replaced by ‘competent SAR point of contact (SPOC)’ for better harmonisation with the ICAO Annex 12 framework and with the terminology used in the COSPAS-SARSAT technical documents (see the response to comment No 35).

Second sub-comment: not accepted

It is not required, it is only advisable, that the transmission service provide the operator with a copy of the data corresponding to an activated system (see the response to comment No 170).

comment | _268_ | comment by: _DGAC France_

AMC1 CAT.GEN.MPA.210

Rationale item (b) on page 13 :

Does the first paragraph mean that there is no transmission to the RCC as long a “distress situation” is not validated by the ATS unit?

The competent SAR centre does not always receive automatically the data sent by the current ELTs. Sometimes, a RCC with a SPOC function needs to relay this data to the competent RCC or to a subordinated RSC in the area.

There is also a confusion between current data transmitted to RCC by ELT triggered at impact and the future ADT systems (whose ELT-DT) which are designed to transmit in flight (ICAO/Annex 6 is very clear about this point).

There is no mention of the operator, especially in airspaces where aircraft tracking is required.

Notion of Seldom Event: the events considered by the NPA seem to be non survivable ones. Survivable events will last more than a few minutes. Some may even last for a few hours. In any case, **this is only when the event development came to an end, that it is possible to ascertain its duration**.

Second paragraph:

- notion of “competent SAR centre”: the SPOC is not always the competent SAR center, or the one in charge of conducting conducting SAR operation in a given area.

The rationale is acceptable for a system triggered at impact (as current ELT), but it is not applicable to data transmitted in flight.

- the ELT message should comply with the same format as required by ICAO in the frame of GADSS.

	Whatever the repository which could be used by a given system, RCCs and RSCs should receive or have access to messages through the same channels with the same message format and human-machine interfaces. <u>Third paragraph</u> There is no reason to exclude systems sending data to the operators (see aircraft tracking areas).
response	First comment (on the first paragraph): partially accepted The data from an activated airborne system is transmitted to the competent SPOC (SAR point of contact that is competent for the SAR region(s) where the aircraft is indicated to be) without prior validation by an ATS unit, as is currently the case for ELT messages that stem from an activated ELT (see the response to comment No 267). There is no confusion between conventional ELTs (ELT(AF) and ELT(S)) and the means to locate an aircraft in distress. The means to locate an aircraft in distress may rely on different types of ELTs to locate the point of end of flight, including an ELT(AF). The scope of ED Decision 2021/008/R is not the implementation of the autonomous distress tracking (ADT) as described in the ICAO Global Aeronautical Distress & Safety System (GADSS) Concept of Operation (ConOps). *Note:* 'autonomous distress tracking' does not appear in ICAO Annex 6 Part I. In addition, aircraft tracking (see ICAO Annex 6, Part I, Section 3.5, and point CAT.GEN.MPA.205) requires operators to track their flights during normal operations, and it should not be confused with locating an aircraft in distress (see ICAO Annex 6, Part I, Section 6.18, and point CAT.GEN.MPA.210). Second comment (on the second paragraph): not accepted 'competent SAR centre' was deleted from the AMC and GM to point CAT.GEN.MPA.210 (see the response to comment No 267). An internationally recognised format for ELT messages is defined in ICAO Annex 10, Volume III, Chapter 5 SARPs, and in COSPAS-SARSAT technical specifications. ED Decision 2021/008/R does not adopt another format. *Note:* The ICAO GADSS ConOps does not contain any SARP and, therefore, any requirement. AMC1 CNS.OR.100 addresses the transmission service in case airborne equipment other than ELTs transmits information. Point (b)(7) of AMC1 CNS.OR.100 specifies that in such a case, the provider of this transmission service should deliver the data in plain text and in a format recognised by the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual. Third comment (on the third paragraph): not accepted

It is not required, it is only advisable for quicker coordination, to transmit the data corresponding to an activated system to the operator (see the response to comment No 170).

comment *269* comment by: *DGAC France*

AMC1 CAT.GEN.MPA 210 :

Concerning Transmission service Item (b1) :

As the system relies on COSPAS SARSAT international program whose coverage is worldwide, it is not understood why each operator would have to check whether this international program meets the communication requirements. Do COSPAS SARSAT program's performances vary depending on the operator?

If not, DGAC suggests that information discussed at (1)(i) and (ii) should be made available to operators before introducing COSPAS SARSAT as a solution for ADT in the regulation.

response Partially accepted

See the response to comment No 26.

comment *270* comment by: *DGAC France*

AMC1 CAT.GEN.MPA.210

Concerning Transmission service item (b)(2)(ii) :

What is the objective of ii), as per i) the equipment has to use a transmission service provided by a surveillance provider that is certified in accordance with the ATM/ANS Regulation ?

It is understood that provider certification should accommodate the intended function be achieved. If not, DGAC thinks that EASA has to clarify which assumptions should be checked by the operators.

response Partially accepted

The objective of point (b)(2)(ii) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was to ensure that the performance of the communication infrastructure is adequate for the transmission of both activation signals and deactivation signals by the airborne system. The operator would receive, as part of the airborne system documentation, the assumptions about the minimum performance of the communication infrastructure necessary for the successful transmission by an installed system (refer to CS ACNS.E.LAD.320 and GM1 ACNS.E.LAD.320). If the actual communication infrastructure delivers lower performance than that required by the airborne system, there is no assurance that signal detection and transmission by that communication infrastructure will be successful. As various service providers may offer the transmission service for a given airborne system, and their respective communication infrastructures may evolve over time, this needs to be under control.

However, in practice, the compatibility of ELTs with the performance of the international COSPAS-SARSAT programme is fully covered by the technical specifications of ELTs and the system documents of the international COSPAS-SARSAT programme. If the airborne system relies on equipment other than ELTs for transmitting the information needed to comply with point CAT.GEN.MPA.210, that equipment should use a transmission service that is provided by a surveillance services provider that is certified in accordance with the ATM/ANS Regulation. AMC1 CNS.OR.100 contains conditions applicable to such a transmission service provider. One of those conditions is that the transmission service provider should establish a list of compatible airborne systems.

Therefore, point (b)(2)(ii) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was deleted.

comment | *271* | comment by: *DGAC France*

AMC1 CAT.GEN.MPA 210 :

Concerning Transmission service Item (e)(1) :

- Those procedures should comprise a failure assessment, whose result will determine if the systems should be disabled or not.

- Clarify the difference between disable and deactivate by adding the definition of disabling. A crew, an operator could deactivate the function in flight but could not disable it. It is understood that activation/deactivation of the system is part of the functional capability of the system whereas abling/disabling the system relies on a maintenance action making the system unavailable.

Concerning Item (e)(2) :

if nuisance activation occurs several times during a flight, the system should be disabled and as a consequence considered inoperative.

response | First comment: noted

Point (e)(1) of AMC1 CAT.GEN.MPA.210 was amended (see the response to comment No 237).

However, as per the airborne system design, the flight crew are only able to manually deactivate it when it is manually activated (see CS ACNS.E.LAD.270). The flight crew are only able to disable the airborne system in flight by actuating the circuit protective devices (refer to CS ACNS.E.LAD.350).

Second comment: noted

This is specified in point (e)(2) of AMC1 CAT.GEN.MPA.210.

comment | *272* | comment by: *DGAC France*

GM1 CAT.GEN.MPA.210

There should be an item (e) for the operators to be consistent with annex 6 – appendix 9 - §2.4.

Item (a) :

If "anywhere in the world" is the scope of the NPA, it means that any RCC/RSC in the world should be able to deal with EASA's requirements.

The same way, other regulators may want their rules to apply anywhere in the world. It is of paramount importance that all regulations throughout the world be consistent with each other.

Item (b) :

ADFR definition to be added in 965/2012 (it comprises an ELT). ADFR is not part of GADSS solution for ADT as described in ICAO Manual. Therefore, enabling such a solution could make European States diverge from ICAO SARPS, hence DGAC's non-concurrence with the introduction of ADFR as a possible distress tracking solution. However, ADFR could still be used for flight recorder data recovery.

Does "For example" means that there are other systems?

response

First comment on incorporating ICAO Annex 6, Part I, Appendix 9, paragraph 2.4: partially accepted

That paragraph was incorporated into point (b) of AMC1 CAT.GEN.MPA.210, which refers to AMC1 CNS.OR.100 (for the transmission of information to the competent SPOC), and into point (d) of AMC1 CAT.GEN.MPA.210 (for informing the relevant ATS unit).

Second comment on point (a) of GM1 CAT.GEN.MPA.210: noted

All the amendments that were adopted with ED Decision 2021/008/R are compatible with the current international regulatory framework that is defined for SAR in ICAO Annex 12. They do not require RCCs to change their equipment or procedures.

Third comment on point (b) of GM1 CAT.GEN.MPA.210: partially accepted

The notion of 'deployable flight recorder' is included in points CAT.IDE.A.185, CAT.IDE.A.190 and CAT.IDE.A.195, as well as in CS 25.1457 of the Certification Specifications for Large Aeroplanes (CS-25). In addition, an explanation of the concept of 'flight recorder' was introduced in GM27 Annex I 'Definitions' by ED Decision 2021/005/R (issued in April 2021). This definition states the following: 'A deployable flight recorder includes a part that is capable of automatically deploying from the aircraft.'

comment | 273 | comment by: *DGAC France*

AMC1 CAT.GEN.MPA.210

Rationale item (d):

For an inflight event, distribution to the operator shall be consistent with ICAO annex 6 appendix 9 §2.4.

DGAC reminds that annex 12 only requires SAR services to monitor distress situations, when informed by the ATS after an emergency phase is triggered.

This rationale illustrates the need for distributing as a priority to ATS and Airline. In addition, the notion of "seldom event" given in this NPA is not consistent with this rationale. The operator should access the data to correlate with Aircraft tracking data analysis. There is a discrepancy to expect the operator to deactivate a system, whose it does not receive the data while ATS units and RCCs would. This "useful information" shall be known as a priority by the ATS units (since it is about an aircraft in flight).

response | Not accepted

The responsibility of an RCC is not limited to monitoring distress situations. According to ICAO Annex 12, Chapter 5, Section 5.2.3, during a distress phase, the RCC must, among others:

'a) immediately initiate action by search and rescue units in accordance with the appropriate plan of operation;

b) ascertain the position of the aircraft, estimate the degree of uncertainty of this position, and on the basis of this information and the circumstances, determine the extent of the area to be searched.'

CS ACNS.E.LAD.140 requires that activation signals contain sufficient information to determine that the airborne system is activated, as well as the position and identity of the transmitting aircraft. CS ACNS.E.LAD.130 requires that deactivation signals be automatically transmitted upon deactivation, and CS ACNS.E.LAD.160 requires that deactivation signals contain sufficient information to determine that the airborne system is deactivated, as well as the identity of the transmitting aircraft.

Based on this information, it is easy for an RCC to determine whether data corresponding to an activated system is sent from a moving target (not requiring the immediate deployment of SAR units) or a fixed target (potentially indicating an accident that requires the deployment of SAR units), and whether the end of the signal transmission corresponds to return to safe operation (deactivation signals are received) or not (e.g. activation signals continue to be transmitted or are interrupted without being followed by deactivation signals).

Regarding the last paragraph of this comment: 'Upon being informed that one of their flights is potentially in a distress situation, operators should use all means at their disposal to verify whether the distress is genuine' (see the rationale of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03) does not imply that the operator must receive the data corresponding to activation signals (see the response to comment No 170). In addition, 'normal' aircraft tracking and location of an aircraft in distress have different scopes and they should not be confused (see the responses to comments Nos 326 and 338).

comment | *274* | comment by: *DGAC France*

AMC1 CAT.GEN.MPA.210

Rationale item (e):

An airborne system may be triggered in any kind of airspaces and may also create a burden for ATS units in high density traffic areas.

About nuisance activation, a filtering capability should be included in the repository to alleviate the burden for RCCs and ATS until the nuisance transmission stops.

response | Not accepted

The erroneous automatic activation of the airborne system is addressed in CS ACNS.E.LAD.620 and AMC1 ACNS.E.LAD.620 (see also the rationale of CS ACNS.E.LAD.620 in Section 3.3.2 of NPA 2020-03).

If the airborne system that is installed to comply with point CAT.GEN.MPA.210 meets the conditions specified in AMC1 ACNS.E.LAD.620, an individual RCC will seldom receive data corresponding to the erroneous automatic activation of that system.

In addition, the implementation of point (c) of AMC1 CAT.GEN.MPA.210 will limit unjustified manual activation of the system by flight crew members.

comment

275 comment by: *DGAC France*

GM1 CAT.GEN.MPA.210 Rationale:

In case of an accident, the operator may have to quickly transmit additional data to the ones contained in the flight plan. Operator shall remain involved as a main user.

In AT airspaces, operator shall be included among the main users.

response

Not accepted

Operators are anyway involved in and responsible for assessing any suspected emergency situation with one of their aircraft and for informing in a timely manner the relevant ATS unit. For this purpose, operators do not need to receive data corresponding to the activation of an airborne system that is compliant with point CAT.GEN.MPA.210. In addition, the international regulatory framework and the tools for notifying the operator are already in place (see the response to comment No 167).

The assessment and transmission of data by the operator through the aircraft tracking system is covered in AMC1 CAT.GEN.MPA.205.

comment

276 comment by: *DGAC France*

GM2 CAT.GEN.MPA.210

- communication infrastructure : Words "[...]to transmit this data to the ground[...]" are too vague, why not clarifying ATC/RCC/...?

- competent SAR centre : This definition is not in line with regulation annex 11 and 12. The competent RCC is the one responsible for the aeronautical SRR or a given area of aeronautical SAR responsibility. This RCC receives the emergency phases from the ATS unit. A competent RCC may be a SPOC of the Cospas-Sarsat system, but not always.

- nuisance activation : The automatic activation will not necessarily be triggered by the accident itself, but possibly by the detection of conditions that are very likely to result in an accident or a distress situation.

- transmission service : Operators are missing in relevant stakeholders. The distribution to the operator should be required in any case when dealing with a system triggering or a solution using a signal transmitted in flight. It is upmost the case for any ADT function associated to a system.

response

First sub-comment: partially accepted

See the response to comment No 257.

Second sub-comment: partially accepted

See the response to comment No 267.

Third sub-comment: noted

The explanation of the term 'nuisance activation' was deleted from GM2 CAT.GEN.MPA.210 (refer to the response to comment No 286).

Fourth sub-comment: not accepted

It is not required, it is only advisable, that the transmission service provide the operator with a copy of the data corresponding to an activated system (please see the response to comment No 170).

comment

277 comment by: *DGAC France*

AMC2 CAT.IDE.A.280

Item (a)(3) :

Difference between ejected and deployed has to be defined/clarified.

Same for AMC2 CAT.IDE.H.280 item (a)(3)

Same for AMC2 NCO.IDE.H.170 item (a)(3)

Same for AMC2 SPO.IDE.H.190 item (a)(3)

Rationale :

It is not clear under which scenario an ADFR could be manually deployed. Moreover, it is clearly specified in AMC2 that ELT AD "is automatically ejected". DGAC recommands that EASA details the foreseen scenario for which manual ejection would be required.

response

Partially accepted

'ejected, deployed' in point (a)(3) of AMC2 CAT.IDE.A.280 in Section 3.2.2 of NPA 2020-03 is a repetition, as for such equipment, 'eject' and 'deploy' may be used interchangeably. The term used in the definition of ELT(AD) in ICAO Annex 6 Part I and in EUROCAE Document ED-62B is 'deployed'; therefore, the term 'ejected' was deleted.

The same correction was made in the AMC to point CAT.IDE.H.280, and in the related AMC to Annex VI (Part-NCC), Annex VII (Part-NCO) and Annex VIII (Part-SPO) to the Air OPS Regulation.

In addition, this comment led to the identification of another correction that had to be made to point (a)(3) of AMC2 NCO.IDE.A.170 (regarding the description of an automatic ELT(AD)).

As per paragraph (d)(7) of CS 25.1457, there shall be no means to manually deploy the ADFR while the aeroplane is capable of moving under its own power.

Note: The manual deployment capability of an ELT(AD) is addressed in EUROCAE Document ED-62B, which is referred to by the European Technical Standard Order (ETSO)-C126c.

comment *278* comment by: *DGAC France*

GM2 CAT.IDE.A.280 Rationale:

Shouldn't the second paragraph be in the previous "rationale" section on page 18?

response Noted

The rationale right below GM2 CAT.IDE.A.280 in Section 3.2.2 of NPA 2020-03 addresses both GM1 CAT.IDE.A.280 and GM2 CAT.IDE.A.280.

comment *279* comment by: *DGAC France*

AMC2 CAT.IDE.A.285(f)

ULD devices aim at locating the wreckage underwater. The NPA must be clearer about the fact that their purpose is out of the scope of SAR which aims at the timely recovery of potential survivors.

SAR units are not required to detect ULD.

response Not accepted

There is no ambiguity. AMC2 CAT.IDE.A.285(f) should be read together with point CAT.IDE.A.285.

comment | 285 comment by: UK CAA

Page No: 11

Paragraph No: AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES (c)

Comment: The UK CAA recommends using two sentences to describe the operator's obligation to highlight the implications of unjustified manual activation.

Justification: Clarity

Proposed Text: Amend as follows:

'(c) '…These procedures should require manual activation only when the flight crew needs to declare a state of emergency to the ATS. ~~and they~~ ***The operator*** should highlight the implications ***for search and rescue authorities*** of ~~unjustified~~ ***false alert*** manual activation ~~for search and rescue authorities.~~

response | Partially accepted

Point (c) of AMC1 CAT.GEN.MPA.210 was reworded to take into account this comment as well as comments Nos 166 and 236.

comment | 286 comment by: UK CAA

Page No: 12

Paragraph No: AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes PERFORMANCE AND PROCEDURES (e)

Comment: The UK CAA recommends using the term "false alert" rather than 'undesirable' or 'nuisance'.

Justification: Clarity and consistency

Proposed Text: Amend as follows:

'(e) Limiting the effects of ~~undesirable~~ ***false alerts*** ~~system activation~~

The operator should establish procedures for informing without delay the relevant ATS unit(s) when an aircraft on which the system is activated is not in a distress situation (e.g. in the case of ~~nuisance~~ ***false alert*** activation of the system or successful recovery from a distress situation). In addition, to reduce the frequency and effects of ~~undesirable~~ ***false alert*** system activation, the operator should:

(1) establish procedures for disabling the system after completion of the flight;

(2) consider the system inoperative if ~~nuisance~~ ***false alert*** activation occurs several times during a flight or if the system is disabled because of ~~nuisance~~ ***false alert*** activation; and

(3) analyse ~~undesirable~~ ***false alert*** system activation to determine the probable cause, and retain records of such analyses for at least 12 months.'

response

Partially accepted

Point (e) of AMC1 CAT.GEN.MPA.210 was corrected, as the difference between 'undesirable system activation' and 'nuisance activation' was not explained in the AMC and GM to point CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 (see the response to comment No 237).

In addition, the explanation of 'nuisance activation' was deleted from GM2 CAT.GEN.MPA.210, as the changes to AMC1 CAT.GEN.MPA.210 made it superfluous. However, the term 'false alert' was not introduced as proposed by this comment; see the response to comment No 290.

comment

287 comment by: *UK CAA*

Page No: 15

Paragraph No: GM1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes OBJECTIVES (a)

Comment: Consider revising paragraph (a) as proposed below for readability and clarity

Justification: Clarity and accuracy of the purpose of the requirement to have ADT

Proposed Text: Amend as follows:

'(a) The purpose of CAT.GEN.MPA.210 is to increase the ~~likelihood that an accident site will be accurately and quickly located~~ probability of identifying establishing the location of the accident site quickly and accurately, anywhere in the world. ~~and irrespective of the accident survivability (hence, the terms 'automatic', 'robust', and 'accurately' are used in CAT.GEN.MPA.210)~~. This ~~also implies that~~ requires the stakeholders concerned ~~are quickly~~ to be informed quickly that an accident has ~~(or is about to)~~ occurred ***or is about to occur***. ~~One of the~~ ***The*** ~~main~~ objectives of CAT.GEN.MPA.210 is to ~~deliver~~ provide data to the competent SAR centre, which ~~they~~ can easily be used to timely and accurately locate the accident site ***~~(~~hence, the terms 'automatic', 'robust', and 'accurately' are used in CAT.GEN.MPA.210~~)~~***. ~~Other important objectives of CAT.GEN.MPA.210 are to make this data available to the ATS unit providing the alerting service in the airspace where the aircraft is indicated to~~

~~be by this data, and to locate the aircraft within a reasonable time frame for the purpose of a safety investigation.'~~

response

Partially accepted

Point (a) of GM1 CAT.GEN.MPA.210 was reworded for clarity. In addition, the content of GM1 ACNS.E.LAD.001 was harmonised with point (a) of GM1 CAT.GEN.MPA.210 for consistency.

comment

_289_ comment by: _UK CAA_

Page No: 16

Paragraph No: GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes

EXPLANATION OF TERMS "accident during which the aeroplane is severely damaged …"

Comment: It is suggested that the spelling of the word "tire" be amended to 'tyre'

Justification: Accuracy

Proposed Text: Replace "tires" with 'tyres'.

response

Accepted

GM2 CAT.GEN.MPA.210 was corrected to read 'tyres' instead of 'tires'.

comment

_290_ comment by: _UK CAA_

Page No: 16

Paragraph No: GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes EXPLANATION OF TERMS **"nuisance activation …'**

Comment: The UK CAA recommend changing the use of the term "nuisance activation" to 'false alert'

Justification: Recognised aviation terminology

Proposed Text: Amend as follows:

- ~~‘nuisance activation’~~ ***‘false alert’*** refers to an automatic activation of the airborne system that is not ~~desirable~~ intended as it does not correspond to an accident condition within the scope of CAT.GEN.MPA.210;’

response

Partially accepted

‘alert’ is used in ICAO Annex 12 for ‘alert phase’. Therefore, to avoid confusion, this term should not be used when addressing the activation of the airborne system. When drafting NPA 2020-03, SAR experts advised EASA to not use the word ‘alert’ to indicate the activation of the airborne system.

The explanation of ‘nuisance activation’ was deleted from GM2 CAT.GEN.MPA.210, and point (e) of AMC1 CAT.GEN.MPA.210 was reworded (see the responses to comments Nos 237 and 286).

comment

295 comment by: *UK CAA*

Page No: 17

Paragraph No: AMC2 CAT.IDE.A.280 Emergency locator transmitter (ELT) (a)(3)

Comment: The term “hydrostatic” has been replaced by ‘water’. It is suggested that a better term would be “Immersion” which covers the intent which is to detect entry into or below water and not just water.

Justification: Clarity of intent and interpretation

Proposed Text: Replace “water sensors” with ‘immersion sensors’

response

Partially accepted

The change was made to harmonise the wording with the specifications of EUROCAE Document ED-62B, which defines a water sensor as follows: ‘A sensor detecting immersion, including at low depth.’

To avoid misunderstanding, an explanation was introduced into GM1 CAT.IDE.A.280.

The same explanation was introduced into the related GM for helicopters, as well as in Parts NCC, NCO, and SPO.

comment

308 comment by: *UK CAA*

Page No: 20

Paragraph No: AMC2 CAT.IDE.H.280 Emergency locator transmitter (ELT) (a)(3)

Comment: The term "hydrostatic" has been replaced by 'water'. It is suggested that a better term would be "Immersion" which covers the intent which is to detect entry into or below water and not just water.

Justification: Clarity of intent and interpretation

Proposed Text: Replace "water sensors" with 'immersion sensors'

response

Partially accepted

See the response to comment No 295.

comment

354 comment by: *Embraer S.A.*

Comment:

It is far beyond the scope of the aircraft operator, for them to ensure that the COSPAS-SARSAT programme meets certain technical requirements defined by EASA.

Reason(s) for Comment:

The COSPAS-SARSAT programme is composed of 45 different countries represented by their different government organizations and agencies. It is not reasonable to assume that the aircraft operator could join this programme; and even if such a thing were possible, it is not reasonable to assume that the aircraft operator would have any power to dictate the technical requirements to be followed by the programme.

Proposed Change/Text (where applicable):

The text passage:

"b) Transmission service

(1) If the system relies on ELTs for transmitting information sufficient to comply with CAT.GEN.MPA.210, the operator should ensure that the international COSPAS-SARSAT programme meets the following:"

should be changed to:

"b) Transmission service

(1) If the system relies on ELTs for transmitting information sufficient to comply with CAT.GEN.MPA.210, it is suggested ~~the operator should ensure~~ that the international COSPAS-SARSAT programme meets the following:"

response

Partially accepted

See the response to comment No 26.

comment

355 comment by: *Embraer S.A.*

Comment:

Manual activation and deactivation should only occur if the automatic activation/deactivation fails.

Reason(s) for Comment:

The need for manual activation of a system for which there is also an automatic (or autonomous) activation is not clear. Manual activation should at best be an optional contingency based on a failure of the automatic system and the availability of crew to do the activation. In a real distress situation, crew workload is high and manual activation of the ADT should not be a priority for the flight crew who may be struggling to save the airplane. Manual activation and deactivation should only occur if the automatic feature fails.

Proposed Change/Text (where applicable):

The text passage:

"(c) Flight crew procedures

The operator should establish flight crew procedures for using the system, including manual activation and manual deactivation of the system. These procedures should require manual activation only when the flight crew needs to declare a state of emergency to the ATS, and they should highlight the implications of unjustified manual activation for search and rescue authorities."

should be changed to:

"(c) Flight crew procedures

The operator should establish flight crew procedures for using the system, when automatic activation fails to occur during a distress phase ~~including manual activation and manual deactivation of the system~~. These procedures ~~should require manual activation only when the flight crew needs to declare a state of emergency to the ATS, and they~~ should also highlight the implications of unjustified manual activation for search and rescue authorities and how to deactivate the system."

response

Partially accepted

While EASA understands the rationale behind this comment, it does not consider it necessary to add the condition 'when automatic activation fails to occur during a distress phase'. Indeed, the flight crew are ultimately responsible for the safety of the aircraft occupants and they may decide to manually activate the airborne system when they anticipate a SAR response, without waiting for the airborne system to be automatically activated. Therefore, point (c) of AMC1 CAT.GEN.MPA.210 was reworded to incorporate this comment as well as comments Nos 166 and 236.

comment

356 comment by: *Embraer S.A.*

Comment:

The "nuissance activation" term should be harmonized with EASA AMC 25.1322 and ARINC 680 documents.

Reason(s) for Comment:

According to EASA AMC 25.1322 (Flight Crew Alerting) and ARINC 680 (Aircraft Autonomous Distress Tracking (ADT)), a nuisance alert is defined as: "(a)n alert generated by a system that is functioning as designed but which is inappropriate or unnecessary for the particular condition." The definition of "nuisance activation in NPA 2020-03 should be harmonized with this definition.

Proposed Change/Text (where applicable):

The text passage:

"The terms used in CAT.GEN.MPA.210 and AMC1 CAT.GEN.MPA.210 are explained below for better understanding:

(...)

- 'nuisance activation' refers to an automatic activation of the airborne system that is not desirable as it does not correspond to an accident condition within the scope of CAT.GEN.MPA.210;"

should be changed to:

"The terms used in CAT.GEN.MPA.210 and AMC1 CAT.GEN.MPA.210 are explained below for better understanding:

(…)

- 'nuisance activation' refers to an automatic activation of the airborne system that is functioning as designed but which is unnecessary since ~~not desirable as~~ it does not correspond to a distress ~~an accident~~ condition within the scope of CAT.GEN.MPA.210;"

response

Partially accepted

The term 'nuisance activation' was deleted from AMC1 CAT.GEN.MPA.210 and GM2 CAT.GEN.MPA.210 (see the response to comment No 237).

comment

388 comment by: *FOCA Switzerland*

FOCA CH proposal:

ad AMC1 CAT.GEN.MPA.210, (b) (1), p.11:

"If the system relies on ELTs for transmitting information sufficient to comply with CAT.GEN.MPA.210, ~~**the operator**~~ **the civil authority** should ensure that the international COSPAS-SARSAT programme meets the following:"

response

Partially accepted

Part-CAT does not contain authority requirements; therefore, the proposed correction cannot be accepted.

However, point (b) of AMC1 CAT.GEN.MPA.210 was corrected to only specify the conditions regarding the transmission service when the transmitter is not an ELT (see the response to comment No 480).

comment	*389* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, (b) (1) (i), p.11: The transmission of the data to the ATS is not in line with the current alerting procedure for ELT's using the Cospas Sarsaat system. The alerts are transmitted to the RCC.
response	Partially accepted The ICAO Location of an Aircraft in Distress Repository (LADR) project aims to facilitate the sharing of distress tracking data between the operator, the relevant ATS unit, and the RCC. It is expected that the international COSPAS-SARSAT programme will send ELT(DT) messages to that repository in addition to delivering them to the competent SPOC. COSPAS-SARSAT technical document C/S A.001 ('Data distribution plan', Issue 8, Revision 5 (June 2021), Section 3.12 specifies that alert data corresponding to an ELT(DT) must be sent to the LADR via the nodal MCC. However, to address comment No 480, point (b)(1) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was deleted.

comment	*390* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, (b)(1)(ii), p.11: This procedure is not in line with the current alerting procedure for ELT's using the Cospas Sarsaat system. The LUT transmits data to the RCC only.
response	Partially accepted See the response to comment No 389.

comment	*391* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, (b)(2), p. 11:

	As regards the other equipment than ELTs, the regulation shall make clear responsibilities and distinction between ATS unit (alerting) and RCC (coordination).
response	Not accepted Point CAT.GEN.MPA.210 is a requirement to be met by aircraft operators, not by ATS units or RCCs. In addition, the conditions on the transmission service, which are contained in point (b) of AMC1 CAT.GEN.MPA.210, are compatible with the current legal framework applicable to RCCs and ATS units.

comment	*392* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, (c), p. 11: The manual deactivation of ELT(DT) is technically not planned in the current ELT(DT) setup.
response	Not accepted Please see the response to comment No 120.

comment	*393* comment by: *FOCA Switzerland* FOCA CH proposal: ad AMC1 CAT.GEN.MPA.210, (d)(1), p.12: "The operational control over the flights should include procedures for assessing whether an aircraft is likely to be in a distress situation and informing without delay the relevant ATS unit **<u>according to the GADSS procedures</u>**."
response	Not accepted The 'GADSS procedures' this comment presumably refers to are contained in the ICAO Global Aeronautical Distress & Safety System, Concept of Operations (GADSS ConOps). This document is a concept of operations and not an ICAO annex or ICAO procedures for air navigation services (PANS).

comment	*394* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, (d)(2), p. 12: According to the current specifications of Cospas-Sarsat a remote deactivation of an ELT is technically not possible.
response	Noted EUROCAE published in February 2021 ED-277, titled 'Minimum aviation system performance standard for aircraft emergency locator transmitter return link service'. It contains specifications for the remote deactivation of an ELT(DT).

comment	*395* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, (e), p. 12: Procedures regarding deactivation should be clearly specified. If ATS is not aware of initial activation of an ELT (only RCC and operator get those messages), the information about a deactivation might be confusing to ATS.
response	Partially accepted Point (c) of AMC1 CAT.GEN.MPA.210 was amended to specify that the flight crew inform the ATS unit in a timely manner when they manually deactivate or disable the system to stop data transmission. See the response to comment No 166.

comment	*396* comment by: *FOCA Switzerland* FOCA CH proposal: ad AMC1 CAT.GEN.MPA.210, (e)(3), p. 12: "analyse **<u>and report to the civil authority</u>** undesirable system [...]". Mandatory reporting is the only way to correct systemic problems with these systems (see Cospas Sarsat A.003 4. Beacon performance monitoring)
response	Partially accepted

	See the response to comment No 237.

comment	*397* comment by: *FOCA Switzerland* FOCA CH Comment: ad AMC1 CAT.GEN.MPA.210, Rationale (b), p. 13: Sending the data to the RCC or SPOC is the correct procedure but it is not correctly relfected in the draft regulation (see our other comments).
response	Partially accepted See the responses to comments Nos 389 and 480.

comment	*398* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, Rationale (b), p. 13: "The transmission service is expected to be compatible with the current legal framework[...]" (i.e. Cospas Sarsat and ICAO Annex 10/11/12). This is the correct way forward but not in line with the draft regulation (see our comments on the draft).
response	Partially accepted See the responses to comments Nos 389 and 480.

comment	*399* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CAT.GEN.MPA.210, Rationale (b), p.13: "However, as ATS units are responsible for coordinating the alerting service [...]". It should be noted that the ATS units are responsible <u>for alerting service and RCC's</u> for coordination.
response	Noted

comment *400* comment by: *FOCA Switzerland*

FOCA CH comment:

ad AMC1 CAT.GEN.MPA.210, Rationale (d), p. 14:

"If the system used to comply with CAT.GEN.MPA.210 allows the aircraft operator to remotely deactivate it [...]" We don't support this kind of procedure of deactivation. Indeed, it will make it impossible for RCC's to judge and manage SAR missions if distress calls are stopped by operators. Only the RCC can stop and terminate a distress situation which was initiated.

response Noted

See the response to comment No 191.

comment *401* comment by: *FOCA Switzerland*

FOCA CH proposal:

ad AMC1 CAT.GEN.MPA.210, Rationale (e), p. 14:

" - operational procedures to quickly inform the relevant **~~ATS unit~~** **RCC** [...]".

response Not accepted

The amendments proposed by NPA 2020-03 are not intended to change the international framework for the coordination among stakeholders when an aircraft is in a state of emergency. The ATS unit provides the alerting service according to ICAO Annex 11 Chapter 5, including the notification to the RCC. ICAO Annex 11 (Amendment No 52, adopted on 9 March 2020), Chapter 5, Section 5.2.3 specifies that the ATS unit shall provide without delay 'information [to the RCC] that the emergency situation no longer exists'. Therefore, the operator does not need to notify the RCC.

The first sentence of point (e) of AMC1 CAT.GEN.MPA.210 was amended; see the response to comment No 78.

comment *402* comment by: *FOCA Switzerland*

FOCA CH proposal:

ad AMC1 CAT.GEN.MPA.210, Rationale (e), p. 14:

" - monitoring **and reporting** of recurrent undesirable system activation [...]".

response

Noted

See the response to comment No 237.

comment

403 comment by: *FOCA Switzerland*

FOCA CH comment:

ad Rationale (e):

"However, analyses of undesirable system activation are needed at regular time intervals to maintain the rate of undesirable system activation at an acceptable level." We wonder who will be responsible to analyse.

response

Noted

The operator will be responsible for such analyses, as stated in point (e) of AMC1 CAT.GEN.MPA.210. The responsible postholder may be the Safety Manager, usually having access to internal occurrence reports and data from the flight data monitoring programme, and being responsible for supervising internal safety analyses and incident investigations.

comment

404 comment by: *FOCA Switzerland*

FOCA CH comment:

ad GM3 CAT.GEN.MPA.210, Rationale, p. 17:

"To facilitate coordination between the ATS unit and the operator in case of a system activation, it is advisable that the operator is also quickly informed. A fast way to achieve this is to include the operator in the recipients of the distribution service." Operator should be informed by RCC and not directly.

response

Noted

The RCC is not the only stakeholder entitled to inform the operator. ICAO Annex 11 (Amendment No 52, adopted on 9 March 2020), Chapter 5, Section 5.5 prescribes

	that that the ATS unit informs the operator and that all information the ATS unit gives to the RCC is also communicated to the operator.

comment	*405* comment by: *FOCA Switzerland* FOCA CH proposal: ad AMC2 CAT.IDE.A.280, (a) (3), p.17: "An ELT that is rigidly attached to the aircraft before the crash and that is automatically ejected, deployed and activated by an ~~**impact**~~ [...]". ELT DT might be activated before impact.
response	Not accepted Point (a)(3) of AMC2 CAT.IDE.A.280 defines an ELT(AD), not an ELT(DT).

comment	*406* comment by: *FOCA Switzerland* FOCA CH proposal: ad AMC2 CAT.IDE.A.280, (b) p.18: "To minimise the possibility of damage in the event of crash impact, the automatic ELTthe ELT(AF), ELT(AP), ELT(AD), and ELT(DT) should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged **and/or having an internal antenna** [...]". It is suggested by various AAIB's and certification agency's, so as to maximise the probability of the signal being transmitted after a crash.
response	Not accepted The performance of an ELT internal antenna is not specified in COSPAS-SARSAT technical documents. Therefore, there is no guarantee that fitting an ELT with an internal antenna would increase the probability of detection of the ELT's signal by the satellites of the international COSPAS-SARSAT programme.

comment	*416* comment by: *ENAIRE*

	In relation with AMC1 CAT.GEN.MPA.210(b)(1)(i) <<the data corresponding to ELT signals transmitted by the system is automatically made available to the ATS unit providing the alerting service in the airspace where the aircraft is indicated to be by this data (the 'relevant ATS unit'); and>>, we would like to make some commentaries: • The rationale on this point ("However, as ATS units are responsible for coordinating the alerting service, this data is made simultaneously available to the relevant ATS unit") seems to assume that whenever distress alert data will be made available on the free repository, the relevant ATS Unit will immediately become aware of it. However, the NPA does not clarify how this will take place. The need for a real-time ATS awareness mechanism about new repository information and its practical implementation are open questions which should be addressed by the present NPA. Local ELT´s remote activation trials in Spain have shown that ATCOs do not desire to have real-time ELT activation alerts interfering on their radar screens. It may not be always realistic to assume that an ATCO will periodically check the repository interface nor an e-mail account. • It is neccessary to further justify the rationale with respect to the existence of targets solely for ATS´performance and not for that of RCCs/SPOCs. The performance of the international COSPAS-SARSAT programme may be deemed sufficient for today - but a hypothetical future performance´s degradation of the COSPAS-SARSAT/RCC interface might imply that an ATS unit would receive SAR alert information before SAR centres, which would not seem to be acceptable. In contrast, AMC1 CNS.OR.100 does contain performance objectives for both SAR and ATS´ information transmission. In relation with AMC1 CAT.GEN.MPA.210(b)(2)(i) <<this equipment should use a transmission service provided by a surveillance provider that is certified in accordance with the ATM/ANS Regulation; and>>, we would suggest that a more precise cross-reference to CNS.OR.100 was made, instead of <<the ATM/ANS Regulation>>. In relation with AMC1 CAT.GEN.MPA.210(b)(2)(ii) <<the communication infrastructure used by the transmission service that is designated in accordance with (i) should satisfy the assumptions about performance of the communication infrastructure (as a minimum the assumptions regarding availability, integrity, and coverage) that were part of the approval of the system installation>>, we would suggest that a cross-reference to EASA CS-ACNS was made in respect of <<approval of the system installation>>.
response	First sub-comment, on point (b)(1) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03, about informing the ATS unit: partially accepted Point (b)(1) of AMC1 CAT.GEN.MPA.210 was deleted; see the response to comment No 480.

Second sub-comment about the absence of a performance objective for transmission to the competent authorities in case of an ELT-based solution: not accepted

The international COSPAS-SARSAT programme is exclusively funded by States (43 participating States to this date) and overseen by a Council composed of delegates of those States. The performance of the international COSPAS-SARSAT programme is tailored to address the SAR needs of the States and is closely monitored by those States. The performance of the COSPAS-SARSAT programme has been continuously improving since its creation in 1979, and the deployment of the Medium-altitude Earth Orbiting Satellite System for Search and Rescue (MEOSAR) is expected to permit near-real-time worldwide coverage for detecting and independently locating a transmitting ELT. Therefore, it is not considered necessary to specify performance objectives for the transmission of data by the international COSPAS-SARSAT programme to the SPOC that is designated by States to comply with ICAO Annex 12.

Third sub-comment about the reference to the ATM/ANS Regulation: partially accepted

As the numbering of the applicable EU regulations and/or of the points within the regulations changes, and changing an AMC often requires more justification, point (b)(2) only refers to 'the ATM/ANS Regulation'. However, to help stakeholders understand this reference:

— the text of point (b)(2)(i) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was changed to point (b); and

— an explanation of the reference to the 'ATM/ANS Regulation' was introduced into GM2 CAT.GEN.MPA.210.

Fourth sub-comment, about a reference to CS-ACNS: partially accepted

Point (b)(2)(ii) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 was deleted. Refer to the response to comment No 270.

comment *435* comment by: *Leonardo DRS*

nuisance activation could also be manually activated (inadvertent or otherwise).

response Not accepted

'nuisance activation' in NPA 2020-03 exclusively refers to undesirable automatic activation. However, the term 'nuisance activation' was deleted from AMC1 CAT.GEN.MPA.210. See the responses to comments Nos 237 and 286.

comment	*436*	comment by: *Leonardo DRS*
	'activation' is used in two ways which creates some confusion. Activation of the system refers to distress triggering of the beacon (such as defined in ED-237) so the distress trigger is the activation signal. 'Activation signal' is also used to refer to the distress beacon RF signal output. Could this be changed to 'distress signal' to clarify meaning?	
response	Partially accepted The potential ambiguity stems from the fact that 'activation signals' is not explained in GM2 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03, but is defined in CS ACNS.E.LAD.010. See the response to comment No 25.	

comment	*442*	comment by: *Leonardo DRS*
	in point (c), the ELT(DT) should also have capability G (internal GNSS receiver).	
response	Partially accepted This comment is presumably on point (c) of AMC2 CAT.IDE.A.280 in Section 3.2.2 of NPA 2020-03. 'Capability G' means that the ELT includes an internal or integral GNSS receiver. EUROCAE Document ED-62B Change 1, Section 2.9.5.1 specifies: 'An ELT(DT) shall transmit an encoded location as defined in C/S T.018 or C/S T.001 as applicable.' ETSO-C126c 'Emergency Locator Transmitter' refers to ED-62B. Therefore, all ELTs(DT) that are approved in accordance with ETSO-C126c transmit an encoded location. This encoded location may be provided by a GNSS receiver that is internal or integral (capability G) or external (capability E). Despite the benefit of an encoded location for SAR operations and the affordability of GNSS chips, it is not justified to require capability G for an ELT(DT) that is installed only to comply with point CAT.IDE.A.280 and not as a means of compliance with point CAT.GEN.MPA.210. In such a case, capability G can only be recommended. Therefore, a sentence was introduced into GM2 CAT.IDE.A.280 to recommend that all ELTs transmit encoded position data; see the response to comment No 494.	

comment	*459*	comment by: *Leonardo DRS*
	in (e)(1), auto-Disarm disables ADT after flight - is this adequate to disable ADT for maintenance?	
response	Noted Refer to CS ACNS.E.LAD.210: '(b) The system remains armed at least as long as the aircraft is airborne.' Hence, any auto-disarming function should comply with this condition.	

comment	*477*	comment by: *IATA*
	There should be more clarity stated for transmitted data to be provided to the operator although the intent is for this to happen.	
response	Partially accepted EASA does not consider it essential to transmit the data corresponding to an activated system to the operator; it is only advisable for quicker coordination (see also the response to comment No 170). For this reason, GM3 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 stated that such a capability is advisable. GM3 CAT.GEN.MPA.210 was merged with GM1 CAT.GEN.MPA.210; see the response to comment No 36.	

comment	*478*	comment by: *IATA*
	Operators should setup a formal comms channel with the transmitted data provider whoever that may be. Some current ELT service providers only offers a telephone service not a data service. Operators are not currently direct recipients of COSPAS/SARSAT alert data.	
response	Not accepted EASA does not consider it essential to transmit the data corresponding to an activated system to the operator; it is only advisable for quicker coordination. See also the response to comment No 170.	

comment	*479* comment by: *IATA* Parts of the NPA implies operator is the alert recipient and in other parts of the NPA the service provider.
response	Partially accepted NPA 2020-03 does not propose that data from an activated system be directly transmitted to the operator. However, there is an international framework as well as the tools for notifying the operator in case of an alert regarding one of their flights. In addition, if an operator has information or a strong suspicion that one of its flights is potentially in an emergency situation, it should inform without delay the relevant ATS unit(s). See also the response to comment No 167.

comment	*480* comment by: *Dany St-Pierre Cospas-Sarsat Secretariat* **Comments for section 3.2.2 Page 11 of NPA** *AMC1 CAT.GEN.MPA.210* *(a) Performance of the airborne system* *…* *(b) TRANSMISSION SERVICE* *(1) If the system relies on ELTs for transmitting information sufficient to comply with CAT.GEN.MPA.210, the operator should ensure that the international COSPAS-SARSAT programme meets the following:* *(i) The data corresponding to ELT signals transmitted by the system is automatically made available to the ATS unit providing the alerting service in the airspace where the aircraft is indicated to be by this data (the 'relevant ATS unit'); and* *(ii) The time from receipt of ELT data by the local user terminal (LUT) to making the corresponding data available to the relevant ATS unit does not exceed 15 minutes, with a probability of 95%,* Comment #1 The Cospas-Sarsat System does not currently make the data from ELT signals automatically available to relevant ATS units, only to RCCs. Until the introduction of ELT(DT)s, nearly all alerts and positions transmitted by ELTs were assumed to occur once the aircraft had reached the end of its flight. After the end of the flight RCCs are

responsible for Search and Rescue operations. Nevertheless exchange between the relevant ATS units and RCCs responsible for the area from where ELT signals are transmitting is usually taking place as part of the rescue operation but the Cospas-Sarsat data is not automatic made available to ATS so and it may take more than 15 minutes for relevant ATS units to receive the ELT data.

To comply with this requirement the Cospas-Sarsat Programme will need to make modifications to its data distribution system for ELTs.

This could be addressed (at least in part (see comment 2) if Cospas-Sarsat ELT(DT)s data is deposited in the ICAO LADR (in addition to be sent to RCCs) as the LADR is expected to make its data available to relevant ATS units. However, if meeting this requirement relies on the availability of the LADT the timeline at which this requirement is met become dependant upon the effective deployment date of the LADR, which remains outside the Cospas-Sarsat Programme control. If the LADR is not created or not made available on time (Jan 2023) this requirement will not be met for ELT (DT)s.

Cospas-Sarsat has also the possibility to create its own database which could be used to make the information from ELT-(DT)s and other ELTs available to relevant ATS. However if this database is created it will likely be assumed that the provision, and the eventual update, of the appropriate ATS's point of contact and associated area of responsibility would need to be the responsibility of ATS units and/or Administrations, as Cospas-Sarsat will not likely chase ATS units on a continuous base to ensure that the connection details of relevant ATS unit is present and updated. Alternatively, Cospas-Sarsat MCCs could also directly forward the alerts and locations of ELT distress signal to relevant ATS in the same way that this information is forwarded to RCCs (no database) but this would require changes to MCCs and would likely require a minimum of 1 but more likely 2 years to implement. If this requirement stays as drafted by EASA and the ICAO LADR is not implement or not implemented in a timely manner, then a decision for the Cospas-Sarsat Programme to implement an ATS distribution of the ELT data would need to be taken in early 2021 at the latest in order for the infrastructure to be ready by the beginning of 2023.

Comment #2

NPA 2020-03 seems to infer that three mature technologies could fulfil CAT.GEN MPA 210, ELT(AD), crash-survivable ELT(DT)s and HRTs. While the need for ATS units to automatically have distress signal data while the aircraft is still in flight is understandable (as they are the responsible entity to coordinate the distress situation in this phase) it is unclear why they should automatically receive the data when the aircraft has reached the end of its flight. ELT (AD) are expected to be activated as the aircraft has ended its flight. This is why Cospas-Sarsat is not currently planning to forward ELT (AD) data to the ICAO LADR as an ELT(AD) is expected to forward a fixed position (or slowly moving while in water) after the end of the flight (like ELT(AF)and (AP)). From a Cospas-Sarsat perspective, the only way to allow for

	an ELT-AD to comply with the EASA requirement while using the ICAO LADR would be to make the ELT AD also DT capable (i.e. capable of transmitting data in flight) and then use an ELT(DT) protocol for the ELT(AD) transmissions. This would impose additional constraints on this technology. Imposing more important energy constraint (higher data rate, more GNSS updates etc.) and may also restrict the location of the ELT(AD) on the aircraft, as the combined ELT (AD/DT) will now need a clear view of the sky. EASA may want to reconsider whether the requirement to make the ELT data automatically available to relevant ATS units should be applicable for the ELT(AD) solution. Comments #3 In its requirement to make ELT data automatically available to relevant ATS units, EASA does not specifies which entity is responsible to ensure that the ELT data is timely accessible by the most relevant ATS unit. Should a notification be sent to the relevant ATS indicating that "relevant data" has been received (if so is this part of the 15 minutes timeline?) or will the ATS be responsible to verify the availability of ELT data when they suspect a distress situation? Also, which entity will be responsible to ensure that the connection details are relevant and updated (see comment 1)? Which entity will be responsible to ensure that the "relevant" ATS has access to the data (considering that the aircraft might be moving through several ATS control zones) These questions may need to be further detailed as part of additional Guidance material associated with this requirement.
response	Sub-comment No 1: accepted EASA concurs with the technical arguments about the uncertainty regarding the successful implementation of the ICAO LADR, and understands the technical challenges associated with implementing point (b)(1) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03 without the ICAO LADR in place. In addition, the capability of making the data automatically available to the relevant ATS unit may be helpful for providing the alerting service, but is not essential. On the other hand, delivering data to the designated SPOC is essential, especially if the means to comply with point CAT.GEN.MPA.210 replaces an automatic ELT, as permitted by point CAT.IDE.A.280. Therefore, the following corrections were made: — point (b)(1) of AMC1 CAT.GEN.MPA.210 was deleted completely; — GM1 CAT.GEN.MPA.210 was reworded to remove the objective of making data available to an ATS unit; — the explanations of 'relevant ATS unit' and 'make data available' were deleted from GM2 CAT.GEN.MPA.210; — the explanation of 'transmission service' in GM2 CAT.GEN.MPA.210 was deleted in order not to specify the recipients of the information sent by the

system, as this is already addressed in AMC1 CNS.OR.100 (see the response to comment No 35);

— point (b)(1) of AMC1 CNS.OR.100 was corrected to remove the reference to a relevant ATS unit; see the response to comment No 35; and

— point (b)(4) of AMC1 CNS.OR.100 was deleted.

Sub-comment No 2: partially accepted

Section 3 of Subpart E of CS-ACNS contains the CSs applicable to airborne systems. CS ACNS.E.LAD.250 requires the following:

'Whether the system is armed or not, it can be manually activated by the flight crew.'

This means that all solutions compliant with point CAT.GEN.MPA.210, including solutions based on an ADFR, should permit the manual activation by the flight crew, including in flight. However, in response to sub-comment No 1, the requirement to make the information that is contained in activation signals available to the relevant ATS unit was deleted.

Sub-comment No 3: noted

In the response to sub-comment No 1, the requirement to make the information available to the relevant ATS unit was deleted.

comment | *483* | comment by: *Transport Canada Civil aviation*

Representation 1

3.2.2 (d) (2)/page 12

Comment summary

If the operator can remotely deactivate the system, it should only use this capability when it has established with certainty that the aircraft is not in a distress situation.

What are the criteria to establish certainty that there is no distress, and/or disagreement between flight crew versus remote decision maker?

Remote deactivation could compromise the affectivity of the system if not correctly defined. If an ELT is remotely deactivated for any reason after confirming with the flight crew that there was not a distress situation; what would happen if after deactivation there is an actual distress situation?

Suggested resolution

Special consideration needs to be given so that the system can be rearmed post-remote deactivation to prevent this to occur.

Suggest establish criteria based on:

- Procedural resolution
- aircraft performance

response

Partially accepted

After consulting its stakeholders on the issue of the capability to remotely activate and deactivate the airborne system, EASA decided not to address it in the AMC and GM to the Air OPS Regulation, or in the AMC and GM to the ATM/ANS Regulation, or in CS-ACNS; see the response to comment No 191.

Regarding the issue of reactivation of an airborne system that was previously deactivated: the deactivation of the airborne system should not disable later reactivation. This needed to be made more explicit in CS-ACNS.

Therefore, to clarify what 'manual activation' and 'manual deactivation' means, definitions of these terms were introduced into CS ACNS.E.LAD.010. To ensure that the automatic deactivation of the airborne system is not permanent, additional paragraphs were introduced into CS ACNS.E.LAD.260 and CS ACNS.E.LAD.270 to forbid that automatic or manual deactivation of the system during the flight inhibits subsequent activation, and to prevent an aircraft system other than the system installed to comply with point CAT.GEN.MPA.210 from deactivating that system if it was manually activated.

comment

493 comment by: *Transport Canada Civil aviation*

Representation 11

3.2.2 AMC1 CAT.GEN.MPA.210 (b)(1)/page 11

Comment Summary

We believe the wording "…the operator should ensure that the international COSPAS-SARSAT programme meets the following" is not what was intended. The operator has no control over the COSPAS-SARSAT programme, it only has control over the system installed. We believe the intent was to say that it is the system installed that must meet the said conditions when working with the COSPAS-SARSAT programme, which it must be compatible with.

Suggested resolution

We suggest to reword the condition to "…the operator should ensure that the system is compatible with the COSPAS-SARSAT programme and meets the following conditions in the context of the programme:" or equivalent wording

response

Partially accepted

Point (b)(1) of AMC1 CAT.GEN.MPA.210 in Section 3.3.2 of NPA 2020-03 was deleted. See the response to comment No 480.

comment

_494_ comment by: _Transport Canada Civil aviation_

Representation 12

AMC2 CAT.IDE.A.280 (a) and AMC2 CAT.IDE.H.280 (a)/pages 17 and 20

Comment Summary

We observe that there is no standard (e.g. ETSO, EUROCAE or other) or detailed specification that required ELTs must comply with, spelled out in the AMC.

Suggested resolution

We suggest to specify required standards for ELT if that was the intent, or confirm in the rationale if there was no intention to recommend a standard for ELT equipment.

response

Partially accepted

It would be beneficial for SAR that ELTs installed onboard aeroplanes and helicopters operated under Part-CAT, Part-NCC and Part-SPO meet modern industry standards, as this would increase their performance. For other types of equipment (e.g. flight recorders), the Air OPS Regulation refers to industry standards.

In addition, several safety recommendations addressed to EASA recommend more stringent standards for ELTs to increase the chance that such equipment will work as intended in case of an accident. For two of these recommendations, EUROCAE Document ED-62B was part of EASA's response:

Safety Recommendation AUST-2015-003 [unofficial translation into English]:

'EASA takes measures to ensure that after an accident, where aircraft has impacted the ground, the signals of the ELT can be received. […] Since after accident-related impacts, aircraft signals from emergency transmitters can often not be received by the designated places, EASA should take appropriate measures to improve transition of useable signals (through use of more crash-enduring antennas, or through the introduction of ELTs that are automatically activated to transmit such signals before the crash, etc). Due to the long service life of aircraft, measures should also be taken for already certified and operational aircraft by using antennas that can better withstand potential accidents, etc.'

Safety Recommendation SWTZ-2017-515 [unofficial translation into English]:

'The Federal Aviation Safety Agency (FOCA), together with the European Aviation Safety Agency (EASA), should make efforts to improve ELTs constructively and their installation technology so as to ensure correct functioning in all cases.'

EUROCAE Document ED-62B was published in December 2018 as the latest industry standard applicable to ELTs. ED-62B is already referred to by ETSO-C126c so that new ELT models that are approved under this ETSO will meet ED-62B. In addition, comment No 442 drew attention to the fact that the transmission of an encoded location should be recommended for all automatic ELTs (ELT(AF), ELT(AP), and ELT(AD)), as this helps to accurately locate the accident site even before deploying SAR mobile facilities, which in turn renders SAR operations even more effective.

However, neither an impact assessment was conducted nor a stakeholder consultation of this issue was held. Therefore, EASA considers it is more appropriate to amend the GM at this stage rather than the AMC.

In addition, this comment led EASA to identify that GM2 CAT.IDE.A.280 needed to be replicated for helicopters in Part-NCC, Part-NCO, and Part-SPO.

Therefore:

— text was introduced into GM2 CAT.IDE.A.280 to recommend meeting the operational performance requirements of ED-62B or RTCA DO-204B (or any later equivalent standard) and transmitting encoded position data;

— GM2 CAT.IDE.H.280 was introduced with the same content as in GM2 CAT.IDE.A.280;

— GM2 NCC.IDE.A.215 was introduced referring to GM2 CAT.IDE.A.280;

— GM2 NCC.IDE.H.215 was introduced referring to GM2 CAT.IDE.H.280;

— GM3 SPO.IDE.A.190 was introduced referring to GM2 CAT.IDE.A.280; and

— GM3 SPO.IDE.H.190 was introduced referring to GM2 CAT.IDE.H.280.

3. Proposed amendments and rationale in detail — 3.2. Draft AMC and GM (Draft EASA decision) — 3.2.3. Draft AMC & GM to Part-NCC p. 21-23

comment	*31* comment by: *Airbus-Regulations-SRg* Please see Airbus comment #30
response	Not accepted See the response to comment No 30.

comment	_34_ comment by: _Airbus-Regulations-SRg_ AMC2 NCC.IDE.A.215 Emergency locator transmitter (ELT) TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS / Page 21 Airbus comment: Re-apply "(a)" to read as follows: (a)(a) Refer to AMC2 CAT.IDE.A.280, point (a).The ELT required by this provision should be one of the following: Rational: Typo at striking / '(a)' should be kept.
response	Accepted EASA thanks you for your comment.

comment	_130_ comment by: _FNAM_ AMC2 NCC.IDE.A.215; GM1 NCC.IDE.A.215; AMC2 NCC.IDE.H.215;GM1 NCC.IDE.H.215: The amendment of this AMC integrates the ELT (DT) and describes the only ELT types that can be used. Position: FNAM assesses this point with a neutral impact as it provides clarifications for operators.
response	Noted

comment	_131_ comment by: _FNAM_ AMC2 NCC.IDE.H.227: "This AMC provides details on ELT (S). Position: FNAM assesses this point with a neutral impact as it provides clarifications for operators. "
response	Noted

comment	*407* comment by: *FOCA Switzerland* FOCA CH proposal: ad AMC2 NCC.IDE.A.215, (b), p. 22: "To minimise the possibility of damage in the event of crash impact, the automatic ELTthe ELT(AF), ELT(AP), ELT(AD), and ELT(DT) should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged **and/or having an internal antenna** [...]". It is suggested by various AAIB's and certification agency's, so as to maximise the probability of the signal being transmitted after a crash.
response	Not accepted See the response to comment No 406.

3. Proposed amendments and rationale in detail — 3.2. Draft AMC and GM (Draft EASA decision) — 3.2.4. Draft AMC & GM to Part-NCO p. 23-25

comment	*132* comment by: *FNAM* AMC2 NCO.IDE.H.170; GM1 NCO.IDE.H.170: This AMC provides additional clarification on the definition of an ELT (AD). Position: FNAM assesses this point with a neutral impact as it provides clarifications for operators.
response	Noted

comment	*383* comment by: *UK CAA* **Page No:** 24 **Paragraph No:** AMC2 NCO.IDE.H.170 Emergency locator transmitter (ELT) (a)(3)

	Comment: The term "hydrostatic" has been replaced by 'water'. It is suggested that a better term would be "Immersion" which covers the intent which is to detect entry into or below water and not just water. **Justification:** Clarity of intent and interpretation **Proposed Text:** Replace "water sensors" with 'immersion sensors'
response	Partially accepted See the response to comment No 295.

comment	*409* comment by: *FOCA Switzerland* FOCA CH Comment: ad AMC2 NCO.IDE.H.170, (a), p. 24: It needs to be clear regarding NCO.IDE.A.170: PLB's to substitute the requirement. Information in Rationale/footnote is not clear regarding (a).
response	Not accepted Point NCO.IDE.H.170 allows installing a personal locator beacon (PLB) instead of an ELT(S) on board helicopters with a maximum passenger seating configuration of six or less. In addition, AMC2 NCO.IDE.H.170 provides technical specifications applicable to ELTs, while AMC3 NCO.IDE.H.170 provides technical specifications applicable to PLBs. Therefore, no clarification is needed.

3. Proposed amendments and rationale in detail — 3.2. Draft AMC and GM (Draft EASA decision) — 3.2.5. Draft AMC & GM to Part-SPO	p. 26-28

comment	*32* comment by: *Airbus-Regulations-SRg* Please see Airbus comment #30.
response	Not accepted See the response to comment No 30.

comment *133* comment by: *FNAM*

AMC2 SPO.IDE.A.190; GM1 SPO.IDE.A.190:

"This AMC clarifies the types of ELT acceptable.

Position: FNAM assesses this point with a neutral impact as it provides clarifications for operators. "

response Noted

comment *134* comment by: *FNAM*

AMC2 SPO.IDE.H.190; GM1 SPO.IDE.H.190:

"This AMC provides additional clarification on the definition of an ELT (AD).

Position: FNAM assesses this point with a neutral impact as it provides clarifications for operators."

response Noted

comment *177* comment by: *ICAO*

AMC1 CNS.OR.100 Technical and operational competence and capability

COMPETENCE OF THE SURVEILLANCE PROVIDER (TRANSMISSION SERVICE FOR THE LOCATION OF AN AIRCRAFT IN DISTRESS)

(a) The transmission service means a distribution service that automatically delivers data corresponding to signals transmitted by an airborne system to the competent SAR centre and that automatically makes this data available to the relevant ATS unit, for the purpose of CAT.GEN.MPA.210 ‘Location of an aircraft in distress’ (refer to Annex IV (Part-CAT) to Regulation (EU) No 965/2012). The transmission service has priority over the other services that are provided by the surveillance provider.

Comment:

The Standards in Annex 6 Part I do not apply to ATS. Having no Standards in Annex 11 for ATS units, this regulation will not be globally applicable. The ICAO LADR allows operators to meet the Annex 6 Part I Standards while not imposing any requirements

	to ATS or RCCs. It is envisaged that once the system is up and running, operational experience will be used to define the appropriate Standards in Annex 11 and 12.
response	Not accepted AMC1 CNS.OR.100 does not contain conditions applicable to ATS units, but conditions applicable to those communications, navigation and surveillance (CNS) services providers that provide the transmission service used by the airborne system that is installed for complying with point CAT.GEN.MPA.210.

comment	*385* comment by: *UK CAA* **Page No:** 27 **Paragraph No:** AMC2 SPO.IDE.H.190 Emergency locator transmitter (ELT) (a)(3) **Comment:** The term "hydrostatic" has been replaced by 'water'. It is suggested that a better term would be "Immersion" which covers the intent which is to detect entry into or below water and not just water. **Justification:** Clarity of intent and interpretation **Proposed Text:** Replace "water sensors" with 'immersion sensors'
response	Partially accepted See the response to comment No 295.

comment	*410* comment by: *FOCA Switzerland* FOCA CH proposal: ad AMC2 SPO.IDE.A.190, (b), p. 26: "To minimise the possibility of damage in the event of crash impact, the automatic ELTthe ELT(AF), ELT(AP), ELT(AD), and ELT(DT) should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged **and/or having an internal antenna** [...]".
response	Not accepted See the response to comment No 406.

comment	_411_ comment by: _FOCA Switzerland_ FOCA CH comment: ad AMC2 SPO.IDE.H.190, p. 27: See remark regarding PLB yes/no AMC2 NCO.IDE.H.170.
response	Noted See the response to comment No 409.

3. Proposed amendments and rationale in detail — 3.2. Draft AMC and GM (Draft EASA decision) — 3.2.6. Draft AMC & GM to Part-CNS	p. 28-31

comment	_86_ comment by: _US Federal Aviation Administration_ **Page 28 AMC1 CNS.OR.100 Technical and operational competence and capability COMPETENCE OF THE SURVEILLANCE PROVIDER (TRANSMISSION SERVICE FOR THE LOCATION OF AN AIRCRAFT IN DISTRESS)** **Comment 11:** text in AMC1 CNS.OR.100 section (a) should be modified to align with suggested renaming of CAT.GEN.MPA.210. **Recommendation 11:** change text as follows: The transmission service means a distribution service that automatically delivers data corresponding to signals transmitted by an airborne system to the competent SAR centre and that automatically makes this data available to the relevant ATS unit, for the purpose of CAT.GEN.MPA.210 'Location of downed ~~an~~ aircraft ~~in distress~~' (refer to Annex IV (Part-CAT) to Regulation (EU) No 965/2012).
response	Not accepted See the response to comment No 77.

comment	_115_ comment by: _MCA_ AMC1 CNS.OR.100

(a) For ELT(DT) - Cospas-Sarsat is the only provider for this solution.

response

Noted

AMC1 CNS.OR.100 is not applicable to the international COSPAS-SARSAT programme, but to providers of the transmission service when the transmitting equipment is not an ELT.

comment

135 comment by: *FNAM*

AMC1 CNS.OR.100:

"This AMC provides the criteria that data transmission services will have to meet when an aircraft is in distress.

Position: FNAM is evaluating this point with a positive impact. "

response

Noted

EASA thanks you for your comment.

comment

283 comment by: *DGAC France*

AMC1 CNS.OR.100

Items (a) and (b) : an airborne system or a solution elaborating on data transmitted in flight shall deliver data as a priority to ATS and Airline. As a second step, these data should be made available automatically or on request to the RCCs/RSCs designated by each State in a given SAR area. Let us remind that a SRR is not an airspace.

Items (b)(3) and (b)(4) : Wording "on the ground" should be clarified. If the first component of the communication infrastructure to receive the distress signal was in space, would the clock start from receipt of the signal by this component? DGAC suggest rewording as follows : "by the communication infrastructure" instead of "on the ground", as specified at item (b)(3) of the associated rationale (p.31).

Item (b)(4): Operator shall be added for consistency.

Item (b)(5): This can only be achieved through a repository or any device allowing to share and distribute data to operators, ATS, and RCC. Let us keep in mind that there is no current network able to distribute automatically to all RCCs, but only to SPOCs.The SPOC data base does not comply with this requirement. There is a need for a more comprehensive data base, which includes ATS and operator according a

	logic based first on airspaces regarding a signal transmitted in flight and that identify all relevant RCCs/RSCs interfering with the footprint of a given airspace. Item (b)(6): For an aircraft still flying, the data must be sent to ATS and Airline as a priority, to RCC as a second step, in a globally harmonised standard to display the track of the aircraft whose system/ADT is triggered in flight.
response	First sub-comment on points (a) and (b) of AMC1 CNS.OR.100 in Section 3.2.6 of NPA 2020-03: not accepted The scope of point CAT.GEN.MPA.210 is not about the transmission of data in flight, but about the provision of robust and accurate means to locate the point of end of a flight after an accident during which the aircraft is severely damaged, in order to serve SAR teams and investigation missions. Therefore, SPOC that are designated by States are the priority recipients of such information. Second sub-comment on points (b)(3) and (b)(4) of AMC1 CNS.OR.100: partially accepted Points (b)(3) and (b)(4) stem from CPO No 22, as described in Appendix 3 to NPA 2020-03. CPO No 22 is only applicable to the distribution service, i.e. after the data has been transmitted to the ground. To ensure the timeliness of the transmission service (from the transmitting airborne system to the intended recipients), and to take into account comment No 35, AMC1 CNS.OR.100 was amended to require that the total time from the transmission of a signal by the airborne system to delivering corresponding data to the competent SPOC does not exceed 20 minutes. Third sub-comment on point (b)(4) of AMC1 CNS.OR.100: not accepted See the response to comment No 170. Point (b)(4) was deleted; see the response to comment No 480. Fourth sub-comment on point (b)(5): partially accepted The term ‘competent SAR centre’ was replaced by ‘competent SAR point of contact (SPOC)’. The definition of ‘competent SPOC’ was harmonised with the current framework established by ICAO Annex 12 and with the terminology used in the technical documents of the international COSPAS-SARSAT programme; see the response to comment No 35. In addition, the condition for maintaining the contact details of the SPOC up to date was slightly modified, as the provider of the transmission service will also depend on the information provided by the national SAR authorities. Fifth comment on point (b)(6): not accepted An airborne system that meets CS-ACNS as presented in Section 3.3.2 of NPA 2020-03 will only be automatically activated if an accident that severely damages the aeroplane has occurred, is occurring, or is very likely to occur within minutes (see CS ACNS.E.LAD.240). Therefore, when such a system is automatically activated, its

data should be transmitted to the competent SPOC without any further delay other than the delay caused by the processing of the data and by the transmission process.

comment | _288_ comment by: _DGAC France_

AMC1 CNS OR 100 rationale :

Item (a) : RCCs and RSCs should receive or have access to messages through the same channels with the same message format and human-machine interfaces.

In addition, Cospas-Sarsat ground segment is not open to other maritime or aeronautical competing data.

Item (a) - Important aspects of the transmission service :

- Item (1): There is a need for a human intervention when the SPOC is not the competent RCC or the RCC in charge of conducting SAR operation. Even for SPOCs, there is no current software for their Human machine interface to deal with updated messages at high frequencies for data transmitted in flight, such as air traffic management systems.

- item (2): The notion of “seldom event” has no operational consistency when referring to real time coordination procedures.

- item (3): Those cases are not likely to be survivable ones, since survivable cases are bound to occur when the pilot still control the aircraft. Some identified survivable scenarios are going to last from 20 minutes up to several hours. The transmission service should not hamper the aircraft CNS transmissions.In addition, this is only once the event ended up that it is possible to assess its duration.

Item (b)(2)(iii): nuisance transmission until destination of the flight :As far as RCC are concerned, filtering devices may be needed to get the data only on request.

Items (3), (4), (5), (6) : It reaches the SPOC within 15 minutes. The definition of competent RCC is not correct.

If the system transmits in flight, ATS and operator shall get automatically the data. ADT systems do no send emergency signals but position information signals according to ICAO framework.

response | First sub-comment: noted

No change was made.

Second sub-comment: partially accepted

On item (1): the term ‘competent SAR centre’ was replaced by ‘competent SAR point of contact (SPOC)’. The definition of ‘competent SPOC’ was harmonised with the current framework established by ICAO Annex 12 and with the terminology used in the technical documents of the international COSPAS-SARSAT programme; see the response to comment No 35.

On item (2): this comment was not understood and, therefore, not addressed.

On item (3): AMC1 CNS.OR.100 is not applicable to aircraft, but to the provider of the transmission service that transmits the information from the aircraft to a SPOC. Hence, 'The transmission service has priority over the other services that are provided by the surveillance provider' does not mean that priority is given by the aircraft to the airborne system that is used for complying with point CAT.GEN.MPA.210 over other airborne applications.

Third sub-comment: not accepted

Undesirable automatic activation is expected to happen seldom, about once per 100 000 flight hours when considering an individual aircraft; refer to the rationale of draft CS ACNS.E.LAD.620 in Section 3.3.2 of NPA 2020-03. Therefore, an individual RCC will seldom receive data corresponding to erroneous automatic activation and there will be no need for filtering that incoming data.

Fourth sub-comment: not accepted

The term 'competent SAR centre' is replaced by 'competent SPOC'; see the response to comment No 35. There is no mention of 'emergency signals' in items (3) to (6).

comment | _386_ | comment by: _UK CAA_

Page No: 28

Paragraph No: AMC1 CNS.OR.100 Technical and operational competence and capability COMPETENCE OF THE SURVEILLANCE PROVIDER (TRANSMISSION SERVICE FOR THE LOCATION OF AN AIRCRAFT IN DISTRESS) (a)

Comment: It is ecommended thatthe reference to ADT automatically making the data available to the relevant ATS and SAR units is deleted.

Justification: The ICAO Standard 6.18.1 requires the aeroplane to be able to transmit its position autonomously to the operator. It is the operator's responsibility to make the information received available to the appropriate organisations. The text in CAT.GEN.MPA.210 only requires the aeroplane to be equipped with the means to determine the location of the end point of the flight

Proposed Text: Amend as follows:

(a) The transmission service means a distribution service that automatically delivers data corresponding to signals transmitted by an airborne system ~~to the competent SAR centre and that automatically makes this data available to the relevant ATS unit, for the purpose of CAT.GEN.MPA.210 'Location of an aircraft in distress' (refer to~~

	~~Annex IV (Part-CAT) to Regulation (EU) No 965/2012~~. The transmission service has priority over the other services that are provided by the surveillance provider.
response	Not accepted Refer to the related discussion in Section 4.4.1.2 of NPA 2020-03, which is about the safety impact of Option 1 (transpose ICAO Annex 6, Part I, Section 6.18 and Appendix 9 standards into the AMC to CAT.GEN.MPA.210 and the associated CSs): 'Today, the data transmitted through an ELT 406-MHz signal is delivered (not only made available) to the competent SAR centre in an internationally recognised format, automatically, and within a few minutes of the ELT signal detection by a satellite. At the end-users workshop of July 2018, the SAR representatives expressed their concerns about solutions that rely on the operators to transmit data to them. EASA shares those concerns and considers that adding intermediary steps in the information transmission chain makes it more prone to information loss or excessive delays in the transmission of information.' The impact assessment in Chapter 4 of NPA 2020-03 concludes that Option 1 is not considered to be the preferred one. Option 2 is preferred, and it includes, among others, automatic transmission of the information to the competent SPOC.

comment	*412* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 CNS.OR.100, (a), p. 28: "The transmission service means a distribution service that automatically delivers data corresponding to signals transmitted by an airborne system to the competent SAR centre and that automatically makes this data available to the relevant ATS unit [...]". This procedure will imply to duplicate RCC tasks at the ATS centre (e.g. managing of ELT transmissions) and additional coordination between RCC's and ATS (who will do what and when).
response	Noted The capability to make data available to the relevant ATS unit, which is proposed in NPA 2020-03, would not create any new task for an ATS unit. The responsibilities of an ATS unit (defined in ICAO Annex 11 Chapter 5) and of an RCC (defined in ICAO Annex 12) would not be affected by this capability. However, to address comment No 480, the conditions related to such capability were deleted from AMC1 CAT.GEN.MPA.210 and AMC1 CNS.OR.100.

comment | _413_ comment by: _FOCA Switzerland_

FOCA CH comment:

ad Rationale (a), p. 29:

"When the international COSPAS/SARSAT programme is not the transmission service (**<u>except for ELT(DT))</u>**[...]". According to the ICAO GADSS Conops Cospas-Sarsat is the only provider for ELT(DT).

response | Not accepted

AMC1 CNS.OR.100 was drafted to address the cases where equipment other than an ELT is used for transmitting information sufficient to comply with point CAT.GEN.MPA.210; refer to point (b)(2) of AMC1 CAT.GEN.MPA.210 in Section 3.2.2 of NPA 2020-03.

comment | _417_ comment by: _ENAIRE_

With respect to point 3.2.6, we pose the next question: Should Regulation (EU) 2017/373, specifically Appendix 1 to ANNEX II — EASA Form 157 as well as any other related AMC/GM, be modified to reflect the transmission service as a new Surveillance Service/Function?

With respect to AMC1 CNS.OR.100(b), we detect that this AMC only contains a general reference to CAT.GEN.MPA.210. By this, it may give the impression that a surveillance provider renders an ELT-based transmission service which it is not the case - that is COSPAS-SARSAT's mission. Furthermore, AMC1 CAT.GEN.MPA.210(b) impacts surveillance providers solely by means of its section (2), ie. when ELTs are not used. Hence, we propose to clarify the type (ELT or not ELT-based) of the transmission service within the scope of the certified CNS (surveillance) providers.

response | First sub-comment: not accepted

Appendix 1 to Annex II (EASA Form 157) to Regulation (EU) 2017/373 ('ATM/ANS Regulation') addresses the privileges of the ATM/ANS service providers, based on which they are certified to provide services.

The transmission service for locating an aircraft in distress is a service for helping SAR operations, and the prerequisite for the provision of this service is to be a surveillance service provider, for which EASA is the competent authority pursuant to Article 80 of Regulation (EU) 2018/1139 ('Basic Regulation').

Considering the specific nature of this service, it is not considered necessary to change the specification in EASA Form 157 regarding the surveillance service.

However, the competent authority may further define it in the applicable conditions that are attached to the form (certificate) (refer to point ATM/ANS.AR.C.005 of Annex II (Part-ATM/ANS.AR) to the ATM/ANS Regulation).

Second sub-comment: not accepted

The conditions listed in AMC1 CNS.OR.100 are only applicable to surveillance service providers, so that they cannot encompass the transmission of ELT signals, which is not part of surveillance.

comment | *432* | comment by: *DGAC France*

AMC1 CNS.OR.100 :

To which point (a or b) is this an AMC to CNS.OR.100 ?

In addition to that, the proposed text is not AMC material (i.e. : provisions which, when complied with, induce compliance with the associated IR). DGAC considers that the proposed text is at best GM.

response

Partially accepted

AMC1 CNS.OR.100 refers to the whole point CNS.OR.100, and not only to parts of it.

AMC1 CNS.OR.100 is only applicable to those providers of surveillance services that provide the transmission service for locating an aircraft in distress. This is stated in point (b) of that AMC.

To further clarify the scope of AMC1 CNS.OR.100, its subtitle was reworded.

comment | *433* | comment by: *DGAC France*

AMC1 CNS.OR.100 :

Item (a) :

- "The transmission service means a distribution service that automatically[...]" : This is the definition of a new type of service. That cannot be done by AMC. Is this notion defined at IR level somewhere else ?

A definition cannot exist only in an AMC.

- "The transmission service has priority over the other services that are provided by the surveillance provider." : DGAC does not agree. The priority is to carry on separating aircraft which are flying and whose locations are known to ATS units. The definition of "surveillance service" is in regl n°549/2004 : "surveillance services’ means those facilities and services used to determine the respective positions of aircraft to allow safe separation;"

This definition, as well as what the priorities of the surveillance service are, cannot be modified by an AMC.

Item (b) :

What about the other surveillance service providers ?

"may provide" : If it is a may, it should be GM. Not AMC.

response

First sub-comment, on point (a): partially accepted

Definitions are part of the regulations, whereas explanations of terms may be provided in AMC or GM. A definition is introduced into a given regulation for a term that needs to be used consistently in many implementing rules (IRs) of that regulation, or for a fundamental concept of that regulation. When a term is only needed for a specific IR or AMC, an explanation of that term is often sufficient.

For consistency, point (b) of AMC1 CNS.OR.100 was slightly amended to replace ‘defined in (a)’ by ‘designated in (a)’.

Note: ‘transmission service for locating an aircraft in distress’ was introduced in point (a) of AMC1 CNS.OR.100 (see the response to comment No 35).

Second sub-comment: accepted

A requirement to prioritise the transmission service is not necessary, as the service performance conditions set in AMC1 CNS.OR.100 should be met irrespective of the other services provided by the surveillance service provider. Therefore, the condition for prioritising the transmission service was deleted from AMC1 CNS.OR.100.

Third sub-comment: not accepted

‘May’ is not reserved only for GM; it may also be used in AMC and regulations.

comment

437 comment by: *Leonardo DRS*

in point b(2), the tranmission service should be capable of receiving and processing signals simultaneously **transmitted** by up to 15 airborne systems...

response

Accepted

EASA thanks you for your comment.

3. Proposed amendments and rationale in detail — 3.3. Draft CSs (Draft EASA decision) — 3.3.1. Draft CS-MMEL p. 32-34

comment | _1_ | comment by: _tim KANE_

All Concerned,

For harmonization purposes with FAA MMEL PL-120 R4 proposal CAT D 120 day relief should be added as an option.

I have uploaded a copy of that proposal for reference.

Revision 4: Adds relief for Fixed Low Frequency-Underwater Locator Beacon (Device) (LF-ULB/ULD). After determination was made that MMEL policy for ULB/ULD was necessary in order to standardize the MMEL relief and clarify requirement provided in ICAO Annex 6 Part 1- Chapter 6.5.3.1.

*** Remote ELT Switch	D	-	-	(M) May be inoperative provided: a) Remote ELT switch is deactivated, and b) ELT switch is placed in the ARMED mode.
	D		0	
*** ELT Indicator Light		-		
	D		-	
*** ELT Aural Alarm		-		
			0	
*** Fixed Under Water Low Frequency -Locator Beacon/Device (LF-ULB/ULD)	D	-		Any in excess of those required by 14 CFR may be inoperative or Missing.

Thank you,

Tim Kane

response | First sub-comment: not accepted

An ELT remote switch, an ELT indicator light, or an ELT aural alarm is not always applicable to an ELT installation and is, therefore, outside the scope of the Certification Specifications and Guidance Material for Master Minimum Equipment List (CS-MMEL).

Second sub-comment: noted

A condition addressing the relief for the carriage of a low-frequency ULD is contained in Appendix 1 to the EASA CS-MMEL Issue 2, dated 23 July 2020.

Its Air Transport Association of America (ATA) number is 25-65-1.

comment *42* comment by: *Airbus-Regulations-SRg*

APPENDIX 1 to GM1 MMEL.145: MMEL ITEMS GUIDANCE BOOK / Page 32

Airbus request:

The new MMEL item 25-65-1 should be marked (MC) for Minor Change:

Equipment for the location of an aircraft in distress (MC)	25-65-1

Rationale:

GM2 MMEL.145 provides guidance about the use of CS MMEL Book 2 (Appendix 1 to GM1 MMEL.145) for the justification of MMEL items:

the MMEL items may be based on the MMEL items content proposed in CS MMEL Book 2. In addition, GM2 MMEL.145 indicates that the items of

CS MMEL Book 2 marked with the symbol (MC) below the corresponding title are considered to be eligible for MMEL minor change classification

in accordance with Part 21.

response Accepted

'(MC)' was introduced into the new MMEL item that addresses 'Equipment for locating an aircraft in distress'. In addition, the number of that MMEL item was changed to '25-66', as in CS-MMEL Issue 2 the number '25-65' was allocated to low-frequency ULDs.

comment	*116* comment by: *MCA* Aircraft applicability: Aeroplanes (5) …6 flights or 25 flight hours, whichever occurs first, and is not within the GADSS requirements.
response	Not accepted The intent of this comment is unclear. No 'GADSS requirements' exist.

comment	*136* comment by: *FNAM* Appendix 1 to GM1 MMEL.145: "This appendix is modified by the addition of item 25-65-1" "Equipment for the location on an aircraft in distress" "and adds a repair class for item 25-63. Position: FNAM assesses this point with a positive impact as an airplane can take off under MEL with an inoperative ELT "
response	Noted EASA thanks you for your comment.

comment	*414* comment by: *FOCA Switzerland* FOCA CH proposal: ad Aircraft applicabilty: Aeroplanes, p. 34: "May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first **and not in the GADSS required area** ."
response	Not accepted The intent of this comment is unclear. 'GADSS required area' does not exist. In addition, ICAO Annex 6, Part I, Section 6.18 standards do not specify an area, i.e. they are applicable wherever the aeroplane is located. Likewise, point CAT.GEN.MPA.210 is applicable wherever the aeroplane is located.

comment	*485* comment by: *Transport Canada Civil aviation* **Representation 3** *3.3.1/page 34 of 150* **Comment summary** MMEL Item 25-65-1B **Suggested resolution** Considering that 25 flight hours is too little for airplanes in transatlantic/transpacific flights, for long haul airplanes, we suggest to rewrite the provisions as follows: a) For short-haul airplanes: May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first. b) For long-haul airplanes: May be inoperative for a maximum of 2 flights. NOTE: Transpacific flights last in average 15 hours, which will limit the proviso to 1 flight if they are kept as proposed.
response	Not accepted 'Short-haul aeroplanes' and 'long-haul aeroplanes' are not defined in CS-MMEL. The aim of the rectification interval for equipment that is used for locating an aircraft in distress (a maximum of 6 flights or 25 flight hours, whichever occurs first) is to discourage the use of an aircraft when such equipment is inoperative in remote areas. In any case, 25 flight hours are considered enough for reaching a maintenance base. Furthermore, when an automatic ELT is operative, the equipment for locating an aircraft in distress may be inoperative for a rectification interval C and vice versa. In addition, if the change proposed in this comment were accepted, then the rectification interval applicable to an ELT would have to be changed as well for consistency, but such a change is outside the scope of NPA 2020-03.

3. Proposed amendments and rationale in detail — 3.3. Draft CSs (Draft EASA decision) — 3.3.2. Draft CS-ACNS p. 35-87

comment	*2* comment by: *Jesus Bedriñana (Aviation Certification Expert)*

In spite of the rationale included in the NPA, the new section Section 3 should not be part of the CS-ACNS because it is not inside the original intent of CS-ACNS, which should cover only those avionics requirements to comply with CNS-ATM Regulations. The CS-ACNS can not be a "hotch-potch"

Considering that the new specification will be only applied to large airplanes with a maximum certified take-off mass (MCTOM) of more than 27 000 kg and a maximum passenger seating configuration of more than 19, should be included in the CS-25, in a single new section, or even better, in the EASA CS-26, to be an additional airworthiness specification for transport aircraft operations, if this is the intention of the new requirement for AIR-OPS Regulations.

response

Not accepted

According to CS ACNS.A.GEN.001 'Applicability', CS-ACNS 'are intended to be applicable to aircraft for the purpose of complying with the communications, navigation and surveillance carriage requirements'. According to ICAO Annex 10, Volume III, the transmission of signals by an ELT is considered part of the communications, even if those signals are transmitted to a SAR point of contact (SPOC) and not to an ATS unit. In addition, paragraph (a) of CS ACNS.A.GEN.001 refers to the Air OPS Regulation, to which point CAT.GEN.MPA.210 belongs.

The option of introducing the proposed provisions of Section 3.3.2 of NPA 2020-03 into CS-25 and CS-26 was assessed at an early stage of the NPA drafting and was considered unsuitable.

comment

3 comment by: *Bombardier*

In CS ACNS.E.LAD.001 Applicability and scope, the sentence starting with Aircraft within the scope of this Section should be reworded to include aircraft with MCTOM > 45500 kg as per CAT.GEN.MPA.210 item (2)

response

Partially accepted

This comment is right in pointing out that aeroplanes with a maximum certified take-off mass (MCTOM) of more than 45 500 kg are also within the scope of point CAT.GEN.MPA.210. However, to prevent any inconsistency between CS-ACNS and point CAT.GEN.MPA.210, should the applicability of the latter be changed in the future, the content of the sentence concerned was made more generic.

In addition, that sentence was moved to GM1 ACNS.E.LAD.001, as it is guidance and not a requirement.

comment | *14* | comment by: *Bombardier*

In CS ACNS.E.LAD.010 Definitions, the term "activation signals" is defined as signals transmitted by the system to accurately determine the location of the point of end of flight. Although the definition of "deactivation signals" can be inferred from CS ACNS.E.LAD.130 Transmission of the deactivation signals (and its rationale), it is requested to add a definition of the term "deactivation signals" in CS ACNS.E.LAD.010 Definitions, for consistency and completeness.

response | Accepted

A definition of 'deactivation signals' was introduced into CS ACNS.E.LAD.010.

comment | *15* | comment by: *Bombardier*

AMC1 ACNS.E.LAD.230 Continued operation after losing normal electrical power, refers to "CS ACNS.E.LAD.230, point (c)" but point (c) does not exist. Might the intended reference be to point (b)(3) instead?

response | Partially accepted

See the response to comment No 446.

comment | *16* | comment by: *Bombardier*

Ref: CS ACNS.E.LAD.280 Indications to the flight crew

(b) The system provides indication to the flight crew in case of failure that affects its performance.

While certain installations may include such an indication to the flight crew, other installation may provide an indication to the maintenance crew. Loss of distress tracking capability (annunciated or not) is a minor failure condition as stated in CS ACNS.E.LAD.610 Availability of the system. An indication to the maintenance crew of degraded operation should be acceptable provided that it can be shown that the resulting availability of the system, taking into account the failure rate of the system and the frequency of maintenance inspection, is consistent with a minor hazard category. It should also be noted that the current ELT(AF) does not have any requirement for indication to the flight crew of degraded operation.

Bombardier proposes to rephrase CS ACNS.E.LAD.280 to allow indication to flight or maintenance crew as follows:

(b) The system provides indication to the flight or maintenance crew in case of failure that affects its performance.

response

Partially accepted

The airborne system may have dormant failures that could go undetected for longer periods of time due to the nature of the system (it is automatically activated only when an accident occurs or is likely to occur within minutes). In addition, the airborne system should be part of the MMEL items (refer to item 25-66 of the CS-MMEL) and, therefore, the time delay for detecting failures should be commensurate with the MMEL rectification interval. NPA 2020-03 proposes a rectification interval of 6 flights or 25 flight hours, whichever occurs first.

Flight recorders are required to be installed with an aural or visual means for preflight checking of the proper operation of the recorder (refer to CS 25.1457(d)(3) for cockpit voice recorders (CVRs) and to CS 25.1459 (a)(4) for flight data recorders (FDRs)). As the purpose of point CAT.GEN.MPA.210 is to quickly and accurately direct SAR operations to the accident site and facilitate the collection of evidence by investigation authorities, the indication of a failure of the airborne system used to comply with CAT.GEN.MPA.210 it is even more justified.

With regard to automatic ELTs and ELTs(DT), EUROCAE ED-62B, Section 3.1.2 specifies the following:

'The remote monitoring system of an ELT shall indicate at least the following:

- […]
- Inform the crew of the Self-Test status.'

Further to that, in C/S T.001, paragraph 4.5.4 (similar in C/S T.018 paragraph 4.5.4.1), the minimum content of the failure condition is specified:

'The self-test function shall perform an internal check and provide distinct indication (which shall occur during the declared timeframe for the self-test mode) that:

a) the self-test mode has been initiated;

b) RF power is being emitted at 406 MHz and at 121.5 MHz, if applicable;

c) the internal check has passed successfully, or has failed;

d) the beacon battery may not have sufficient energy to support beacon operation for the manufacturer-declared minimum operating lifetime; and

e) for RLS-capable beacons, [...]'

However, such indication of failure does not need to be automatically provided during the flight, as it cannot be addressed by the flight crew. A self-monitoring function is considered sufficient.

In addition, meeting point (c) of C/S T.001 paragraph 4.5.4 could be difficult if the system includes an ELT(AF): the self-test of an ELT(AF) consumes battery energy, so that ELT manufacturers usually recommend to not test the ELT(AF) more than once per month. Therefore, the self-monitoring function should not be required to monitor failures that affect the transmission of a signal.

Similarly, failures that affect the deployment capability (if the system includes deployable equipment) cannot be easily tested and the self-monitoring function should not be required to monitor such failures.

Therefore,

— the CS ACNS.E.LAD.280 title was modified to include 'self-monitoring'. This change of title is also applied to all the AMC and GM to CS ACNS.E.LAD.280;

— point (b) of CS ACNS.E.LAD.280 was modified to remove the requirement to provide an indication of failure to the flight crew and to specify the scope of the self-monitoring function; and

— GM to CS ACNS.E.LAD.280 was introduced to indicate that the self-monitoring performed by the system is not required to detect failures that affect the transmission of signals or the deployment capability (if the system includes deployable equipment).

comment | *17* | comment by: *Bombardier*

In AMC1 ACNS.E.LAD.310, the applicable environmental conditions for location of aircraft in distress components may vary for each installation.
1. The automatic trigger function could be done by main avionics components (that may also perform essential or critical functions unrelated to Location of Aircraft in Distress), whose current installation does not necessarily meet all environmental requirements of table 1.

2. By virtue of their installation , these main avionics components may benefit, prior to a crash and barring in-flight destruction, from natural protection against environmental effects such as, for example, (ref. DO-160G section 10, waterproofness) liquid water being sprayed or falling on the equipment or to the effects of condensation.

It is proposed to add a statement to AMC1 ACNS.E.LAD.310 permitting an analysis to determine which equipment may be exposed to which environment of table 1. The modified AMC1 ACNS.E.LAD.310 Environmental would therefore become (added statement is shown in italics):

The system should meet the specifications for automatic activation and transmission of the activation signals while all the equipment that the system is composed of is subject to the environmental test conditions of Table 1 and Table 2 below. The environmental conditions of Table 1 may be modified if it is demonstrated that system components would not be exposed to this condition, or exposed to a more benign condition prior to a crash and barring in-flight destruction of the aircraft

response

Partially accepted

This comment refers to airborne equipment that is used for compliance with point CAT.GEN.MPA.210 but was primarily designed for other purposes.

Only the transmission of position information sufficient for meeting the position accuracy requirement of CS ACNS.E.LAD.410 is within the scope of paragraphs (a) and (b) of CS ACNS.E.LAD.310. Environmental testing is to be performed only for the equipment concerned.

In addition, CS ACNS.E.LAD.110 is about the transmission of activation signals, while CS ACNS.E.LAD.140 is about the content of activation signals and not their transmission. Therefore, the references to CS ACNS.E.LAD.110 and CS ACNS.E.LAD.140 in the first row of Table 1 of AMC1 ACNS.E.LAD.310 were not correct. Further, CS ACNS.E.LAD.240 contains the requirements for automatic activation, not transmission. Therefore, the references to CS ACNS.E.LAD.240 in Table 1 were not justified.

Therefore,

— point (a) of AMC1 ACNS.E.LAD.310 was reworded;

— CS ACNS.E.LAD.310 was retitled and reworded to clarify that it is about the effect of environmental conditions and crash conditions on the position accuracy of the point of end of flight that is specified for non-survivable accidents (refer to CS ACNS.E.LAD.410); and

— the text in the first row of Table 1 of AMC1 ACNS.E.LAD.310 was corrected.

comment

18 comment by: *Bombardier*

AMC1 ACNS.E.LAD.280 Indications to the flight crew

CS ACNS.E.LAD.280 requires timely indication to the flight crew and not an "alert" to the flight crew.

AMC1 ACNS.E.LAD.280 proposes guidance that this indication be a specific alert level but does not address the fact that during distress conditions, the Flight Deck Effects critical to recovery from the distress event will be those associated with the distress condition that triggered the automatic activation. During this high workload distress event, the attention of the flight crew should be focused on the resolution of the event that led to the distress condition and not be distracted by a Caution message with an associated Master Caution and aural attenson during that time. Since the

	flight deck indication and alerting philosophy may be different for each aircraft platform, the guidance in AMC1 ACNS.E.LAD.280 should aim only to prevent the negative effect of distraction; it should not specify that this indication be an alert or specify an alert level. Proposed wording of the requirement: The indication to the flight crew that the system has been automatically activated should not impair the flight crew's ability to recover from the distress condition.
response	Partially accepted It is redundant to specify that an indication to the flight crew should not impair their ability to ensure safe flight and landing, as this is applicable to all cockpit indications. The indication to the flight crew should be an alert, as stated in CS 25.1322 (Flight crew alerting), to ensure that this indication is well designed and reliable. However, EASA agrees that this indication does not need to be a 'caution', as it does not 'require immediate flight crew awareness'. Indeed, either the system activation is genuine and the flight crew are already busy with handling the distress situation when the indication of activation is provided, or the system activation is undesirable and then it is acceptable that the flight crew response is not immediate. The alert could then be an advisory (see CS 25.1322 (b)(3): 'Advisory: For conditions that require flight crew awareness and may require subsequent flight crew response.'). Therefore, AMC1 ACNS.E.LAD.280 was amended to state that the indication should be an alert (as defined in CS 25.1322), and not specifically a caution alert.

comment	*19* comment by: *Bombardier* In the GM1 ACNS.E.LAD.001 paragraph describing the Distress Tracking (ELT(DT)) solution, the last sentence of the paragraph: "If the accident is survivable, a crash-survivable ELT (an ELT(DT) or an automatic ELT) transmits the 406-MHz signals and a 121.5-MHz homing signal after the impact to provide accurate location of the point of end of flight and to support the on-site location and rescue of potential survivors." Bombardier requests confirmation that the 406 MHz signal mentioned in this paragraph is not a homing signal, but rather is the activation signal that would have been started before, and continuing after, the survivable crash, and thus the proposed acceptable means of compliance does not require the Optional 406 MHz Homing Transmitter (capability H4) defined in DO-204B.
response	Partially accepted

GM1 ACNS.E.LAD.001 does not refer to an optional 406-MHz homing transmitter. The sentence concerned was corrected for clarity.

comment *20* comment by: *Bombardier*

GM1 ACNS.E.LAD.260 Automatic deactivation. GUIDANCE FOR ALL SOLUTIONS

It is proposed to delete the 1st paragraph of GM1 ACNS.E.LAD.260 which reads: "No automatic deactivation capability is expected after the transmitter of activation signals is deployed.",

as it is specific to solutions based on an ADFR and is already addressed in GM2 ACNS.E.LAD.260.

response Accepted

In addition, GM2 ACNS.E.LAD.260 in Section 3.3.2 of NPA 2020-03 was also deleted as it was stating the obvious.

comment *21* comment by: *Bombardier*

It is believed that the 200m number is intended to represent a minimum standard for accuracy. As such better accuracy would mean a lesser error. Multiple examples elsewhere in document of using "greater than" a magnitude of error where "more accurate" is likely the intent. Rationale (a) requires "... that the point of end of flight is located with a two-dimensional

location accuracy greater than or equal to 200 meters (95 % probability) …".

Suggest change to:

"... that the point of end of flight is located with a two-dimensional location accuracy better than or equal to 200 meters (95 % probability) …".

Multiple other instances, including GM1.ACNS.E.LAD.360 and CS ACNS.E.LAD.420 (the latter in both body and rationale)

response Partially accepted

Appropriate adjectives for accuracy are normally 'high' and 'low', not 'good' or 'great'. However, 'accuracy higher than 200 meters' may be confusing, because the higher the accuracy, the smaller the associated error figure.

The text of CS ACNS.E.LAD.410 and CS ACNS.E.LAD.420 was corrected to remove 'or greater'.

In addition, the condition 'under nominal GNSS satellite constellation conditions' was moved to AMC1 ACNS.E.LAD.420, as this is applicable to all solutions.

Further:

— AMC2 ACNS.E.LAD.420, GM1 ACNS.E.LAD.420, GM2 ACNS.E.LAD.420, and GM3 ACNS.E.LAD.420 in Section 3.3.2 of NPA 2020-03, were deleted; instead, conditions were introduced into AMC1 ACNS.E.LAD.420 to gather in one place the conditions applicable to an ELT when used to comply with CS ACNS.E.LAD.420; and

— AMC3 ACNS.E.LAD.420 in Section 3.3.2 of NPA 2020-03 was deleted because it was stating the obvious and was not a means of compliance.

comment *22* comment by: *Bombardier*

The forms "shall" (or "must", alternatively) are typically used to indicate a requirement.

The proposed text reads: "The performance of the system ensures that based on the data …"

This does not appear to be stated as a requirement, and instead the following is suggested:

"The performance of the system shall ensure that based on the data …"

response Not accepted

All CSs in CS-ACNS are written in the present tense. Section 3 of Subpart E of CS-ACNS, which contains the CSs applicable to locating an aircraft in distress, starts with an explanatory sentence (refer to CS ACNS.E.LAD.001).

comment *23* comment by: *Bombardier*

The stated purpose of the "trajectory" is to "verify that the system ... meets the location accuracy objectives of CS ACNS.E.LAD.410". There are two different aspects to the "trajectory" which would appear to influence the accuracy achieved - the actual motion of the vehicle, which may affect the accuracy with which location is determined, and the orientation of the vehicle, which may affect the ability to communicate with any off-vehicle elements.

It is suggested that the former be simplified to a statement of vehicle speed at which the accuracy requirements apply, and it is further suggested that this speed be specified in terms of existing defined speeds for the aircraft, such as perhaps VD, rather than a single extremely fast speed.

This would then allow the communication aspects to be defined by a sequence of orientation angles through which communications should ideally be maintained and during which sequence accuracy is established. It is further suggested that in light of the impracticality of a demonstration other than at ground level (on a test installation of some form) for such orientations that all mention of altitude be omitted from the trajectory, and replaced by a requirement to establish performance and accuracy at ground level.

Suggest to split the "trajectory" up to better facilitate a piecewise demonstration of compliance. As a whole, the trajectory is thoroughly unrealistic for a commercial/civil aircraft.

For example:

b) Trajectory

Where accuracy is influenced by vehicle speed, a speed of not less than 300m/s or VD/VNE shall be assumed.

The trajectory and the status of the system should be as described below:

(1) change the system to the armed state, and maintain a static orientation for 60 s, a; the attitude angles are:

(i) pitch attitude angle: 0°,

(ii) bank angle: 0°, and

(iii) heading: north;

(2) apply the following during 30 s:

(i) roll:

(A) bank right with a constant roll rate of +30°/s until reaching +30°, then bank

left with a constant roll rate of –30°/s until reaching –30°; and

(B) continue this sequence until the end of the 30-s sequence; and

(ii) keep heading, pitch attitude angle, and altitude unchanged;

(3) apply the following during 2 s:

(i) pitch attitude: pitch down at a constant pitch rate of –10°/s until reaching –20°;

(ii) roll attitude: bank left at a constant roll rate of –30°/s until reaching –60°; and

(iii) keep heading unchanged;

	(4) from this point and until 125 further seconds have passed,: (i) maintain pitch attitude angle at –20°; (ii) simultaneously repeat the following sequence: (A) during 17.5 s: (a) maintain roll attitude angle at –60°; and (b) decrease the heading at a constant yaw rate of –10°/s; (B) during 4 s: (a) increase the roll attitude angle at a roll rate of 30°/s to reach +60°; and (b) decrease the yaw rate at a yaw acceleration of 5°/s² to reach +10°/s; (C) during 17.5 s: (a) maintain roll attitude angle at +60°; and (b) increase the heading at a constant yaw rate of +10°/s; and (D) during 4 s: (a) decrease roll attitude at a constant roll rate of –30°/s to reach -60°; and (b) decrease yaw rate at a yaw acceleration of -5°/s² to reach –10°/s; and (5) after 125s have passed, maintain stationary attitudes for 60 s.
response	Partially accepted Appendix A is part of a possible verification method in AMC3 ACNS.E.LAD.320 for demonstrating compliance with paragraph (a)(1) of CS ACNS.E.LAD.320. Hence, not only the accuracy of the point of end of flight should be demonstrated, but also that the signals are transmitted in such a manner that they can be detected by the communication infrastructure. In addition, altitude is one of the parameters that should be addressed in this demonstration. This comment obviously assumes that some flight testing with the airborne equipment is necessary for the demonstration, while a combination of ground testing and simulation may be sufficient. To clarify this, the text of AMC3 ACNS.E.LAD.320 and of Appendix A were amended; refer to the response to comment No 73.

comment	*37*	comment by: *Airbus-Regulations-SRg*
	GM1 ACNS.E.LAD.001 Applicability and scope COMMON GUIDANCE FOR ALL SOLUTIONS / Page 36-37 Airbus comment: The definition 'accident during which the aeroplane is severely damaged' as introduced by ICAO Annex 13 distinguishes clearly between kind of failures and exceptions to this by using a dedicated formatting. Airbus proposal: To use the same formatting as per ICAO Annex 13 or revise the wording to read as follows: qoute: '— adversely affects the structural strength, performance or flight characteristics of the aircraft; and — would normally require a major repair or replacement of the affected component, except for an engine failure or damage to the engine, when the damage is limited to a single engine (including its cowlings or accessories), **or damages** to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damage to main rotor blades, tail rotor blades, the landing gear,and **or damages** those resulting from hail or bird strike (including holes in the radome);' Rational: Improve the clarity of the content (Clear wording); *PLEASE see also Airbus comment #29*	
response	Partially accepted Please see the response to comment No 29.	

comment	*38*	comment by: *Airbus-Regulations-SRg*
	GM1 ACNS.E.LAD.001 Applicability and scope COMMON GUIDANCE FOR ALL SOLUTIONS / Page 36 Airbus comment: The proposed GM1 describes the scope of the ACNS.E.LAD as follows:	

	quote: The scope of this Section is accidents and distress situations, as a means compliant with CAT.GEN.MPA.210 may replace an automatic ELT. unquote The CS ACNS.E.LAD.001 states: “This Section provides standards for the location of an aircraft in distress…” Airbus request: Please harmonize GM1 with the CS definition of the scope.
response	Partially accepted The sentence concerned was deleted from GM1 ACNS.E.LAD.001. In addition, GM1 ACNS.E.LAD.001 was reworded to clarify the scope of point CAT.GEN.MPA.210 and to make consistent the explanations provided in GM1 CAT.GEN.MPA.210 and GM1 ACNS.E.LAD.001 (see also the response to comment No 287).

comment	_39_ comment by: _Airbus-Regulations-SRg_ GM1 ACNS.E.LAD.001 Applicability and scope COMMON GUIDANCE FOR ALL SOLUTIONS / Page 38 Quote While not required, the installation of an ELT(AF), ELT(AD) or ELT(AP) is a means to meet several requirements of this Section: transmission of a homing signal, manual activation, operation without propulsive power, and location accuracy in case of a survivable accident. Unquote Airbus comment: What is meant by ‘While not required’ in this context? What is the rational to highlight the _partial compliance_ of automatic ELTs with the LAD requirements? Airbus proposal: Please delete the quoted sentence or clarify the intent by rewording.

response

Accepted

The sentence was deleted.

comment

40 comment by: *Airbus-Regulations-SRg*

CS ACNS.E.LAD.010 Definitions / Page 39

'solution based on HRT'

Airbus comment:

The high rate of transmission of the signals is not indicated in the proposed definition.

Airbus proposes to amend the definition to read as follows:

— 'solution based on HRT' means a solution that is based on an automatic triggering function

coupled with airborne equipment that transmits **in high rate** the aircraft position and information that an accident or a distress situation is very likely to occur.'

Rational:

Clear separation between "Normal tracking" and "High Rate Tracking" as per GADSS concept

response

Partially accepted

'high rate' is rather subjective. In addition, AMC3 ACNS.E.LAD.420 allows the post-impact transmission of activation signals if the rate of transmission before reaching the point of end of flight is not sufficient to meet the 200-metre accuracy objective of CS ACNS.E.LAD.420. In that case, only the 6-NM accuracy objective of CS ACNS.E.LAD.410 is applicable to in-flight-transmitted data, and this can be achieved by reporting a position every 30 to 40 seconds (assuming that the position reports are accurate and only a few seconds old). Therefore, instead of 'high rate', 'frequently' was inserted into the definition of 'solution based on HRT'.

In addition, this comment led to clarifying that solutions based on an ELT(DT) are not considered a subset of solutions based on HRT.

The definition of 'solution based on HRT' in CS ACNS.E.LAD.010 was reworded accordingly.

comment

41 comment by: *Airbus-Regulations-SRg*

	CS ACNS.E.LAD.010 Definitions / Page 39 'standby' Airbus comment: As per ED-62B the status "disarmed" fulfils the same intent as mentioned in the NPA for 'standby'. Airbus proposal: Please harmonize the proposed CS ACNS.E.LAD with EUROCAE ED-62B 'Disarmed' system status
response	Accepted ED-62B, Subsection 2.9.5.1 explains 'disarmed' for an ELT(DT) as follows: 'Once disarmed, it will not begin transmitting when any of the three activation conditions listed above occurs. Whatever its arming state, the ELT(DT) shall activate, except in OFF mode, when manually triggered by the crew.' ED-62B does not contain the term 'standby'. Therefore, throughout CS-ACNS Subpart E, 'standby' was replaced by 'disarmed' when it refers to the status of the airborne system. This comment also led to correcting the definition of 'functions of the system' in CS ACNS.E.LAD.010, because CS ACNS.E.LAD.210 is titled 'normal operation' while addressing the arming and disarming of the system. Further, this comment resulted in deleting GM1 ACNS.E.LAD.210 in Section 3.3.2 of NPA 2020-03, as this GM only repeated the definitions that are provided in CS ACNS.E.LAD.010.

comment	*43* comment by: *Airbus-Regulations-SRg* GM2 ACNS.E.LAD.010 Definitions GUIDANCE FOR SOLUTIONS BASED ON AN ADFR / Page 41 Airbus comment regarding the link to "ACNS.E.LAD.010 Definitions": Airbus considers a general guidance regarding the suitable ADFR/ELT combinations as very useful but Airbus assumes to find this clarification under "ACNS.E.LAD.001 Applicability and Scope" Airbus comment regarding link to the content:

Compared to AMC1 ACNS.E.LAD.110 (a) & (d) the proposed GM2 ACNS.E.LAD.010 provides less detailed

information regarding the possible ADFR/ELT combinations and the recording function. Airbus proposes

to harmonize the current wording with proposed AMC1 ACNS.E.LAD.110 (a) & (d).

Rationale:

Avoid duplication of information.

response

Accepted

GM2 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 repeated the conditions that are provided in AMC1 ACNS.E.LAD.110. These conditions are now gathered in AMC2 ACNS.E.LAD.020. GM2 ACNS.E.LAD.010 was deleted.

comment

44 comment by: *Airbus-Regulations-SRg*

GM3 ACNS.E.LAD.010 Definitions GUIDANCE FOR SOLUTIONS BASED ON AN ELT(DT) / Page 41

Airbus comment regarding the link to "ACNS.E.LAD.010 Definitions": Airbus considers a general guidance as per proposed GM3 ACNS.E.LAD.010 (a) regarding the suitable ELT combinations

as very useful but Airbus assumes to find this clarification under "ACNS.E.LAD.001 Applicability and Scope".

Airbus comment regarding link to the content:

- Compared to AMC2 ACNS.E.LAD.110 (a) the proposed GM3 ACNS.E.LAD.010 (a) provides less detailed information

regarding the possible ELT combinations. Airbus proposes to harmonize the current wording with proposed AMC2 ACNS.E.LAD.110 (a).

- GM3 ACNS.E.LAD.010 (b) & (c) don't provide definition but detailed design guidance for specific items defined later in the proposed regulation.

Airbus proposes:

- o to transfer the content of GM3 ACNS.E.LAD.010 (b) to AMC/GM ACNS,E.LAD.250 related to ELT(DT)
- o to transfer the content of GM3 ACNS.E.LAD.010 (c) to AMC/GM ACNS,E.LAD.140 related to ELT(DT)

Rationale:

Guidance material should be directly linked to the corresponding ACNS regulation.

Avoid duplication of information.

response

Partially accepted

See also the response to comment No 49.

GM3 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 was deleted for the following reasons:

— the content of point (a) of GM3 ACNS.E.LAD.010 was addressed in GM3 ACNS.E.LAD.110 with regard to possible ELT configurations;

— the content of point (b) of GM3 ACNS.E.LAD.010 was addressed in point (a) of AMC1 ACNS.E.LAD.250: '(a) CS ACNS.E.LAD.250 may be met by installing an ELT(AF) or (AP)' (said point was deleted and replaced by GM; see the response to comment No 362); and

— AMC1 ACNS.E.LAD.020 specifies that all ELTs that are part of the system should be approved in accordance with ETSO-C126c, so that point (c) of GM3 ACNS.E.LAD.010 was redundant and, therefore, deleted.

comment

45 comment by: *Airbus-Regulations-SRg*

GM4 ACNS.E.LAD.010 Definitions GUIDANCE FOR SOLUTIONS BASED ON HRT / Page 41

Airbus comment regarding the link to "ACNS.E.LAD.010 Definitions": Airbus considers a general guidance as per proposed GM4 ACNS.E.LAD.010 regarding the suitable ELT combinations as very useful

but Airbus assumes to find this clarification under "ACNS.E.LAD.001 Applicability and Scope".

Airbus comment regarding the content:

In this GM4 for HRT the definition of acceptable equipment combinations to meet the section LAD requirements are missing.

(It was provided for ADFR & ELT(DT) based solutions in the proposed GM2 & GM3 ACNS.E.LAD.010).

GM4 ACNS.E.LAD.010 (b): AMC4 ACNS.E.LAD.170 already defines corresponding Means of Compliance.

GM4 ACNS.E.LAD.010 (b) should be harmonized with AMC4 ACNS.E.LAD.170.

GM4 ACNS.E.LAD.010 (c) & (d) don't provide definition but detailed design guidance for specific items defined later in the proposed regulation.

Airbus proposes:

- to transfer the content of GM4 ACNS.E.LAD.010 (c) to AMC/GM ACNS,E.LAD.310 & AMC/GM ACNS,E.LAD.320 related to HRT systems
- to transfer the content of GM4 ACNS.E.LAD.010 (d) to AMC/GM ACNS,E.LAD.240 related to HRT systems

Rationale:

Guidance material should be directly linked to the corresponding ACNS regulation.

Avoid duplication of information.

response

Partially accepted

Points (a) and (b) of GM4 ACNS.E.LAD.010 (in Section 3.3.2 of NPA 2020-03) provided no new information compared to the description of HRT in GM1 ACNS.E.LAD.001; therefore, they were deleted.

Point (c) of GM4 ACNS.E.LAD.010 was deleted as it provided no detailed information and as AMC3 ACNS.E.LAD.320 addresses the source of position information in the case of a solution based on HRT.

The comment on point (d) of GM4 ACNS.E.LAD.010 refers to the fact that 'activation signals' need to be more specifically defined; refer also to the response to comment No 25. Once 'activation signals' are clearly defined, the issue in point (d) of GM4 ACNS.E.LAD.010 is addressed; therefore, said point was deleted. As a result, the whole GM4 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 was deleted.

A point was added in GM1 ACNS.E.LAD.240 to clarify that CS ACNS.E.LAD.240 restricts the automatic transmission of activation signals to accidents during which the aircraft is severely damaged.

comment

46 comment by: *Airbus-Regulations-SRg*

AMC1 ACNS.E.LAD.110 (d) Transmission of the activation signals / Page 42

AND

AMC2 ACNS.E.LAD.110 (a) Transmission of the activation signals / Page 43

AND

AMC4 ACNS.E.LAD.170 (b) Transmission of a homing signal / Page 50

'approved and compliant'

	Airbus comment: The wording “approved and compliant with ETSO-xxx” could be understood in such a way that an ETSO approval is a prerequisite to declare compliance. In our understanding a technical solution is already capable to meet the requirement when it is compliant to the relevant ETSO without having an EASA ETSO approval granted. Airbus proposal: To replace “...approved and compliant with ETSO-xxx...” by “...should be approved in accordance with ETSO-xxx...” Rationale: Clarification of wording and harmonization within CS ACNS
response	Partially accepted The wording ‘approved in accordance with’ is widely used in CS-ACNS when compliance with an ETSO is required. With regard to AMC1 ACNS.E.LAD.110 and AMC2 ACNS.E.LAD.110, CS ACNS.E.LAD.020 was created and some of the former conditions regarding compliance with ETSOs were moved to the AMC to that CS.

comment	_47_ comment by: _Airbus-Regulations-SRg_ CS ACNS.E.LAD.110 Transmission of the activation signals / Page 42 Airbus proposes to revise the text to read as follows: “Following the system activation, the The system transmits the activation signals to the communication infrastructure within a time frame that maximises the likelihood that at least a set of defined activation data containing the information required for activation signals is received following activation.” Rationale: To Improve the readability.
response	Partially accepted

The text of CS ACNS.E.LAD.110, CS ACNS.E.LAD.120 and CS ACNS.E.LAD.130 was amended for clarity. However, the term 'activation data' was not introduced, as it is not defined nor elsewhere used in Section 3 of Subpart E of CS-ACNS.

comment | _48_ | comment by: _Airbus-Regulations-SRg_

AMC1 ACNS.E.LAD.110 Transmission of the activation signals ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ADFR / Page 42-43

Airbus comment

The proposed AMC1 ACNS.E.LAD.110 (a) - (d) are not specifically related to the transmission

of activation signals but provide general guidance for ADFR solutions.

Airbus request

For this purpose we proposes to shift this AMC content to "ACNS.E.LAD.001 Applicability and Scope".

(Please also to Airbus comment #43 regarding GM2 ACNS.E.LAD.010)

response

Partially accepted

Points (a) to (c) of AMC1 ACNS.E.LAD.110 in Section 3.3.2 of NPA 2020-03 specified the conditions that should be met to consider the solution based on an ADFR acceptable. These conditions were grouped in AMC1 ACNS.E.LAD.110 to have in one place the most important conditions to be met with an ADFR solution (concept of a 'one-stop shop').

However, EASA acknowledged that most of those conditions were not needed for complying with CS ACNS.E.LAD.110. These conditions were moved to AMC2 ACNS.E.LAD.020 that requires all equipment that is part of the system to be approved. Therefore:

— the condition of AMC2 ACNS.E.LAD.320 to meet the specifications of ETSO-2C517 was deleted;

— AMC to CS ACNS.E.LAD.240, AMC to CS ACNS.E.LAD.310, and AMC to CS ACNS.E.LAD.650 were created to specify that meeting AMC2 ACNS.E.LAD.020 satisfies those CSs; and

— AMC1 ACNS.E.LAD.520 was created to specify that for an ELT, meeting AMC1 ACNS.E.LAD.020 satisfies CS ACNS.E.LAD.520.

comment	*49* comment by: *Airbus-Regulations-SRg* AMC2 ACNS.E.LAD.110 Transmission of the activation signals ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ELT(DT) / Page 43 Airbus comment: The proposed AMC2 ACNS.E.LAD.110 (a) is not specifically related to the transmission of activation signals but provides general guidance for ELT(DT) solutions. Airbus request: For this purpose we proposes to shift this AMC content to "ACNS.E.LAD.001 Applicability and Scope". (Please also to Airbus comment #44 regarding GM3 ACNS.E.LAD.010)
response	Partially accepted Points (a) to (c) of AMC2 ACNS.E.LAD.110 (in Section 3.3.2 of NPA 2020-03) specify the conditions that should be met to consider the solution based on an ELT(DT) acceptable. These conditions were grouped in AMC2 ACNS.E.LAD.110 to have in one place the most important conditions to be met with an ELT(DT) solution (concept of a 'one-stop shop'). However, EASA acknowledged that most of those conditions were not needed for complying with CS ACNS.E.LAD.110. Those conditions were moved to AMC3 ACNS.E.LAD.020.

comment	*50* comment by: *Airbus-Regulations-SRg* AMC2 ACNS.E.LAD.110 Transmission of the activation signals ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ELT(DT) (b) / Page 44 General Remark: The proper installation should not be limited to ELT(DT) solutions. Airbus proposed to modify the wording as follows: (b) Installation of the ELT(DT) should result in the ELT(DT) transmitting ensure the transmission of the activation signals and deactivation signals, either through the automatic triggering function or manual activation by the flight crew.

	Reason: Clarification of wording
response	Partially accepted Point (b) of AMC2 ACNS.E.LAD.110 in Section 3.3.2 of NPA 2020-03 was already covered by CS-ACNS on activation and deactivation (CS ACNS.E.LAD.240 to CS ACNS.E.LAD.270). Therefore, this point was deleted (see the response to comment No 49).

comment	*51* comment by: *Airbus-Regulations-SRg* GM1 ACNS.E.LAD.120 Repeated transmission of the activation signals COMMON GUIDANCE FOR ALL SOLUTIONS / Page 45 Airbus proposes to delete the following sentence: “The transmission service is also expected to make this data available to the ATS units that are competent for the area where the activation signals are coming from to support them in providing the alerting service.” Rationale: This information is not linked to the repeated transmission of activation signals
response	Partially accepted GM1 ACNS.E.LAD.120 (in Section 3.3.2 of NPA 2020-03) did not provide guidance for complying with CS ACNS.E.LAD.120, but justification for the expected duration of the transmission of activation signals and for their intended recipient. GM1 ACNS.E.LAD.120 was deleted, as its content was not appropriate for GM.

comment	*52* comment by: *Airbus-Regulations-SRg* CS ACNS.E.LAD.130 Transmission of the deactivation signals / Page 45 Airbus proposes to revise the text as follows:

"a) Upon deactivation, the system automatically transmits deactivation signals so that at least a

set of the defined deactivation data containing the information required for deactivation signals is

transmitted within 1 minute of the deactivation time after deactivation of the system."

Rationale:

To Improve the readability:

The general purpose of the system is the automatic transmission of such signals.

The term "deactivation time" is not defined in the rule.

response

Partially accepted

Paragraph (a) of CS ACNS.E.LAD.130 was reworded to clarify that it is about the deactivation of the airborne system.

comment

53 comment by: *Airbus-Regulations-SRg*

GM1 ACNS.E.LAD.140 Activation signals — mandatory information

COMMON GUIDANCE FOR ALL SOLUTIONS / Page 47

Airbus comment:

Within current signal definition as per COSPAS SARSAT documents T001 and T018 for the information on

the type of beacon for aeronautical use just distinguishes between ELT(DT) and other ELT.

A further separation between ELT(AF), ELT(AP) or ELT(AD) is not foreseen.

Airbus request:

Please revise the text accordingly.

response

Accepted

GM1 ACNS.E.LAD.140 in Section 3.3.2 of NPA 2020-03 was deleted because its useful content was moved to AMC1 ACNS.E.LAD.140 (see the response to comment No 310).

comment	*54* comment by: *Airbus-Regulations-SRg* GM2 ACNS.E.LAD.140 Activation signals — mandatory information GUIDANCE FOR SOLUTIONS BASED ON AN ELT(DT) / Page 47 Airbus comment: The intent of GM2 ACNS.E.LAD.140 is unclear: For ELT(DT) systems the logic when to use external or internal GNSS data is already defined in the relevant COSPAS SARSAT documents. Is the intention of this GM to ensure that the ELT(DT) should be supplied with accurate aircraft position data? Airbus request: Please review GM2 content.
response	Partially accepted See the response to comment No 241.

comment	*55* comment by: *Airbus-Regulations-SRg* CS ACNS.E.LAD.150 Activation signals — supplementary information / Page 47 Airbus comments: It is unusual that a certification specification can be considered as mandatory only in case when practical. Airbus request: Please provide a dedicated AMC to clarify the applicability of CS ACNS.E.LAD.150.
response	Partially accepted This comment points out that an essential condition was missing from CS-ACNS in NPA 2020-03: the characteristics of the activation and deactivation signals must be such that they will be detected by the communication infrastructure that is supposed to be used by the system, based on the assumptions that must be made according to CS ACNS.E.LAD.320. Therefore: — a condition regarding the characteristics of the activation signals was introduced into CS ACNS.E.LAD.110;

- AMC1 ACNS.E.LAD.110 was created to specify that a detailed description of any communication infrastructure other than the COSPAS-SARSAT programme should be provided;
- AMC1 ACNS.E.LAD.120 was created to specify that an assumption about the performance of any communication infrastructure other than the COSPAS-SARSAT programme should be provided, to justify the time intervals at which activation signals are transmitted;
- a condition regarding the characteristics of the deactivation signals was introduced into CS ACNS.E.LAD.130;
- AMC1 ACNS.E.LAD.130 was created to specify that a detailed description of any communication infrastructure other than the COSPAS-SARSAT programme should be provided;
- the first sentence of CS ACNS.E.LAD.150 was modified to refer to the communication infrastructure (defined in CS ACNS.E.LAD.010) instead of the 'transmission service'; and
- GM1 ACNS.E.LAD.150 was created to explain the wording 'readily available to the system' and 'supported by the communication infrastructure'.

comment | *56* | comment by: *Airbus-Regulations-SRg*

CS ACNS.E.LAD.230 Continued operation after losing normal electrical power / Page 54

In combination with

AMC1 ACNS.E.LAD.230 / Page 54

Airbus comment:

AMC1 ACNS.E.LAD.230 refers to CS ACNS.E.LAD.230 (c).

The proposed CS ACNS.E.LAD.230 doesn't include a paragraph (c).

Airbus request:

Please align CS & AMC1 to ACNS.E.LAD.230.

Remark: AMC2 ACNS.E.LAD.230 (a) is also affected as it refers to AMC1 ACNS.E.LAD.230

response | Accepted

EASA thanks you for your comment. See the response to comment No 446.

comment	*57* comment by: *Airbus-Regulations-SRg*
	CS ACNS.E.LAD.320 Flight dynamics and locating the aircraft and table / Page 68-**69** Airbus request: We suggest to link the numbering of table to each specific CS requirement, e.g. CS ACNS.E.LAD.320 (b)(iv) should refer to table 1 instead of table 3. The numbering of the table should be adapted accordingly. Rationale: To avoid misunderstandings caused by future updates of the rule, e.g. introduction of additional tables.
response	Accepted Paragraph (b)(1)(iii) of CS ACNS.E.LAD.320 was corrected. Table 3 of CS ACNS.E.LAD.320 was renumbered ‘Table 1’. Paragraphs (b)(1)(iii) and (b)(1)(iv) of CS ACNS.E.LAD.320 were merged for conciseness, and a missing condition addressing the position accuracy applicable to a survivable accident was introduced. Paragraph (b)(2)(iv) of CS ACNS.E.LAD.320 (stating that the installation allows the flight crew to manually transmit activation signals) was deleted, as its content is covered by CS ACNS.E.LAD.250. ‘accident trajectory’ was replaced throughout the document by ‘accident flight trajectory’ for clarity.

comment	*58* comment by: *Airbus-Regulations-SRg*
	CS ACNS.E.LAD.610 Availability of the system / Page 80 Airbus proposes to revise the text as follows: The availability of the system is designed commensurate with at least a minor failure condition, for the loss of any function. Rationale: - Clarification of wording and harmonization within CS ACNS: the term “at least” should be removed. The rationale for the failure condition is already given in the NPA itself.

	- The term "for the loss of any function" is too unspecific and can cause confusion with other requirements in the system performance section.
response	Partially accepted The content of CS ACNS.E.LAD.610 in Section 3.3.2 of NPA 2020-03 was replaced by a high-level continuity requirement, and this CS paragraph was renamed 'Continuity'. The term 'continuity' is defined in CS ACNS.A.GEN.005 (Definitions). The former content of CS ACNS.E.LAD.610 was moved to AMC1 ACNS.E.LAD.610. In addition, the text of AMC1 ACNS.E.LAD.610 is clearer than that of CS ACNS.E.LAD.610 in Section 3.3.2 of NPA 2020-03. The text of AMC1 ACNS.E.LAD.610 does not contain the wording 'at least', but still refers to 'loss of a function of the system', as the functions of the system are defined in CS ACNS.E.LAD.010.

comment	*59* comment by: *Airbus-Regulations-SRg* CS ACNS.E.LAD.620 Erroneous automatic activation / Page 80 AND CS ACNS.E.LAD.630 Integrity of information of the activation signals / Page 82 Airbus proposes to delete the term "at least" in the text of the regulations. Rationale: - Clarification of wording and harmonization within CS ACNS. And the rationale for the failure condition is already given in the NPA itself.
response	Accepted 'at least' was deleted.

comment	*60* comment by: *Airbus-Regulations-SRg* AMC1 ACNS.E.LAD.650 Risk for third parties ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ADFR / Page 84 **AND**

GM1 ACNS.E.LAD.650 Risk for third parties

COMMON GUIDANCE FOR ALL SOLUTIONS / Page 84

Airbus request:

1. Since the content of the AMC1 & GM1 are identical it is proposed to extend the applicability of AMC1 to all solutions

which include deployable components.

Accordingly, GM1 is proposed to be deleted

2. The term “ADFR” is not used in CS25.

Airbus proposed to refer to the related AMC for deployable cockpit voice recorder instead.

Rationale:

To simplify the guidance material and to improve the cross link to CS 25

response

Partially accepted

GM1 ACNS.E.LAD.650 in Section 3.3.2 of NPA 2020-03 was deleted, as AMC2 ACNS.E.LAD.020 indicates where to find guidance for the approval of solutions based on an ADFR.

CS-25 does not contain an ‘ADFR’ paragraph, but AMC 25.1457 includes the ADFR-related AMC. Furthermore, GM1 ACNS.E.LAD.001 explains that the scope of Section 3 of Subpart E of CS-ACNS includes only large aeroplanes. Therefore, a general reference to the ‘AMC to the CSs applicable to the aircraft type’ may be confusing. AMC2 ACNS.E.LAD.020 includes the minimum conditions to be met by equipment when selecting a solution based on an ADFR. AMC1 ACNS.E.LAD.650 was corrected to refer to AMC2 ACNS.E.LAD.020.

comment

61 comment by: *Airbus-Regulations-SRg*

CS ACNS.E.LAD.010 Definitions / Page 38

‘Automatic activation ’

Airbus comment:

“Automatic activation” is used several times in the document but is not listed in “Definitions”

Airbus request:

Please include a definition of this term with an emphasis to clarify the meaning of “automatic” taking into account the different possible technical solutions.

response

Accepted

A definition of 'automatic activation' was introduced into CS ACNS.E.LAD.010 and an explanation of this term was introduced into GM2 CAT.GEN.MPA.210.

'activation of the system' and 'the system is activated' are defined in CS ACNS.E.LAD.010.

comment

62 comment by: *Airbus-Regulations-SRg*

AMC1 ACNS.E.LAD.240 Automatic activation

ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO SOLUTIONS BASED ON

AN ELT(DT) AND TO SOLUTIONS BASED ON HRT / Page 56

Airbus request:

Please clarify that the terms "ELT(AF), (AD) or (AP)" are used to describe the expected function.

response

Partially accepted

The terms 'ELT(AF), (AD) or (AP)' in the text of AMC1 ACNS.E.LAD.240 in Section 3.3.2 of NPA 2020-03 do not refer to the automatic triggering function. In addition, the reference to ELT(AD) should be deleted because an ELT(AD) that is not integrated in an ADFR is not adequate (see the response to comment No 446).

Therefore, the first sentence of this AMC was reworded for clarity. The second sentence was also reworded to provide a clearer reference to the database of accidents and incidents flight data sets, which is included in Appendix 1 to ED-237. This AMC was renumbered 'AMC2 ACNS.E.LAD.240' as a new AMC1 ACNS.E.LAD.240 (addressing solutions based on an ADFR) was introduced.

In addition, a point was introduced into AMC2 ACNS.E.LAD.240 to specify that a solution based on an ELT(DT) or on HRT should include an automatic triggering function (even if it may also include other means, such as crash-impact detection or water immersion).

Finally, an additional point was introduced into AMC2 ACNS.E.LAD.240 to extend the scope of automatic activation to in-flight conditions that disable the automatic triggering function and are unlikely during normal aircraft operation, to ensure that the system will be activated should the automatic triggering function be disabled due to severe damage to the aircraft before the activation criteria of the automatic triggering function are met. That point was complemented by GM2 ACNS.E.LAD.240.

comment	*63* comment by: *Airbus-Regulations-SRg* CS ACNS.E.LAD.270 Manual deactivation (b) / Page 59 Airbus proposes to amend CS ACNS.E.LAD.270 (b) to read as follows: "(b) When the system is automatically activated, it cannot be manually deactivated **during flight**" Rationale: The flight crew should have a means to deactivate the system on ground when the aircraft is safely landed.
response	Not accepted If the flight crew need to stop the transmission of the activation signals after landing, they can disable it using the circuit protective devices (see CS ACNS.E.LAD.350).

comment	*64* comment by: *Airbus-Regulations-SRg* GM2 ACNS.E.LAD.310 Environmental conditions encountered during accidents GUIDANCE FOR SOLUTIONS BASED ON AN ADFR / Page 67 Airbus comment. The content of the proposed GM2 includes not just guidance but proposes acceptable means of compliance, quote: "An ADFR that meets the conditions of AMC1 ACNS.E.LAD.110 can be used to meet CS ACNS.E.LAD.310." Unquote Airbus request: Please convert GM2 to AMC4 ACNS.E.LAD.310 for ADFR solutions.
response	Partially accepted GM2 ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03 was meant to explain why there is no AMC specific for a solution based on an ADFR. This GM was deleted because it is obvious that in the absence of such a specific AMC, AMC1 ACNS.E.LAD.310 is sufficient for showing compliance in the case of an ADFR-based solution.

comment	*65* comment by: *Airbus-Regulations-SRg* General Airbus comment regarding reference to not yet released ETSO: Airbus would like to highlight that the ETSO-2C517 & ETSO-C126c are still in the finalization process. As such the content is not frozen yet.
response	Noted CS-ETSO Amendment 16, introducing ETSO-C126c and ETSO-2C517, was published on 24 July 2020.

comment	*66* comment by: *Airbus-Regulations-SRg* AMC1 ACNS.E.LAD.280 Indications to the flight crew ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION / Page 59 Airbus comment: Airbus position is that an advisory as per CS 25.1322 is an appropriate solution. Rational: A caution as per CS 25.1322 is not appropriate in the context of flight crew workload, in particular during critical phases of flight such as take-off and landing.
response	Accepted See the response to comment No 18.

comment	*67* comment by: *Airbus-Regulations-SRg* AMC2 ACNS.E.LAD.310 Environmental conditions encountered during accidents ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ELT(DT) (a) / Page 66 Airbus propose to amend sub-paragraph (a) to read as follows:

	(a) The system should meet the conditions of AMC1 ACNS.E.LAD.310, except for AMC1 ACNS.E.LAD.310 (b). Rationale: An ELT-DT will stay affixed to the aircraft after reaching point of end of flight. As it is expected that the activation signals were provided before a crash with sufficient accuracy to meet CS ACNS.E.LAD.410 it is not necessary for an ELT-DT to transmit activation signals after a non-survivable crash.
response	Partially accepted The rationale of this comment is accepted. However, point (b) of AMC1 ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03 is not applicable if activation signals do not need to be transmitted after the point of end of flight to meet CS ACNS.E.LAD.410. Therefore, it is not expected that said point will be applicable to an ELT(DT). However, this comment indicates that point (b) of AMC1 ACNS.E.LAD.310 contained several commas that may cause misunderstanding. The first sentence of point (b) of AMC1 ACNS.E.LAD.310 was, therefore, corrected; see the response to comment No 216.

comment	*68* comment by: *Airbus-Regulations-SRg* GM3 ACNS.E.LAD.310 Environmental conditions encountered during accidents GUIDANCE FOR SOLUTIONS BASED ON AN ELT(DT) AND FOR SOLUTIONS BASED ON HRT / Page 67 Airbus propose to modify the content to read as follows: The automatic triggering function should be considered in is within the scope of AMC1 ACNS.E.LAD.310, point (a). Appropriate environmental qualification levels for the equipment hosting the triggering function need to be considered. Rationale: Depending on the technical solution and the kind of triggering function used in the different crash scenarios suitable qualification levels need to be defined. Therefore AMC1 Table 1 might be applicable only partially for the hosting equipment.
response	Partially accepted

CS ACNS.E.LAD.310 was reworded so that automatic activation no longer falls within the scope of this CS. This has also led to excluding from the environmental testing that is specified in AMC1 ACNS.E.LAD.310 the equipment needed for supporting the automatic activation function, and to deleting GM3 ACNS.E.LAD.310.

comment | *69* | comment by: *Airbus-Regulations-SRg*

GM1 ACNS.E.LAD.320 Flight dynamics and locating the aircraft

COMMON GUIDANCE FOR ALL SOLUTIONS (a) / page 73

Airbus proposes to revise sub-para. (a) to read as follows:

(a) Documentation that shows the detailed assumptions about the performance of the

communication infrastructure needs to be prepared for provided to the aircraft operator.

Rationale:

The documentations should be available at the operator side.

response | Partially accepted

This comment stresses the importance of documenting the assumptions about the performance of the communication infrastructure that is used by the system for the transmission of activation and deactivation signals, as this significantly contributes to the transmission performance that is achieved under very dynamic flight conditions.

Therefore:

— a paragraph was introduced into CS ACNS.E.LAD.320 to specify that documentation showing the minimum performance of the communication infrastructure required must be prepared; and

— point (a) of GM1 ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03 was deleted.

comment | *70* | comment by: *Airbus-Regulations-SRg*

CS ACNS.E.LAD.620 Erroneous automatic activation / Page 80

Airbus comment:

The rationale provided in this NPA includes provisions to justify that an ELT-based solution in DAL "D"

definition together with qualified triggering function in accordance with "major" failure classification meets this requirement.

Airbus requests:

To summarize this approach in an "AMCx ACNS.E.LAD.620 Erroneous automatic activation for ELT(DT) solutions".

response

Partially accepted

AMC 25.1309 covers designs whereby the software and the programmable electronic hardware operate seldom, so that a lower design assurance level (DAL) may be acceptable. Therefore, EASA considers it unnecessary to introduce AMC to CS ACNS.E.LAD.620 for this purpose. However, the scope of paragraph (b) of GM2 ACNS.E.LAD.620 in Section 3.3.2 of NPA 2020-03 was widened to include other systems than ELTs; refer to GM1 ACNS.E.LAD.620.

comment

71 comment by: *Airbus-Regulations-SRg*

GM2 ACNS.E.LAD.620 Erroneous automatic activation

COMMON GUIDANCE APPLICABLE TO ALL SOLUTIONS (a) / Page 82

Airbus comment:

GM2 ACNS.E.LAD.620 (a) defines the term "'erroneous automatic activation'.

Airbus request:

To transfer this definition to CS ACNS.E.LAD.010 (Definitions)

response

Accepted

A definition of 'erroneous automatic activation' was introduced into CS ACNS.E.LAD.010.

comment

72 comment by: *Airbus-Regulations-SRg*

AMC3 ACNS.E.LAD.320 Flight dynamics and locating the aircraft

ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO SOLUTIONS BASED ON

	AN ELT(DT) AND TO SOLUTIONS BASED ON HRT / Page 71 AND Appendix A — Test trajectory / Page 85 Airbus comments: Verification as per appendix A can only be done via simulation. Airbus request: This should be clarified in AMC3 ACNS.E.LAD.320 (c).
response	Partially accepted See the response to comment No 23.

comment	*73* comment by: *Airbus-Regulations-SRg* CS ACNS.E.LAD.320 Flight dynamics and locating the aircraft, Appendix A — Test trajectory / Page 85 Airbus comment: The proposed values for test trajectories in “Appendix A” might vary between different aircraft types. Airbus request: It should be mentioned in “Appendix A” that the values used for testing shall correspond to CS ACNS.E.LAD.240 (Automatic activation).
response	Partially accepted The purpose of ‘Appendix A — Example flight trajectory’ is to verify through the simulation of a representative flight trajectory (and, if necessary, through ground tests) that the accuracy objective of CS ACNS.E.LAD.410 is met on typical aircraft trajectories. Therefore: — AMC3 ACNS.E.LAD.320 was reworded for clarity, including a statement that verification may rely on computer-based simulations and ground tests. Further, it specifies that the trajectory presented in Appendix A is an example trajectory and not a test trajectory.

— The trajectory presented in Appendix A is not mentioned any more in the verification method that is described in AMC3 ACNS.E.LAD.320 for showing the successful transmission and detection of the activation signals.

— The title and the first sentence of Appendix A were modified to specify that the trajectory that is presented in Appendix A is an example trajectory applicable to subsonic aeroplanes, as the simulated aeroplane speed does not exceed 333 m/s.

comment

_87_ comment by: _US Federal Aviation Administration_

Page 35 SECTION 3 — LOCATION OF AN AIRCRAFT IN DISTRESS AND EMERGENCY LOCATION

Comment 12: Title of Section 3 should be changed since it does not cover aircraft in distress, it only provides standards for CAT.GEN.MPA.210, CAT.IDE.A.280, CAT.IDE.A.285

Recommendation 12: Change title as follows: **SECTION 3 — LOCATION OF DOWNED~~AN~~ AIRCRAFT ~~IN DISTRESS~~ AND EMERGENCY LOCATION**

response

Not accepted

The objective of point CAT.GEN.MPA.210 'Location of an aircraft in distress' is to locate an aircraft in distress, as stated in Section 2.1 of NPA 2020-03. Section 3 of that NPA includes CSs for approving airborne systems that can be used to comply with point CAT.GEN.MPA.210. See also the response to comment No 77.

comment

_88_ comment by: _US Federal Aviation Administration_

Page 36 GM1 ACNS.E.LAD.001 Applicability and scope COMMON GUIDANCE FOR ALL SOLUTIONS

Comment 13: In GM1 ACNS.E.LAD.001 Applicability and scope, paragraph 4, the use of the word 'distress' may be misinterpreted to describe an aircraft that is still in flight but in a distress condition as defined by ICAO in Document 10045

Recommendation 13: remove the word distress as follows:

"The scope of this Section is accidents and ~~distress situations,~~ as a means compliant with CAT.GEN.MPA.210 may replace an automatic ELT. In CS ACNS.E.LAD.001, 'accident that severely damages the aircraft' means an accident during which the aircraft sustains damage or structural failure that:

response

Not accepted

The distress phase is defined in ICAO Annex 11 (Amendment No 52, adopted on 9 March 2020) as 'a situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance'. According to this definition, whether or not an aircraft is flying is not a criterion for considering the aircraft being in distress or not.

In addition, as a means that is compliant with point CAT.GEN.MPA.210 may replace an automatic ELT according to point CAT.IDE.A.280, that means should also cover distress situations that are not accidents or that precede an accident and during which an automatic ELT would be manually triggered.

See also the response to comments Nos 80 and 38.

comment

89 comment by: *US Federal Aviation Administration*

Page 38 CS ACNS.E.LAD.010 Definitions

Comment 14: Use of the word "Distress" is not defined in this NPA. It should be defined or not used except in limited cases.

Recommendation 14: Add 'Distress" to the list of defined terms using the definition found in ICAO Annex 6 Appendix 9 section 2.2 and consider adding the language from footnote 22 as follows: — 'distress condition' means an aircraft is in a distress condition when it is in a state that, if the aircraft behaviour event is left uncorrected, can result in an accident.

response

Partially accepted

'Distress condition' is a term specific to solutions that solely rely on in-flight transmission of signals, i.e. the solutions based on an ELT(DT) or on HRT. Therefore, this term is used in ICAO Annex 6, Part I, Appendix 9 and in EUROCAE ED-237. In NPA 2020-03, the term 'distress condition' appears only in point (e) of AMC3 ACNS.E.LAD.320 (in Section 3.3.2) and in point (a)(4) of AMC2 CAT.IDE.A.280 (in Section 3.2.2). In addition, 'distress situation' appears in several places in Section 3.2.2 without being defined.

Therefore:

— AMC3 ACNS.E.LAD.320 and AMC2 CAT.IDE.A.280 were reworded to remove 'distress condition'; and

— a definition of 'distress situation' was introduced in CS ACNS.E.LAD.010, consistent with the definition of 'distress phase' in ICAO Annex 11.

comment	*90* comment by: *US Federal Aviation Administration* **Page 38 CS ACNS.E.LAD.010 Definitions** **Comment 15:** (found on page 39) the word organized misspelled, correct spelling. **Recommendation 15:** change text as follows: — 'system' means the ~~organised~~ organized set of airborne applications and airborne equipment to meet CAT.GEN.MPA.210;
response	Not accepted See the response to comment No 83.

comment	*91* comment by: *US Federal Aviation Administration* **Page 40 GM1 ACNS.E.LAD.010 Definitions COMMON GUIDANCE FOR ALL SOLUTIONS** **Comment 16:** If it is agreed H4 should be added to AMC1 ACNS.E.LAD.110, add a definition for H4 here. **Recommendation 16:** Add a new (b) 4 as follows: (4)'capability H4 (406-MHz homing signal)' means transmitting a homing signal at 406 MHz; Renumber following definitions
response	Not accepted A 406-MHz homing signal capability is not needed to meet CS ACNS.E.LAD.110; refer to the response to comment No 93.

comment	*92* comment by: *US Federal Aviation Administration* **Page 41 GM4 ACNS.E.LAD.010 Definitions GUIDANCE FOR SOLUTIONS BASED ON HRT** **Comment 17:** in GM4 ACNS.E.LAD.010 Definitions, (b) it states: "It is expected that a solution based on HRT transmits a homing signal after a survivable accident (refer to CS ACNS.E.LAD.170)." I would rephrase this to say the aircraft must be capable of providing information from which the crash location can be determined. **Recommendation 17:** change text as follows

	~~It is expected that a solution based on HRT transmits a homing signal after a survivable accident (refer to CS ACNS.E.LAD.170).~~ If a HRT system is used, the aircraft must have the capability to provide information from which position can be determined after a crash and is expected to transmit, at a minimum a 406 MHz and 121.5 MHz signal.
response	Partially accepted 'Must' is not appropriate for GM. GM4 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 was deleted; see the response to comment No 45.

comment	_93_ comment by: _US Federal Aviation Administration_ **Page 42 CS ACNS.E.LAD.110 Transmission of the activation signals** **Comment 18**: In AMC1 ACNS.E.LAD.110 Transmission of the activation signals (which starts on page 41), (d)(2). Consider including capability H4 (406 MHz homing signal) just to make sure it is not missed. This section does mention COSPAS-SARSAT T.001 and T.018 which are 406 systems so maybe this is repetitive but something to consider. **Recommendation 18:** add additional text to AMC1 ACNS.E.LAD.110 (d)(2) as follows: (2) an ELT that is integrated into the deployable package of the ADFR, approved and compliant with ETSO-C126c, of type ELT(AD), class 0, capability C (crash survivability), ~~and~~ H1 (121.5-MHz homing signal), H4 (406 MHz Homing signal), and any generation (capability T.001 or T.018), and an ELT that is approved and compliant with ETSO-C126c, of type (AF) or (AP), a class appropriate for the installation, capabilities C (crash survivability), and G (internal/integral GNSS receiver), and any generation (capability T.001 or T.018).
response	Not accepted Capability H4 is not needed to meet CS ACNS.E.LAD.110 or other conditions of Section 3 of Subpart E of CS-ACNS. In addition, according to COSPAS-SARSAT T.018, Section 2.5 (Issue 1, Revision 8, dated June 2021): 'A [continuous wave] unmodulated 406-MHz homing and on-scene locating signal is under development with details to be provided in a future update to T.018 and will be centered at 406.050 MHz, ± 2 kHz, at a power level, repetition rate, and pulse width to be determined'. To date, many States have not equipped their mobile SAR facilities with a 406-MHz homing direction finder; therefore, capability H4 is not considered an acceptable

alternative to capability H1 for a means compliant with point CAT.GEN.MPA.210. This point is applicable to aeroplanes with such a range that they could have an accident everywhere on Earth.

comment | *94* comment by: *US Federal Aviation Administration*

Page 46 AMC1 ACNS.E.LAD.140 Activation signals — mandatory information ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION

Comment 19: It appears the title is based on the name of CS ACNS.E.LAD.140. That said, the title for this section seems contradictory for use in the tile of an AMC. Change title to remove the word 'mandatory' from the AMC1 ACNS.E.LAD.140 title.

Recommendation 19: AMC1 ACNS.E.LAD.140 Activation signals — ~~mandatory~~ information. If sentence is clarified ensure it does not conflict with ICAO Annex 6 part I section 6.18 which requires information from which position can be determined

response | Partially accepted

The title of an AMC cannot differ from the title of the related CS.

To avoid confusion, the title of CS ACNS.E.LAD.140 and of all related AMC and GM was changed to 'Activation signals — essential information'.

Similarly, the title of CS ACNS.E.LAD.160 and of all related AMC and GM was changed to 'Deactivation signals — essential information'.

comment | *95* comment by: *US Federal Aviation Administration*

Page 46 AMC1 ACNS.E.LAD.140 Activation signals — mandatory information ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION

Comment 20: AMC1 ACNS.E.LAD.140 Activation signals — mandatory information (b) states the activation signal should contain transmitter Lat and Long. To better align with ICAO Annex 6 Pt I Section 6.18 it should say data from which Lat and Long can be determined

Recommendation 20: Reword AMC1 ACNS.E.LAD.140 (b) as follows: The activation signals should contain information from which the latitude and longitude of the transmitter even if their accuracy is such that they are considered erroneous can be determined, (refer to AMC1 ACNS.E.LAD.630 and GM1 ACNS.E.LAD.630).

response

Partially accepted

AMC1 ACNS.E.LAD.140 was reworded for clarity and consistency with CS ACNS.E.LAD.140, because:

— CS ACNS.E.LAD.140 specifies that the activation signals contain information sufficient to determine a latitude and a longitude, and not necessarily the latitude and longitude data; and

— the references to AMC1 ACNS.E.LAD.630 and GM1 ACNS.E.LAD.630 were not relevant, as said AMC and GM addressed the case where aircraft position information is erroneous, not just inaccurate.

comment

96 comment by: *US Federal Aviation Administration*

Page 48 CS ACNS.E.LAD.170 Transmission of a homing signal

Comment 21: CS ACNS.E.LAD.170 Transmission of a homing signal (a) does not mention 406MHz. This should include a 406MHz signal. SAR has indicated they want and use 121.5 signals to home in on a crash site but a 406 MHz signal is needed to get them within line of sight so they can use 121.5 to home in on the source.

Recommendation 21: Add the following text:

In case of a survivable accident that falls within the scope of this Section, a 406 MHz and 121.5-MHz homing signal is automatically transmitted after reaching the point of end of flight. The 121.5-MHz homing signal is compatible with standard homing direction finders.

response

Partially accepted

A 406-MHz homing signal is not considered necessary to direct mobile SAR facilities near the transmitter in case of a survivable accident, as in that case, CS ACNS.E.LAD.420 requires a two-dimensional position accuracy of 200 metres (95 % probability). The 121.5-MHz homing signal that is transmitted by an ETSO-approved ELT model has such characteristics that it can be detected from farther than 10 NM by a homing direction finder when it is in line of sight.

However, this comment shows that minimum performance needs to be specified for the homing transmitter that is used to comply with CS ACNS.E.LAD.170.

Therefore, conditions applicable to the homing transmitter were introduced into AMC1 ACNS.E.LAD.170. Those conditions are based on the performance of an automatic ELT with capabilities C and H1 and of class 0 or 1 or an ELT(DT) of capabilities C and H1 and of class 0 or 1.

This has also led to changing the text of the other AMC to CS ACNS.E.LAD.170, as otherwise they would be redundant with the new text that was introduced in point (a) of AMC1 ACNS.E.LAD.170.

Therefore:

— AMC2 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 was deleted, as AMC1 ACNS.E.LAD.020 and AMC2 ACNS.E.LAD.020 cover the content of AMC2 ACNS.E.LAD.170;

— the content of point (b) of AMC3 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 was moved to AMC1 ACNS.E.LAD.170;

— AMC3 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 was deleted, as AMC3 ACNS.E.LAD.020 includes the general conditions to be met by a solution based on an ELT(DT); and

— AMC4 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 was deleted as its content is covered by the redrafted AMC1 ACNS.E.LAD.170.

Finally, this change led to identifying that the content of GM3 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 was covered by point (c) of CS ACNS.E.LAD.170. Therefore, GM3 ACNS.E.LAD.170 was deleted.

comment *97* comment by: *US Federal Aviation Administration*

Page 48 CS ACNS.E.LAD.170 Transmission of a homing signal

Comment 22: CS ACNS.E.LAD.170 Transmission of a homing signal (b) should include a 406MHz signal. SAR has indicated they want and use 121.5 signals to home in on a crash site but a 406 MHz signal is needed to get them within line of sight so they can use 121.5 to home in on the source.

Recommendation 22: Add the following text:

The flight crew can manually initiate the transmission of a 406 MHz and 121.5-MHz homing signal, at least when the aircraft is not airborne.

response Not accepted

See the response to comment No 96.

comment *98* comment by: *US Federal Aviation Administration*

Page 48 CS ACNS.E.LAD.170 Transmission of a homing signal

Comment 23: CS ACNS.E.LAD.170 Transmission of a homing signal (c) should include a 406MHz signal. SAR has indicated they want and use 121.5 signals to home in on a crash site but a 406 MHz signal is needed to get them within line of sight so they can use 121.5 to home in on the source.

Recommendation 23: Add the following text:

The flight crew can manually stop the transmission of the 406 MHz and 121.5-MHz homing signal whether this transmission was automatically or manually initiated unless the homing transmitter is detached from the aircraft.

response

Not accepted

See the response to comment No 96.

comment

99 comment by: *US Federal Aviation Administration*

Page 50 AMC4 ACNS.E.LAD.170 Transmission of a homing signal ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON HRT

Comment 24: AMC4 ACNS.E.LAD.170 Transmission of a homing signal, (b) should include H4 (406 MHz homing signal) just to make sure it is not missed. Text following calls out COSPAS-SARSAT T.001 and T.018 which are 406 systems so maybe this is repetitive but something to consider.

Recommendation 24: add additional text to AMC4 ACNS.E.LAD.170 Transmission of a homing signal (b) as follows:

The following may be installed to meet CS ACNS.E.LAD.170 and CS ACNS.E.LAD.420: an ELT(AF), (AD) or (AP) that is approved and compliant with ETSO-C126c, of class 0 or 1, capabilities H4 (406 MHz Homing capability), H1 (121.5-MHz homing signal), and G (internal/integral GNSS receiver), and of any generation (capability T.001 or T.018).

response

Not accepted

See the response to comment No 93.

comment

100 comment by: *US Federal Aviation Administration*

Page 51 GM1 ACNS.E.LAD.170 Transmission of a homing signal COMMON GUIDANCE FOR ALL SOLUTIONS

	Comment 25: GM1 ACNS.E.LAD.170 Transmission of a homing signal (b) should include 406 MHz. To remove possible confusion 406 MHz should be added. **Recommendation 25:** reword GM1 ACNS.E.LAD.170 Transmission of a homing signal (b) as follows "It is recommended that the manual activation of the system also initiates the transmission of the 406 MHz and 121.5-MHz homing signal as soon as, but not before, the aircraft reaches the point of end of flight (see CS ACNS.E.LAD.250)."
response	Not accepted See the response to comment No 93.

comment	*101* comment by: *US Federal Aviation Administration* **Page 51 GM3 ACNS.E.LAD.170 Transmission of a homing signal GUIDANCE FOR SOLUTIONS BASED ON AN ADFR** **Comment 26:** In GM3 ACNS.E.LAD.170 Transmission of a homing signal, should consider adding 406MHz to this requirement **Recommendation 26:** reword GM3 ACNS.E.LAD.170 Transmission of a homing signal, to say "If an ELT that is integrated into the deployable package of the ADFR is used to meet CS ACNS.E.LAD.170, it is acceptable that the crew cannot stop the transmission of the 406 MHz and 121.5-MHz homing signal by this ELT after that package is deployed."
response	Not accepted See the response to comment No 93.

comment	*102* comment by: *US Federal Aviation Administration* **Page 54 CS ACNS.E.LAD.230 Continued operation after losing normal electrical power** **Comment 27:** In CS ACNS.E.LAD.230 Continued operation after losing normal electrical power (a), a space should be added between words "the" and "following" **Recommendation 27:** add a space between "thefollowing" as follows: (a) If the system does not deploy equipment, it remains armed or activated throughout ~~thefollowing~~ the following:

response

Accepted

EASA thanks you for your comment.

comment

103 comment by: *US Federal Aviation Administration*

Page 55 CS ACNS.E.LAD.240 Automatic activation

Comment 28a: CS ACNS.LAD.240 does not have a requirement date. A forward fit date should be provided and follow the forward fit date of CAT.GEN.MPA.210.

Comment 28b: In CS ACNS.E.LAD.240 Automatic activation, the term automatic 'activation' is not defined. "Automatic activation occurs only when the aircraft detects that an accident or a distress situation just occurred, is occurring, or is likely to occur within minutes." In the rationale, it is noted 'activation' is defined in CS ACNS.E.LAD.010, but a definition for 'activation' is not listed. CS ACNS.E.LAD.010 does define 'activation signals' as signals transmitted by the system to accurately determine the location of the point of end of flight. Based on the definition of 'activation signals', a system meeting this requirement will not be required to work when an aircraft is in distress. Point of end of flight cannot be determined until the acft lands or crashes. As such, an aircraft that has reached the point of end of flight is not longer in distress. If the intent is to require aircraft to transmit information from which position can be determined, when in distress, rewrite this section to clarify. In the suggested recommendation I use the term automatic trigger function since it is already defined, and add a definition for distress which is taken from ICAO Annex 6 Part I Appendix 9 section 2.2

Recommendation 28: Rewrite CS ACNS.E.LAD.240 as follows:

~~Automatic activation occurs only when the aircraft detects that an accident or a distress situation just occurred, is occurring, or is likely to occur within minutes.~~ An aircraft shall be equipped with an automatic trigger function that provides information from which position, (Latitude, Longitude and Time), can be determined if a distress situation just occurred, is occurring, or is likely to occur within minutes.

(1) all aeroplanes with an MCTOM of more than 27 000 kg, with an MOPSC of more than 19 and first issued with an individual CofA on or after 1 January 2023; and

(2) all aeroplanes with an MCTOM of more than 45 500 kg and first issued with an individual CofA on or after 1 January 2023.

(3) 'automatic trigger function' is defined in CS ACNS.E.LAD.010

(4) 'distress' means an aircraft is in a condition that if left uncorrected, can result in an accident.

response	Partially accepted On sub-comment No 28a: no applicability date needs to be specified in the CSs. The amendment of a given CS that is applicable to a new certification project is specified in the certification basis. On sub-comment No 28b: 'activation of the system' is defined in CS ACNS.E.LAD.010: '— "activation of the system" is the transition of the system from another state to the activated state; and — "the system is activated" means that the system is transmitting activation signals.' In addition, a definition of 'automatic activation' was introduced in CS ACNS.E.LAD.010; refer to the response to comment No 61. Further, CS ACNS.E.LAD.240 was amended to specify that automatic activation relies only on detecting accidents during which the aircraft is severely damaged. This is because the automatic detection of a distress situation seems very challenging given the definition of a distress situation that was introduced in CS ACNS.E.LAD.010. The flight crew can manually activate the system in a distress situation. Moreover, the following corrections were made for clarification: — in CS ACNS.E.LAD.110: refer to the response to comment No 47; — in CS ACNS.E.LAD.130: refer to the response to comment No 52; — In CS ACNS.E.LAD.150, CS ACNS.E.LAD.240, CS ACNS.E.LAD.320, and CS ACNS.E.LAD.340: 'activation' was replaced by 'activation of the system'; and — in CS ACNS.E.LAD.310: refer to the response to comment No 213.

comment	*104* comment by: *US Federal Aviation Administration* **Page 62 AMC1 ACNS.E.LAD.310 Environmental conditions encountered during accidents ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION** **Comment 29:** AMC1 ACNS.E.LAD.310 (d) should also mention 406 MHz **Recommendation 29:** Rewrite AMC1 ACNS.E.LAD.310 as follows: The homing signal transmitter should successfully transmit the 406 MHz and 121.5-MHz homing signal when subjected to the environmental tests applicable to an ELT(AF) in Table 4-1 and Table 4-2 of EUROCAE ED-62B
response	Not accepted

	See the response to comment No 93.

comment	*105* comment by: *US Federal Aviation Administration* **Page 75 CS ACNS.E.LAD.360 Priority of activation over concurrent applications** **Comment 30:** CS ACNS.E.LAD.360,This requirement seems vague. Suggest clarifying. **Recommendation 30:** Clarify CS ACNS.E.LAD.360 as follows: The use of shared airborne resources from other systems, sensors or devices does not adversely affect the performance of the Location of downed aircraft or distress system, or the system, sensor or devices sharing the resources.
response	Partially accepted CS ACNS.E.LAD.360 was reworded to include the use of transmission means and its title was harmonised with its content. In addition, explanations of the terms 'shared airborne resource' and 'communication means' were introduced into GM1 ACNS.E.LAD.360.

comment	*106* comment by: *US Federal Aviation Administration* **Page 76 CS ACNS.E.LAD.410 Location accuracy for non-survivable accidents** **Comment 31:** CS ACNS.E.LAD.410 does not provide a definition of what a non-survivable accident is. I quantitative definition of survivable and non-survivable must be provided to ensure system designers can build systems that meet measurable standards. Given that ELTs have a defined set of criteria they must meet to be 'crash survivable", it is safe to say any condition exceeding these requirements would not be crash survivable while those that meet this criteria are crash survivable. It is recommend to add the definition of a non-survivable accident that aligns with ED-62B and provide previously agreed to definition. **Recommendation 31:** Add a definition to CS ACNS.E.LAD.410 or CS ACNS.E.LAD.010 Definitions as follows: — 'non-crash survivable' means a condition that exceeds the test specifications of Group A and B found in EUROCAE ED-62B, Chapter 4.
response	Partially accepted 'Survivable accident' is defined in CS ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03.

However, to ensure the harmonised implementation of CS-ACNS:

— the definition of 'survivable accident' in CS ACNS.E.LAD.010 was modified using the content of point (a) of GM1 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03; this GM contains a criterion for determining whether an accident is survivable; and

— point (a) of GM1 ACNS.E.LAD.010 was modified to explain why the definition of 'survivable accident' refers to ED-62B.

In addition, the explanation of 'accident during which the aircraft is severely damaged' in GM1 ACNS.E.LAD.001 in Section 3.3.2 of NPA 2020-03 was changed to a definition and moved to CS ACNS.E.LAD.010.

comment | *107* comment by: *US Federal Aviation Administration*

Page 76 CS ACNS.E.LAD.410 Location accuracy for non-survivable accidents

Comment 32: a reference should be added to inform the reader to follow Appendix A — Test trajectory to verify compliance with CA ACNS.E.LAD.410

Recommendation 32: Add a reference to CS.ACNS.E.LAD.410 as follows: The performance of the system ensures that based on the data that is received on the ground, the point of end of flight is located with a two-dimensional location accuracy greater than or equal to 6 nautical miles (95 % probability), within 20 minutes of the time of reaching the point of end of flight when the accident is not survivable. Appendix A - Test Trajectory defines a test that must be performed to verify the system under test will comply with CAT.GEN.MPA.210

response | Partially accepted

The example trajectory provided in 'Appendix A — Example flight trajectory' was designed for verifying the successful transmission and the location accuracy only for a system transmitting activation signals in flight (before deploying the equipment or without deploying the equipment). Therefore, that example trajectory is not relevant for a solution based on an ADFR or other deployable equipment.

In addition, the position accuracy of the point of end of flight cannot be shown by only considering the airborne system, but also the assumptions about the communication infrastructure, which must be provided as per CS ACNS.E.LAD.320.

Therefore:

— the first paragraph of Appendix A was reworded to clarify this for the reader: please refer to the response to comment No 73; and

	— GM1 ACNS.E.LAD.410 was introduced, which refers to Appendix A for a system transmitting activation signals in flight.

comment	*108* comment by: *US Federal Aviation Administration* **Page 77 CS ACNS.E.LAD.420 Location accuracy for survivable accidents** **Comment 33:** CS ACNS.E.LAD.420 Location accuracy for survivable accidents, does not provide a definition of what a survivable accident is. I quantitative definition of survivable and non-survivable must be provided to ensure system designers can build systems that meet measurable standards. Given that ELTs have a defined set of criteria they must meet to be 'crash survivable", it is safe to say any condition exceeding these requirements would not be crash survivable while those that meet this criteria are crash survivable. It is recommend to change the definition of a 'survivable accident' to align with ED-62B and provide previously agreed to definition. **Recommendation 33:** Change the definition of survivable accident — 'survivable accident' is an accident where the device under test meets the test specifications of Group A and B found in ED-62B, Chapter 4 ~~some crew members or passengers may survive~~;
response	Partially accepted See the response to comment No 106.

comment	*109* comment by: *US Federal Aviation Administration* **Page 83 GM1 ACNS.E.LAD.630 Integrity of information of the activation signals COMMON GUIDANCE FOR ALL SOLUTIONS** **Comment 34:** GM1 ACNS.E.LAD.630 Integrity of information of the activation signals, should be written to describe the quality of position information provided during a distress condition. If this is the case, this section should be clarified to describe the quality of the position information needed in situations where the aircraft is likely to 'survive' and not survive. It is recommended a quantitative test be described that will satisfy the case for a survivable accident. It is recommended that the requirement for non-survivable accidents be dropped since a system or device cannot be built that will function after every type of non-survivable accident.

Recommendation 34: Rephrase GM1 ACNS.E.LAD.630 as follows: ~~An erroneous position of the point of end of flight is any position from which the horizontal distance to the actual position of the point of end of flight is greater than~~ When in a distress condition the position error prior to an accident should not exceed:

(a) 660 m, for a survivable accident; and

(b) 20 NM, for an non-survivable accident.

response

Partially accepted

CS ACNS.E.LAD.630 in Section 3.3.2 of NPA 2020-03 was not about the 'quality of the position information', but about designing the system in a way that errors in the aircraft position information or in the aircraft identification are infrequent (minor failure condition). GM1 ACNS.E.LAD.630 was deleted, as it was not easily understandable and is not essential for implementing CS ACNS.E.LAD.630.

Note: 'CS ACNS.E.LAD.630' was changed to 'AMC1 ACNS.E.LAD.620'.

comment

111 comment by: *Airbus-Regulations-SRg*

CS ACNS.E.LAD.280 - Indications to the flight crew, sub-para (b) / Page 59

Airbus comment:

The operational benefit of such a performance status indication is unclear, in particular when taking into account

the provided rationale for CS ACNS.E.LAD.280 (b) in the NPA:

- If the indication is intended as a status indication during preflight/postflight check scenario to verify the proper function

of the system a dedicated indication is considered as too prescriptive. In this case the rule should require a means for

checking of the LAD system for proper operation in general.

- During normal flight operation the indication of a degraded LAD system performance would not have any added value

for the flight crew to operate the flight.

- During and after a distress situation leading to the activation of the distress and/or homing signal the primary target of the

flight crew will be land the aircraft as safely as possible. If they are in the position to perform voice or data communication

	they will do it in accordance with the already defined procedures, independent of the LAD system status. Also in this scenario such indication would have no added value for the flight crew. Also the term "failure that affects its performance" needs to be clarified as there is a potential variety of failures degrading the overall performance of the LAD system without any operational impact. Airbus request: The purpose of the proposed indication for flight crew in case of system failures leading to degraded system performance is unclear. The purpose and also the expected functionality should be clarified in a dedicated GM.
response	Accepted See the response to comment No 16.

comment	*117* comment by: *MCA* GM1 ACNS.E.LAD.001 Distress tracking ELT (ELT(DT). ...the 406-MHz signals are transmitted to the ground, and then processed into ELT messages that are delivered to the nearest MCC and then competent SAR centre. If the accident is survivable, a crash-survivable ELT (an ELT(DT) or an automatic ELT) transmits the 406-MHz signals and a 121.5-MHz homing signal after the impact. Comment: ELT(DTs) will transmit whislt the aircraft is still in flight and these and ELTs can be activated by the crew, prior to crash. High-rate tracking (HRT). ... signals is transmitted to the Aircraft Operator. Comment: HRT doesn't go to SAR. A 121.5 MHz homing signal is also transmitted after a survivable accident to support. Comment: Signals are transmitted when the beacon is activated, not only after an accident, for ELT(AF).
response	First sub-comment on the information transmission to the MCC: not accepted It is unnecessary to detail all the steps of the information transmission from the ELT to the RCC or SPOC in GM1 ACNS.E.LAD.001. The scope of Section 3 of Subpart E of CS-ACNS is only about the installation of equipment and systems that are intended

to help locate an aircraft in distress; it does not encompass the processing of data outside the aircraft.

Second sub-comment (on the homing and manual-activation capabilities of an ELT(DT)): partially accepted

With regard to the homing capability, refer to ED-62B (Change 1), Section 2.9.5.1:

'If fitted with a homing capability, the homing signal shall be transmitted following the ELT activation and detection of a post-crash condition. Acceptable means for detection of a post-crash condition are for example: (…). If the ELT(DT) is automatically activated, homing signals shall not be transmitted while the aircraft is still in flight.'

With regard to the manual activation by the flight crew: a sentence was introduced into GM1 ACNS.E.LAD.001 to clarify that the ELT(DT) can also be manually activated by the flight crew.

Third sub-comment (on HRT): not accepted

Regarding transmission to the operator, see the response to comment No 170.

Regarding the homing capability of an ELT(AF): an ELT(AF) may transmit a homing signal in flight. However, GM1 ACNS.E.LAD.001 does not describe detailed solutions; it only presents three types of solutions for which AMC and GM are provided. In addition, Section 3 of Subpart E of CS-ACNS does not require that a solution based on HRT include an ELT(AF).

comment

118 comment by: *MCA*

CS ACNS.E.LAD.130

(a) Upon deactivation, the system automatically transmits ~~deactivation~~ a cancellation message ~~signals.~~

response

Partially accepted

A definition of 'deactivation signals' was introduced into CS ACNS.E.LAD.010; see the response to comment No 14.

comment

119 comment by: *MCA*

CS ACNS.E.LAD.170

	(a) This can be transmitted before end of flight, if the ELT is activated. (b) The flight crew can activate whilst airborne too. Can only activate the ELT, not the homing signal. Comment: When ELTs are activated, both 406 and 121.5 MHz are transmitted. ELT(DT) will be just the 406 signal, when in flight. (c) N/A for ELT(DTs).
response	First sub-comment on point (a) of CS ACNS.E.LAD.170: not accepted Point (a) does not forbid the transmission of a 121.5-MHz homing signal before reaching the point of end of flight. Second sub-comment on point (b) of CS ACNS.E.LAD.170: not accepted CS ACNS.E.LAD.170 does not forbid designs whereby manually starting the 406-MHz signal transmission activates the 121.5-MHz homing signal. An ELT(AF) or ELT(AP) may be used to meet point (b) of CS ACNS.E.LAD.170. Third sub-comment on point (c): not accepted ED-62B specifies that an ELT(DT) can be manually activated and deactivated by the flight crew. Please see the response to comment No 120.

comment	*120* comment by: *MCA* CS ACNS.E.LAD.320 (iv) This is not the case for ELT(DT)
response	Not accepted It is assumed that this comment pertains to paragraph (b)(2)(iv) of CS ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03: ‘(iv) the installation allows the flight crew to manually transmit activation signals and deactivation signals without deployment;’ EUROCAE Document ED-62B (Change 1), Section 2.9.5.1 specifies the following: ‘Whatever its arming state, the ELT(DT) shall activate, except in OFF mode, when manually triggered by the crew.’ In addition, Section 3.1.2 of the same document specifies the following: ‘The remote controls of an ELT shall enable selection of at least the following functions: — MANUAL ON: Activate the ELT manually

— ARMED: ELT unit enabled such that activation will occur in response to an activation input (for example, crash sensor, water switch, triggering logic or a remote manual activation) (may not apply to ELT(DT)).

— RESET: ELT unit deactivated and return to "ARMED". The control must have a provision to prevent inadvertent reset. In the case of ELT(DT), this function shall only reset the manual activations and automatic activations due to the crash sensor, when installed, but not the activations resulting from automatic distress tracking logic, including those related to the loss of an external triggering logics as defined in § 2.9.5.2.1 e). Performing a reset shall automatically initiate a cancellation sequence on C/S T.001 ELT(DT)s and C/S T.018 ELTs.

— […]'

The 'MANUAL ON' function of the remote controls of an ELT(DT) allows the flight crew to manually trigger the transmission of activation signals.

The 'RESET' function allows the flight crew to manually stop the transmission of activation signals and to transmit deactivation signals (designated by 'cancellation sequence' in ED-62B, Section 3.1.2).

ETSO-C126c 'Emergency Locator Transmitter' refers to ED-62B without differentiating between the manual activation and the manual deactivation of the ELT(DT).

However, paragraph (b)(2)(iv) of CS ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03 was deleted, as its content is covered by CS ACNS.E.LAD.250.

comment

121 comment by: *MCA*

AMC3 ACNS.E.LAD.320

(d & e)...transmission of the activation signals ~~are likely to~~ will be successful when the aircraft is in flight.

response

Partially accepted

Point (d) of AMC3 ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03 is related to position determination and transmission of activation signals during a normal flight. Point (e) of that AMC is related to position determination and transmission of activation signals with the values of the aircraft attitude angles and of the aircraft speed significantly exceeding the values encountered during normal operation (aircraft upset or loss of control in flight or air speed close to design diving speed).

While position determination and transmission of activation signals during a normal flight should be achieved for all normal aircraft speeds and attitude angles, this cannot be achieved with some extreme values of aircraft attitude and speed.

Therefore, AMC3 ACNS.E.LAD.320 was reworded accordingly.

comment | *123* comment by: *Airbus-Regulations-SRg*

CS ACNS.E.LAD.280 (a) Indications to the flight crew / Page 59

Airbus comment:

The operational benefit of such a performance status indication is unclear as written in the NPA.

Rationale:

ADT will be developed according to given availability- and nuisance rates. It is intended to reduce

flight crew workload by sending A/C position data autonomously (without flight crew involvement)

in case of A/C in distress.

The required indication and especially the rational implies the expectation that flight crew monitors

the system for cases of activation (potential nuisance) and non-activation (A/C in distress).

This additional monitoring by flight crew question the installation of a system intended to operate

autonomously with the aim of reducing flight crew workload.

In case of an incapacitated or "uncooperative" flight crew, a cockpit indication will have no effect.

response | Not accepted

Regarding 'nuisance rate': AMC1 ACNS.E.LAD.620 specifies that erroneous automatic activation should be considered a major failure condition, which means that erroneous automatic activation should be a seldom event (maximum 1E-5/flight hour) and, therefore, it will probably not cause a significant increase in the flight crew workload.

comment	*124* comment by: *Airbus-Regulations-SRg* AMC2 ACNS.E.LAD.280 Indications to the flight crew ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ADFR Page 60 Airbus proposes to modify the wording to read as follows: “The system should provide distinct indications when the ELT integrated into the deployable package of the ADFR is activated without deployment and or when this package is deployed" Rationale: To improve the wording to avoid misinterpretations.
response	Partially accepted This comment shows that the text of AMC2 ACNS.E.LAD.280 in Section 3.3.2 of NPA 2020-03 was unclear. As explained in the rationale of that AMC in NPA 2020-03, the deployable package could cause damage to other aircraft, an aerodrome approach aid, or aerodrome lights, when deployed on or above a runway or taxiways. Therefore, the flight crew should know whether only the ELT was activated or also the deployable package was deployed. In addition, as the purpose of AMC2 ACNS.E.LAD.280 was to limit the risk to third parties, it was deleted and its content moved to CS ACNS.E.LAD.650.

comment	*137* comment by: *FNAM* CS ACNS.E.LAD.001; GM1 ACNS.E.LAD.001: "This AMC and associated GM present the field of applicability and the standards to be respected in order to locate an airplane in distress, as well as the end of flight point in the event of an accident (crash). Position: FNAM assesses this point with a positive impact since it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	*138* comment by: *FNAM* CS ACNS.E.LAD.010; GM1 ACNS.E.LAD.010; GM2.ACNS.E.LAD.010; GM3 ACNS.E.LAD.010; GM4 ACNS.E.LAD.010: "This point and associated AMC / GM provide definitions on several terms used in section 3. Position: The FNAM assesses this point with a neutral impact since it assists in the application of the regulations. "
response	Noted EASA thanks you for your comment.

comment	*139* comment by: *FNAM* CS ACNS.E.LAD.110; AMC1 ACNS.E.LAD.110; AMC2 ACNS.E.LAD.110; AMC3 ACNS.E.LAD.110; GM1 ACNS.E.LAD.110: "This point and associated AMC / GM provide details on the transmission of activation signals to locate the end of flight point. Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	*140* comment by: *FNAM* CS ACNS.E.LAD.120; GM1 ACNS.E.LAD.120: "This point gives details of the data transmission when the system is activated. Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	_141_ comment by: _FNAM_ CS ACNS.E.LAD.140; AMC1 ACNS.E.LAD.140; GM1 ACNS.E.LAD.140; GM2 ACNS.E.LAD.140: "This point and associated AMC / GM provide criteria on the mandatory information that must be contained in the activation signal messages when an aircraft is in distress (latitude, longitude, transmission time, aircraft registration and the type of equipment that transmitted this signal). Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	_142_ comment by: _FNAM_ CS ACNS.E.LAD.150: "This point provides additional criteria on the mandatory information that the location messages of an aircraft in distress must contain. Position:FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. " CS ACNS.E.LAD.160: "This point provides criteria on the mandatory information that must be contained in deactivation signal messages when an aircraft is in distress. Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	_143_ comment by: _FNAM_

	CS ACNS.E.LAD.170; AMC1 ACNS.E.LAD.170; AMC2 ACNS.E.LAD.170; AMC3 ACNS.E.LAD.170; ACM4.ACNS.E.LAD.170; GM1 ACNS.E.LAD.170; GM2 ACNS.E.LAD.170; GM3 ACNS.E.LAD.170: "This point and associated AMC / GM provide criteria for the 121.5MHz signal in the event that the accident involves survivors. Position: FNAM assesses this point with a positive impact as it facilitates the location of the end-of-flight point in the event that there are survivors. "
response	Noted EASA thanks you for your comment.

comment	*144* comment by: *FNAM* CS ACNS.E.LAD.230; AMC1 ACNS.E.LAD.230; AMC2 ACNS.E.LAD.230; GM1 ACNS.E.LAD.230: "This point and associated AMC / GM provide regulatory criteria for the location system in the event that the aircraft loses its electricity supply. Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	*145* comment by: *FNAM* CS ACNS.E.LAD.240; AMC1 ACNS.E.LAD.240; GM1 ACNS.E.LAD.240: "This point and the associated AMC / GM provide criteria for the automatic activation of the aircraft location system (s). Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	*146* comment by: *FNAM* CS ACNS.E.LAD.250; AMC1 ACNS.E.LAD.250; AMC2 ACNS.E.LAD.250; GM1 ACNS.E.LAD.250: "This point and the associated AMC / GM provide regulatory criteria on the possibility of the system to be triggered automatically. Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	*147* comment by: *FNAM* CS ACNS.E.LAD.260; GM1 ACNS.E.LAD.260; GM2 ACNS.E.LAD.260: "This point and the associated GM give the criteria for automatic deactivation of the signal making it possible to locate a device in distress in the event that the airplane has returned to a" normal "flight state. Position: FNAM assesses this point with a positive impact as it makes it possible to identify a return to a normal situation. "
response	Noted EASA thanks you for your comment.

comment	*148* comment by: *FNAM* CS ACNS.E.LAD.270: "This point gives the criteria for manual deactivation of the signal making it possible to locate a device in distress in the event that the airplane has returned to a" "normal" "flight state. Position:FNAM assesses this point with a positive impact as it makes it possible to identify a return to a normal situation. "
response	Noted

EASA thanks you for your comment.

comment 149 comment by: FNAM

CS ACNS.E.LAD.280; AMC1 ACNS.E.LAD.280; AMC2 ACNS.E.LAD.280:

"This point and the associated AMCs indicate regulatory criteria to let the crew know that the equipment is activated.

Position: FNAM assesses this point with a positive impact as it facilitates the understanding of the system for crews."

response Noted

EASA thanks you for your comment.

comment 150 comment by: FNAM

CS ACNS.E.LAD.290; AMC1 ACNS.E.LAD.290; AMC2 ACNS.E.LAD.290; AMC3 ACNS.E.LAD.290:

"This point and the associated AMC indicate that operators must set up a system for monitoring the anomalous activation of equipment allowing the location of an aircraft in distress.

Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress."

response Noted

EASA thanks you for your comment.

comment 151 comment by: FNAM

CS ACNS.E.LAD.310; AMC1 ACNS.E.LAD.310; AMC2 ACNS.E.LAD.310; AMC3 ACNS.E.LAD.310; GM1 ACNS.E.LAD.310; GM2 ACNS.E.LAD.310; GM3 ACNS.E.LAD.310:

"This point and the associated AMCs / GMs indicate that the location system of an aircraft must be able to withstand all weather conditions.

	Position: FNAM assesses this point with a positive impact as it gives indications on the robustness of the localization system of an aircraft in distress."
response	Noted EASA thanks you for your comment.

comment	*152* comment by: *FNAM* CS ACNS.E.LAD.340; AMC1 ACNS.E.LAD.340; CS ACNS.E.LAD.350; AMC1 ACNS.E.LAD.350: "This point and the associated AMC / GM indicate that the data transmission must be satisfactory whatever the last flight point of the aircraft (sea or land). Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	*153* comment by: *FNAM* CS ACNS.E.LAD.360; GM1 ACNS.E.LAD.360: "This point and the associated GM request that the aircraft location system have priority over all other means of communication when it is activated. Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "
response	Noted EASA thanks you for your comment.

comment	*154* comment by: *FNAM* CS ACNS.E.LAD.410; AMC1 ACNS.E.LAD.410; AMC2 ACNS.E.LAD.410:

"This point and the associated AMCs give criteria of precision in order to locate an aircraft with or without survivors (circle of 6nm in diameter at most / 20 min before impact).

Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "

response

Noted

EASA thanks you for your comment.

comment

155 comment by: *FNAM*

CS ACNS.E.LAD.420; AMC1 ACNS.E.LAD.420; AMC2 ACNS.E.LAD.420; AMC3 ACNS.E.LAD.420; GM1 ACNS.E.LAD.420; GM2 ACNS.E.LAD.420; GM3 ACNS.E.LAD.420:

"This point and the associated AMC / GM provide precision criteria in the case of accidents with survivors: two-dimensional location greater than or equal to 200 meters (probability of 95%) within 20 minutes of the point at which the end point flight is reached, when the accident is likely to survive.

Position: FNAM assesses this point with a positive impact as it facilitates the location of the aircraft in distress. "

response

Noted

EASA thanks you for your comment.

comment

156 comment by: *FNAM*

CS ACNS.E.LAD.520; GM1 ACNS.E.LAD.520:

"This point and the associated GM give indications for the protection of the transmission signals of an airplane in distress.

Position: FNAM assesses this point with a positive impact as it facilitates the reliability of the localization system."

response

Noted

EASA thanks you for your comment.

comment	*157* comment by: *FNAM* CS ACNS.E.LAD.610; GM1 ACNS.E.LAD.610: "This point and the associated GM indicate that equipment reliability studies must have been carried out to ensure ideal operation for each flight. Position: FNAM assesses this point with a positive impact as it facilitates the reliability of the localization system."
response	Noted EASA thanks you for your comment.

comment	*158* comment by: *FNAM* CS ACNS.E.LAD.620; GM1 ACNS.E.LAD.620; GM2 ACNS.E.LAD.620: "This point and the associated GMs indicate that studies on the improper activation of equipment must have been carried out. Position: FNAM assesses this point with a positive impact as it facilitates the reliability of the localization system."
response	Noted EASA thanks you for your comment.

comment	*159* comment by: *FNAM* CS ACNS.E.LAD.630; AMC1 ACNS.E.LAD.630; GM1 ACNS.E.LAD.630: "This point and the associated AMC / GM indicate that studies of the integrity of the information transmitted by the equipment must have been carried out to guarantee safe operation. Position: FNAM assesses this point with a positive impact as it facilitates the reliability of the localization system."
response	Noted

EASA thanks you for your comment.

comment | *160* | comment by: *FNAM*

CS ACNS.E.LAD.650; AMC1 ACNS.E.LAD.650; GM1 ACNS.E.LAD.650:

"This point and the associated AMC / GM indicate that third parties must be taken into account in the event of improper activation of the system in order to limit the potential risk of accidents / incidents.

Position: FNAM assesses this point with a positive impact as it facilitates the reliability of the localization system."

response | Noted

EASA thanks you for your comment.

comment | *178* | comment by: *ICAO*

SECTION 3 — LOCATION OF AN AIRCRAFT IN DISTRESS AND EMERGENCY LOCATION

General

CS ACNS.E.LAD.001 Applicability and scope

...

Aircraft within the scope of this Section are large aeroplanes with a maximum certified take-off mass (MCTOM) of more than 27 000 kg and a maximum passenger seating configuration of more than 19.

Comment:

This is not compliant with the Standards in Annex 6 Part I which specify a MCTOM of 27000 kg but have no requirement for a specific number of seats. Aircraft with less than 19 seats are still required to have the means to enable location of an aircraft in distress.

response | Not accepted

The new Section 3 of Subpart E of CS-ACNS provides standards for the installation of equipment and systems that are intended to support the implementation of the requirements of the Air OPS Regulation, especially point CAT.GEN.MPA.210 thereof, which has other applicability criteria than ICAO Annex 6, Part I, Section 6.18.

	Note: The sentence quoted in this comment was changed: see also the response to comment No 3.

comment	*179* comment by: *ICAO* GM1 ACNS.E.LAD.001 Applicability and scope COMMON GUIDANCE FOR ALL SOLUTIONS The objective of CAT.GEN.MPA.210 is to increase the likelihood that an accident site is quickly and accurately located, wherever the accident occurs and irrespective of the accident survivability. The scope of CAT.GEN.MPA.210 includes only accidents and distress situations, therefore unlawful interference is not addressed in this Section. **<u>Comment:</u>** There is a reference here to *distress situations*. These are not defined in the NPA and all material relates only to determining the location of an aircraft after an accident.
response	Partially accepted The scope of point CAT.GEN.MPA.210 includes distress situations, because the means compliant with point CAT.GEN.MPA.210 may replace an automatic ELT according to point CAT.IDE.A.280. See the response to comment No 88. The CSs, AMC and GM adopted with ED Decision 2021/008/R cover other aspects than just determining the location of an aircraft after an accident. For instance, point (c) of AMC1 CAT.GEN.MPA.210 and CS ACNS.E.LAD.250 address the manual activation of the airborne system by the flight crew, allowing the flight crew to activate the system when a SAR response is needed or anticipated. See also point (d) of AMC1 CAT.GEN.MPA.210 regarding the operator procedures. A definition of ‘distress situation’ was introduced in CS ACNS.E.LAD.010; see also the response to comment No 89.

comment	*180* comment by: *ICAO* GM1 ACNS.E.LAD.001 Applicability and scope COMMON GUIDANCE FOR ALL SOLUTIONS ... — Automatic deployable flight recorder (ADFR)

Comment:

The solutions listed include ADFR, which would not be able to determine the location of an aircraft in distress, only the location of the accident site. If the ELT fitted in the ADFR is of the ELT (DT) type it would be able to provide information if the aeroplane enters a distress condition. An aircraft fitted with a standard ADFR would not be compliant with the requirements of Annex 6, Part I, 6.18.

response

Not accepted

Regarding the scope of NPA 2020-03, see the response to comment No 162.

In addition, the ADFR-based solution meets the purpose of ICAO Annex 6, Part I, Section 6.18 'Location of an aeroplane in distress', which is stated in ICAO Annex 6, Part I, Appendix 9: 'Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.'

comment

181 comment by: *ICAO*

GM1 ACNS.E.LAD.001 Applicability and scope

COMMON GUIDANCE FOR ALL SOLUTIONS

...

— High-rate tracking (HRT)

Comment:

An aircraft which was equipped with a high rate tracking system *only* would not be compliant with the Standards of Annex 6 Part I since there is a requirement to notify the operator that an aircraft is in a distress condition.

response

Partially accepted

The three solutions that are specifically addressed in CS-ACNS (ADFR, ELT(DT), and HRT) describe the information path as it is now and not as it might be in the future.

In addition, aspects related to the distribution of data are outside the scope of Section 3 of Subpart E of CS-ACNS and, therefore, not to be mentioned in GM1 ACNS.E.LAD.001 or in Section 3 in general.

Therefore:

— the explanations regarding the information path were deleted from GM1 ACNS.E.LAD.001, and a sentence was introduced to clarify that the approval of the transmission service is outside the scope of Section 3 of Subpart E of CS-ACNS;

— the definitions of 'competent SAR centre' and 'relevant ATS unit' were deleted from CS ACNS.E.LAD.010;

— GM1 ACNS.E.LAD.120 in Section 3.3.2 of NPA 2020-03 was deleted (refer to the response to comment No 51), as it contained a reference to 'ATS unit'; and

— GM4 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 was deleted (see the response to comment No 45). This GM contained a reference to 'SAR centre'.

comment | *182* | comment by: *ICAO*

GM2 ACNS.E.LAD.010 Definitions

GUIDANCE FOR SOLUTIONS BASED ON AN ADFR

The solution based on an ADFR could be an ADFR, or an ADFR combined with a stand-alone non-deployable automatic ELT (ELT(AF) or ELT(AP)), depending on the ADFR capabilities. The recording function of the ADFR is not necessary to comply with CAT.GEN.MPA.210.

Comment:

An ADFR, even if combined with an ELT(AF) or ELT(AP) would not be compliant with the Standards of Annex 6 Part I, section 6.18. If the ELT is of the ELT (DT) type it would comply.

response | Noted

See the response to comment No 180.

comment | *183* | comment by: *ICAO*

GM4 ACNS.E.LAD.010 Definitions

GUIDANCE FOR SOLUTIONS BASED ON HRT

...

(d) In the solution based on HRT, an airborne system could continuously transmit the aircraft position throughout the flight. However, only information contained in activation and deactivation signals is expected to be received by the competent SAR centre (refer to CS ACNS.E.LAD.240).

Comment:

	If a solution based on HRT were transmitting continuously, it is not clear what activation and deactivation signals this is referring to.
response	Noted GM4 ACNS.E.LAD.010 of Section 3.3.2 of NPA 2020-03 was deleted; see the response to comment No 45.

comment	*184* comment by: *ICAO* GM2 ACNS.E.LAD.140 Activation signals — mandatory information GUIDANCE FOR SOLUTIONS BASED ON AN ELT(DT) It is advisable that the ELT(DT) encodes the latitude and longitude based on an approved aircraft position source (when available), rather than on the internal GNSS receiver as the latter is often less reliable and less accurate. **Comment:** The requirement in Annex 6 Part I is for the system to autonomously transmit information from which the position of the aircraft can be determined. Reliance on the position source from the aircraft would mean that this is not truly autonomous - there should be an internal source for use when the aircraft position information is not available.
response	Partially accepted See the response to comment No 241.

comment	*185* comment by: *ICAO* CS ACNS.E.LAD.160 Deactivation signals — mandatory information The deactivation signals are sufficient to determine: — that the system was deactivated; — the individual aircraft from which the deactivation signals are sent; and — the type of airborne equipment that transmitted the signals. **Comment:** No specific requirement for deactivation signals is included in Annex 6 Part I, this is an additional requirement. It should be noted that aircraft may be compliant with the requirements of the Annex without carrying equipment which meets this mandatory element.

response

Noted

The transmission of deactivation signals was identified as a necessary capability in the common performance objectives (CPOs) applicable to all solutions compliant with point CAT.GEN.MPA.210; please refer to Appendix 3 of NPA 2020-03.

See also the rationale of CS ACNS.E.LAD.130:

'Specific signals must be sent to indicate deactivation of the system as authorities should be able to distinguish between interruptions of the transmission of activation signals possibly caused by the accident and those due to a recovery to normal conditions (see the proposed CS ACNS.E.LAD.260 on deactivation conditions). […]'

It should also be noted that ED-62B Section 3.1.2 specifies that the remote controls of an ELT should include a 'RESET' function allowing the flight crew to manually stop the transmission of activation signals and to transmit deactivation signals (designated by 'cancellation sequence' in ED-62B Section 3.1.2).

It is recognised that the competent authorities may not rely only on deactivation signals to determine the end of a distress situation. However, deactivation signals are an important input for them to assess the situation.

comment

_186_ comment by: _ICAO_

CS ACNS.E.LAD.170 Transmission of a homing signal

(a) In case of a survivable accident that falls within the scope of this Section, a 121.5-MHz homing signal is automatically transmitted after reaching the point of end of flight. The 121.5-MHz homing signal is compatible with standard homing direction finders.

Comment:

The regulation for location of an aircraft in distress (CAT.GEN.MPA.210) is presented as performance-based regulation, yet this requirement is technology specific. This should be drafted as 'a means to accurately guide SAR personnel to the crash site', which would allow for alternative methods to be used while still permitting homing signals where needed.

response

Not accepted

Point CAT.GEN.MPA.210 is performance based, as it does not prescribe any particular solution or technology. However, this does not prevent the AMC to that point from containing prescriptive conditions when they are considered necessary. Any EU-based operator may submit alternative means of compliance (AltMoC) to point

CAT.GEN.MPA.210, which may be accepted if they provide an equivalent level of compliance with point CAT.GEN.MPA.210.

As explained in Section 2.2 of NPA 2020-03, the main specific objective of the NPA is to ensure that industry implements solutions to comply with point CAT.GEN.MPA.210 so that:

'wherever an accident that requires SAR operations occurs to an aeroplane within the scope of CAT.GEN.MPA.210, these SAR operations are accurately and quickly directed to the accident site;' and

'the introduction of a solution has no adverse impact on the workload of RCCs/SPOC and air traffic service (ATS) units and this solution is compatible with their current legal responsibilities;'

The 121.5-MHz homing signal capability is considered essential by SAR authorities for searching the wreckage in reduced-visibility conditions, and all mobile SAR facilities worldwide are equipped with a standard homing direction finder, which is an easy-to-use and useful tool in SAR operations. As point CAT.IDE.A.280 allows the replacement of an automatic ELT by means compliant with point CAT.GEN.MPA.210, such means, similar to an automatic ELT, must be able to transmit a 121.5-MHz homing signal after a survivable accident.

comment *187* comment by: *ICAO*

CS ACNS.E.LAD.240 Automatic activation

Automatic activation occurs only when the aircraft detects that an accident or a distress situation just occurred, is occurring, or is likely to occur within minutes.

Comment:

Distress situation is not defined for this document and it's use is inconsistent with ICAO terminology.

response Partially accepted

The definition of 'distress situation' was introduced in CS ACNS.E.LAD.010 and is consistent with the definition of 'distress phase' in ICAO Annex 11.

See the response to comment No 89.

comment *188* comment by: *ICAO*

	AMC1 ACNS.E.LAD.240 Automatic activation ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO SOLUTIONS BASED ON AN ELT(DT) AND TO SOLUTIONS BASED ON HRT The criteria used by the automatic triggering function should comply with EUROCAE ED-237, except that this function should not be inhibited when the aircraft is airborne unless the aircraft is equipped with an ELT(AF), (AD) or (AP). When the accident database of EUROCAE ED-237 does not cover all possible scenarios, additional accidents should be included to verify the event detection rate. **Comment:** Since ED-237 is referenced, it would be advisable to add to the definitions and explanation of terms what a *distress condition* or *distress situation* is. Also, while this information applies to ELT(DT) and HRT solutions, no mention is made of ADFR. An ADFR solution that did not include activation of a tracking system when the aircraft was in a distress condition would not be compliant with Annex 6 Part I, 6.18, however if the ADFR is fitted with an ELT (DT) it would be satisfy the distress aspect.
response	Partially accepted The definition of 'distress situation' was introduced in CS ACNS.E.LAD.010. See the response to comment No 89. 'Distress condition' is a term used in ICAO Annex 6, Part I and in ED-237, but it is specific to solutions that rely on in-flight position transmission, such as the solutions based on an ELT(DT) or on HRT. The term 'distress condition' appeared only in AMC3 ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03, and it was deleted. See also the response to comment No 89. With regard to the ADFR-based solution, see the response to comment No 180.

comment	*189*	comment by: *ICAO*
	CS ACNS.E.LAD.280 Indications to the flight crew (a) The system provides timely indication to the flight crew that it is activated or transmitting the homing signal. **Comment:** Systems installed in aircraft which do not have this functionality would still meet the requirement of Annex 6 Part I, 6.18 since no specific provisions on flight crew indications are included.	

response

Noted

An indication to the flight crew when the system is activated or transmitting a homing signal is considered important for receiving confirmation that the manual activation of the system worked (when the automatic activation failed or has not yet occurred), and for being informed of an erroneous automatic activation. See also the rationale of CS ACNS.E.LAD.280 in Section 3.3.2 of NPA 2020-03.

comment

190 comment by: *ICAO*

CS ACNS.E.LAD.320 Flight dynamics and locating the aircraft

...

(b) Based on the assumptions of point (a), it is shown that:

(1) if the system transmits activation signals before or without deploying any equipment:

...

(iv) the following is not adversely affected on accident trajectories with parameter values that vary between the ranges of Table 3:

(A) detection of the activation signals by the communication infrastructure; and

(B) location accuracy of the point of end of flight.

Comment:

Propose this should be amended to ‘location accuracy of the aircraft in distress and the point of end of flight’

response

Not accepted

CS ACNS.E.LAD.410 and CS ACNS.E.LAD.420 address the position accuracy of the point of end flight. CS ACNS.E.LAD.320 addresses the successful transmission of activation signals by the airborne system when the flight dynamics is representative of the accident conditions (high speed and/or vertical speed, high-attitude angle values, high-attitude angle rate). For the same reason, CS ACNS.E.LAD.320 is in the ‘Robustness’ and not in the ‘Accuracy’ subsection of Section 3 of Subpart E of CS-ACNS.

comment

193 comment by: *ICAO*

	AMC1 ACNS.E.LAD.350 Means and procedures to prevent undesirable activation ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION The instructions for the flight crew should be included in the aircraft flight manual (AFM). Those instructions should address as a minimum all of the following: (a) conditions that justify manual activation of the system and conditions that do not justify manual activation; (b) recommended flight crew actions after manual activation or manual deactivation of the system; and (c) recommended flight crew actions in case of undesirable activation. **Comment:** The manual activation function should be included in the AFM, however it should be left to operators to determine for themselves what conditions justify the use of this function, and not developed by the manufacturer.
response	Not accepted Point (c) of AMC1 CAT.GEN.MPA.210 specifies that the operator should establish flight crew procedures for using the system. The wording of AMC1 ACNS.E.LAD.350 allows operators to have flight crew procedures that are different from the recommendations of the type certificate (TC) / supplemental type certificate (STC) holder.

comment	_204_	comment by: _Thomas J. Pack – ACR Group_
	AMC2 ACNS.E.LAD.110 Transmission of the activation signals ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ELT(DT) (a) The following ELT configurations can meet CS ACNS.E.LAD.110 and CS ACNS.E.LAD.170: (1) an ELT(DT) that is approved and compliant with ETSO-C126c, of ~~class 0 or 1~~a **a class appropriate to the installation**, capabilities G (internal/integral GNSS), C (crash survivability), and H1 (121.5-MHz homing signal), and any generation (capability T.001 or T.018); or (2) an ELT(DT) that is approved and compliant with ETSO-C126c, of a class appropriate to the installation, capability G, and any generation (capability T.001 or T.018), and an ELT(AF), (AD) or (AP) that is approved and compliant with ETSO-C126c, **a class appropriate to the installation** ~~class 0 or 1~~, capabilities G, C, and H1, and any generation. **Rationale:** The design impact of Class 0 (-55C à 70C) and Class 1 (-40C à 55C) is significant in size, weight, cost, and safety. The low temperature ranges all but dictate the use	

	of lithium battery chemistries and additional battery cells due to the loss of energy capacity at low temperatures. The strict requirements and extensive testing to comply with TSO-C142b as well as additional special conditions at the aircraft level make the container for the batteries and device larger and heavier. Development times are extended, and aircraft installation and type approval are compounded. It is proposed to allow for temperature **classes appropriate to the installation** as state by the manufacturer of the ELT and OEM airframers. This is consistent with the ELT approvals and installations of the last 30 years. There is little evidence to support that a lower temperature class would result in additional benefit to SAR, the airlines, or the survivors. The question also arises that for aircraft not bound to CAT.GEN.MPA.210: would the conventional ELT installations ELT(AF) or ELT(AP) also have to meet Class 0 or 1 operation?
response	Not accepted Experience with a recent ELT(DT) project shows that class 0 or 1 is achievable with current technologies. Aeroplanes that fall within the scope of point CAT.GEN.MPA.210 have an MCTOM of over 27 000 kg. Aircraft in this MCTOM category have such a range that even if their normal area of operation does not include cold areas, they could have an accident over a mountainous or polar area where the temperatures locally are extremely low. This is not necessarily the case for aeroplanes with an MCTOM of less than 27 000 kg due to their shorter range. Therefore, class 0 or 1 is not justified for all ELTs(AF) or (AP). *Note:* The content of point (a) of AMC2 ACNS.E.LAD.110 in Section 3.3.2 of NPA 2020-03 was moved to AMC3 ACNS.E.LAD.020; refer to the response to comment No 49.

comment	*205* comment by: *L3Harris* ETSO-2C517 is not released as of the date of these comments.
response	Noted CS-ETSO Amendment 16, introducing ETSO-2C517, was published on 24 July 2020.

comment	*206* comment by: *L3Harris*

	Attachment #1 at a typical cruise speed and this transmission repetition rate (1 minute), the aircraft would travel about ten miles in between transmissions. This is not consistent with the other means of compliance 200m accuracy for locating the end of flight.
response	Not accepted This comment is presumably on CS ACNS.E.LAD.120. The attachment to this comment was also reviewed: it discusses the accuracy objective of 6 NM, as per CS ACNS.E.LAD.410, not the accuracy objective of 200 m, as per CS ACNS.E.LAD.420. EASA acknowledges that the time intervals between successive detections of the aircraft position will probably need to be shorter than 1 minute to meet CS ACNS.E.LAD.410. However, CS ACNS.E.LAD.120 does not require the duration of such time intervals to be exactly 1 minute. In addition, the purpose of CS ACNS.E.LAD.120 is not to achieve a given position accuracy of the point of end of flight, but to help RCC personnel follow up on a distress situation without waiting for the accident to occur.

comment	*207* comment by: *L3Harris* ELT class C should be required to implement a robust homing function as required on the other homing AMCs.
response	Partially accepted The condition of having capability C was introduced into AMC1 ACNS.E.LAD.170; see the response to comment 96.

comment	*208* comment by: *L3Harris* suggest that "automatic ELT of capability C is advisable" be changed to "automatic ELT of cpability C is required"
response	Noted This comment is related to the rationale of AMC4 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03. However, ED Decision 2021/008/R that issued CS-ACNS Issue 3 only includes the amended CS-ACNS and not the rationales presented in NPA 2020-03.

comment	*209*	comment by: *L3Harris*
	(b)(3): why does a system that deploys equipment (not in flight) need to remain armed for distress tracking functions after flight has ended? Deployment will result in activation of ELT [AD] functions in accordence with the applicable requirments. Recommend deleting (b)(3).	
response	Not accepted This comment is presumably on paragraph (b)(3) of CS ACNS.E.LAD.230, which is meant to increase the chances of successful deployment after an emergency landing on water. In such a case, deployment might not be immediately triggered when the aircraft reaches the point of end of flight (because no airframe deformation is detected), and it may take several minutes for the aircraft to sink. Therefore, the system should remain armed for a duration that is sufficient for triggering deployment following immersion of its water sensor. For an ADFR, ETSO-2C517 specifies that 'Automatic deployment shall take place up to 15 minutes after the loss of external electrical power.'	

comment	*210*	comment by: *L3Harris*
	suggest changing the phrase "complete engine flameout" to "complete loss of engine propulsion" or similar to be consistent with other documents.	
response	Noted This comment is on the rationale of CS ACNS.E.LAD.240 in Section 3.3.2 of NPA 2020-03. ED Decision 2021/008/R that issued CS-ACNS Issue 3 only includes the amended CS-ACNS and not the rationales presented in NPA 2020-03.	

comment	*211*	comment by: *L3Harris*
	suggents changing "detection of an incoming accident" to "detection of an incipient accident" or "detection of a impending accident"	
response	Noted	

This comment is on the rationales of AMC1 ACNS.E.LAD.210 and AMC1 ACNS.E.LAD.240 in Section 3.3.2 of NPA 2020-03. However, ED Decision 2021/008/R that issued CS-ACNS Issue 3 only includes the amended CS-ACNS and not the rationales presented in NPA 2020-03.

comment | *212* | comment by: *L3Harris*

AMC2 ACNS.E.LAD.290 Means to analyse undersirable automatic activation: Note: Deployment is not necessarily associated with "location of an aircraft in distress" per the goals of this NPA. Deployment criteria for an ADFR is not associated with data used to initiate a distress tracking trigger. Deployment due to airframe deformation, immersion, or other physical critera are not standard recorded parameters or available for recording on devices that remain attached to the aircraft. Item (b) is qualified by an "if" statement and is not regarded as a requirement.

response

Partially accepted

Point (a) of AMC2 ACNS.E.LAD.290 in Section 3.3.2 of NPA 2020-03 stated that '(a) The system should meet the conditions of AMC1 ACNS.E.LAD.290.'

The following changes were made to address this comment as well as comment No 331:

— AMC1 ACNS.E.LAD.290 was reworded to state that the information necessary to determine the condition that triggered the automatic activation should help the operator perform a quick and effective analysis of the automatic activation, and that if such information is recorded on board, it should be recorded on non-deployable equipment;

— AMC2 ACNS.E.LAD.290 was deleted as its content is covered by the redrafted AMC1 ACNS.E.LAD.290;

— AMC3 ACNS.E.LAD.290 was deleted as its content is covered by the redrafted AMC1 ACNS.E.LAD.290; and

— the titles of CS ACNS.E.LAD.290 and AMC1 ACNS.E.LAD.290 were changed to 'Means to analyse automatic activation', as automatic activation in general is within the scope of CS ACNS.E.LAD.290, and not only undesirable automatic activation.

comment | *213* | comment by: *L3Harris*

Note: the survival tests of ED-112A for fixed recorders do NOT require that the equipment OPERATE following the tests, only that the protected memory can be recovered. These tests are also sequential in that the equipment is exposed to a set of tests to simulate various accident sequences. It is impractical to build equipment that will remain operational following these exposure sequences. The weight, cost, and size will be prohibitive.

response

Partially accepted

This comment is presumably on point (a) of CS ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03.

That point seemed to require that the system function 'transmission of activation signals' performs normally after being exposed to extreme environmental conditions, while it only required that the accident conditions do not impede the transmission of activation signals and that the position accuracy requirements related to the location of the point of end of flight are met.

Therefore, CS ACNS.E.LAD.310 was reworded for clarity and its point (a) was split into two points: the first one covers environmental conditions that are encountered during the flight of a non-survivable accident (prior to a crash impact or another event severely damaging the aircraft), and the second one covers collision with terrain or water.

comment

214 comment by: *L3Harris*

Section 21.0 Cat M is more appropriate as a minimum level. Cat H would be for installation specific situations, such as externally mounted equipment (ADFR)

response

Partially accepted

This comment is presumably on the radio frequency (RF) transmission test that is specified in Table 1 of AMC1 ACNS.E.LAD.310.

In ED-14G (EMISSION OF RADIO FREQUENCY ENERGY), Section 21.0 categories H and M are defined as follows:

'Category M

This category is defined for equipment and interconnected wiring located in areas where apertures are electro-magnetically significant and not directly in view of radio receiver's antenna. This category may be suitable for equipment and associated interconnecting wiring located in the passenger cabin or in the cockpit of a transport aircraft.

	Category H This category is defined for equipment located in areas which are in direct view of a radio receiver's antenna. This category is typically applicable for equipment located outside of the aircraft.' Category M is indeed the minimum value required. If the equipment is installed inside or outside specific aircraft with a RF transparent structure, that level may be required to be higher. It is the applicant's responsibility to ensure that the installation of the system does not interfere with other equipment. A sentence was introduced into the header of Table 1 of AMC1 ACNS.E.LAD.310 to clarify the meaning of the term 'Minimum' in column 'TEST CATEGORIES' of Table 1.

comment	_215_ comment by: _L3Harris_ Icing is applicable to "external antennas and equipment"
response	Accepted This comment is presumably on the icing test that is specified in Table 1 of AMC1 ACNS.E.LAD.310, in column 'ADDITIONAL TEST CONDITIONS'. The wording 'and equipment' was added for clarity.

comment	_216_ comment by: _L3Harris_ Flame: this test is superceded by ED-112A high temperature fire tests for equipment in AMC1 ACNS.E.LAD.310 (b)
response	Partially accepted This comment is presumably on the flame test that is specified in Table 2 of AMC1 ACNS.E.LAD.310. The high-temperature fire test of EUROCAE ED-112A is only applicable to equipment that is affixed to the aircraft and that transmits activation signals, if the equipment must remain operative after a non-survivable accident to meet CS ACNS.E.LAD.410; see point (b) of AMC1 ACNS.E.LAD.310. On the other hand, Table 2 of AMC1 ACNS.E.LAD.310 is applicable to all equipment used for the transmission of activation signals, except for ELTs that are approved in accordance with European Technical Standard Order (ETSO)-C126c.

However, this comment led to identifying some editorial errors in point (b) of AMC1 ACNS.E.LAD.310. To address both this comment and comment No 333, point (b) of AMC1 ACNS.E.LAD.310 was slightly modified.

comment | *217* | comment by: *L3Harris*

Comment to rationale carryover paragraph (b): fixed recorders are not required to operate following a crash.

response

Partially accepted

This comment is presumably on point (b) of AMC1 ACNS.E.LAD.310.

EASA acknowledges that non-deployable flight recorders are not required to remain operative after being subject to the crash-testing conditions specified in ED-112A. However, if the system must transmit activation signals after reaching the point of end of flight to meet CS ACNS.E.LAD.410, and the equipment used by the system for that purpose is not deployable, then that equipment must be able to perform after being exposed to crash-testing conditions.

This comment shows that the phrase ‘affixed to the aircraft’ that was used in AMC1 ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03 may be misleading, as in other parts of CS-ACNS the term ‘non-deployable’ is used instead.

Therefore:

— point (b) of AMC1 ACNS.E.LAD.310 was corrected; and

— to address both this comment and comment No 333, ‘affixed to the aircraft’ was replaced by ‘non-deployable’.

comment | *218* | comment by: *L3Harris*

Rationale GM1: in-flight destruction of the aircraft should also support timely location of the accident aircraft (or debris) and accident investigations.

response

Partially accepted

This comment is presumably on GM1 ACNS.E.LAD.310.

In-flight destruction of the aeroplane does not need to be considered to demonstrate compliance with CS ACNS.E.LAD.310. This is because in-flight destruction of a large CAT aeroplane is much more seldom than destruction by collision with terrain or water, and because some cases of in-flight destruction (e.g. aircraft tank explosion, collision with another aircraft not fitted with an SSR transponder) cannot be anticipated by an automatic system. The scenario specified in Section 3 of ED-237 (applicable to an ELT(DT) or HRT) and the crash-testing conditions specified for an ADFR in Section 3 of ED-112A do not cover the case of in-flight destruction.

However, a point was introduced into AMC1 ACNS.E.LAD.240 to include, for solutions based on an ELT(DT) or HRT, a condition that would result in the automatic activation in case of failure of the automatic triggering function caused by severe in-flight damage that does not immediately result in the destruction of the aircraft; refer to the response to comment No 62.

In addition, the word 'sudden' was introduced into GM1 ACNS.E.LAD.310.

comment — *219* — comment by: *L3Harris*

(b)(1)(i) "derivitives" is assumed to mean the rate of change of the previous described parameters within the flight envelope. Please clarify.

response — Accepted

In CS ACNS.E.LAD.320 and AMC3 ACNS.E.LAD.320, 'derivative' was replaced by 'rate of change'.

comment — *220* — comment by: *L3Harris*

(b)(2)(ii) "impact shock forces": these forces are established in the ED-112A MOPS

response — Not accepted

This comment is presumably on paragraph (b)(2)(ii) of CS ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03.

The impact shock test that is defined for an ADFR (Section 3-3.2.1 of ED-112A) is not always representative of the actual impact shock forces to which the deployed part could be exposed when colliding with the ground. Depending on its deceleration properties, the deployed part could collide with the ground at a relative speed higher than 46 m/s.

comment	*221* comment by: *L3Harris* (b)(2)(iii) "activation" should be "manual activation" (since automatic triggering is disabled in non-flight phases per CS ACNS.E.LAD.210
response	Not accepted This comment is presumably on paragraph (b)(2)(iii) of CS ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03. This paragraph addresses the transmission by deployed equipment. CS ACNS.E.LAD.250 does not allow the manual deployment of any part of the system during flight.

comment	*222* comment by: *L3Harris* AMC2 ACNS.E.LAD.320 Flight dynamics and locating the aicraft ACCEPTABLE MEANS OF COMPLIANCE SPECIFIC TO SOLUTIONS BASED ON AN ADFR: this paragraph assigns design specifications not supported by the ED-112A MOPS and the associated ADFR survivability tests. This cannot be achieved for all possible aircraft installations. The requirment is highly subject to aircraft size and assumes a speed that is not applicable to all aircraft for which this NPA will apply. This paragraph should be deleted or should refer to the ED-112A MOPS for consistency with international equipment certification standards.
response	Partially accepted The condition of point (b) of AMC2 ACNS.E.LAD.320 ensures that in case of a survivable accident, the ELT that is integrated in the ADFR will not fail as a result of the impact forces. The specifications of ED-112A are not sufficient in addressing this issue, whereas point (b) of AMC2 ACNS.E.LAD.320 provides a means to comply with paragraph (a)(2)(ii) of CS ACNS.E.LAD.320. However, as in Appendix 2 of ETSO-2C517, a standard horizontal deceleration distance of 70 metres may be assumed, even if the aircraft fuselage is shorter. Therefore, to address both this comment and comment No 469, point (b) of AMC2 ACNS.E.LAD.320 was corrected accordingly.

comment	*223* comment by: *L3Harris*

	Rationale (b): if this is the rationale, then the ED-237 trigger from the TAWS should activate a distress message prior to impact and the additional impact survivability requirement (exceeding ED-112A) is not needed. This will then be consistent with the requirements for non ADFR solutions of AMC3 ACNS.E.LAD.320
response	Partially accepted This comment is presumably on point (b) of AMC2 ACNS.E.LAD.320. This comment points to the issue of 'hybrid' or 'combined' solutions, i.e. solutions that use more than one of the technologies that are addressed in CS-ACNS. An example of such a combined solution is a solution combining an ADFR with an ELT(DT). To address such solutions, GM1 ACNS.E.LAD.001 was modified to include the case of a solution that differs from the three types of solutions that are addressed in Section 3 of Subpart E of CS-ACNS, or that is a combination of these three types of solutions. The main principle is that the means to achieve compliance should include all non-specific AMC of Section 3 of Subpart E of CS-ACNS, and additional conditions agreed with EASA on a case-by-case basis.

comment	*224* comment by: *L3Harris* Rationale (b) "Some protocals..." suggest referencing the C/S document that defines the protocols that support the desired location accuracy.
response	Partially accepted This comment is presumably on the rationale of AMC2 ACNS.E.LAD.420 in Section 3.3.2 of NPA 2020-03. This AMC was deleted as the conditions applicable to an ELT when it is used to meet CS ACNS.E.LAD.420 are now included in AMC1 ACNS.E.LAD.420 (refer to the response to comment No 21). The modified AMC1 ACNS.E.LAD.420 includes the condition to transmit an encoded position and to use a message-coding protocol compatible with the position accuracy that is required by CS ACNS.E.LAD.420.

comment	*225* comment by: *L3Harris*

333 m/s is 647 knots. This speed may be well outside the operational envelope of the aircraft when performing the following maneuvers, if the speed is achievable at all. Recommend using maneuvering speed (Va) for the target aircraft subject to structural limitations and multiple control inputs.

response

Not accepted

This comment is presumably on Appendix A. The trajectory that is described in that Appendix does not need to be a realistic representation of the aeroplane flight dynamics; it is only intended to verify, on a representative trajectory of a non-survivable accident, that activation signals are successfully detected by the communication infrastructure and that CS ACNS.E.LAD.410 is met.

A speed of 333 m/s corresponding to Mach 0.97 was specified, so that Appendix A can be used for any subsonic aircraft.

comment

226 comment by: *L3Harris*

(4)(ii) is this implying that the maneuver in (i) is to be uncoordinated? i.e. rudder is being used to hold heading while rolling? This is unlikely to be within the operating envelope of the aircraft at the high speed in (4)

response

Noted

See the response to comment No 225.

comment

227 comment by: *L3Harris*

(5) this may be outside the safe operating envelop for the target aircraft and may induce negative G loading.

response

Noted

See the response to comment No 225.

comment

228 comment by: *L3Harris*

(6) this eliminates a "test" and requires this section can only be performed via simulation.

response

Partially accepted

Appendix A is not intended to be implemented in a flight test or during the testing of actual airborne equipment.

This was clarified by correcting AMC3 ACNS.E.LAD.320 and Appendix A; refer to the responses to comments Nos 23 and 73.

comment

238 comment by: *The Boeing Company*

Page: 35

Paragraph: CS ACNS.E.LAD.001

THE PROPOSED TEXT STATES:

…The intent of CAT.GEN.MPA.210 is to provide for robust and automatic means to accurately determine, following an accident during which the aircraft is severely damaged, the location of the point of end of flight. Aircraft within the scope of this Section are large aeroplanes with a maximum certified take-off mass (MCTOM) of more than 27 000 kg and a maximum passenger seating configuration of more than 19. Accidents and distress situations within the scope of this Section are those that take place between take-off and landing, or at an airfield, and severely damage the aircraft, irrespective of the number of fatalities and injuries.

REQUESTED CHANGE:

Request the remainder of the NPA references to applicability be adjusted to align with this section (27,000 kg and a maximum passenger seating configuration of more than 19).

JUSTIFICATION: The requested change is in line with safety recommendations provided within the NPA (section 4.1.3.2).

response

Partially accepted

CS ACNS.E.LAD.001 was corrected to be consistent with the applicability criteria of point CAT.GEN.MPA.210; refer to the response to comment No 3.

comment	239 comment by: *The Boeing Company*
	Page: 35 Paragraph: Section 3, CS ACNS.E.LAD.001 **THE PROPOSED TEXT STATES:** …Accidents and distress situations within the scope of this Section are those that take place between take-off and landing, or at an airfield, and severely damage the aircraft, irrespective of the number of fatalities and injuries. **REQUESTED CHANGE:** …Accidents and distress situations within the scope of this Section are those that take place ***away from the immediate vicinity of an airfield*** ~~between take-off and landing, or at an airfield,~~ and severely damage the aircraft, irrespective of the number of fatalities and injuries **JUSTIFICATION:** To minimize nuisance activations the scope should not include take-off and landing since the airplane will be easily located and also it aligns with ED-237, section 3.1 "In order to minimize nuisance triggers and optimize triggering logic, the logic may be inhibited or may be limited in its ability to detect distress events during the following flight phases: take-off, initial climb, final approach, landing and go-around."
response	Not accepted Refer to the rationale of CS ACNS.E.LAD.210 in Section 3.3.2 of NPA 2020-03: 'Most accidents occur during take-off, climb, approach or landing. A working paper that was presented at the ICAO Thirteenth Air Navigation Conference showed that in several historical accidents of large aeroplanes, the absence of accurate location information had caused significant delays, which in turn, resulted in more deaths caused by the accident.' Therefore, the system must be armed no later than when the aircraft becomes airborne and must remain armed as long as the aircraft is airborne. AMC2 ACNS.E.LAD.240 excludes the possibility to inhibit the automatic triggering function in some flight phases, unless the aircraft is equipped with an automatic ELT.

comment | *240* | comment by: *The Boeing Company*

Page: 46

Paragraph: AMC1 ACNS.E.LAD.140

THE PROPOSED TEXT STATES:

REQUESTED CHANGE:

We request to add a new subparagraph (e):

(e) ELT configurations can meet CS ACNS.E.LAD.140 if an ELT(DT) has met the requirements and be found compliant with ETSO-C126c, of class 0 or 1, capabilities G (internal/integral GNSS), C (crash survivability), and H1 (121.5-MHz homing signal), and any generation (capability T.001 or T.018)

JUSTIFICATION:

Data transmission of the ELT (DT) is verified during the ETSO approval process.

response

Partially accepted

Any ELT(DT) that is approved in accordance with ETSO-C126c provides an encoded location as per ED-62B.

The ELT class and the ELT capabilities C and H1 are not relevant for complying with CS ACNS.E.LAD.140 (Essential information contained in activation signals), but are justified by CS ACNS.E.LAD.170 (Transmission of a homing signal) and CS ACNS.E.LAD.420 (Position accuracy for survivable accidents).

Only capability G is relevant for CS ACNS.E.LAD.140. COSPAS-SARSAT document T.001 Section 4.5.5.6 and document T.018 Section 4.5.5.1 specify that the source of position should be an 'internal navigation device'.

In addition, AMC1 ACNS.E.LAD.140 is applicable to any type of solution, while the comment requests an AMC specific to solutions based on an ELT(DT).

However, CS ACNS.E.LAD.020, AMC1 ACNS.E.LAD.020, and AMC3 ACNS.E.LAD.020 address this comment.

comment | *241* | comment by: *The Boeing Company*

Page: 47

Paragraph: GM2 ACNS.E.LAD.140

THE PROPOSED TEXT STATES:

It is advisable that the ELT(DT) encodes the latitude and longitude based on an approved aircraft position source (when available), rather than on the internal GNSS receiver as the latter is often less reliable and less accurate.

REQUESTED CHANGE:

It is ***acceptable*** ~~advisable~~ that the ELT(DT) encodes the latitude and longitude based on an approved aircraft position source (when available), rather than on the internal GNSS receiver ~~as the latter is often less reliable and less accurate~~.

JUSTIFICATION: The statement as written is in direct conflict with COSPAS-SARSAT requirements found in COSPAS-SARSAT C/S T.001, Issue 4, Rev. 3, Section 4.5.5.6 and C/S T.018, Issue 1, Rev. 3, Section 4.5.5.1, which specify that the internal GNSS receiver should have priority over the external source.

response

Partially accepted

EASA is aware of the specification in COSPAS-SARSAT C/S T.001 and C/S T.018 regarding the ELT(DT) navigation device requirements. The latest versions of these COSPAS-SARSAT specification documents are COSPAS-SARSAT C/S T.001, Issue 4, Rev. 8, and COSPAS-SARSAT C/S T.018, Issue 1, Rev. 8 (both issued in June 2021). However, an aircraft position source that is certified for use for navigation purposes has a higher level of integrity and reliability than an internal GNSS receiver. GM2 ACNS.E.LAD.140 in Section 3.3.2 of NPA 2020-03 is intended to describe the preferred implementation, but not to be constraining. The text of that GM (renumbered 'GM1 ACNS.E.LAD.140') was reworded to clarify its intent.

comment

242 comment by: *The Boeing Company*

Page: 48

Paragraph: *CS ACNS.E.LAD.170 (c)*

THE PROPOSED TEXT STATES:

(c) The flight crew can manually stop the transmission of the 121.5-MHz homing signal whether this transmission was automatically or manually initiated unless the homing transmitter is detached from the aircraft.

REQUESTED CHANGE:

(c) The flight crew can manually stop the transmission of the 121.5-MHz homing signal whether this transmission was automatically ***initiated after reaching the point of end of flight*** or manually initiated unless the homing transmitter is detached from the aircraft. ***If the system autonomously triggered before reaching the point of end of flight, maintenance action may be required to manually stop the transmission of the 121.5-MHz homing signal.***

JUSTIFICATION: Other requirements for the Autonomous Distress Tracking system prevent the crew from being able to disable an alert autonomously triggered in-air (prior to the point of end of flight).

response Not accepted

This comment presumably refers to the standards of ICAO Annex 6, Part I, Section 6.18 and Appendix 9. The scope of these standards includes 'information from which a position can be determined by the operator' (refer to Section 6.18.1 and Appendix 9, Section 2.1), but not a 121.5-MHz homing signal. A homing signal can only be detected from a few tens of NM and it is intended for SAR mobile facilities, not for the operator.

comment *243* comment by: *The Boeing Company*

Page: 59

Paragraph: CS ACNS.E.LAD.280 (a)

THE PROPOSED TEXT STATES:

(a) The system provides timely indication to the flight crew that it is activated or transmitting the homing signal.

REQUESTED CHANGE:

(a) The system provides timely indication to the flight crew that it is activated or transmitting ~~the homing~~ ***an emergency*** signal.

JUSTIFICATION: Revising wording to clarify the crew should be notified anytime the system is transmitting an alert, including both the 406MHz and 121.5 MHz signals.

response

Not accepted

The concept of 'emergency signal' is not defined in CS-ACNS, as there is no internationally recognised definition of 'emergency signal'.

In addition, according to CS ACNS.E.LAD.010:

'— "the system is activated" means that the system is transmitting activation signals;'

and

'— "activation signals" are signals transmitted by the system to enable determination of the location of the point of end of flight without sending mobile SAR facilities to the area of the transmitter;'

Therefore, the wording 'that it is activated' in CS ACNS.E.LAD.280 means that the system transmits 406-MHz signals or equivalent.

comment

244 comment by: *The Boeing Company*

Page: 59

Paragraph: CS ACNS.E.LAD.280 (b)

THE PROPOSED TEXT STATES:

(b) The system provides indication to the flight crew in case of failure that affects its performance.

REQUESTED CHANGE:

(b) The system provides ***a maintenance*** indication ~~to the flight crew~~ in case of failure that affects its performance***, but does not activate or transmit an emergency signal.***

JUSTIFICATION: For failure modes that do not result in activation or transmission of an emergency signal, a maintenance message is the proper way to handle this indication for the following reasons:

There is no crew action that can address this failure in the air.

During flight, the indication would be considered a nuisance indication.

The crew has manual procedures available in the event search & rescue services are needed.

The exposure to the failure will be limited to that flight as maintenance will be required prior to the next flight or per the MEL.

response Partially accepted

See the response to comment No 16.

comment *245* comment by: *The Boeing Company*

Page: 59

Paragraph: AMC1 ACNS.E.LAD.280

THE PROPOSED TEXT STATES:

The indication to the flight crew that the system is activated should be a caution, in accordance with CS 25.1322.

REQUESTED CHANGE:

There should be an indication to the flight crew that the system is activated. The alert level should be consistent with the specifications provided in CS 25.1322.

JUSTIFICATION:

In consideration of CS 25.1322, the message should be considered an "Advisory." The system is designed to activate when the airplane is in impending danger. There will very likely be several flight deck effects that require more immediate pilot action. Adding another 'caution' level alert increases pilot workload and distracts from the primary task to control the path of the airplane. The crew needs to make a report to ATC as soon as practical, but not immediately.

During preflight the crew is required to check for "Status" message or equivalent to verify the any maintenance items that need action are addressed. Considering that there is a requirement for maintenance release, dispatch check and a crew procedure to check the status of the airplane, the worst case exposure is one flight.

response Accepted

See the response to comment No 18.

comment *246* comment by: *The Boeing Company*

Page:72

Paragraph: AMC4 ACNS.E.LAD.320

THE PROPOSED TEXT STATES:

(b) An ELT(DT) may receive a position signal from both the aircraft receiver and the internal receiver. COSPAS-SARSAT C/S T.001, Issue 4, Rev. 3, Section 4.5.5.6 and C/S T.018, Issue 1,

REQUESTED CHANGE:

(b) An ELT(DT) may receive a position signal from both the aircraft ~~receiver~~ ***position*** and the internal receiver. COSPAS-SARSAT C/S T.001, Issue 4, Rev. 3, Section 4.5.5.6 and C/S T.018, Issue 1,

JUSTIFICATION:

In line with EUROCAE Document ED-62B, the requested change would allow for airplane position to be acquired from other practical aircraft sources without limiting to a GNSS receiver.

response Partially accepted

This comment is on the rationale of AMC4 ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03. However, ED Decision 2021/008/R that issued CS-ACNS Issue 3 only includes the amended CS-ACNS and not the rationales presented in NPA 2020-03.

However, this comment indicates that point (b) of that AMC is covered by AMC3 ACNS.E.LAD.320.

Therefore, AMC4 ACNS.E.LAD.320 was deleted.

comment | *247* comment by: *The Boeing Company*

Page: 74

Paragraph: *CS ACNS.E.LAD.350*

THE PROPOSED TEXT STATES:

CS ACNS.E.LAD.350 Means and procedures to prevent undesirable activation

(a) Instructions are provided to the flight crew to address manual activation of the system and handling of undesirable activation.

REQUESTED CHANGE:

CS ACNS.E.LAD.350 Means and procedures to prevent undesirable activation

(a) Instructions are provided to the flight crew to address manual activation of the system. ~~and~~ ***Instructions for*** handling of undesirable activation ***communications should be incorporated based on industry guidance.***

JUSTIFICATION: Typically there is a standard procedure for communications during an emergency situation, however there has not been language established for non-emergency communications similar to this scenario. Boeing believes the procedures for exact communications between the flight crew and ATS should be established at the industry level and not left to the individual operators or OEM's to establish. This will ensure genuine and unambiguous communication is established between the flight crew and ATS. Boeing recommends EASA coordinates with industry participants from the appropriate organizations to establish this communication protocol.

response | Partially accepted

The content of the instructions for handling undesirable activation should be addressed by means of AMC to the CSs, not at CS level. AMC1 ACNS.E.LAD.350 addresses 'recommended flight crew action in case of undesirable activation'.

Both the ATS unit and the RCC concerned will need to be informed in case of undesirable activation. While the flight crew may directly inform the ATS unit through aircraft communication systems, finding and informing the competent RCC is not the flight crew's responsibility.

Point (d) of AMC1 CAT.GEN.MPA.210 address the operator's action when it is informed of undesirable activation by the flight crew; see the response to comment No 78.

In addition, a circuit protective device may be actuated to stop the transmission of activation signals if this does not make other essential loads inoperative (refer to CS ACNS.E.LAD.350); this would inhibit the transmission of activation signals to RCCs along the flight path. Such information should be provided to the flight crew as part of their instructions.

Therefore, AMC1 ACNS.E.LAD.350 was amended accordingly.

comment *248* comment by: *The Boeing Company*

Page: 80

Paragraph: CS ACNS.E.LAD.620

THE PROPOSED TEXT STATES:

The system is designed commensurate with at least a major failure condition for erroneous automatic activation.

REQUESTED CHANGE:

The system is designed commensurate with at least a ~~major~~ ***minor*** failure condition for erroneous automatic activation.

JUSTIFICATION:

Boeing appreciates and agrees that non-genuine ELT activations (Erroneous automatic activations) have an impact on SAR resources, however this does not justify classifying “erroneous automatic activation” as a “Major” hazard. The data provided in COSPAS-SARSAT R.007 for erroneous activation does not show that large aeroplanes significantly contributed to the erroneous activation and the unnecessary use of SAR resources. The vast majority were contributed by non-large aeroplanes and occurred on the ground due to operator/maintenance error. The COSPAS data also shows less than 3% of the real alerts were caused by commercial aircrafts, which is extremely small. Therefore, the real root cause is not addressed by requiring new air transport autonomous distress tracking systems to be designed to a hazard classification level of ‘Major’. Furthermore, erroneous automatic activation on large aeroplanes would not reduce the capability of the airplane or the ability of the crew to cope with adverse operating conditions and it has minor or no impact on the aircraft operation and performance.

ED-237, section 3.2.4, considered the impact of this function on SAR and provided a recommended objective that the triggering logic that causes an alert should have a nuisance trigger rate on the order of one per 100,000 Flight Hours. The ED-237 document did not classify it as a "major' since the transmitter is minor. The main objective is to reach the goal based on performance based implementation. Moreover, it does not seem practical to require the "major" classification for the erroneous activation where the ELT ETSO classifies the ELT as minor. It is important to recognize that the erroneous automatic activation would not significantly reduce aeroplane safety, and involves crew actions that are well within their capabilities (AMC 25.1309, section 7). Therefore, Boeing recommends to change the hazard to "Minor" to be consistent with the ELT transmitter since the transmitter is a DAL "D" which has been accepted by the regulators and the industry.

Furthermore, Boeing strongly believes, since the transmitter is DAL D, increasing the triggering logic DAL to "C" or higher would not improve the SAR resource issues due to erroneous automatic activations. This excessive requirement would not contribute to improving airplane safety and will burden the industry with additional development/redevelopment costs and may discourage airlines from retrofit of non-mandated airplanes. It is important to recognize that the Development Assurance Level of an aircraft/system function or item applies not only to the development process of this aircraft/system function or item, but also to the development of the interfaces with all the other aircraft/system functions or items inter-related, including the ELT (DT), to the extent that they may affect the function or item being examined (ARP4754A, section 5.2).

response Partially accepted

In response to this comment:

— the content of CS ACNS.E.LAD.620 and CS ACNS.E.LAD.630 in Section 3.3.2 of NPA 2020-03 was moved to AMC to CS ACNS.E.LAD.620 that now contains a system integrity requirement. 'System integrity' is defined in CS-ACNS, Subpart A, point CS ACNS.A.GEN.005 (Definitions), as follows:

  'Integrity (system integrity) is measured as the probability per operating hour of an undetected failure of a functional element that results in corrupted (erroneous) data, or a failure in the processing as specified, leading to the (partial) loss of otherwise available data'; and

— an explanatory text was introduced into GM1 ACNS.E.LAD.620.

The objective regarding erroneous automatic activation is not determined by airworthiness, but by the impact that frequent erroneous automatic activation would have on the ability of RCCs to conduct SAR operations, as well as by the risk faced by SAR teams when operating in remote areas and in adverse conditions. Other items of avionics equipment, e.g. transponders or ADS-B Out systems, have safety objectives that are not derived from the direct application of CS/FAR 25.1309, which considers the effect on the aeroplane safety or crew workload, but from the impact on other airspace users. For instance, refer to CS-ACNS, Subpart D, CS ACNS.D.ADSB.100, paragraph (a):

'(a) The ADS-B Out system integrity is designed commensurate with a 'major' failure condition for the transmission of the following parameters: […]'

Subpart D, Appendix H, Part 4 states:

'Although the direct effects to an aircraft of an ADS-B Out failure may be minor, the ADS-B Out information will be used by ATC and other ADS-B equipped aircraft, thus provisions that would allow for a reduction in failure probabilities and design assurance level, do not apply to the ADS-B Out system.'

The proposal in this comment to revert to a minor failure condition translates in a quantitative objective of 1E-3/FH erroneous activation. Assuming that the target fleet accumulates around 50 000 000 FH per year, this would mean up to 50 000 false alerts per year or around 140 false alerts per day. According to COSPAS-SARSAT C/S R.007 (Report on system status and operations) No. 36, COSPAS-SARSAT processed 20 706 alerts from ELTs in 2019 (including actual distress alerts, false alerts, and undetermined alerts). Allowing a minor failure condition could then result in a 250 % increase in the number of alerts that are received from ELTs.

This comment refers to COSPAS-SARSAT C/S R.007. However, C/S R.007 does not contain information about the proportion of erroneous activation with large aeroplanes: it only classifies the occurrences of erroneous activation (R.007 designates them as 'false alerts') by beacon type (ELT, emergency position-indicating radio beacon, personal locator beacon) and by country.

This comment also mentions that only 3 % of the real alerts are caused by CAT aircraft. Although EASA did not verify this figure, it is acknowledged that COSPAS-SARSAT R.007 gives information on the aircraft type for real alerts only. However, this document does not indicate the rate of false alerts that stem from CAT aircraft.

This comment also highlights that according to COSPAS-SARSAT R.007, most of the alerts occur on the ground due to the operator/maintenance. This is consistent with the nature of the ELTs that are installed on currently operated aircraft, as the electronics of such ELTs is mainly on standby until the ELT is switched on by a shock detection.

However, the above-mentioned figures cannot be applied to the new systems proposed for complying with point CAT.GEN.MPA.210. The objective of considering erroneous automatic activation a major failure condition (refer to AMC1 ACNS.E.LAD.620) is not to address the root causes of current false alerts but to avoid additional false alerts due to malfunctions or errors stemming from systems compliant with point CAT.GEN.MPA.210.

This comment refers to EUROCAE Document ED-237, but ED-237 does not contain a failure condition classification because development errors and equipment failures are outside its scope and not because 'the transmitter is minor' as stated in this comment. Refer to ED-237, Section 3.2.4:

'Addressing the reliability of hardware and the design implementation are beyond the scope of this document.'

This comment also refers to the (E)TSO failure condition classification, but (E)TSOs are only minimum performance standards that the equipment is required to meet. They do not specify the performance to be met at installation or the performance to meet the Air OPS Regulation provisions. EASA acknowledges that current ELTs(AF) or ELTs(S) are designed with commensurate minor failure conditions. However, the electronic hardware and software of these transmitters is mainly on standby until the activation of a manual switch or of the g-switch turns them on. ELT(DT) is a new type of equipment whose design can be tailored to a major failure condition.

According to EUROCAE ED-79A/SAE ARP 4754A, the 'major' failure condition classification corresponds to a functional development assurance level (FDAL) C. However, EUROCAE ED-79A/SAE ARP 4754A Table 3 also permits 'FDAL D for two of the Members leading to top-level Failure Condition' (note: EUROCAE ED79A defines a 'member' as an aircraft/system function or item that may contain an error causing its loss or anomalous behaviour). In addition, all aircraft sensors that are used to implement the scenarios developed in EUROCAE ED-237 are developed in accordance with item DAL (IDAL) C.

comment | _252_ | comment by: _THALES_

CS ACNS.E.LAD.001 : Inconsistency : The requirement is only referring ' Aircraft within the scope of this Section are large aeroplanes with a maximum certified take-off mass (MCTOM) of more than 27 000 kg and a maximum passenger seating configuration of more than 19' whereas CAT.GEN.MPA.210 also consider ' all aeroplanes with an MCTOM of more than 45 500 kg'.

<u>THALES proposal:</u>

To also mention 'all aeroplanes with an MCTOM of more than 45 500 kg' in the CS ACNS.E.LAD.001 requirement.

response

Partially accepted

See the response to comment No 3.

comment

253 comment by: *THALES*

P41. GM4 ACNS.E.LAD.010 : GM4 ACNS.E.LAD.010 is supposed to be a GM to a 'definitions' requirement whereas in fact it goes far beyond a definition with details of expected characteristics - this type of information will not be expected to be found in the 'definitions' sections by the reader (for example '....the robustness of a solution based on HRT is comparable to that...'; ' ...needs to be robust so that accurate position determination remains possible in conditions representative of an accident flight'). Moreover the terminology 'it is expected…' is very strong for a Guidance Material.

THALES proposal:

To move to another section than the 'definitions' one the content of GM4 ACNS.E.LAD.010 that details expected characteristics of the solution. Moreover it should not be a GM or the 'it is expected …' have to be removed.

response

Accepted

See the response to comment No 45.

comment

254 comment by: *THALES*

P47. CS ACNS.E.LAD.150 : Whereas for CS ACNS.E.LAD.140, it is indicated 'the latitude and longitude of the transmitter', in CS ACNS.E.LAD.150 it is listed 'altitude' - 'ground speed' - 'ground track'- 'vertical speed' without detail about the expected parameter.

THALES proposal:

To add in CS ACNS.E.LAD.150 'altitude of the transmitter', 'ground speed of the transmitter' , 'ground track of the transmitter', 'vertical speed of the transmitter'

response

Partially accepted

The latitude and longitude of the aircraft are part of the essential information that is specified in CS ACNS.E.LAD.140. However, it is unnecessary to specify that the latitude and longitude of the aircraft should be the exact latitude and longitude of the transmitter/antenna that is used by the system, because the required accuracy for survivable accidents, as specified in CS ACNS.E.LAD.420, is 200 metres, which is twice the length of the largest civilian aircraft models.

Therefore, in CS ACNS.E.LAD.140 and AMC1 ACNS.E.LAD.140, 'transmitter' was replaced by 'aircraft'. In addition, CS ACNS.E.LAD.150 now specifies that the altitude, ground speed, and vertical speed to be recorded are the altitude, ground speed, and vertical speed of the aircraft.

In addition, 'aircraft course', and not 'ground track', is the most common term to designate the direction towards which an aircraft is flying in the ground reference system. Therefore, in CS ACNS.E.LAD.150, 'ground track' was replaced by 'aircraft course'.

comment | *255* | comment by: *THALES*

p47. CS ACNS.E.LAD.150 : Whereas for CS ACNS.E.LAD.140, there is GM2 ACNS.E.LAD.140 to indicate that aircraft position source can be used for latitude and longitude, there should be the same for 'altitude', 'ground speed', 'ground track' and 'vertical speed' in the GM of CS ACNS.E.LAD.150.

THALES proposal:

To indicate in a GM that the aircraft source can be used for 'altitude', 'ground speed', 'ground track' and 'vertical speed'.

response | Not accepted

As CS ACNS.E.LAD.150 covers supplementary information, any source of information is acceptable. Therefore, related GM is not necessary.

comment | *256* | comment by: *THALES*

p54. AMC1 ACNS.E.LAD.230 : AMC1 ACNS.E.LAD.230 refers to bullet (c) of CS ACNS.E.LAD.230 whereas the bullets stop at (b).

THALES proposal:

To replace ' point(c)' by the correct reference.

response | Partially accepted

See the response to comment No 446.

comment	292 comment by: *DGAC France* **GM1 ACNS.E.LAD.001** The scope of this section should also include optimisation of the analysis by the operator and ATS unit for any in flight event. SAR authorities always aim at timely locating and rescuing the survivors of an accident. But there will never be any guarantee that survivors are found and rescued. Let us keep in mind that SAR services act sometimes in very adverse conditions. The sentence “SAR authority must timely locate and rescue … accident” is not appropriate. SAR services must only use the means at their disposal to try and do the best effort possible to find potential survivors. - ADFR: There is no mention of an ELT-DT or of any ADT device embedded in an ADFR system. ADFR provides for ELT floatability but does not allow the performance of an ADT system as ELT-DT or HRT do. Word "AFRD" shall be corrected as follows : "ADFR" - ELT(DT) and HRT: There shall be a distinction between the ADT function and the post flight function (automatic ELT).
response	First sub-comment on ‘optimisation of the analysis’: partially accepted Aspects related to the distribution of data are outside the scope of Section 3 of Subpart E of CS-ACNS; therefore, they were deleted from Section 3. Some corrections were made; see the response to comment No 181. Second sub-comment on SAR authorities: accepted GM1 ACNS.E.LAD.001 was reworded to clarify that means compliant with CAT.GEN.MPA.210 are expected to provide sufficient information to both SAR authorities and investigation authorities to conduct their missions. GM1 ACNS.E.LAD.001 does not impose any obligations on them. Third sub-comment on the ADFR: partially accepted GM1 ACNS.E.LAD.001 was modified to also cover ‘combined’ solutions, e.g. an ADFR combined with an ELT(DT); see the response to comment No 223. With regard to combining an ADFR with an ELT(DT): see the response to comment No 180. The ADFR spelling was corrected. Fourth sub-comment on ‘distinction between the ADT function and the post flight function (automatic ELT)’: not accepted

Point CAT.GEN.MPA.210 does not require autonomous distress tracking of aircraft, but only robust means to locate the point of end of flight. To comply with point CAT.GEN.MPA.210, no such distinction is needed.

comment *293* comment by: *DGAC France*

CS ACNS.E.LAD.001

Why:

- omitting aeroplanes with an MCTOM of more than 45 500 kg?

- not specifying the CofA requirement?

response Noted

See the response to comment No 3.

comment *294* comment by: *DGAC France*

CS ACNS.E.LAD.001 Rationale :

Last paragraph on page 36 : Consistency should be maintained with E.LAD.001 which also specifies "at an airfield".

Either airfield to be added here, or removed from E.LAD.001

response Noted

This comment is on the phrase 'or at an airfield' in CS ACNS.E.LAD.001 in Section 3.3.2 of NPA 2020-03, which does not appear in the rationale of CS ACNS.E.LAD.001. The condition 'or at an airfield' in CS ACNS.E.LAD.001 is considered relevant.

However, ED Decision 2021/008/R on CS-ACNS Issue 3 only includes the amended CS-ACNS and not the rationales presented in NPA 2020-03.

comment *296* comment by: *DGAC France*

GM1 ACNS E LAD 001 rationale :

	Last paragraph :Remote activation/deactivation in flight of a solution/system is out of the scope of SAR responsibility.
response	Noted

comment	*297* comment by: *DGAC France* **CS ACNS.E.LAD.010** As already mentioned, there is a confusion in the NPA when dealing with the definition of "competent SAR centre" or SPOC. As mentioned in "solution based on an HRT", an HRT transmits aircraft position in flight. ELT-DT does the same. For a given situation in flight, every kind of solution transmits a position information which must be distributed in an harmonised and consistent way. - activation signals : Depending on the implemented system, signals may be sent while system is in activated state several minutes before impact occurrence. Therefore, in such cases, one could argue that the first emitted signals will not necessarily allow an accurate determination of the point of end of flight. It is understood that EASA considers 'activation signals' as signals emitted whenever the system is activated (cf. p17). If so, 'activation signals' definition should be modified accordingly.
response	First sub-comment: partially accepted The term 'competent SAR centre' was deleted from Section 3 of Subpart E of CS-ACNS; see the response to comment No 181. Second sub-comment on the definition of 'solution based on HRT': partially accepted The definition of 'solution based on HRT' was modified; see the response to comment No 40. Third sub-comment on the definition of 'activation signals': partially accepted The definition of 'activation signals' was modified; see the response to comment No 25.

comment	*298* comment by: *DGAC France* **GM1 ACNS.E.LAD.010**

	<u>Item (c) :</u> Does "used" imply "monitored" in this case? If confirmed, DGAC suggests to use "monitored" which is deemed as less ambiguous
response	Not accepted The system may not only monitor the data that is stemming from other airborne equipment, but also carry out computations based on this data to detect activation conditions. Therefore, 'used' is preferred.

comment	_299_ comment by: _DGAC France_ **GM2 ACNS.E.LAD.010** Is ELT-DT with a ELT-AF function also a possibility in ADFR ?
response	Noted Regarding a combined ADFR-ELT(DT) solution: see the response to comment No 180. GM2 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 was deleted, as it was redundant; see the response to comment No 43.

comment	_300_ comment by: _DGAC France_ **GM3 ANCS.E.LAD.010** <u>Item (b):</u> it is necessary to provide with the difference between the ADT function and the ELT-AF function. <u>Item (c):</u> For solution based on FGB, the ADT function of the ELT-DT transmits an encoded position, but the ELT-AF function transmits both independent position (406 MHz) and encoded position (GNSS). In the future, for solution based on SGB, both 406 and GNSS will be transmitted in flight or at/after impact.
response	First sub-comment on point (b) of GM3 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03: partially accepted See the response to comment No 44. Second sub-comment on point (c) of GM3 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03: partially accepted

	See the response to comment No 44.

comment	*301* comment by: *DGAC France* **GM4 ANCS.E.LAD.010** Item (d): activation/deactivation signals must be received first by the units (ATS or Operator) in charge of tracking the aircraft. And plese refer to previous comment on 'activation signals' definition (p-38) (comment #297) Rationale: There is a need to distinguish signals sent by an aircraft in flight or on ground/at sea. The same operational concept shall be in place whatever it deals with an ELT solution or an HRT solution for both cases: data sent in flight, data sent on ground or indicating “no data evolution”.
response	Not accepted With regard to the transmission of activation signals, the distinction between ‘an aircraft in flight or on ground’ is redundant; see the response to comment No 266. GM4 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 was deleted; see the response to comment No 45.

comment	*302* comment by: *DGAC France* **AMC1 ACNS E.LAD.110** Item (d)(2) : "capability" should be replaced by "capabilities". Regarding "any generation (capability T.001 or T.018)", since not equipped with a GNSS receiver, what information whould be sent through T.0XY capability? Rationale Item (c) : “In addition, the ELT that is integrated …..is expetected to start transmitting ….48 hours” : Does it mean that no ELT-DT could be embedded in ADFR?
response	First sub-comment: noted Point (d)(2) of AMC1 ACNS.E.LAD.110 in Section 3.3.2 of NPA 2020-03 specified capability ‘G (internal/integral GNSS receiver)’, but this AMC was redrafted (see the response to comment No 48). Second sub-comment: noted

According to CS ACNS.E.LAD.170, the aircraft transmits a homing signal for at least 48 hours. ED-112A Section 3-1.8.2 specifies: 'In addition to meeting the endurance requirements specified by ED-62A, the 121.5MHz radio shall operate for an additional 102 hours for a total minimum operational duration of 150 hours.'

comment | 303 | comment by: *DGAC France*

CS.ACNS.E.LAD.120 Rationale:

1st paragraph: "its position facilitate the follow up of the distress situation" :

- By whom? ATS and Airline shall be first informed, then the RCC "monitor" the distress situation.

- The label "distress" is not in line with GADSS since an ADT transmits a position information which needs further analysis by Airline and ATS before being said a "distress" case.

2nd paragraph:

The transmission service must transmit as a priority to ATS and Airline, and in a second phase to RCC.

Otherwise, there would be a problem with alerting service and ATS responsibilities since it is about an aircraft in flight.

"In addition, to limit the impact on SAR centres ….within minutes" is not a realistic approach since ADT systems should detect a potential distress event as soon as possible and the flight may last up to several hours.

response

Sub-comment on '1st paragraph': not accepted

This comment is presumably on the first paragraph of the rationale of CS ACNS.E.LAD.120 in Section 3.3.2 of NPA 2020-03.

With regard to who should be informed: see the responses to comments Nos 170 and 273. The distribution of data by the transmission service is addressed in AMC1 CNS.OR.100, not in Section 3 of Subpart E of CS-ACNS.

With regard to the use of the term 'distress': the term 'distress situation' was introduced into the definitions of CS ACNS.E.LAD.010; see the response to comment No 89.

Sub-comment on '2nd paragraph': not accepted

This comment is presumably on the second paragraph of the rationale of CS ACNS.E.LAD.120 in Section 3.3.2 of NPA 2020-03.

With regard to first alerting the ATS unit: see the response to comment No 170. The distribution of data by the transmission service is addressed in AMC1 CNS.OR.100, not in Section 3 of Subpart E of CS-ACNS.

With regard to the comment on the last sentence of paragraph 2 of the rationale of CS ACNS.E.LAD.120 in Section 3.3.2 of NPA 2020-03: the commentator refers to the ADT concept as described in the ICAO GADSS ConOps, which does not address reliability aspects. In that context, it is possible that an ADT system keeps transmitting activation signals for hours. The conditions defined in Section 3 of Subpart E of CS-ACNS and in the AMC to CAT.GEN.MPA.210 make the location of an aircraft in distress more robust and reliable, so that the continued transmission of activation signals for more than a few minutes will be a seldom event. The common performance objectives (CPOs) Nos 13, 17, and 18 of Option 2 of the 'Impact assessment' (IA) Chapter of NPA 2020-03 ensure high reliability of the solutions.

comment | *304* | comment by: *DGAC France*

GM1. ACNS.E.LAD.120

These most probable cases are not about SAR but about wreckage recovery.This Common guidance is based on the following rationale: in 95% of the accidents, the aircraft is crashed within 6 mn. But from a SAR perspective in those accidents, the energy at impact will be so huge that there will not be any survivor (AF 447 scenario for instance).

The NPA should include the cases where survivors might be found, that means for cases with an energy at impact that the pilot in command can manage.

This is also not relevant that HRT solutions which transmit to ATS is only required to make data available to ATS even for an aircraft in flight. How will HRT solutions "automatically provide" data to RCC, through which systems, networks, and interfaces?

response | Not accepted

Survivable accidents are within the scope of NPA 2020-03 (see Sections 2.2 and 4.1.2) and are addressed by Section 3 of Subpart E of CS-ACNS (see, for instance, CS ACNS.E.LAD.170 and CS ACNS.E.LAD.420).

The distribution of data by the transmission service is not addressed in CS-ACNS, but in AMC1 CNS.OR.100.

GM1 ACNS.E.LAD.120 in Section 3.3.2 of NPA 2020-03 was deleted; see the response to comment No 51.

comment	*305* comment by: *DGAC France* **CS.ACNS.E.LAD.130 Rationale:** Item (a): being aware of a deactivation in flight is of paramount importance for ATS first and Airline. There is a failure or a missing element between deactivation and the impact on RCCs. Item (a) 2nd paragraph : The competent authotities for an aircraft in flight are the captain, the ATS and the airline. the RCC is not responsible for assessing the situation on board the aircraft.
response	First sub-comment on paragraph (a) of CS ACNS.E.LAD.130: noted The distribution of data by the transmission service is not addressed in Section 3 of Subpart E of CS-ACNS, but in AMC1 CNS.OR.100. Second sub-comment on the second paragraph of the rationale of CS ACNS.E.LAD.130: not accepted Authorities are organisations (usually national or international administrations) with legal power to take decisions or enforce the law in certain areas. Refer also to the definition of 'national competent authority' in Regulation (EU) 2018/1139: '"national competent authority" means one or more entities designated by a Member State and having the necessary powers and allocated responsibilities for performing the tasks related to certification, oversight and enforcement in accordance with this Regulation and with the delegated and implementing acts adopted on the basis thereof, and with Regulation (EC) No 549/2004.' The commander of an aircraft or the operator of an aircraft is not 'competent authority'.

comment	*306* comment by: *DGAC France* **CS.ACNS.E.LAD.140** Solution based partially on ADT functions will transmit according to ICAO requirements for LADR. It should also be useful to know which condition activated the ADT function and the time of the first transmission. Latitude and longitude: reference system shall be the same as for ADT systems with ICAO's LADR. About the type of airborne equipment that transmitted the signals : The added-value of emitting this information is not obvious. There is no need for the system to provide

	its type to be able to retrieve this information (it can be obtained from the aircraft operator upon request). The same for CS ACNS.E.LAD.160.
response	First sub-comment on activation condition and time of first transmission: noted The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT concept as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210. Depending on the solution that is selected by the applicant (based on an ADFR, an ELT(DT), or HRT) the implementation of automatic activation varies, but the general conditions for automatic activation are addressed in CS ACNS.E.LAD.240. The conditions for manual activation are addressed in CS ACNS.E.LAD.250. The time frame for the first transmission of activation signals is addressed in CS ACNS.E.LAD.110. Second sub-comment on the reference system for latitude and longitude: not accepted The functional specifications of the ICAO LADR do not indicate any reference system. Third sub-comment on the type of airborne equipment that transmits the signals: not accepted Refer to the rationale of CS ACNS.E.LAD.140 in Section 3.3.2 of NPA 2020-03: '[…] The information on the type of airborne equipment that transmitted the signals can be used to contact the provider of the transmission service and/or the manufacturer of that airborne equipment if the other information required by CS ACNS.E.LAD.140 (status of the system, latitude and longitude values and their age, identification of the individual aircraft) is incomplete or erroneous.' If the identification of the aircraft was incomplete or not consistent with the position information, then it might be difficult to identify the operator of the aircraft. In addition, several items of equipment capable of transmitting activation signals could be on board an aircraft, including ELTs (ELT(DT), ELT(AF), ELT(AP), ADFR) and non-ELT-based equipment (HRT transmitter). Therefore, it should not be assumed that the operator always knows by which equipment the activation signals are transmitted.

comment	*307* comment by: *DGAC France* **CS.ACNS.E.LAD.140 Rationale :** **CS.ACNS.E.LAD.160 Rationale :**

	"The information on the type of airborne equipment that transmitted the signals can be used to contact the provider of the transmission service and/or the manufacturer of that airborne equipment if the other information required by CS ACNS.E.LAD.140 (status of the system, latitude and longitude values and their age, identification of the individual aircraft) is incomplete or erroneous." : There is no need for the system to provide its type to be able to retrieve this information (it can be obtained from the aircraft operator upon request)
response	Not accepted See also the response to comment No 306.

comment	*310* comment by: *DGAC France* **AMC1 ACNS.E.LAD.140 :** - Item (c): Latitude and longitude: reference system shall be the same as for ADT systems with ICAO's LADR. - Item (d): ELT-DT or other current ELTs?
response	First sub-comment: not accepted See the response to comment No 306. Second sub-comment: accepted Point (d) of AMC1 ACNS.E.LAD.140 was modified for clarity. Based on that change, GM1 ACNS.E.LAD.140 in Section 3.3.2 of NPA 2020-03 was deleted, as its useful content was incorporated into AMC1 ACNS.E.LAD.140. GM should contain guidance on the implementation, not a justification for a regulation or AMC.

comment	*311* comment by: *DGAC France* **GM1.ACNS.E.LAD.140** It is also useful for ATS and Airline to know what kind of system transmits in flight. At the RCC level, a unique message format and Human machine interface for any solution is required.

response

Not accepted

The purpose of locating an aircraft in distress is to rescue aircraft occupants and help investigate the cause of the accident. The alerting service that is provided by an ATS unit and the support that is provided by the aircraft operator serve that purpose, they are not a purpose per se.

The distribution of data by the transmission service is not addressed in Section 3 of Subpart E of CS-ACNS, but in AMC1 CNS.OR.100.

comment

312 comment by: *DGAC France*

CS.ACNS.E.LAD.150

Please refer to ICAO LADR specifications. At the RCC level, a unique message format and Human machine interface for any solution is required.

response

Not accepted

The conditions specified in AMC1 CAT.GEN.MPA.210 are performance based and, therefore, do not require that data corresponding to activation signals be sent to a specific repository, such as the ICAO LADR. The ICAO LADR is mentioned in NPA 2020-03 only as an example of a solution.

See also the response to comment No 311.

comment

313 comment by: *DGAC France*

CS.ACNS.E.LAD.160

Lat – long may also be useful to check the consistency with the transmission phase.

For an ADT system, ADT activation does not mean "distress" (see ICAO/Annex 6).

Deactivation system should allow identifying immediately the aircraft without contacting the data provider

response

First sub-comment on transmitting latitude and longitude: not accepted

Checking the consistency between activation and deactivation signals by using latitude and longitude is not straightforward and, therefore, not considered essential.

Second sub-comment on 'ADT activation': noted

The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT concept as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210. The term 'distress situation' was clarified in CS-ACNS; see the response to comment No 89.

Third sub-comment on immediately identifying the aircraft: partially accepted

CS ACNS.E.LAD.160 was modified to be harmonised with CS ACNS.E.LAD.140, which specifies that the activation signals contain sufficient information to identify the individual aircraft, i.e. there is no need to obtain additional data from the data provider to identify the individual aircraft.

comment | *314* comment by: *DGAC France*

AMC1 ACNS.E.LAD.170

- item (b): Life raft are not fitted with portable beacons. The crew must take the ELT-S before leaving the hull.

response | Noted

This comment rightly points out that life rafts on board CAT aeroplanes are not required to be equipped with an ELT(S) (refer to point CAT.IDE.A.285 and AMC1 CAT.IDE.A.285). However, this does not affect point (b) of AMC1 ACNS.E.LAD.170, as the justification for that point remains valid.

comment | *315* comment by: *DGAC France*

GM1 ACNS.E.LAD.170

<u>- item (b):</u> A 121,5 homing transmission in flight may keep from transmitting a radio message on 121,5. Therefore, any solution triggered in flight shall be an ADT device/solution. For instance, ELT-DT transmits in flight only on 406 MHz (see GADSS and annex 6).

response | Not accepted

ICAO Annex 6 or the ICAO GADSS ConOps do not forbid the in-flight transmission of a homing signal.

Refer to the rationale of point (b) of GM1 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03:

'[…] Transmission of the 121.5-MHz homing signal in flight is discouraged as it could prevent crew communication on that emergency frequency. However, this is not forbidden as the crew can manually interrupt the transmission of the homing signal.'

Note: Neither ICAO Annex 6 nor the ICAO GADSS ConOps specify that an 'ADT system' should only transmit a 406-MHz signal when the aircraft is airborne.

comment | *316* | comment by: *DGAC France*

GM1 ACNS.E.LAD 210

- The activated state is of interest for ATS and Airline for in flight activation.

response | Not accepted

The purpose of locating an aircraft in distress is to rescue aircraft occupants and help investigate the cause of the accident. The alerting service that is provided by an ATS unit and the support that is provided by the aircraft operator serve that purpose, they are not a purpose per se.

GM1 ACNS.E.LAD.210 in Section 3.3.2 of NPA 2020-03 was deleted (refer to the response to comment No 41).

comment | *317* | comment by: *DGAC France*

AMC1 ACNS.E.LAD.210

<u>Item (c) :</u> proposed NPA does not specify if/how system "armed" status should be recorded (FDR recording, CVR recording through operating procedure for flight crew to announce when the system is armed ...)

response | Not accepted

There is no need to record the armed status of the system to comply with point CS ACNS.E.LAD.210.

comment | *318* | comment by: *DGAC France*

CS ACNS.E.LAD.230

	<u>- Item (b)(3) :</u> Shouldn't it only require that system remains armed (GM1 also seems to indicate that only the "armed" case applies for (b)(3): "to cover for the case of a ditching if the sensors of the ADFR do not detect an accident condition ")? "15 minutes after impact" deemed as more appropriate ((b)(3) would also be applicable in the case of a ditching scenario)?
response	First sub-comment: noted Point (b) of CS ACNS.E.LAD.230 does not require the system to be activated; being just armed is acceptable. Second sub-comment: not accepted '15 minutes after impact' is not appropriate wording, because it would imply that the system should remain armed or activated after the aircraft impacts on terrain or water, while the crashworthiness of the system is outside the scope of CS ACNS.E.LAD.230.

comment	*319* comment by: *DGAC France* **CS.ACNS.E.LAD.230 Rationale :** Electrical failure detection by an ELT-DT requires to transmit the data to ATS and Airline, since an electrical failure by itself does not lead to an accident. RCC will only monitor the situation when it is deemed necessary to do so. "it is not expected that crash detection still operates" : AMC1 ACNS.E.LAD.110 (d)(2) defines a compliant system installation comprising an ELT (type (AF) or (AP)) in addition to the ADFR. It is understood that ADFR ejection should occur before crash, and that on-board ELT would be triggered subsequently to crash detection. For such cases, shouldn't crash detection still operate after ADFR deployment?
response	First sub-comment: partially accepted 'normal electrical power' in CS ACNS.E.LAD.230, in Section 3.3.2 of NPA 2020-03, refers to the electrical power that is produced by engine-driven systems generating normal electrical power on board the aeroplane (refer to CS 25.1351). Hence, a 'flight without normal electrical power' means that none of the engines (neither the APU, if applicable) can generate electrical power, as explained in the rationale. This condition is not only an 'electrical failure', but corresponds to a distress situation as defined in CS ACNS.E.LAD.010. This condition is one of the scenarios to be considered when defining the criteria for detecting in-flight distress events according to ED-237 Section 3.2.

	For clarification, in CS ACNS.E.LAD.230, GM1 ACNS.E.LAD.230, and GM2 ACNS.E.LAD.230, 'normal electrical power' was replaced by 'systems generating normal electrical power'. Second sub-comment: not accepted According to its design, an ADFR is not deployed before but during a crash impact (refer to CS 25.1457 and to ED-112A). The sentence in the rationale that is quoted by the commentator refers to the crash detection by the ADFR, not by an ELT(AF). In addition, 'ADFR' should not be confused with 'ADFR-based solution'. The ADFR-based solution (defined in CS ACNS.E.LAD.010) may include an automatic ELT in addition to the ADFR.

comment	*320* comment by: *DGAC France* **AMC1 ACNS.E.LAD.230** No point (c). Shouldn't it be (b)(3)?
response	Partially accepted See the response to comment No 446.

comment	*321* comment by: *DGAC France* **GM1 ACNS.E.LAD.230** Life rafts are not fitted with portable beacons. ELT-S is usually installed close to the aircraft door. "15 minutes after impact" deemed as more appropriate ((b)(3) would also be applicable in the case of a ditching scenario)?
response	First sub-comment: noted This comment rightly points out that life rafts on board CAT aeroplanes are not required to be equipped with an ELT(S) (refer to point CAT.IDE.A.285 and AMC1 CAT.IDE.A.285). However, this does not affect GM1 ACNS.E.LAD.230 in Section 3.3.2 of NPA 2020-03, as the related explanations in this GM remain valid. Second sub-comment: not accepted See the response to comment No 317.

comment	*322* comment by: *DGAC France*
	CS ACNS.E.LAD.240 ADT Automatic activation occurs also in non distress condition (see electrical failure detected by an ADT) or when the detected condition lasts for several minutes (up to 30 minutes for all engines' failure).
response	Not accepted The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT concept as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210, i.e. to provide standards for the installation of equipment and systems to help locate an aircraft in distress, in accordance with the Air OPS Regulation. However, ICAO Annex 6, Part I, Section 6.18 only prescribes the transmission of information by the aeroplane 'when in distress'. See also the reply to comment No 319.

comment	*323* comment by: *DGAC France*
	CS ACNS.E.LAD.250 It is necessary to tell the difference between ELT-DT (as ADT function) and the automatic ELT as it currently exists.
response	Not accepted CS ACNS.E.LAD.250 includes a general requirement applicable to all solutions. In addition, 'the system' does not imply individual items of equipment; refer to the definition of 'the system' in CS ACNS.E.LAD.010.

comment	*324* comment by: *DGAC France*
	AMC1 ACNS.E.LAD.250 In the main text as in the rationale, it is necessary to define the difference between ELT-DT (as ADT function) and the automatic ELT as it currently exists.

response	Not accepted See the response to comment No 323. In addition, ED Decision 2021/008/R does not include the rationales presented in NPA 2020-03.

comment	*325* comment by: *DGAC France* **AMC2 ACNS.E.LAD.250 Rationale :** - item (b): any solution activated in flight shall indicate to the competent ATS centre (RCC centre only monitors when appropriate). An automatic ELT is not a means to indicate a distress condition. This is the function of an ADT function as ELT-DT for instance. ELT AF, AP, AD or S are not designed and were not meant to deal with an aircraft flying. (They are designed for Cospas-Sarsat LEOSAR environment). The signal from current ELT is not always sent to the competent SAR Centre.
response	First sub-comment on providing information to the relevant ATS unit: not accepted With regard to who should be informed, see the responses to comments Nos 170 and 273. The distribution of data by the transmission service is addressed in AMC1 CNS.OR.100, not in Section 3 of Subpart E of CS-ACNS. Second sub-comment: not accepted According to ED-62B, the flight crew can manually activate the automatic ELT in flight, and 406-MHz signals that stem from an automatic ELT can be detected and processed by the international COSPAS-SARSAT programme. The COSPAS-SARSAT programme relies on the following satellite constellations: Low-altitude Earth Orbiting Satellite System for Search and Rescue (LEOSAR), Geostationary Earth Orbiting Satellite System for Search and Rescue (GEOSAR), and Medium-altitude Earth Orbiting Satellite System for Search and Rescue (MEOSAR). Aircraft flight manuals (AFMs) of most large aircraft types require the flight crew to activate the automatic ELT under the abnormal procedures for emergency landing or ditching. Third sub-comment: noted The distribution of data by the transmission service is addressed in the AMC1 CNS.OR.100, not in Section 3 of Subpart E of CS-ACNS.

comment	*326* comment by: *DGAC France* **CS ACNS.E.LAD.260 :** **-** Item (a): in flight transmissions are part of CAT GEN MPA 210. The unit in charge of tracking the aircraft (ATS or Airline) shall get first this information. - Rationale (a) : There is a confusion between SAR and ATS responsibilities. - Rationale (b): there is a confusion between normal procedure, back-up procedure, and last resort procedure which consists in using a device for another purpose than the ones for which it is designed. The solution is designed for this cases and environment. This is here a backup procedure, whereas (b) mentions a last resort procedure in CAT GEN MPA 205.
response	First sub-comment: not accepted The distribution of data by the transmission service is addressed in AMC1 CNS.OR.100, not in Section 3 of Subpart E of CS-ACNS. Second sub-comment: not accepted There is no confusion in the rationale of paragraph (a) of CS ACNS.E.LAD.260. Third sub-comment: not accepted The manual activation of a means for locating an aircraft in distress is not a backup solution when aircraft tracking does not work, neither in ICAO Annex 6 Part I nor in the Air OPS Regulation. The means for locating an aircraft in distress are to be manually activated by the flight crew only in a distress situation.

comment	*327* comment by: *DGAC France* **GM1 ACNS.E.LAD.260** The logic of automatic deactivation of ELT-DT is the same as other ADT solutions: deactivation occurs when the condition which generated activation no longer exists.
response	Not accepted Refer to ED-237 Section 3.2.3: ‘A “transmission cancellation notification” will be generated when there are no triggering conditions present and the trigger cancellation criteria have been met.’

	This means that the absence of triggering conditions is not sufficient for automatically deactivating a system that relies on an automatic triggering function; cancellation criteria must also be met.

comment	_328_ comment by: _DGAC France_ **CS.ACNS.E.LAD.270** If flight cases are taken into account (rationale – item (b)): It must be clear about which function is deactivated: ADT function, Post-flight function, or both?
response	Not accepted The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT and post-flight localisation and recovery (PFLR) concepts, as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210.

comment	_329_ comment by: _DGAC France_ **CS ACNS.E.LAD.280 Rationale :** <u>- Item (a):</u> Flight crew advise ATS units of nuisance activations. Yes but there shall be also the airline when in charge of tracking the aircraft in some airspaces. <u>- Item(b):</u> the same authority shall be alerted by the crew whether they use radio emergency frequencies or manual activation of an ADT. Since radio messages are mentioned, it is clear that this CS is related to the ADT function of the solution activated in flight. Same for AMC1 ACNS.E.LAD.280
response	First sub-comment: noted Flight crew procedures are addressed in AMC1 CAT.GEN.MPA.210. Second sub-comment: not accepted Authorities are organisations (usually national or international administrations) with legal power to take decisions or enforce the law in certain areas. The operator of an aircraft is not an ‘authority’.

comment	*330* comment by: *DGAC France* **CS ACNS.E.LAD.290** The sentence "*any activation signal is automatically transmitted to …ressources*" is not in line with the aim and impact of each embedded function: - ADT function of the system shall be automatically transmitted to the relevant ATS (here ATS on the airport) and Airline, and then made available on request to the relevant RCC. - Post-flight function should be made available to RCC (and to ATS and Airline according to GADSS and ICAO Annex 6) - 121,5 MHz homing signal will mainly impact ATS (on the airport for instance). - It is necessary to tell the difference between undesirable activation in flight or on ground.
response	Not accepted The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT and the PFLR concepts, as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210, i.e. to provide standards for the installation of equipment and systems to help locate an aircraft in distress, in accordance with the Air OPS Regulation. In addition, the distribution of data by the transmission service is addressed in AMC1 CNS.OR.100, not in Section 3 of Subpart E of CS-ACNS.

comment	*331* comment by: *DGAC France* **AMC1 ACNS.E.LAD.290** This CS is about in flight activation of the solution. ATS shall get the information in priority along with the airline. The in flight transmission about the cause of undesirable activation shall be transmitted to the Airline for analysis. It is not up to the RCC or ATS to analyse the cause of wrong activation. What ATS and/or RCC need whether the activation is related to a real case of automatic activation. The crew shall have means to be aware of an accidental deployment of the ADFR in flight, so that any ELT (ELT-DT or ELT-AF function) signal will not be dealt by ATS, Airline, and RCC.

response	First sub-comment: partially accepted As explained in the rationale of CS ACNS.E.LAD.290, the intent of that CS is to provide the operator, and not the ATS units or RCCs, with means to determine the causes of automatic activation. This is because point CAT.GEN.MPA.210 is an Air OPS Regulation provision; therefore, the operator is ultimately responsible for the performance of the system. However, AMC1 ACNS.E.LAD.290 was reworded for clarity; please see the response to comment No 212. Second sub-comment: noted The indication of the ADFR deployment to the flight crew when a solution based on an ADFR is implemented was addressed in AMC2 ACNS.E.LAD.280 in Section 3.3.2 of NPA 2020-03, the content of which was moved to CS ACNS.E.LAD.650.

comment	*333* comment by: *DGAC France* **AMC1 ACNS.E.LAD.310** <u>Item (b) :</u> Since the term "equipment" is used, it is understood that this requirement does not apply to the entire system but to a (singular) specific component/part. Therefore, DGAC suggest to EASA to clarify if by "transmitted" is it implied the emission of the activation signal (if so, equipment would be understood as antenna and antenna cabling), the data gathering and formatting of the message to be passed to the system antenna for emission, or both? <u>Rationale item (d) :</u> Same comment, what is implied by "signal transmitter" (shouldn't the antennas, and other components that are required for the transmission of the homing signal be comprised within transmitter term)?
response	First sub-comment: partially accepted Point (b) of AMC1 ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03 was corrected; see the response to comment No 216. The term used for designating the broadcasting of signals by an ELT in ED-62B, ETSO-C126, and the Air OPS Regulation is ‘transmit’, not ‘emit’. Therefore, the equipment is called ‘emergency locator transmitter’. In English, ‘emit’ is rather used with liquid, heat, sound, gas, particles, etc.), while ‘transmit’ is used with electromagnetic signals. Second sub-comment: accepted

Point (e) of AMC1 ACNS.E.LAD.310 was modified to include the antennas that are used for homing-signal transmission.

comment *334* comment by: *DGAC France*

AMC2 ACNS.E.LAD.310 :

- Item (e): ICAO concept does not require ADT systems (whose ELT-DT) to withstand a crash.

Crash survivability is only an option according to the functions expected from the ELT-DT. If a Post-flight function is required, crash survivability shall also be required when the ELT-DT is not associated to an ELT which fulfil the Post-flaight function (crash sensor, post-crash 406 Mhz transmission, and 121,5 MHz homing transmission).

response Not accepted

The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT and the PFLR concepts, as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210.

If a means compliant with point CAT.GEN.MPA.210 is installed on board an aircraft, point CAT.IDE.A.280 does not require the carriage of an automatic ELT. Therefore, any means compliant with point CAT.GEN.MPA.210 should cover the service that is currently provided by an automatic ELT: refer to Section 4.1.2 of NPA 2020-03. For this reason, the scope of CS ACNS.E.LAD.001 includes the cases where an ELT is replaced by means that help locate an aircraft in distress.

ICAO Annex 6, Part I, Section 6.17 allows replacing the automatic ELT by a 'capability that meets the requirement of 6.18' (which the commentator indicates as 'ADT'). However, as stated in ICAO Annex 6, Part I, Appendix 9, 'Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.' This means that ICAO Annex 6 Part I allows replacing automatic ELTs with means that do not meet the accuracy that is needed by SAR mobile facilities when trying to locate an accident site. This issue was raised in a working paper (WP) that was presented on behalf of the EU Member States, the European Civil Aviation Conference (ECAC), and EUROCONTROL at the 13th Air Navigation Conference in October 2018 (WP AN-Conf/13-WP/212).

comment *335* comment by: *DGAC France*

AMC3 ACNS.E.LAD.310

Per previous requirements, system is armed as soon as the aircraft is airborne. DGAC recommends that EASA details what is implied per "normal" shutdown while airborne.

response

Partially accepted

Point (b) of AMC3 ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03 was deleted because that point included conditions to automatically activate the system, and not environmental and crash conditions. A point that captures the intent of point (b) was introduced into AMC2 ACNS.E.LAD.240; see the response to comment No 62.

comment

336 comment by: *DGAC France*

CS ACNS.E.LAD.320 Rationale :

Item (b)(1): ELT-AF, ELT-AP, ELT-S are not designed to transmit in flight and give an accurate position. (They belong to LEOSAR concept of operation). Only ADT solutions are designed to transmit in flight.

Item (b)(2): That is one of the reasons why ATS and Airline shall get the information before RCC**.**

response

First sub-comment: not accepted

Refer to the response to comment No 325.

Second sub-comment: not accepted

According to AMC2 ACNS.E.LAD.240, the criteria used by the automatic triggering function of a solution based on an ELT(DT) or on HRT should comply with ED-237. Therefore, in the examples mentioned in point (b)(2) of the rationale of CS ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03, the automatic triggering function activates the system only when the electrical power from all engines is lost after fuel exhaustion (Scenario 4 in Section 3.2.1 of ED-237).

comment

337 comment by: *DGAC France*

AMC3 ACNS.E.LAD 320

In flight transmission are taken into account. Thus, the NPA is not only focused on the determination of the point of end of flight.

response

Noted

AMC3 ACNS.E.LAD.320 contains AMC applicable to ELT-based and HRT-based solutions. Such solutions rely on in-flight transmission of activation signals to achieve the position accuracy objectives that apply to the point of end of flight (refer to CS ACNS.E.LAD.410 and CS ACNS.E.LAD.420). Other solutions (e.g. ADFR-based solutions) can achieve the position accuracy objectives without in-flight transmission of activation signals.

comment

338 comment by: *DGAC France*

GM1 ACNS.E.LAD.320 Rationale :

Item (a): ADT signals are the same kind of information than Aircraft tracking signals: they are both position information of an aircraft in flight, especially when ADT will be manually activated in flight when ADT does not automatically triggers.

response

Not accepted

The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT concept as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210.

The scope of the requirements on aircraft tracking (ICAO Annex 6, Part I, Section 3.5 and point CAT.GEN.MPA.205) is different from the scope of the requirements on locating an aircraft in distress (ICAO Annex 6, Part I, Section 6.18 and Appendix 9, and point CAT.GEN.MPA.210); therefore, the former should not be confused with the latter. As required by point CAT.GEN.MPA.205, aircraft tracking is part of the operational control over the flights, and it is not intended for locating an aircraft in distress or the point of end of flight after an accident.

comment

339 comment by: *DGAC France*

AMC1 ACNS.E.LAD.340

Since there is no requirement for ELT-AF floatability, solutions mentioned in item (a) and item (b) do not fulfil the same level of performance in terms of Post-flight localisation, with regard to 406 MHz 15 minute transmission and homing.

response

Not accepted

The objective of the performance-based approach that was adopted in NPA 2020-03 is not that all solutions have exactly the same performance, but that they all meet the CPOs.

AMC1 ACNS.E.LAD.340 provides AMC to CS ACNS.E.LAD.340, which only requires the successful automatic activation of the system and the transmission of the activation signals, regardless of whether the point of end of flight is over land or over water. CS ACNS.E.LAD.340 does not set any minimum transmission time and does not address the transmission of a homing signal.

The objective of point (a) of AMC1 ACNS.E.LAD.340 is to ensure the transmission of information sufficient to determine the position of the point of end of flight before the aircraft sinks into water if the system relies on non-deployable equipment. The '15 minute' transmission time that is mentioned in this comment is only applicable to solutions that deploy equipment (refer to CS ACNS.E.LAD.230), but not applicable to solutions that fall within the scope of point (a) of AMC1 ACNS.E.LAD.340. Hence, the comparison is not meaningful.

comment | *340* | comment by: *DGAC France*

CS ACNS.E.LAD.350 Rationale :

Item (b) :

ATS and Airline shall be mentioned along with RCC.

It is also a good reason not to transmit automatically to RCC, and let ATS and Airline (which both may be in contact with the crew) decide about the status of the activation.

response | Not accepted

Any action by the flight crew to declare a distress situation should be considered as genuine, since the flight crew are ultimately responsible for the safety of the aircraft occupants. This should not undergo filtering by the operator, which in addition may waste time, thus reducing the chances to rescue accident survivors. According to ICAO Annex 11 (Amendment No 52, adopted on 9 March 2020), Chapter 5, Section 5.2.1, a distress phase must be declared when 'information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely'. This obviously includes the information that the aircraft is in distress, which is received from the flight crew, be it through normal communication channels or through the manual activation of the system.

In addition:

	— the distribution of data by the transmission service is addressed in AMC1 CNS.OR.100; and — the flight crew procedures are addressed in AMC1 CAT.GEN.MPA.210. With regard to the transmission of the data to an RCC, see the response to comment No 273.

comment	*341* comment by: *DGAC France* **AMC1 ACNS.E.LAD.350 rationale :** If the flight crew detects a distress situation (for instance, not enough fuel to get to an airfield), they shall manually activate the ADT function of the solution, so that the Airline and ATS (and RCC when deemed necessary) share the same position information at the same time to allow the best coordination possible. Not Being able to reach an airfield is a distress situation as soon as the crew is aware of it.
response	Noted The flight crew procedures are addressed in point (c) of AMC1 CAT.GEN.MPA.210. That point was reworded to clarify that manual activation is reserved for when a SAR response is needed or anticipated; refer to the response to comment No 166.

comment	*342* comment by: *DGAC France* **CS ACNS.E.LAD.360 Rationale :** For the same reason as mentioned for previous CSs, there may be also a few hours from activation to destruction of the system.
response	Not accepted See the response to comment No 336.

comment	*343* comment by: *DGAC France* **GM1 ACNS.E.LAD.360**

The system activation shall not downgrade transmissions between the crew and the ATS or the Airline (radio, CPDLC, Aircraft tracking data).

response

Noted

This comment is addressed by paragraph (a)(1) of CS 25.1309 and by AMC 25.1309.

CS 25.1309 specifies the following:

'(a) The aeroplane equipment and systems must be designed and installed so that:

(1) Those required for type certification or by operating rules, or whose improper functioning would reduce safety, perform as intended under the aeroplane operating and environmental conditions.'

AMC 25.1309, point (9)(a)(3) specifies the following:

'[…] For the equipment systems and installations covered by CS 25.1309(a)(1), the compliance demonstration should also confirm that the normal functioning of such equipment, systems, and installations does not interfere with the proper functioning of other equipment, systems, or installations covered by CS 25.1309(a)(1).'

comment

344 comment by: *DGAC France*

CS ACNS.E.LAD.410

CS ACNS.E.LAD.420

"on the ground" wording should be clarified. If the first component of the communication infrastructure to receive the distress signal was in space, would the clock start from receipt of the signal by this component?

DGAC recommends to reword as follows : "by the communication infrastructure" instead of "on the ground", as specified at item (b)(3) of the associated rationale (p.31)

response

Partially accepted

See the response to comment No 257.

comment

345 comment by: *DGAC France*

CS ACNS.E.LAD.420

Agreement for 200 m accuracy and homing on 121,5 MHz.

Why choosing a 15 mn post-crash transmission if an ELT can not withstand a fire environment for more than 15 seconds?

response

Noted

CS ACNS.E.LAD.420 does not require 'post-crash transmission' for 15 or 20 minutes.

CS ACNS.E.LAD.420 requires that the performance of a system compliant with CAT.GEN.MPA.210 is such that the data received from the communication infrastructure (after it has detected and processed the activation signals transmitted by that system) allows locating the point of end of flight with a two-dimensional position accuracy of 200 metres within 20 minutes of reaching that point, when the accident is survivable.

This 20-minute time objective is set to ensure that accurate information on the location of the point of end of flight reaches the competent SPOC quickly, as this information is key for an RCC to determine which mobile SAR facilities need to be deployed.

comment

_346_ comment by: _DGAC France_

GM2 ACNS.E.LAD.420

Item (a) : Why should the automatic ELT be of second-generation type when the ELT(DT) can be first-generation?

response

Noted

GM2 ACNS.E.LAD.420 in Section 3.3.2 of NPA 2020-03 was deleted; refer to the response to comment No 21.

COSPAS-SARSAT C/S T.007 (406-MHz distress beacon type approval standard) provides the testing standards applicable to a first-generation beacon.

According to COSPAS-SARSAT C/S T.007, Issue 5, Revision 7 (June 2021), Annex A, Section A.3.8.2, the standards for testing the encoded position accuracy require to not exceed:

'500 metres for beacons with Standard, National or RLS Location protocols,

- 200 metres in the horizontal plane (2D) and within the limits of A.2.5 c) i) and ii) in Altitude for ELT(DT)s,

- 5.25 km for beacons with User-Location protocols.'

According to COSPAS/SARSAT Document T.001, Issue 4, Revision 8 (June 2021), Section 4.5.5.6, a first-generation ELT(DT) must incorporate an internal navigation device, and the distance between the position that is provided by the internal navigation device at the time of the position update, and the 2D position that is contained in the next 406-MHz transmission from the ELT(DT), while static, 'shall not exceed 200 m'. In addition, COSPAS/SARSAT Document T.001, Annex A, Section A3.3.8 'ELT(DT) Location Protocol' allocates a larger number of bits to the position data to achieve a high resolution. Therefore, a first-generation ELT(DT) can meet C/S T.007, Annex A, Section A.3.8.2, because of the high accuracy of the position source and the high resolution of the encoded position information.

Otherwise, the overall accuracy of the location information encoded in messages transmitted by first-generation beacons is limited by the small number of bits that can be used to transmit this location information. Furthermore, the independent location information that is provided by COSPAS-SARSAT through the analysis of the beacon bursts of a first-generation beacon is inaccurate (accuracy error of several kilometres).

According to C/S T.007 Issue 5 Revision 7, the best accuracy that can be required from a first-generation ELT(AF) is 500 metres, which does not meet CS ACNS.E.LAD.420.

COSPAS-SARSAT Document C/S T.021 (COSPAS-SARSAT Second-Generation 406-MHz Distress Beacon Type Approval Standard) provides the testing standards applicable to a first-generation beacon.

According to Annex B, Subsection B.14.2.4.3 of COSPAS-SARSAT Document C/S T.021, Issue 1, Revision 1 (June 2021):

'The location accuracy shall be 30 meters 95% of the time a beacon is activated.'

COSPAS-SARSAT C/S G.008 'Operational Requirements for Cospas-Sarsat Second-Generation 406-MHz Beacons', Issue 1, Revision 3 (October 2014), Section 4.2.1 specifies that 'Encoded locations shall be provided to an accuracy of 30 m in latitude and longitude, 95% of the time, within 5 minutes of beacon activation.' In addition, said document also sets for a second-generation beacon an independent location accuracy of 100 metres for 95 % of the time within 30 minutes.

This means that the position accuracy that is required from a second-generation ELT(AF) according to C/S T.021 and C/S G.008 is sufficient to meet CS ACNS.E.LAD.420.

comment 347 comment by: *DGAC France*

CS ACNS.E.LAD.610

In case of an ADT function being integrated in the system (HRT, ELT-DT), the failure of this function has an impact first on the alerting service which is not able to assess the situation encountered in flight by the aircraft.

DGAC see a need to define the difference between ADT and Post-flight functions. No ADT function failure should impact SAR service.

response

Not accepted

The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT and the PFLR concepts as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210, i.e. to provide standards for the installation of equipment and systems to help locate an aircraft in distress, in accordance with the Air OPS Regulation, especially with point CAT.IDE.A.280 'Emergency locator transmitter (ELT)' thereof, as a system compliant with point CAT.GEN.MPA.210 may replace an automatic ELT.

comment

348 comment by: *THOMAS J. PACK – ACR GROUP*

AMC1 ACNS.E.LAD.230 Continued operation after losing normal electrical power ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION CS ACNS.E.LAD.230, **point (c)** may be met by installing an ELT(AF) or (AP).

NOTE: There is no point (c) listed in CS ACNS.E.LAD.230

response

Noted

EASA thanks you for your comment. See the response to comment No 446.

comment

349 comment by: *DGAC France*

CS ACNS.E.LAD.620 Rationale :

Notion of "other stakeholders":

The focus on SAR is erroneous when dealing with in flight transmission of an ADT function of the system, since ATS and Airline shall be frontline in this case.

Distinguishing ADT function and Post-flight function allows for alleviating the workload of RCCs when dealing with undesirable activations.

response

Not accepted

The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT concept as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210, i.e. to provide standards for the installation of equipment and systems to help locate an aircraft in distress, in accordance with the Air OPS Regulation.

In addition, as detailed in COSPAS-SARSAT R.007 (COSPAS-SARSAT report on system status and operations) No 36 (January to December 2019), most current false alerts that are received by RCCs due to an ELT activation are caused by inadvertent activation or inappropriate manipulation of the ELT during maintenance. According to said document, such false alerts represent more than 95 % of all the alerts that are received by RCCs. Segregating the ADT functions from the PFLR functions, as presented in the GADSS ConOps, would not solve this issue. It would not reduce the workload on RCC staff that is caused by false alerts.

comment — _352_ — comment by: _THOMAS J. PACK – ACR GROUP_

AMC1 ACNS.E.LAD.240 Automatic activation ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO SOLUTIONS BASED ON AN ELT(DT) AND TO SOLUTIONS BASED ON HRT The criteria used by the automatic triggering function should comply with EUROCAE ED-237, except that this function should not be inhibited when the aircraft is airborne unless the aircraft is equipped with an ELT(AF), (AD) or (AP). When the accident database of EUROCAE ED-237 does not cover all possible scenarios, additional accidents should be included to verify the event detection rate.

Note: Just a note of clarification. This AMC is saying that the automatic triggering function can be disabled in flight is the aircraft is equipped with an ELT(AF), (AD) or (AP). In an extreme example, an aircraft could fly with the automatic triggering always disabled as long as it has an ELT(AF). It seems to completely bypass the automatic triggering requirements.

response — Noted

This sentence was reworded for clarity; see the response to comment No 62.

comment — _357_ — comment by: _Embraer S.A._

Comment:

The scope of CAT.GEN.MPA.210 also encompasses aeroplanes with an MCTOM (Maximum Certified Take-Off Mass) of more than 45,500 kg.

Reason(s) for Comment:

The proposed CS ACNS.E.LAD.001 only mentioned aeroplanes with an MCTOM of more than 27,000 kg, with an MOPSC (Maximum Operating Passenger Seating Configuration) of more than 19 passengers; while requirement CAT.GEN.MPA,210 also encompasses aeroplanes with an MCTOM of more than 45,500 kg, independently of the number of passengers.

Proposed Change/Text (where applicable):

The text passage:

"(…)

Aircraft within the scope of this Section are large aeroplanes with a maximum certified take-off mass (MCTOM) of more than 27 000 kg and a maximum passenger seating configuration of more than 19.

(…)"

should be changed to:

"(…)

Aircraft within the scope of this Section are large aeroplanes with a maximum certified take-off mass (MCTOM) of more than 27 000 kg and a maximum passenger seating configuration of more than 19 and aeroplanes with a MCTOM of more than 45 000 kg.

(…)"

response

Partially accepted

See the response to comment No 3.

comment

358 comment by: *Embraer S.A.*

Comment:

The definition of "survivable accident" of CS ACNS.E.LAD.010 contradicts the definition of "survivable accident" of GM1 ACNS.E.LAD.010 (a).

Reason(s) for Comment:

The term "survivable accident" in CS ACNS.E.LAD.010 is defined as an accident where some crew members or passengers may survive; whereas the same term is defined in GM1 ACNS.E.LAD.010 (a) as an accident during which a properly installed automatic ELT is not exposed to conditions exceeding the environmental test conditions of an ELT(AF), as specified in EUROCAE ED-62B, Chapter 4. It is not impossible to have an accident where all lives are lost and the ELT (AF) remains intact (for example, loss of all oxygen on board). It is advisable to harmonize these two definitions and to favor the definition contained in GM1 ACNS.E.LAD.010 (a). Although the definition in GM1 ACNS.E.LAD.010 (a), at first, seems to be less intuitive, for the purposes of this rule it is more adequate since it eliminates the subjectivity for system/equipment requirements when an accident is survivable or not.

Proposed Change/Text (where applicable):

The text passage:

"This CS contains definitions of terms that are only applicable in this Section and may differ from definitions of terms in CS ACNS.A.GEN.005 'Definitions':

(…)

- 'survivable accident' is an accident where some crew members or passengers may survive;

(…)"

should be changed to:

"This CS contains definitions of terms that are only applicable in this Section and may differ from definitions of terms in CS ACNS.A.GEN.005 'Definitions':

(…)

- 'survivable accident' is an accident ~~where some crew members or passengers may survive~~ during which a properly installed automatic ELT is not exposed to conditions exceeding the environmental test conditions of an ELT(AF), as specified in EUROCAE ED-62B, Chapter 4;

(…)"

response Accepted

See the response to comment No 106.

comment	*359* comment by: *Embraer S.A.*

Comment:

There are two comments for this part of the proposed rule:

1) "Crash survivable ELT" is not a defined term in this proposed rule – but survivability capability is defined in EUROCAE ED-62B (and briefly referenced in GM1 ACNS.E.LAD.010) and such definition is harmonized with the definition of GM1 ACNS.E.LAD.010 (a) ; and

2) The text passage that references the combination of an ELT(DT) without the survivability capability with other ELT types with survivability capability is not very clear the way that it is currently proposed.

Reason(s) for Comment:

"Crash survivable ELT" is not a well-defined term in this NPA. Because of this lack of definition, it would be better if this term could be replaced by a text that is harmonized with the survivability capability definition that is specified in EUROCAE ED-62B, which also happens to be harmonized with the definition of "survivable accident" in GM1 ACNS.E.LAD.010 (a).

Also, the proposed text is not very clear for the acceptable ELT combinations of an ELT(DT) without the survivability capability with other ELT types with the survivability capability. It is suggested to categorically express that the combinations that are allowed, also explicitly expressing that such combinations are for the ELT(DT) without the survivability capability.

Proposed Change/Text (where applicable):

The text passage:

"a) In the solution based on an ELT(DT), the ELT could be:

- a crash-survivable ELT(DT); or

- an ELT(DT) and an ELT(AF), ELT(AD) or ELT(AP)."

should be changed to:

"a) In the solution based on an ELT(DT), the ELT could be:

- an ~~crash-survivable~~ ELT(DT) that also meets the environmental test conditions of Group A and B tests specified in EUROCAE ED-62B, Chapter 4; or

- an ELT(DT) that complies with § 4.6 of EUROCAE ED-62B and an ELT(AF);~~,~~ or

- an ELT(DT) that complies with § 4.6 of EUROCAE ED-62B and an ELT(AD); or

- *an ELT(DT) that complies with § 4.6 of EUROCAE ED-62B and an ELT(AP).”*

response

Partially accepted

GM3 ACNS.E.LAD.010 was deleted and the term ‘crash-survivable ELT(DT)’ was deleted; see the response to comment No 44.

comment

360 comment by: *Embraer S.A.*

Comment:

AMC1 ACNS.E.LAD.230 references CS ACNS.E.LAD.230, point (c), which is a requirement that does not exist.

Reason(s) for Comment:

AMC1 ACNS.E.LAD.230 references CS ACNS.E.LAD.230, point (c), which does not exist. Therefore, AMC1 ACNS.E.LAD.230 should be deleted or it should be rewritten to contemplate the correct reference.

Proposed Change/Text (where applicable):

To delete AMC1 ACNS.E.LAD.230:

~~“AMC1 ACNS.E.LAD.230 Continued operation after losing normal electrical power~~
~~ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION~~

~~CS ACNS.E.LAD.230, point (c) may be met by installing an ELT(AF) or (AP).”~~

response

Partially accepted

See the response to comment No 446.

comment

361 comment by: *Embraer S.A.*

Comment:

The proposed text does not contemplate the possibility of an ELT(DT) also functioning as an ELT(AF), ELT(AD) or ELT(AP).

Reason(s) for Comment:

CS ACNS.E.LAD.010(a), AMC2 ACNS.IDE.A.280(c) and AMC2 ACNS.E.LAD.110(a)(1) indicate that an ELT(DT) class 0 or 1 and with G/C/H1 capabilities can meet the requirements without the necessity of also installing one ELT(AF), or ELT(AD), or ELT(AP) on board. Therefore, such configuration also meets the requirements of ACNS.E.LAD.240 and this should be reflected in the proposed text of the NPA.

Proposed Change/Text (where applicable):

The text passage:

"The criteria used by the automatic triggering function should comply with EUROCAE ED-237, except that this function should not be inhibited when the aircraft is airborne unless the aircraft is equipped with an ELT(AF), (AD) or (AP). When the accident database of EUROCAE ED-237 does not cover all possible scenarios, additional accidents should be included to verify the event detection rate."

should be changed to:

"The criteria used by the automatic triggering function should comply with EUROCAE ED-237, except that this function should not be inhibited when the aircraft is airborne unless the ELT(DT) is also qualified as an ELT(AF), (AD), or (AP) or the aircraft is equipped with an ELT(AF), (AD) or (AP), as referenced in CS ACNS.E.LAD.010(a), AMC2 ACNS.IDE.A.280(c) and AMC2 ACNS.E.LAD.110(a)(1). When the accident database of EUROCAE ED-237 does not cover all possible scenarios, additional accidents should be included to verify the event detection rate."

response Partially accepted

See the response to comment No 62.

comment *362* comment by: *Embraer S.A.*

Comment:

The proposed text does not contemplate the possibility of an ELT(DT) also functioning as an ELT(AF) or ELT (AP).

Reason(s) for Comment:

As previously pointed out in the last comment, CS ACNS.E.LAD.010(a), AMC2 ACNS.IDE.A.280(c) and AMC2 ACNS.E.LAD.110(a)(1) indicate that an ELT(DT) class 0 or 1 and with G/C/H1 capabilities can meet the requirements without the necessity of also installing one ELT(AF) or ELT(AP) on board. Therefore, such configuration also meets the requirements of ACNS.E.LAD.250 and this should be reflected in the proposed text of the NPA.

Proposed Change/Text (where applicable):

The text passage:

"(a) CS ACNS.E.LAD.250 may be met by installing an ELT(AF) or (AP)."

should be changed to:

"(a) CS ACNS.E.LAD.250 may be met by installing an ELT(AF) or (AP) or an ELT(DT) compliant with class 0 or 1 and with G/C/H1 capabilities, as defined in EUROCAE ED-62B."

response Partially accepted

Regarding point (a) of AMC1 ACNS.E.LAD.250 in Section 3.3.2 of NPA 2020-03: it was not intended to require the installation of an ELT(AF) or (AP), but to indicate that point (a) of CS ACNS.E.LAD.250 could be met by equipping the aircraft with an ELT(AF) or (AP), regardless of the implemented solution. Said point included GM and its content was moved to GM1 ACNS.E.LAD.250

In addition, as the intent of AMC2 ACNS.E.LAD.250 in Section 3.3.2 of NPA 2020-03 was covered by CS ACNS.E.LAD.140 (as this CS requires that activation signals contain sufficient information to determine the aircraft position), AMC2 ACNS.E.LAD.250 was deleted.

comment	*363*	comment by: *Embraer S.A.*

Comment:

System failure indication is not necessary for the flight crew.

Reason(s) for Comment:

System failure or malfunction should not preclude the pilots during a distress situation from the execution of any emergency procedure that exists today, including the use of aeronautical emergency frequency and the activation of the corresponding transponder code. Therefore, since the failure of the system does not require any action from the pilots or brings any substantial benefit for aircraft operation in flight, the system failure should not be presented to the pilots in flight as suggested in the requirement rationale. An indication may be useful for maintenance or dispatch procedures, nonetheless.

Proposed Change/Text (where applicable):

The text passage:

"(b) The system provides indication to the flight crew in case of failure that affects its performance."

should be changed to:

"(b) The system may provide~~s~~ an advisory indication to the flight crew in case of failure that affects its performance or may provide no indication at all."

response Partially accepted

See the response to comment No 16.

comment *364* comment by: *Embraer S.A.*

Comment:

Caution is not the appropriate category for LAD system activation.

Reason(s) for Comment:

System activation indication, unless it is a nuisance, does not require subsequent flight crew response for that indication. Therefore, the more appropriate category for this indication is "advisory" (which contemplate conditions that require flight crew awareness and may require subsequent flight crew response, as per CS 25.1322(b)(3)).

Considering a scenario of an actual distress condition, the LAD system status would not be relevant for the pilots in recovering the aircraft from a distress condition. Therefore, a caution message from the LAD system would distract the flight crew, increasing the pilots' workload, instead of aiding them.

By design, the number of nuisance activations will be limited and within the nuisance activations that the ATSs and RCCs currently manage. Therefore, the level of urgency and priority asked in this NPA is not adequate.

Proposed Change/Text (where applicable):

The text passage:

"The indication to the flight crew that the system is activated should be a caution, in accordance with CS 25.1322."

should be changed to:

"The indication to the flight crew that the system is activated should be an advisory ~~caution~~, in accordance with CS 25.1322."

response Accepted

See the response to comment No 18.

comment *365* comment by: *Embraer S.A.*

Comment:

The manner that AMC1 ACNS.E.LAD.310 is written may give the impression that the system may have to comply with different non-compatible environmental condition

Reason(s) for Comment:

AMC1 ACNS.E.LAD.310 present some environmental test conditions, while ce solutions, such as ELT(DT) and ADFR have already more specific and stringent conditions, such as EUROCAE ED-62B and ED-112A. The text, the way that it is wr may give the impression that there is an antinomy of these test conditions. The text

NPA should state that these conditions are to be followed, unless there are more specific and stringent test conditions.

Proposed Change/Text (where applicable):

The text passage:

"(a) The system should meet the specifications for automatic activation and transm of the activation signals while all the equipment that the system is composed of is su to the environmental test conditions of Table 1 and Table 2 below.

(…)

(e) If ELTs are used to meet CS ACNS.E.LAD.310, they should be installed in accordance the guidelines of EUROCAE ED-62B, Chapter 6."

should be changed to:

"(a) The system should meet the specifications for automatic activation and transm of the activation signals while all the equipment that the system is composed of is su to the environmental test conditions of Table 1 and Table 2 below, except if they other more stringent and specific test conditions.

(…)

(e) If ELTs are used to meet CS ACNS.E.LAD.310, they should meet the tests in EUR 62B, Chapter 4, as applicable, and be installed in accordance with the guidelin EUROCAE ED-62B, Chapter 6."

response Not accepted

If airborne equipment meets more stringent environmental testing conditions than those specified in Tables 1 and 2 of AMC1 ACNS.E.LAD.310, then, obviously, that equipment is deemed to meet the conditions specified in said tables.

The need to refer to the conditions for an ELT(AF) or (AP), which are specified in Chapter 4 of ED-62B, is addressed by point (c) of AMC1 ACNS.E.LAD.310.

In addition, an ELT(DT) is required to comply with ETSO-C126c; refer to the response to comment No 49.

comment	*366*	comment by: *Embraer S.A.*

Comment:

The text of this section is not harmonized with § 2.9.5.1 of EUROCAE ED-62B.

Reason(s) for Comment:

EUROCAE ED-62B, § 2.9.5.1, states for the ELT(DT) that "(o)nce armed, the ELT transmitter shall automatically activate and radiate a signal through an antenna upon command from automatic triggering system or if the communication connections to the automatic triggering system is lost". Considering that at least the electrical connection is lost when automatic triggering function is lost, there is incompatibility of the proposed NPA text with ED-62B. It is suggested to delete the text that is not harmonized with ED-62B.

Proposed Change/Text (where applicable):

The text passage:

"It is not advisable that the automatic triggering function activates the system when input data from a single source is lost or erroneous, except when this indicates that an accident or a distress situation is likely to occur within minutes. On the contrary, the automatic triggering function is expected to activate the system when multiple data sources fail as a result of accident conditions (e.g. on-board fire or in-flight collision). Similarly, loss of the automatic triggering function may be too frequent a condition to be used to activate the system while meeting CS ACNS.E.LAD.620. Loss of power supply to the automatic triggering function is considered a more robust condition to activate the system. Refer to AMC3 ACNS.E.LAD.310."

should be changed to:

"It is not advisable that the automatic triggering function activates the system when input data from a single source is lost or erroneous, except when this indicates that an accident or a distress situation is likely to occur within minutes. On the contrary, the automatic triggering function is expected to activate the system when multiple data sources fail as a result of accident conditions (e.g. on-board fire or in-flight collision). ~~Similarly, loss of the automatic triggering function may be too frequent a condition to be used to activate the system while meeting CS ACNS.E.LAD.620. Loss of power supply to the automatic triggering function is considered a more robust condition to activate the system. Refer to AMC3 ACNS.E.LAD.310."~~

response Partially accepted

This comment points to an inconsistency between the first issue of EUROCAE Document ED-62B and GM1 ACNS.E.LAD.620 in Section 3.3.2 of NPA 2020-03. This inconsistency was corrected by ED-62B Change 1, issued in June 2020. Section 2.9.5.1 of ED-62B Change 1 states that once the ELT(DT) is armed, it shall transmit:

— ‘Upon command from the automatic triggering system;

— If the ELT(DT) determines that a triggering command can no longer be provided based on inputs from aircraft system(s) or automatic triggering system;

— When the communication connections necessary to automatically trigger the ELT(DT) become unavailable’.

All references to EUROCAE ED-62B in Section 3 of Subpart E of CS-ACNS were replaced by ‘EUROCAE ED-62B (including Change 1)’.

In addition, GM1 ACNS.E.LAD.620 was amended.

comment | *374* comment by: *THOMAS J. PACK – ACR GROUP*

AMC1 ACNS.E.LAD.310 Environmental conditions encountered during accidents ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION

(b) If activation signals need to be transmitted by equipment affixed to the aircraft, after reaching the point of end of flight, to meet CS ACNS.E.LAD.410, that equipment should be shown to pass the following tests: ....[referenced ED-112 tests]

Comment: It is not apparent as to why a non-survivable crash would need a more stringent environmental testing. It is not a SAR issue, since being a non-survivable crash, there are no survivors, and hence it just becomes a recovery (not rescue) operation. It is not currently required for an ELT to transmit after a non-survivable crash. There appears to be no benefit to the aviation industry and compliance would result in more costly equipment and installation. The Proposed Action is to remove subsection (b) entriely.

response | Not accepted

The objective of point CAT.GEN.MPA.210 is to achieve a high probability of timely and accurately locating the accident site after an accident during which the aircraft was severely damaged, wherever the accident occurred and irrespective of the accident survivability. Means compliant with point CAT.GEN.MPA.210 are expected to provide better and faster location information not only to SAR authorities but also to safety investigation authorities. This is the main reason why point CAT.IDE.A.285

does not require the carriage of a low-frequency ULD if a means compliant with point CAT.GEN.MPA.210 is installed onboard the aircraft.

comment | *415* comment by: *FOCA Switzerland*

FOCA CH comment:

ad AMC2 ACNS.E.LAD.110, (b) and (c), p. 44:

ELT (DT) cannot be activated manually (by crew) according to our understanding (GADSS CONOPS?).

response | Not accepted

The ICAO GADSS ConOps does not address the manual activation of an ELT(DT).

ED-62B specifies that an ELT(DT) can be manually activated and deactivated by the flight crew. See the response to comment No 120.

comment | *420* comment by: *THOMAS J. PACK – ACR GROUP*

CS ACNS.E.LAD.620 Erroneous automatic activation The system is designed commensurate with at least a ~~major~~ **minor** failure condition for erroneous automatic activation.

Comment:

The recommendation is that the major failure condition be changed to a minor. Develop to a DAL C level drives cost and complexity in the design making ELT(DT) adn HRT systems more costly. Longer development times will slow adoption in the market.

CS ACNS.E.LAD.610 states that “loss of function” of the system is a “minor” failure, yet in CS ACNS.E.LAD.620 an erroneous activation is a “major” failure. CS ACNS.E.LAD.630 Integrity of information of the activation signals indicates that transmitting erronous position data is a “minor” failure. It becomes hard to believe that not finding an aircraft due to loss of function or an erronous position is considered a minor failure, yet, a false alarm to SAR is a major system failure. It does not seem consistent.

The rationale tries to further explain that the major failure of " .620" is not an airworthiness issue, but a SAR issue for false alarms. These effects are out of the scope of airworthiness and aircraft design assurance. We believe that further clarification is needed in this area, including a more definitive statement that the "major" classification regarding the integrity of activation does not imply a DAL C system design, but possibly subsystem compliance for the functionality affecting erronous activations.

It is reasonable that GM2 ACNS.E.LAD.620 and AMC1 ACNS.E.LAD.630 imply that an ELT and its input data must meet DAL D, however, we also support that this is applicable to other technologies including the HRT.

response

Not accepted

The objectives related to the loss of a function of the system and the transmission of erroneous position data are consistent with the objectives set for equipment that supports the rescue of accident survivors and of the recovery of accident data (e.g. ELTs, recorders, ULDs). However, the objective related to erroneous automatic activation is not driven by the need to rescue survivors or retrieve flight recorder data. Accepting designs that classify erroneous automatic activation as a minor failure condition could have a significant impact on RCCs (in average more than 100 false alerts worldwide per day, caused by erroneous automatic activation) and, therefore, it is not considered appropriate. Refer also to the response to comment No 248.

Paragraph (a)(1) of CS 25.1309 requires that the 'aeroplane equipment and systems must be designed and installed so that […] those required […] by operating rules […] perform as intended under the aeroplane operating and environmental conditions.' The airworthiness approval, therefore, ensures that airborne equipment complies with interoperability requirements, e.g. that radio transmitters do not affect other airspace users.

The 'major' failure condition classification corresponds to a functional development assurance level (FDAL) C, but EUROCAE ED-79A/SAE ARP 4754A permits 'FDAL D for two of the Members leading to top-level Failure Condition' (refer to the response to comment No 248). Repeating this well-established standard is not necessary.

comment

_422_ comment by: _MITSUBISHI AIRCRAFT CORPORATION_

[Page, Chapter]

Page 54 of 150, AMC1 ACNS.E.LAD.230 Continued operation after losing normal electrical power ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION

[Comment]

This AMC refers to CS ACNS.E.LAD.230 point (c), which cannot be found in the NPA.

[Reason for Change]

CS ACNS.E.LAD.230 as proposed by this NPA only contains bullets (a) and (b), and AMC1 ACNS.E.LAD.230 refers to CS ACNS.E.LAD.230 point (c).

[Change Proposal]

Clarify the correct CS.ACNS.E.LAD.230 bullet the AMC refers to.

response

Partially accepted

See the response to comment No 446.

comment

423 comment by: *MITSUBISHI AIRCRAFT CORPORATION*

[Page, Chapter]

Page 59 of 150, CS ACNS.E.LAD.280 Indications to the flight crew _ (a)

[Comment]

The indication to the flight crew requested in CS ACNS.E.LAD.280(a) should include the inadvertent activaction, not only of the homing signal, but of the distress detection.

[Reason for Change]

The activation due to distress detection may also initiate source and rescue operation on ground.

[Change Proposal]

"The system provides timely indication to the flight crew that it is activated or transmitting ~~the homing signal~~."

response

Partially accepted

Refer to the definitions of 'the system is activated' and 'activation signals' in CS ACNS.E.LAD.010.

However, the latter definition was improved for accuracy and clarity. Refer to the response to comment No 25.

comment

424 comment by: *MITSUBISHI AIRCRAFT CORPORATION*

[Page, Chapter]

Page 59 of 150, AMC1 ACNS.E.LAD.280 Indications to the flight crew ACCEPTABLE MEANS OF COMPLIANCE APPLICABLE TO ANY SOLUTION

[Comment]

A caution message might be adequate for the activation of the homing signal. However, for activation due to distress condition, the caution message could impact in the ability of the crew to address the distress condition in a timely manner.

[Reason for Change]

If the aircraft is in distress, the crew must focus on trying to recover the aircraft. Having a caution message unrelated to the reason of distress may impact the ability of the crew to respond in a timely manner.

Considering indication is required for activation by either crash detection or distress detection, there should be no requirement for the level of message.

[Change Proposal]

Delete AMC1 ACNS.E.LAD.280.

response

Partially accepted

See the response to comment No 18.

comment

426 comment by: *Orolia*

Attachment #2

Topic: comment to NPA 2020-03 from RMT.400

Page 58 Section **CS ACNS.E.LAD.270 Manual deactivation**

Since an ELT(DT) could be activated in flight to improve the probability of the determination of the location of the end of flight, a specific deactivation management shall be in place when the aircraft is on ground.

In order to avoid false alert or continuous transmission when the people are safe on ground, the point is to clarify the text for this CS ACNS and to allow to stop the distress alert, manually by the crew, in very specific cases.

It would be for instance the case of safe landing with ELT(DT) still activated. This proposal is supported by the airframers because in case of a false activation (after or without a real alert) for instance from the ADT module for whatever reason, it would allow:

- The crew or SAR Forces to have the possibility to deactivate this nuisance from ground when all people are safe.

- To avoid 406 transmissions during 24h once the aircraft has safely landed (without any possible cancelling actions). Risk of Cospas-Sarsat "saturation effect" if ADT modules have possible failure modes or in specific modes related to the state of the aircraft (e.g. only one part of the aircraft broken or in failure)

The detection of "on ground" will be done by the reception of the ARINC429 label 202 bit 15 (ELT enable/disable) which allows the ELT(DT) to be armed once in flight and disarmed once on ground (see ARINC Report 680).

Cospas-Sarsat is not involved in this triggering mechanism. However, since nothing prevent to implement such feature if aviation authorities are fine with this approach, no issue is identified today.

So, to clarify the mitigation of this risk to have no way to deactivate the transmission in specific cases, the proposed text for change to the GM2 ACNS.E.LAD.260 Automatic deactivation is as follow:

CS ACNS.E.LAD.270 Manual deactivation

(a) When the system is manually activated, it can be manually deactivated if the transmitter is attached to the aircraft.

(b) When the system is automatically activated, it cannot be manually deactivated **as long as the system is enabled.**

Rationale

(a) The flight crew must be able to deactivate the system when they activated it. Only if the transmitter is detached from the aircraft (for instance, in case of a deployed ADFR), it is not expected that the flight crew have means to stop the transmission of activation signals.

(b) (b) However, manual deactivation of an automatically activated system is forbidden during flight, not only because it is unacceptable to address unreliable design through operational procedures, but also to avoid inadvertent deactivation by the flight crew. **Nevertheless, when the aircraft is on ground, it is acceptable to deactivate the system manually if it has been automatically activated.**

response

Not accepted

See the response to comment No 63.

comment

438 comment by: *Leonardo DRS*

The primary purpose of the ELT(AD) in ADFR is to locate end of flight and facilitate rescue of survivors.

response	Noted The statement made in this comment is correct.

comment	*439* comment by: *Leonardo DRS* For ELT(DT), "autonomous triggering" may be a better term for in-flight triggering to avoid confusion with the "automatic" crash triggers used by "automatic" ELTs AF, AD and AP.
response	Partially accepted 'Automatic triggering function' is defined in CS ACNS.E.LAD.010. The definition states that such a function 'detects conditions that are likely to result in an accident during which the aircraft is severely damaged'. According to ED-62B, the crash sensor of an ELT is: 'A deceleration-sensitive device which detects a crash and initiates the transmission of emergency signals. It is sometimes referenced as g-switch.' Therefore, the crash sensor of an ELT cannot be considered part of the automatic triggering function, because it only detects a crash and not the conditions preceding a crash. In addition, AMC2 ACNS.E.LAD.240 specifies that the criteria that are used by the automatic triggering function should comply with EUROCAE ED-237. However, to avoid misunderstanding, a sentence was introduced into GM1 ACNS.E.LAD.010 to clarify that, unlike a crash sensor, an automatic triggering function is intended to activate the system before an accident occurs.

comment	*440* comment by: *Leonardo DRS* 'automatic triggering function' may clarified as 'autonomous triggering function'.
response	Partially accepted See the response to comment No 439.

comment	*441* comment by: *Leonardo DRS*
	Activation signal is used to mean two different things; distress trigger signal and RF beacon distress signal. The following clarification to the definition may help to avoid confusion. -'the system is activated' means that the system is transmitting **distress** signals; and
response	Partially accepted The definition of 'activation signals' in CS ACNS.E.LAD.010 was clarified; see the response to comment No 25.

comment	*443* comment by: *Leonardo DRS*
	The ELT(AD) in an ADFR exceeds all of the performance requirments of an ELT(AF) or (AP). Thus, GM2 E.LAD.010 could be simplified.
response	Partially accepted An ADFR-based solution needs to include an automatic ELT with capability G to meet CS ACNS.E.LAD.420. This ELT could be an ELT(AF) or (AP) installed in addition to the ADFR, or it could be the ELT integrated into the deployable package of the ADFR. However, GM2 ACNS.E.LAD.110 in Section 3.3.2 of NPA 2020-03 was deleted as AMC2 ACNS.E.LAD.020 specifies capability G for the ELT that is integrated into the deployable package of the ADFR.

comment	*444* comment by: *Leonardo DRS*
	LAD.170 point (a) needs clarification. The 406 MHz signal only needs to be transmitted for 20 minutes afer end of flight? Or for several hours after end of flight? (Cospas Sarsat requires between 18-24 hours of 406 TX after end of flight, depending on ELT type)
response	Partially accepted This comment is presumably on GM2 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03.

	The scope of CS ACNS.E.LAD.170 does not include the transmission of a 406-MHz signal, but only the transmission of a 121.5-MHz homing signal. However, point (a) of GM2 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 contained a rationale, not guidance, for the minimum transmission time. Further, the reference to AMC2 ACNS.E.LAD.110 in point (b) of that GM was not relevant anymore as the content of AMC2 ACNS.E.LAD.110 in Section 3.3.2 of NPA 2020-03 is now covered by AMC3 ACNS.E.LAD.020. Therefore, GM2 ACNS.E.LAD.170 was deleted.

comment	_445_ comment by: _Leonardo DRS_ CS ACNS E.LAD.230. in (2) without normal aircraft power, the ELT(DT) only needs to transmit (remain activated) for maximum 370 minutes per C/S T.001 and T.018. A genuine distress condition of longer duration is very unlikely.
response	Noted The condition in paragraph (b)(2) of CS ACNS.E.LAD.230 was clarified (see also the response to comment No 319). If all electrical power generating systems are inoperative, emergency batteries are the only electrical power source required to remain available on board a large aeroplane and they are required to provide 60 minutes of power (refer to paragraph (d) of CS 25.1351 and AMC 25.1351(d)). Therefore, a 370-minute duration is longer than the maximum possible duration that is specified in the corresponding point (b)(2) of CS ACNS.E.LAD.230.

comment	_446_ comment by: _Leonardo DRS_ in E.LAD.230, an ELT(AD) can also be used as AMC for continued operation after losing power. Loss of power is not a condition for deployment.
response	Partially accepted AMC1 ACNS.E.LAD.230 of Section 3.3.2 of NPA 2020-03 did not require the installation of an ELT(AF) or (AP), but indicated that paragraph (b) of CS ACNS.E.LAD.230 could be met by equipping the aircraft with an ELT(AF) or (AP), regardless of the implemented solution. The content of AMC1 ACNS.E.LAD.230 was guidance material and, therefore, was moved to GM1 ACNS.E.LAD.230.

Therefore:

— AMC1 ACNS.E.LAD.230 was deleted; and

— AMC2 ACNS.E.LAD.230 of Section 3.3.2 of NPA 2020-03 was deleted because its point (b) was not relevant for CS ACNS.E.LAD.230 and was covered by GM1 ACNS.E.LAD.350, and because its point (c) was guidance material and, therefore, moved to GM1 ACNS.E.LAD.230 containing common guidance for all solutions.

In addition, the references to an ELT(AD) were deleted from Section 3 of Subpart E of CS-ACNS. This is because according to EUROCAE ED-62B, Section 2.9.4.1.1, an 'ELT(AD) not in an ADFR shall have the capability for manual deployment', whereas CS ACNS.E.LAD.250 requires that manual deployment of any part of the system be prevented during flight. Therefore:

— GM3 ACNS.E.LAD.010 in Section 3.3.2 of NPA 2020-03 was deleted; see the response to comment No 44;

— AMC4 ACNS.E.LAD.170 was deleted; see the response to comment No 96;

— point (a) of GM1 ACNS.E.LAD.170 was corrected to delete '(AD)'; and

— AMC1 ACNS.E.LAD.240 was reworded; see the response to comment No 62.

comment	*447* comment by: *Leonardo DRS* in AMC1 for E.LAD.250, an ELT(AD) can also be manually activated if not automatically activated.
response	Partially accepted See the response to comment No 362.

comment	*448* comment by: *Leonardo DRS* It is assumed that class 1 operation (-40C) is adequate for the 121.5 MHz homing transmitter to operate in any location on the ground.
response	Noted It is unclear which part of Section 3 of Subpart E of CS ACNS this comment refers to.

	AMC1 ACNS.E.LAD.170 provides the applicable ELT classes for the 121.5-MHz homing-signal transmitter.

comment	*449* comment by: *Leonardo DRS* in E.LAD.230 (2), loss of power (and thus ARINC comms) is normally a distress trigger and will activate the ADT system.
response	Not accepted This comment is presumably on paragraph (a)(2) of CS ACNS.E.LAD.230. In the case of an ADFR-based solution, the loss of normal electrical power does not trigger the activation of the ELT that is integrated into the deployable package of the ADFR. The ELT is activated through the automatic detection of a deformation in the airframe, automatic detection of airframe immersion into water, or a manual command by the flight crew.

comment	*450* comment by: *Leonardo DRS* CS ACNS.E.LAD.230 point (c) is missing. It is assumed to be a requirement to provide a 121.5 MHz homing signal on ground. ELT(AD) can also be used as AMC to provide this capability.
response	Not accepted Refer to the response to comment No 446.

comment	*451* comment by: *Leonardo DRS* Automatic 'ARM' and 'Disarm' functions will prevent transmission during on-ground maintenance activity. No need to provide extra 'disable' functions.
response	Not accepted This comment is presumably on AMC2 ACNS.E.LAD.230. CS ACNS.E.LAD.210 requires that the system be automatically armed at the beginning of the flight and while the aircraft is still above the departure airfield.

	Therefore, a means may be needed to disable transmission during maintenance activities or before specific design or production flights. However, AMC2 ACNS.E.LAD.230 in Section 3.3.2 of NPA 2020-03 was deleted; see the response to comment No 446.

comment	*452* comment by: *Leonardo DRS* 'Autonomous' triggering function would be clear.
response	Not accepted See the response to comment No 439.

comment	*453* comment by: *Leonardo DRS* could a maximum nuisance activation rate be specified - e.g. 10E-5 flight hours?
response	Not accepted This comment is presumably related to erroneous automatic activation, which is considered a major failure condition (refer to CS ACNS.E.LAD.620 and AMC1 ACNS.E.LAD.620). When considering electronic equipment on standby (e.g. ELT), a higher rate may be acceptable if errors in the design of the equipment software or electronic hardware do not result in erroneous automatic activation; see the rationale of GM2 ACNS.E.LAD.620 in Section 3.3.2 of NPA 2020-03. Therefore, an occurrence rate of erroneous automatic activation per flight hour is not specified.

comment	*454* comment by: *Leonardo DRS* confirmation time that is 'long enough' -- a quantitative range would be helpful here -- 2-4 minutes?
response	Partially accepted

	This comment is presumably on GM1 ACNS.E.LAD.260 in Section 3.3.2 of NPA 2020-03. To address both this comment and comment No 20, GM1 ACNS.E.LAD.260 was reworded and clarified.

comment	*455* comment by: *Leonardo DRS* The ED-112A environmental tests are for flight recorders and not applicable to normal ELTs. Flight recorders do not have to operate after these tests and it is unlikely for most ELTs to survive these tests.
response	Not accepted This comment is presumably on point (b) of AMC1 ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03. Said point is applicable when a transmitter affixed to the aircraft needs to remain operative after a non-survivable accident so that the system meets the accuracy objective set by CS ACNS.E.LAD.410. In such a case, the crashworthiness test specifications for non-deployable flight recorders are applicable.

comment	*456* comment by: *Leonardo DRS* In GM3, the autonomous or automatic triggering function is only required pre-crash and should not have to survive the crash conditions.
response	Partially accepted This comment is presumably on GM3 ACNS.E.LAD.310. See the response to comment No 68.

comment	*457* comment by: *Leonardo DRS* Major failure condition for false activation may be impractical. Does this imply 10E-7 false activation rate?
response	Noted

This comment is presumably on CS ACNS.E.LAD.620.

See the response to comment No 453.

comment	*458*	comment by: *FOCA Switzerland*
	FOCA CH comment: ad AMC3 ACNS.E.LAD.110, p. 44: ELT (DT) cannot be activated manually (by crew).	
response	Not accepted ED-62B specifies that an ELT(DT) can be manually activated and deactivated by the flight crew. See the response to comment No 120.	

comment	*460*	comment by: *FOCA Switzerland*
	FOCA CH comment: ad CS ACNS.E.LAD.130, (a), p. 45: "Upon deactivation, the system automatically transmits deactivation signals[...]". This is a new requirement for beacons. Are the beacon manufacturers aware of this requirement and able to produce such beacons in time?	
response	Noted As stated in CS ACNS.E.LAD.001, the scope of Section 3 of Subpart E of CS-ACNS includes the installation of equipment and systems that are intended to help locate an aircraft in distress, and not only ELTs. With regard to the solutions that are addressed in CS-ACNS Subpart E, Section3: — an ELT(DT) should be able to send a cancellation message according to EUROCAE ED-62B (Including Change 1) Section 2.9.5.1; — EUROCAE ED-237 Section 3.2.3 specifies: ‘A “transmission cancellation notification” will be generated when there are no triggering conditions present and the trigger cancellation criteria have been met.’ EUROCAE ED-237 is applicable to ELT(DT)- and HRT-based solutions; and	

— for ADFR-based solutions, the ELT that is integrated into the deployable package of the ADFR does not need to be automatically deactivated after deployment (see also CS ACNS.E.LAD.270).

comment

461 comment by: *FOCA Switzerland*

FOCA CH comment:

ad CS ACNS.E.LAD.140, p. 46:

Cospas Sarsat requirements for 2nd Generation beacons are more detailed: e.g. remaining battery power, alternating bursts.

response

Noted

The information provided by a second-generation beacon may not be relevant for an HRT-based solution (the transmitter is not an ELT). In addition, more information may be required to be transmitted; refer to CS ACNS.E.LAD.150.

comment

462 comment by: *FOCA Switzerland*

FOCA CH comment:

ad CS ACNS.E.LAD.170, (b), p. 48:

The crew can only activate the ELT, not the homing signal alone.

ad CS ACNS.E.LAD.170, (c), p. 48:

It does not work with an ELT(DT), only other ELT's (AD).

response

First sub-comment on paragraph (b) of CS ACNS.E.LAD.170: noted

CS ACNS.E.LAD.170 does not forbid designs whereby the 406-MHz signal transmission is activated by the flight crew when activating the 121.5-MHz signal. An ELT(AF) or ELT(AP) may be used to meet paragraph (b) of CS ACNS.E.LAD.170.

Second sub-comment on paragraph (c) of CS ACNS.E.LAD.170: not accepted

ED-62B specifies that an ELT(DT) can be manually activated and deactivated by the flight crew. See the response to comment No 120.

comment | *463* comment by: *FOCA Switzerland*

FOCA CH comment:

ad AMC1 ACNS.E.LAD.170, (b), p. 49:

In life rafts that are fitted with portable beacons. Where are the corresponding requirements regarding life rafts and portable beacons?

response | Noted

The rationale of point (b) of AMC1 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 is not accurate. Life rafts on board CAT aeroplanes are not required to be equipped with an ELT(S) (refer to point CAT.IDE.A.285 and AMC1 CAT.IDE.A.285). However, the justification for point (b) of AMC1 ACNS.E.LAD.170 in Section 3.3.2 of NPA 2020-03 (the installation of the homing transmitter should be such that the transmission of the homing signal remains possible after a successful ditching or a successful emergency landing) remains valid.

comment | *464* comment by: *FOCA Switzerland*

FOCA CH comment:

ad CS ACNS.E.LAD.230, p. 54:

Where are the corresponding requirements regarding life rafts and portable beacons?

response | Noted

The rationale of CS ACNS.E.LAD.230 in Section 3.3.2 of NPA 2020-03 is not accurate. Life rafts on board CAT aeroplanes are not required to be equipped with an ELT(S) (refer to point CAT.IDE.A.285 and AMC1 CAT.IDE.A.285). However, this does not affect CS ACNS.E.LAD.230, as the justification for that CS (the activation must remain possible as long as the aircraft is flying, including when all the systems generating normal electrical power are inoperative) remains valid.

comment | *465* comment by: *FOCA Switzerland*

FOCA CH comment:

ad CS ACNS.E.LAD.260, (b), p. 58:

	"When the system is manually activated, it cannot be automatically deactivated". We support the proposal but it does not seem to be consequently followed in the text of the NPA e.g. AMC1 CAT.GEN.MPA.210.
response	Not accepted As specified in point (a) of AMC1 CAT.GEN.MPA.210, the airborne system that is used to comply with point CAT.GEN.MPA.210 should comply with CS-ACNS (all Subpart E Section 3 CSs are applicable to the airborne system). The conditions for the design of the system do not need to be repeated in AMC1 CAT.GEN.MPA.210.

comment	*466* comment by: *FOCA Switzerland* FOCA CH comment: ad AMC1 ACNS.E.LAD.290, p. 60: Regulation 376 should be amendend accordingly (mandatory reporting).
response	Partially accepted Undesirable automatic activation of an ELT or a system compliant with point CAT.GEN.MPA.210 is outside the scope of Regulation (EU) No 376/2014 ('Occurrence Reporting Regulation'), as the definition of occurrence in that Regulation does not encompass false alerts to an RCC. However, AMC1 CAT.GEN.MPA.210 was complemented by specifying that the operator should analyse occurrences of undesirable automatic activation and provide such analyses to the competent authority upon request; refer to the response to comment No 237.

comment	*467* comment by: *FOCA Switzerland* FOCA CH comment: ad CS ACNS.E.LAD.320, (b) (2) (iv), p. 69: It is not applicable to ELT (DT).
response	Not accepted See the response to comment No 120.

comment	*468* comment by: *FOCA Switzerland* FOCA CH comment: ad CS ACNS.E.LAD.350, (c), p. 74: It is a very important means to prevent undesirable activations. Indeed, currently most frequent false alert source due to incorrect Aircraft Maintenance Manuals.
response	Accepted GM1 ACNS.E.LAD.350 was introduced to indicate that means to disarm or disable the system during maintenance are not forbidden. Point (a) of CS ACNS.E.LAD.350 only forbids that such means are provided in the cockpit or cabin during the flight (except circuit protective devices). Paragraph (a) of CS ACNS.E.LAD.350 was slightly modified to prevent, in addition to in-flight disabling, in-flight disarming of the system. Further, CS ACNS.A.GEN.010 'Instructions for continued airworthiness' requires the following: 'Instructions for continued airworthiness for each system, part or appliance as specified in this CS ACNS and any information related to the interface of those systems, parts or appliances with the aircraft are to be provided.' Therefore, for consistency with CS ACNS.A.GEN.010, the term 'maintenance instructions' was replaced by 'instructions for continued airworthiness' in paragraph (c) of CS ACNS.E.LAD.350.

comment	*469* comment by: *Leonardo DRS* AMC2 (b) ADFR does not deploy until after impact. 300kt initial ground speed is excessive
response	Partially accepted This comment is presumably on point (b) of AMC2 ACNS.E.LAD.320 in Section 3.3.2 of NPA 2020-03, which addresses the crash testing conditions applicable to an ELT that is integrated into the deployable package of an ADFR. This point was modified; see the response to comment No 222.

comment | *473* comment by: *GSA*

Page 47: GM2 ACNS.E.LAD.140 Activation signals — mandatory information

GUIDANCE FOR SOLUTIONS BASED ON AN ELT(DT)

It is advisable that the ELT(DT) encodes the latitude and longitude based on an approved aircraft position source (when available), rather than on the internal GNSS receiver as the latter is often less reliable and less accurate.

Comment

It is advisable that the ELT(DT) encodes the latitude and longitude based on the internal GNSS receiver with priority over an external position source in accordance with C/S T.001, Issue 4, Rev 6, May 2020, par. 4.5.5.6.

Moreover, the use of a multi-constellation multi-frequency receiver is recommended in order to increase the availability, resilience and accuracy of the position.

Rationale

The increased number of satellites in view, enabled by multiple constellations, decreases the dilution of precision (DOP) which results in improved position accuracy and reliability.

C/S T.001 – Issue 4 – Rev. 6 May 2020, 4.5.5.6 ELT(DT) Navigation Device Requirements, gives priority to the internal GNSS receiver.

"…the location produced by the internal GNSS receiver has priority over the external source of data."

In addition, as pointed out in the ICAO GADSS v6.0, section 1.2, page 8, the ADT function should not depend of any other aircraft system.

"Autonomous Distress Tracking (ADT). The capability using transmission of information from which a position of an aircraft in distress can be determined at least once every minute and which is resilient to failures of the aircraft's electrical power, navigation and communication systems."

response | Partially accepted

See the response to comment No 241.

comment | *481* comment by: *Dany St-Pierre Cospas-Sarsat Secretariat*

Comments for section 3.3.2 Page 47 of NPA

GM2. ACNS.E.LAD.140

EASA guidance is contrary to the Cospas-Sarsat approach which is to prioritize the use of the GNSS on the beacon rather than the aircraft GNSS. This opposite policy could be confusing for aircraft manufacturer trying to develop technologies to meet the requirement of CAT.GEN.MPA 210.

While it is acknowledged that the aircraft GNSS will likely be a better unit, the ELT GNSS still need to be reliable and accurate enough for the purpose of meeting AMC1. ACNS.E.LAD.140 as the Aircraft GNSS might not be available. Furthermore the accuracy of the GNSS while the aircraft is flying will likely remains a small contribution on the uncertainty of the location of the end of flight (i.e. GNSS accuracy of 10 m vs 200m is small compared with the 6 NM uncertainty obtained from the minimum 1 minute transmission imposed). EASA might want to reconsider giving this guidance or submit proposal to Cospas-Sarsat to amend its approach in order to avoid a confusing situation for people trying to develop systems to comply with CAT.GEN.MPA 210.

response

Partially accepted

See the response to comment No 241.

comment

482 comment by: *Dany St-Pierre Cospas-Sarsat Secretariat*

Comments for section 3.3.2 Page 76-77 of NPA

AMC2ACNS.E.LAD.410

The explanation provided in the rationale needs to be repeated as guidance material for both AMC here to ensure that system providers use a consistent methodology to demonstrate location accuracy, especially if the text of the rationale is to be removed from the final document.

response

Accepted

The explanations provided in the rationale of AMC2 ACNS.E.LAD.410 in section 3.3.2 of NPA 2020-03 are applicable to all solutions, whereby CS ACNS.E.LAD.410 is met by transmitting activation signals before reaching the point of end of flight from equipment that is affixed to the aircraft.

Therefore, said explanations were introduced into GM1 ACNS.E.LAD.410.

comment

486 comment by: *Transport Canada Civil aviation*

	Representation 4 *Section 3 - AMC1 ACNS.E.LAD.310/page 63 of 150* **Comment summary** Activation during testing - Table 1 — Minimum environmental qualification level test conditions applicable to the system. **Suggested resolution** During the test, the system should be activated without deployment before the test. Does this mean, armed? What is the intention of the word “deployment” in a test environment?
response	Partially accepted As stated in paragraph (a) of CS ACNS.E.LAD.250, regardless of whether or not the system is armed, it can be manually activated by the flight crew. Paragraph (b) of CS.ACNS.E.LAD.250 also states that the manual deployment of any part of the system is prevented during flight. This means that if the system includes deployable equipment (e.g. ADFR-based solution), the system can always be manually activated by the flight crew without deploying that equipment. The phrase ‘without deployment’ that appears several times in Table 1 of AMC1 ACNS.E.LAD.310, in section 3.3.2 of NPA 2020-03, is only applicable to a system that includes deployable equipment. It means that the system should be activated without deploying the deployable equipment. In addition, the environmental conditions applicable to the deployment mechanism of an ADFR are addressed in ETSO-2C517, Table 2, which includes more stringent conditions than Table 1 of AMC1 ACNS.E.LAD.310. The following changes were made for clarity: — in Table 1 of AMC1 ACNS.E.LAD.310, all instances of ‘without deployment’ were deleted from the column ‘ADDITIONAL TEST CONDITIONS’; — a sentence was introduced into the first row of Table 1 of AMC1 ACNS.E.LAD.310 to clarify that if the system includes deployable equipment, ‘the system should be activated’ means that the system should be activated without deploying that equipment and that the performance of the deployment mechanism does not need to be checked; and — references to the environmental standard that is specified by ETSO-2C517 and to the conditions applicable to the installation of an ADFR in CS 25.1457 were introduced into point (d) of AMC1 ACNS.E.LAD.310.

comment | *487* comment by: *Transport Canada Civil aviation*

Representation 5

Section 3 - AMC2 ACNS.E.LAD.310/page 66 0f 150

Comment summary

Integral vs. Internal Battery definition

Suggested resolution

These two definitions need to be clarified or defined at the beginning of the document. Otherwise, a reference to the applicable document (RTCA/EUROCAE) should be included.

response | Accepted

As the notions of 'internal battery' and 'integral battery' only appear in AMC2 ACNS.E.LAD.310 in Section 3.3.2 of NPA 2020-03, a definition thereof in CS ACNS.E.LAD.010 is not needed.

Therefore,

— the term 'internal battery' was deleted from Section 3 of Subpart E of CS-ACNS; and

— the term 'integral battery' only appears in AMC3 ACNS.E.LAD.310 and this AMC refers to ED-62B for the definition of 'integral battery'.

comment | *488* comment by: *Transport Canada Civil aviation*

Representation 6

Section 3 - CS ACNS.E.LAD.350/page 74 of 150

Comment summary

Means and procedures to prevent undesirable activation (a)

Suggested resolution

To complement comment No. 1, there should be instructions to rearm the system after remote deactivation. Recommendations on page 75 should include this scenario. The following text is suggested:

Page 74:

(b) Instructions are provided to the flight crew to address manual activation of the system and handling of undesirable activation **including remote deactivation.**

Page 75:

(b) recommended flight crew actions after manual activation, manual deactivation **or remote deactivation** of the system; and

response

Partially accepted

After consulting its stakeholders on the issue of remote activation and deactivation of the airborne system, EASA decided not to address this issue in the AMC and GM to the Air OPS Regulation, the AMC to the ATM/ANS Regulation, or CS-ACNS; see the response to comment No 191.

comment

490 comment by: *Transport Canada Civil aviation*

Representation 8

CS ACNS-.E.LAD.610 and .620/page 80

Comment Summary

This comment is in regards to the different classification of failure conditions, i.e. minor for the loss of function and major for erroneous automatic activation. Why would the failure to trigger be minor while erroneous activation be major? There is no rationale to compare both and justify a lower level for failure to trigger. It is understood from the rationale that the risk of erroneous activation (major) is related to the reduced availability of SAR resources that could potentially delay deployment hence potentially increasing death. However, failure to trigger means no deployment at all. So the potential end result that justifies a major classification in one instance is the same end result –and even more direct - in the other instance yet it is only a classification of minor.

Suggested resolution

It is suggested to classify the failure of any function that would result in failure to activate as major (LAD.610), or to provide a rationale comparing the classification of loss of activation with the classification of erroneous activation (LAD.620), and explain why erroneous activation justifies a higher classification than failure to activate.

response

Partially accepted

The objectives related to the loss of a function of the system and the transmission of erroneous position data are consistent with the objectives set for equipment that supports the rescue of accident survivors and the retrieval of accident data (e.g. ELTs, recorders, ULDs). However, the objective related to erroneous automatic activation is not driven by the need to rescue survivors or locate the aircraft for accident investigation purposes. Accepting designs that classify erroneous automatic activation as a minor failure condition could have a significant impact on RCCs (in average more than 100 false alerts worldwide per day, caused by erroneous automatic activation) and, therefore, it is not considered appropriate. Refer also to the response to comment No 248.

An explanatory text was introduced into GM1 ACNS.E.LAD.620.

comment | *491* | comment by: *Transport Canada Civil aviation*

Representation 9

CS ACNS-.E.LAD.620/page 80

Comment Summary

The whole premise of classifying erroneous automatic activation as a major failure condition is based on the assumption that the SAR system could be overwhelmed by responses to non-genuine distress situations, and hence prevent a timely response to genuine distress situations. While the rationale gives a quantitative number of false alerts in 2017, it does not provide any evidence as the impact of this number on SAR operations. Has there been a study tallying the numbers of SAR responses being delayed because resources were unavailable while attending another event? Factors to take into account would be COSPAS-SARSAT contact of the registered beacon owner following receipt of signal, which we understand is meant to confirm the validity of the alert and hence reduce the number of deployments due to false alerts.

Suggested resolution

It is suggested to present more comprehensive evidence for the basis of classifying erroneous automatic activations as a major failure condition, including statistical studies of the actual operating impact on SAR resources of false activations.

response | Not accepted

In COSPAS-SARSAT C/S R.007 (COSPAS-SARSAT report on system status and operations) No 36, Table 3.3.2-3 presents the global numbers of 406-MHz beacon activation that were reported by MCCs to SPOC that are designated by States within their MCC service area during 2019.

Table 3.3.2-3 shows that 41 660 alerts in total were reported to SPOC in 2019, of which 20 706 from ELTs (the rest from EPIRBs and PLBs). Out of these 20 706 alerts, 420 correspond to genuine distress alerts, the rest being categorised as ‘operational false alerts’ or ‘undetermined’. These figures show that if 50 000 additional false alerts were caused by the design of airborne systems that are installed to comply with point CAT.GEN.MPA.210 (which could potentially result from accepting designs that qualify erroneous automatic activation as a minor failure condition), this would significantly impact on RCCs.

In addition, once a system design is approved, the number of installations on individual aircraft may quickly grow with a potential for repetitive erroneous automatic activation — especially due to development errors. The time frame for an aircraft manufacturer to obtain and implement a fix is usually several months, or even years, as shown for example by the resolution of continuing-airworthiness issues affecting secondary surveillance radar (SSR) transponders. In the meantime, the numerous false alerts caused by erroneous automatic activation may become a significant burden for RCCs.

This comment also shows the need to clarify the service that is provided by the international COSPAS-SARSAT programme. COSPAS-SARSAT does not contact operators but only transmits the ELT messages of an activated ELT to the SPOC that is designated by a State to comply with ICAO Annex 12 and that is responsible for the SAR region(s) where the ELT is indicated to be. This SPOC dispatches these messages to the relevant RCC. The latter shall notify the ATS unit and the operator, according to ICAO Annex 12.

4. Impact assessment (IA) p. 88-123

comment *122* comment by: *MCA*

4.3. How it could be achieved — options

UK supports option 2.

response Noted

EASA thanks you for your comment.

comment *191* comment by: *Air France*

We consider that remote activation is definitely a very useful function in an distress/abnormal situation, and request to have the possibility to use it.

Passengers, crews and aircraft are under our responsibility. We can not accept that operators are kept away from such a function

As an airline, our dispatch staff permanently and closely follow our flights. We may have information (from pilots, aircraft systems, flight context, etc…), not available externally, that may accelerate situation assessment, contact, investigations. Such a tool could easily be integrated in our dispatch tools and procedures, under restricted and controlled environment.

A remote activation could be immediately triggered by our dispatch staff in case of loss of contact for example. And immediately deactivated when normal situation is assessed. Our staff are professional, trained, high skilled and able to assess consequences of an activation !

We can however understand the risk of false alerts or unappropriated uses raised in the document. But this should not be a reason to keep all operators away. This risk can easily be mitigated/removed by introducing stringent conditions for granting of access to this function: procedures, conditions of use, commitments, consideration of operator experience/organization/history, strong and unique sign-in process, audits, periodic checks, temporary or permanent withdrawal of access, etc…). We are opened to discuss all that.

This could also allow to reinforce cooperation between operators and rescue stakeholders, just by knowing better each other.

Safety is our priority. Please do not keep operators away from such a function to help protecting their passengers, crews and aircraft

response Noted

After consulting its stakeholders on the issue of a capability to remotely activate and deactivate the airborne system, EASA decided to not address this issue under this rulemaking task (RMT.0400).

EUROCAE Document ED-277 provides specifications for the remote activation and deactivation of an ELT(DT). However, the scope of point CAT.GEN.MPA.210 is broader, as it is a performance-based rule that does not prescribe a particular technology. Section 3 of Subpart E of CS-ACNS relies on a performance-based approach, it does not impose a technology, and it provides detailed conditions to facilitate the approval of other than ELT(DT)-based solutions, such as solutions based on an ADFR or on HRT. The comments on Section 4.3.3.2 of NPA 2020-03 raised several issues (see comments Nos 112, 229, 400, 483, and 488 and the responses thereto) that are partially addressed by ED-277 for ELT(DT)-based solutions, but not for other solutions.

In addition, the remote activation and deactivation of a system for locating aircraft in distress hardly brings any marginal benefit for SAR operations. EASA is not aware of a convincing case where a remote activation/deactivation capability would bring a significant benefit to aviation safety or accident survivability, compared to the amendments issued with ED Decision 2021/008/R.

Therefore, point (d)(2) of AMC1 CAT.GEN.MPA.210 in Section 3.3.2 of NPA 2020-03 was deleted.

comment

192 comment by: *Air France*

Option 2 supported for new aircraft

response

Noted

EASA thanks you for your comment.

comment

194 comment by: *ICAO*

CAT.GEN.MPA.210 is considered to be the EU requirement that transposes ICAO Annex 6, Part I, Section 6.18 'Location of an aeroplane in distress', Standard 6.18.1. CAT.GEN.MPA.210 addresses the objective of Section 6.18 as stated in ICAO Annex 6, Part I, Appendix 9, i.e to establish 'to a reasonable extent, the location of an accident site within a 6 NM radius.' However, the applicability and scope of CAT.GEN.MPA.210 is not fully harmonised with that standard as CAT.GEN.MPA.210 had been adopted and published before this Standard was issued17. Appendix 1, Table 2 of this NPA shows the main differences between ICAO Annex 6, Part I, Section 6.18 and CAT.GEN.MPA.210. Appendix 1, Table 1 of this NPA presents the Standards and Recommended Practices (SARPs) of ICAO Annex 6, Part I that are related to location of an aircraft in distress.

Comment:

By this explanation it appears that the NPA is proposing provisions to go beyond the ICAO Annex 6, Part I, 6.18 provisions for aircraft in distress. In doing so it appears to create inconsistencies with distress tracking provisions and leans to a technology preferenced solution ie. ELTs. Also refer to the conclusion on Page 91.

response

Not accepted

The proposed amendments in Chapter 3 of NPA 2020-03 are the result of a performance-based, top-down approach, as explained in its Section 4.3.3.1:

'Option 2 [selected in NPA 2020-03] consists in defining CPOs [common performance objectives] applicable to any means compliant with CAT.GEN.MPA.210, instead of prescribing a particular solution, such as Option 1 [Transpose ICAO Annex 6, Part I, Section 6.18 and Appendix 9 standards into AMC to CAT.GEN.MPA.210 and CSs].

The CPOs defined under Option 2 […] do not prescribe a certain technology.'

In addition, Section 4.3.3.1 of NPA 2020-03 explains why the approach taken under Option 2 results in some CPOs being more demanding than what is prescribed by the ICAO Annex 6 Part I standards. This is because some aspects, such as the position data accuracy in case of a survivable accident, the robustness of the airborne system, and the performance of the transmission service, are simply not addressed in the ICAO Standards and Recommended Practices (SARPs), although they are essential for meeting the objective of locating an aircraft in distress.

The conclusion of Section 4.1.2 on page 91 of NPA 2020-03 states:

'In conclusion, the scope of this NPA is not only limited to defining performance objectives and technical conditions for an effective implementation of CAT.GEN.MPA.210 'Location of an aircraft in distress'; it also includes laying down ELT-carriage requirements (CAT.IDE.A.280, NCC.IDE.A.215, SPO.IDE.A.190) and 8.8-kHz ULD carriage requirements on large aeroplanes (CAT.IDE.A.285, point (f)). […]'

As the ICAO GADSS ConOps, NPA 2020-03 also takes a global approach in order to better locate the accident aircraft, accident survivors, and flight recorders. Therefore, it is not inconsistent with the ICAO SRPSs approach and is not driven by a technology preference.

comment | *195* | comment by: *ICAO*

These ICAO standards imply that there is a worldwide system in place that allows the aircraft position information to be transmitted to the operator concerned, and that the operator makes available the position information to the relevant ATS unit and the competent SAR centre. Therefore, Option 1 de facto excludes all ELT-based solutions as the international COSPAS-SARSAT programme does not transmit the ELT signals to the operator of the aircraft concerned, but directly to the competent SAR centre27. The ICAO GADSS ConOPs introduces the concept of a distress tracking repository to solve this issue and facilitate the sharing of distress tracking data between the operator, the relevant ATS units, and the competent SAR centre. In October 2019, ICAO published a tender for the creation of such a repository28. Should such a repository be successfully set up, it is expected that the international COSPAS-SARSAT programme sends ELT messages to that repository in addition to delivering them to the competent SAR centre.

Comment:

The ICAO Standards do not exclude all ELT-based solutions. ELT(DT) are compliant with the Standards in Annex 6 Part I as long as the information regarding the position information of the aircraft in distress is sent to the Location of an Aircraft in Distress Repository (LADR). Cospas-Sarsat has been working closely with ICAO and have

	confirmed that this will be the case, therefore this statement regarding exclusion of ELT-based solutions is not correct
response	Noted EASA agrees that the international COSPAS-SARSAT programme worked towards reconciling the implementation of ELT message transmission with the new ICAO SARPs in ICAO Annex 6, Part I, Section 6.18, and Appendix 9 ('Location of an aeroplane in distress'). These new SARPs were developed and adopted with the insufficient involvement of SAR stakeholders, so that a solution to reconcile the international COSPAS-SARSAT programme with the ICAO SARPs and the ICAO GADSS ConOps had to be developed a posteriori.

comment	_196_ comment by: _ICAO_ However, when developing Option 2, care was taken to serve the purpose of ICAO Annex 6, Part I, Appendix 9: 'Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.' **<u>Comment:</u>** This statement seems to misinterpret the intent of the Standards of Annex 6 Part I and implies that the only consideration is the last known position of the aircraft be determined to within 6 NM. This is incorrect. Activation of the system while in flight is a key consideration, which is why it is considered that solutions such as ADFR, on their own, do not meet the requirements for the provisions of 6.18. However, if the ELT integral to the ADFR is of the ELT (DT) type it would meet the requirement.
response	Not accepted There is no misinterpretation of the objective of the SARPs in ICAO Annex 6, Part I, Section 6.18 and Appendix 9. Only one high-level objective is stated in Appendix 9: 'establish, to a reasonable extent, the location of an accident site within a 6 NM radius.' In-flight transmission of activation signals appears only to be a means to achieve this high-level objective; it is not an objective per se.

comment	_197_ comment by: _ICAO_ Table 4 - CPOs under Optoin 2 (a) The system should be capable of automatically activating upon detection that an accident that severely damaged the aeroplane or a distress situation have occurred,

are occurring or are very likely to occur within minutes. The system should, to the extent possible, not automatically activate without indication that severe damage or a distress situation occurred, or is likely to occur, to the aeroplane within minutes.

Comment:

The table indicates that automatic activation in a distress situation is addressed, however only the means to determine the location following an accident that severely damages the aircraft is explicitly referred to.

response

Noted

Point CAT.GEN.MPA.210 requires means to locate the point of end of flight after an accident where the aeroplane is severely damaged. However, solutions based on distress tracking (e.g. ELT(DT) or HRT) may be used to achieve this objective. Such solutions do not detect accidents that have occurred but conditions that indicate that an accident during which the aeroplane is severely damaged is likely to occur within minutes. Therefore, a system compliant with point CAT.GEN.MPA.210 is allowed to be activated upon detection of such conditions.

comment

198 comment by: *ICAO*

4.4.1.2 Option 1

...

According to the ICAO Annex 6, Part I standards, the data does not need to be delivered to the competent SAR centre or relevant ATS unit, it only needs to be made available to them, and it may be manually validated before being made available. Today, the data transmitted through an ELT 406-MHz signal is delivered (not only made available) to the competent SAR centre in an internationally recognised format, automatically, and within a few minutes of the ELT signal detection by a satellite. At the end-users workshop of July 2018, the SAR representatives expressed their concerns about solutions that rely on the operators to transmit data to them. EASA shares those concerns and considers that adding intermediary steps in the information transmission chain makes it more prone to information loss or excessive delays in the transmission of information.

Comment:

This statement is a misunderstanding of how the LADR is intended to function, and therefore the assumptions are incorrect. The process by which the location of an aircraft in distress position data is made available to an RCC is not affected by the operator process - this is automatic and immediate. An activation of a distress tracking device in itself does not necessarily mean that the aircraft will be involved in an accident. As stated above, the Standard requires that information of an aircraft in a distress condition to be made available automatically and immediately, however, before any action is taken based on that information, the condition of the aircraft needs to be verified. This verification is envisaged to be either by confirmation that the aircraft has been in an accident, via the operator, or through the ATS unit.

response

Not accepted

The ICAO LADR is not required by or recommended in ICAO Annex 6 Part I. ICAO has adopted an amendment to Volume III of the Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS). However, as stated in the foreword of PANS-OPS Vol III, Section 5 ‘Publication of differences’: ‘The PANS do not carry the status afforded to Standards adopted by the Council as Annexes to the Convention and, therefore, do not come within the obligation imposed by Article 38 of the Convention to notify differences in the event of non implementation.’ Hence, introducing provisions into PANS-OPS is not equivalent to introducing SARPs into ICAO Annex 6: it does not provide for a mechanism to monitor the level of implementation of the provisions by States, such as the obligation to send a notification of differences with the ICAO SARPs.

In addition, the ICAO LADR is to this date an ICAO project and not a proven global solution with sufficient international support and secure funding.

Moreover, to ensure timely and effective SAR operations, the system that transmits activation signals must be reliably activated in case of an accident during which the aircraft is severely damaged and should not be activated in other cases. EASA considers it inadequate to allocate to the operator the responsibility for assessing the genuineness of system transmissions.

comment

199 comment by: *ICAO*

4.4.1.4 Summary of Safety Impact

Table 9 - Summary of Safety impact

Option1

CAT.GEN.MPA.210 is implemented in a way that does not fully address SAR needs and is not very robust.

Comment:

Disagree with this summary - this seems primarily to be based on a misunderstanding of how the LADR system is intended to operate, therefore it is not a valid conclusion.

response

Not accepted

Even if the ICAO LADR is successfully implemented, Option 1 of the impact assessment (IA) of NPA 2020-03 will still not fully address SAR needs and will remain less robust than Option 2, as it does not address several objectives. Refer to Section 4.4.1.2 of NPA 2020-03:

'Option 1 has several significant drawbacks for SAR. Option 1 does not provide for accurately locating the accident site. Similar to Option 0, the automatic ELT may not be installed if a means compliant with CAT.GEN.MPA.210 is installed […]. As a result, in case of an accident, the accident site would not need to be known with a 2D location accuracy greater than 6-NM. For example, assuming a track spacing of 500 m and a speed of 20 kt, a visual search with a mobile SAR facility could only cover an area of 18.5 km2 per hr, so that roughly 21 hours would be needed to cover the surface of a circle with a radius of 6 NM (388 km2). […] This is not acceptable, considering the need to quickly rescue accident survivors. The 2D location accuracy of the point of end of flight that is needed by mobile SAR facilities to be able to rescue accident survivors is of the order of a few tens to a few hundreds of meters, not 6 NM. This was confirmed during an 'end-users' workshop, which was held by EASA with representatives of SAR and safety investigation authorities in July 2018. […]

In addition, if the automatic ELT were removed from large aeroplanes, the 121.5-MHz homing capability that is provided by the automatic ELT would also be lost. At the end-user workshop of July 2018, the SAR representatives strongly opposed to solutions that do not include an automatically activated 121.5-MHz homing signal transmitter, for the following reasons:

— the signal carrying the position information (406-MHz signal in the case of an ELT) might remain undetected, e.g. because it is partially masked or not powerful enough;

— data contained in the signal that is carrying the position information may not be refreshed, e.g. the GNSS receiver may be damaged or the GNSS signal masked by the aircraft wreckage;

— relying only on one type of signal to locate the accident site decreases the chances of timely locating accident survivors; and

— all mobile SAR facilities worldwide are equipped with a homing direction finder, which is provenly a practical and robust way to find the accident site.

[…]

Finally, Option 1 does not address several aspects of a robust solution, such as ensuring that:

— when the system relies on non-dedicated airborne resources, applications that are needed by the system have a high priority;

— the system relies on a communication infrastructure that has sufficient performance in terms of coverage, availability, integrity, and capacity;

[…]'

comment

200 comment by: *ICAO*

4.4.4.2 Option 1

Economic assessment on industry

...

However, Option 1 excludes ELT-based solutions (e.g. ELT(DT) or ADFR) as it requires that the position of an aeroplane in distress is determined and transmitted by the operator to the competent SAR centre and relevant ATS unit, while the international COSPAS-SARSAT programme distributes ELT messages to SAR centres only. In that context, Option 1 restricts the possibilities of industry to rely on existing (and proven) ELT technology to locate the point of end of flight in case of an accident. To solve this issue, the concept of a global distress tracking repository was created in ICAO GADSS ConOps, and ICAO is currently trying to implement this concept by setting up the Location of an Aircraft in Distress Repository (LADR)34; however, it is not known whether the LADR will be successfully implemented and as of when it could be fully operational.

Comment:

As previously stated, Option 1 does not exclude ELT-based solutions since cospas-sarsat will provide information to the LADR, thereby meeting the requirements of Annex 6, Part I 6.18 in full. The text goes on to refer to this solution but does not acknowledge that this negates the principle argument against Option 1 expressed here.

response

Not accepted

The ICAO LADR is not required by or recommended in ICAO Annex 6 Part I (see the response to comment No 198). In addition, the ICAO LADR is to this date an ICAO project and not a proven global solution with sufficient international support, unlike the international COSPAS-SARSAT programme. Therefore, the ICAO LADR cannot be considered part of Option 1. Should the ICAO LADR project fail, ELT(DT)-based solutions might be excluded because there seems to be no other way for an ELT(DT) to meet the SARPs in ICAO Annex 6, Part I, Section 6.18, and Appendix 9.

In addition, the COSPAS-SARSAT system documents only address the transmission of ELT(DT) data to the ICAO LADR (see the response to comment No 480), so that other mature solutions relying on ELTs (ADFR-based solutions, solutions combining HRT with an ELT(AF)) could not benefit from the ICAO LADR implementation.

comment	*201* comment by: *ICAO* 4.4.4.3 Option 2 Economic assessment on Industry The cost impact of Option 2 on industry is similar to that of Option 1, with one significant difference: Option 2 is less prescriptive than Option 1 as it does not require to track the aeroplane to locate the point of end of flight and it can be implemented with ELT-based solutions. **Comment:** An ELT-based solution will be compliant with Option 1, as stated.
response	Noted See the response to comment No 200.

comment	*202* comment by: *ICAO* 4.4.4.3 Option 2 Impact on harmonisation with ICAO and with other regulators Option 2 would result in implementing CAT.GEN.MPA.210 in a manner that is harmonised to a lesser extent than Option 1 with the ICAO Annex 6, Part I standards on location of an aeroplane in distress. Option 2 does not prescribe the transmission of a position report every minute. However, Option 2 addresses the intent of the ICAO standards on location of an aeroplane in distress, which is to facilitate locating accidents to large CAT aeroplanes. **Comment:** Option 2 would result in a solution that is not compliant with Annex 6 Part I, location of an aircraft in distress. Operators should be aware that failing to meet the requirements of the Annex could mean that other States may not allow operators to conduct international operations within their State.
response	Not accepted Option 2 accepts solutions that are harmonised with the SARPs of ICAO Annex 6, Part I, Section 6.18, and Appendix 9, i.e. ELT(DT)- and HRT-based solutions. Industry will be able to find solutions that meet the CPOs under Option 2 as well as the SARPs of ICAO Annex 6, Part I, Section 6.18, and Appendix 9.

Furthermore, most ICAO Member States have not implemented those SARPs to this date, and only few will have them implemented by 1 January 2023.

comment | *203* | comment by: *ICAO*

4.4.4.4 Summary of economic impact

Table 11 — Summary of economic impact

Option 2

This Option adresses the intent of ICAO standards on location of an aeroplane in distress, but is less harmonised than Option 1 with those standards.

Comment:

Disagree. Option 2 does not meet the requirements of Annex 6 Part I, 6.18

response | Not accepted

See the response to comment No 202.

comment | *229* | comment by: *L3Harris*

"there is no international mechanism to control....." remote activation of an aircraft system invokes significant cybersecurity aspects for security assurance. Implementation of a remote activation feature could, depending on the system satisfying this NPA, create significant functional segregation challenges. Access control on the ground portion of the system is also significant. Techniques for remote activation are underdeveloped for these aspects and inclusion in this NPA is discouraged.

response | Noted

EASA thanks you for your comment. See the response to comment No 191.

comment | *230* | comment by: *L3Harris*

5(b) "in the case where equipment is deployed" should be "in the case where equipment is deployed or activated"

response	Not accepted This comment is presumably on CPO No 5, point (b): ‘(b) In addition, the system should remain armed or activated throughout the maximum possible duration of a flight without propulsive power on any engine, followed in the case where equipment is deployed, by a period of 15 min on ground without any propulsive power on any engine.’ The end of the sentence is only applicable to the case where the system includes deployable equipment. Refer to the justification in Appendix 3 to NPA 2020-03: ‘In case equipment is deployed, after a ‘soft’ landing or ditching (automatic deployment is not triggered), all aircraft power sources may be lost. In that case, manual activation (and, if applicable, automatic deployment based on hydrostatic detection) must remain possible for at least 15 min, as recommended by EUROCAE ED-62B.’

comment	*231* comment by: *L3Harris* 9 : why is this different than #8? is this only for non-survivable accidents?
response	Noted This comment is presumably on CPO No 9, which addresses the case of non-survivable accidents. Refer to the justification for CPO No 9 in Appendix 3 to NPA 2020-03.

comment	*232* comment by: *L3Harris* 17 : is this a DAL statement?
response	Noted This comment is presumably on CPO No 17, which is not a DAL objective. In addition, the rationale of GM2 ACNS.E.LAD.620 in Section 3.3.2 of NPA 2020-03 provides guidance regarding the DAL. See the response to comment No 70.

comment	*233* comment by: *L3Harris*

	20 : assumption is that "ground track" is derived data.
response	Partially accepted This comment is presumably on CPO No 20. This comment raises the issue that the term 'ground track' is not accurate. What was meant was the aircraft course, i.e. the angle between the north direction and the aircraft ground speed vector. Therefore, this was corrected in CS ACNS.E.LAD.150; see the response to comment No 254.

comment	*234* comment by: *L3Harris* 20(b) "necessary" should be "sufficient"
response	Noted This comment is presumably on point (b) of CPO No 20. This comment rightly points out that 'necessary' should be replaced by 'sufficient' in that point. However, the correct term was used in CS ACNS.E.LAD.160, which was derived from point (b) of CPO No 20 (refer to Section 3.3.2 of NPA 2020-03).

comment	*350* comment by: *DGAC France* **Paragraph 4.1.3.2** ELT and Cospas-Sarsat system do not take part to safety (safety= preventing accidents or distress situations). A safe flight does not include an ELT triggering. While Airline and ATS take part to flight safety, RCC do not. RCC intervene when Flight Safety has failed.
response	Not accepted It is not clear why this comment refers to Section 4.1.3.2 of NPA 2020-03. However, 'safety' is not limited to the safe conduct of an individual flight; it includes survivability, as well as accident investigation and prevention. Emergency equipment contributes to reducing the number of fatalities or serious injuries attributable to aviation, which is the objective of aviation safety. For the same reason, such emergency equipment is regulated by EASA.

comment	*351* comment by: *DGAC France* **Paragraph 4.1.4 :** It should be clear that an ULD (under water locating device) is only designed to find the wreckage and does not allow SAR operation, especially for SAR aircraft.
response	Not accepted The purpose of ULDs and the interface between point CAT.GEN.MPA.210 and the requirement to carry a low-frequency ULD in point CAT.IDE.A.285 are explained in Section 4.1.2 of NPA 2020-03. Section 4.1.4 does not suggest that a ULD could be used for supporting SAR operations.

comment	*353* comment by: *DGAC France* **Paragraph 4.1.5.3 :** There is also a link with the alerting service, especially for data transmitted in flight. That is the reason why consistency with annex 6 shall be compulsory when an ADT function is embedded in the system. - Section 5.2.1 in annex 11 refers to a point on ground/at sea (within a SRR). During a distress phase, the RCC triggers a SAR operation (eg triggers SAR units) provided the RCC is able to determine the probable area where the accident. RCC are not responsible to look for an aircraft assumed to be still flying.This means that ATS shall receive with the highest priority all “in flight” data to be able to assess the situation and trigger the relevant emergency phase.
response	Not accepted The intent of this comment is unclear. However, Section 5.2.1 of ICAO Annex 11 does not contain the concept of ‘fixed point’ in any of the definitions of ‘uncertainty phase’, ‘alert phase’ or ‘distress phase’.

comment	*367* comment by: *DGAC France* **Paragraph 4.1.6**

	Note 1: MEOSAR will not change the purpose of current ELTs with LEOSAR constellation, and shall not change RCCs responsibility. Only an ELT-DT are designed to fulfil an ADT function in the frame of GADSS.
response	First comment on MEOSAR: noted The intent of this comment is unclear. Note 1 in Section 4.1.6 of NPA 2020-03 does not suggest that the deployment of the MEOSAR system will affect the purpose of current ELTs or the RCCs' responsibilities. However, if there is such a concern, it should be addressed to the Secretariat of the international COSPAS-SARSAT programme. Second comment on ELT(DT): noted The intent of this comment is also unclear. The objective of Section 3 of Subpart E of CS-ACNS is not to implement the ADT concept as presented in the ICAO GADSS ConOps, but to implement point CAT.GEN.MPA.210.

comment	*368* comment by: *DGAC France* **Paragraph 4.3 Table 3:** Option 1 and 2 also serve the needs of the alerting service when an ADT function is embedded in the system.
response	Not accepted Option 1 consists in strictly incorporating the ICAO Annex 6, Part I, Section 6.18, and Appendix 9 standards. Option 1 only requires that the position information of an aircraft in distress be provided to the operator. Then the operator must make this information available to 'the appropriate organisations, as established by the State of the Operator', including the relevant ATS unit (refer to ICAO Annex 6, Part I, Section 6.18.1). Therefore, implementing Option 1 will bring little improvement to the alerting service, compared to the current situation.

comment	*369* comment by: *DGAC France* **Paragraph 4.3.2** <u>About Note (27) :</u> ICAO annex 12 and annex 11 refers to a fixed position on ground/at sea as currently sent by beacons in the Cospas-Sarsat system. There is a confusion

	between SPOC and the competent SAR centre (the one who receive the alert by the ATS). Option 1 does not exclude ELT-DT as long as a ICAO's LADR or any other repository is implemented before 01/01/2023.
response	First comment on ICAO Annexes 12 and 11: not accepted ICAO Annex 11 does not 'refer to a fixed position on ground/at sea'. ICAO Annex 11 (Amendment No 52, adopted on 9 March 2020), Chapter 5, Section 5.4 states the following: 'When a state of emergency is considered to exist, the flight of the aircraft involved shall be plotted on a chart in order to determine the probable future position of the aircraft and its maximum range of action from its last known position.' This shows that the scope of the alerting service that is provided by ATS units includes locating still-flying aircraft. Second comment on the difference between SPOC and competent SAR centre: partially accepted The term 'competent SAR centre' was replaced by 'competent SPOC'; see the response to comment No 35. Third comment on the ICAO LADR: not accepted The ICAO LADR is only a project; see also the response to comment No 200. In addition, it is not sufficient to create 'any other repository' to avoid the risk of excluding ELT(DT)-based solutions. As shown by the functional specifications of the ICAO LADR, a global repository for the exchange of distress data would have to fulfil many requirements to be a credible alternative to the service that is currently provided by the international COSPAS-SARSAT programme. EASA is not aware of a project comparable to the ICAO LADR.

comment	*370* comment by: *DGAC France* **Paragraph 4.3.3.1** Contrary to ICAO, this NPA does not require an enhancement of alerting service capacities by detecting an event as soon as it occurs in flight. The NPA also excludes all systems which transmit in flight data directly to airlines.
response	Not accepted

The ICAO Annex 6, Part I, Section 6.18, and Appendix 9 provisions do not bring any significant benefit to ATS units with regard to the alerting service, compared to the current situation; see the response to comment No 368.

In addition, NPA 2020-03 does not forbid the transmission to the operator of information that is contained in activation signals and deactivation signals, but it does not require it either. See the response to comment No 170.

comment | *372* | comment by: *DGAC France*

Paragraph 4.3.3.2 Table 4 - CPOs under option 2 :

CPO 3 : It does not cover Option 1 since, ADT systems are designed to detect in flight a "distress condition" which might develop in a distress situation. CPO 3 does not include requirements for in flight event detection as soon as they occur.

CPO3 does not improve the alerting service capability and the dialogue between ATS and Operator, especially for survivable events.

CPO 4 : There is no requirement to embed an ADT function in ADFR.

CPO 6 : This is covered by option 1 when taking into account ED237 MASPs for ELT-DT as an ADT system.

CPO 8 and 9 : It is necessary that ICAO joins EASA's view on this point and add a Post-flight function requirement in the frame of GADSS.

Wording "on the ground" could be understood as SAR, which is not the case (cf. Justification for CPO n°8)

CPO 10 : It should distinguish between ADT function and Post-flight function for data distribution. ADT function requires Operator and ATS to get the data in priority.

Option 1 requires an ADT system, whereas this NPA does not.

Option 1 is about making the data available, through an automatic process of notification to all stakeholders (Airline, ATS, RCC/RSC).

The NPA is confusing when dealing with Cospas-Sarsat SPOC and the notion of competent RCC.

CPO 14 : Does annex 6 allow deployable equipment in the frame of GADSS?

CPO 18 : it makes sense when dealing with an ADT function of the solution.

CPO 19 : It shall mention distribution to ATS, Airline, and RCC in a common format internationally recognised.

In addition, the distribution service shall not require RCC to use networks, software, or Human-Machine Interfaces specific to each solution.

	<u>CPO 20 :</u> When referring to GADSS ConOps section 3.4, it means that this CPO deals with the ADT function of the system. Thus, there is a confusion with the location accuracy requested for the Post-flight function, for instance when expecting if practicable the estimated accuracy of latitude and longitude. Regarding ADT function, EASA should refer to ICAO standards. <u>CPO 22 :</u>It is the main difficulty for SAR services, since this NPA does not tell the difference between the ADT function and the Post-flight function of the system. "Automatic delivery" to RCCs and only "Automatic availability" to ATS is a major inconsistency for data transmitted in flight (ADT function of a any solution). Data transmitted in flight shall be delivered as a priority to the authority responsible for tracking the aircraft (ATS or airline), and to the alerting service (ATS). RCC are not responsible to investigate if an aircraft is still in flight. This is the responsibility of ATS. Automatic notification must also be acceptable, to ensure consistency with ICAO repository concept of operation. <u>CPO 23 :</u> The ADT function of the solution shall not trigger the 121,5 MHz homing transmission. Only, the Post-flight function of the solution may be able to trigger this transmission on 121,5 MHz.
response	First sub-comment on CPO No 3: not accepted CPO No 3 includes cases where an accident is likely to occur within minutes. *Note:* The intent of CPO No 3 was clarified in the response to comment No 197. Second sub-comment on CPO No 4: not accepted This comment seems to rely on the assumption that a system that only transmits data in flight ('ADT') does not have to meet any environmental condition to comply with point CAT.GEN.MPA.210. However, point CAT.GEN.MPA.210 requires 'robust' means. Therefore, as explained in Appendix 3 to NPA 2020-03, the airborne system should be able to withstand 'demanding environmental test conditions for that part of the airborne equipment that is expected to be operating until the crash (e.g. high level of vibrations due to engine failure, depressurisation, etc.)'. Third sub-comment on CPO No 6: not accepted CPO No 6 includes objectives for the communication infrastructure regarding the detection of activation signals and deactivation signals. Those objectives are not addressed in ICAO Annex 6, Part I, ICAO Doc 10054, the ICAO GADSS ConOps, or EUROCAE ED-237, and, therefore, are not covered by Option 1. Fourth sub-comment on CPOs Nos 8 and 9: noted

CPO No 8 reflects the SAR needs as expressed during an end-user workshop organised for RMT.0400, and are not just 'EASA's view'. In addition, CPO No 8 reflects Working Paper AN-Conf/13-WP/212 that was presented at the ICAO Thirteenth Air Navigation Conference by Austria on behalf of the EU Member States, the other Member States of ECAC, and EUROCONTROL.

Fifth sub-comment on CPO No 10: not accepted

The scope of NPA 2020-03 includes providing means of compliance to point CAT.GEN.MPA.210 and not implementing the ADT as described in the ICAO GADSS ConOps. In addition, the statement that 'Option 1 is about making the data available, through an automatic process of notification to all stakeholders (Airline, ATS, RCC/RSC)' is not accurate: ICAO Annex 6, Part I, Section 6.18, and Appendix 9 only require the transmission of information based on which a position can be determined by the operator, but no automatic notification to an ATS unit or an RCC.

The term 'competent SAR centre' was replaced by 'competent SPOC'; see the response to comment No 35.

Sixth sub-comment on CPO No 14: noted

The scope of NPA 2020-03 includes providing means of compliance to point CAT.GEN.MPA.210 and not implementing the ADT as described in the ICAO GADSS ConOps. Deployable equipment may be used to locate the point of end of flight after an accident during which the aeroplane is severely damaged.

Seventh sub-comment on CPO No 18: noted

CPO No 18 is intended to limit the impact of undesirable activation on RCCs (as explained in Appendix 3 to NPA 2020-03) and it is justified regardless of the solution that is implemented to comply with point CAT.GEN.MPA.210.

Eighth sub-comment on CPO No 19: partially accepted

Option 2 requires the distribution of distress data to the SPOC that are designated by States and to ATS units. However, after reviewing the comments on NPA 2020-03, only the distribution of distress data to the SPOC designated by States is part of the conditions stated in Part-CNS and in AMC1 CNS.OR.100 (see the response to comment No 480). Hence, the scope of CPO No 19 does not need to be extended to include ATS units or operators.

In addition, CPO No 19 requires that the data be delivered in 'plain text' so that no special tool or service is needed to read it; refer to Appendix 3 to NPA 2020-03.

Ninth sub-comment on CPO No 20: not accepted

The scope of NPA 2020-03 includes providing means of compliance to point CAT.GEN.MPA.210 and not implementing the ADT as described in the ICAO GADSS ConOps. There is no 'confusion with the location accuracy requested for the Post-flight function'. Even with an in-flight transmitting system (e.g. ELT(DT) or HRT system), the estimated accuracy of the latitude and longitude information that is transmitted must be known to evaluate the accuracy of the position of the point of end of flight.

Tenth sub-comment on CPO No 22: not accepted

This comment does not represent the views of all SAR authorities. Other SAR authorities that commented on NPA 2020-03 did not raise concerns over CPO No 22. However, in response to several comments, the requirement to make data corresponding to activation and deactivation signals available to the relevant ATS unit was deleted from the amendments, and the term 'competent SAR centre' was replaced by 'competent SPOC'; see the responses to comments Nos 35, 267, and 480. As a result, data corresponding to activation and deactivation signals should only be transmitted to the competent SPOC; refer to Part-CNS and in AMC1 CNS.OR.100.

Eleventh sub-comment on CPO No 23: partially accepted

Although the transmission of a homing signal is outside the scope of CPO No 23, this comment is addressed by clarifying the definition of 'activation signals' in CS ACNS.E.LAD.010; see the response to comment No 25. The correction clarified that homing signals are not activation signals.

comment

373 comment by: *DGAC France*

Paragraph 4.4.1 Table 5 :

<u>Option 1 and 1a :</u> ULD detection are not required for SAR units (Neither annex 12 nor IAMSAR refers to ULD). Aircraft tracking devices may be of paramount importance to help find the accident site, especially when a solution has no ADT function and the solution fails or does not withstand the impact.

response

Not accepted

ULDs are meant to help locate the aircraft wreckage by safety investigation authorities. In addition, point CAT.IDE.A.285 allows replacing a low-frequency ULD by a means compliant with point CAT.GEN.MPA.210. Therefore, ULDs are one of the technologies that are addressed in Table 5 of Section 4.4.1 of NPA 2020-03. Refer to the first sentence of Section 4.4.1 of NPA 2020-03:

'To better assess the safety impacts of the various options, different scenarios corresponding to possible outcomes for SAR and investigation authorities were defined.'

This comment also refers to 'aircraft tracking devices', which is presumably a reference to aircraft tracking as prescribed by ICAO Annex 6, Part I, Section 3.5, and required by point CAT.GEN.MPA.205. As explained in Section 4.1.1 of NPA 2020-03, the aircraft tracking requirements only require a position report every 15 minutes, which cannot result in accurately locating the aeroplane (the distance that is covered in 15 minutes by an aeroplane that cruises at Mach 0.8 is about 120 NM). In addition, the aircraft tracking requirements do not require the means that are used for this purpose to be robust. Whether or not an aeroplane complies with the aircraft tracking requirements does not make a significant difference regarding the accuracy of the point-of-end-of-flight information.

comment *375* comment by: *DGAC France*

Paragraph 4.4.1.2 option 1

From a SAR perspective Option 1 has a low positive impact compared to the current situation, since it allows:

- a major improvement in the early detection of an event in flight. It results also in step forward for the alerting service to analyse the situation and make a decision about an emergency phase;

- it may give a prenote to RCCs, especially when the situation is a survivable one.

Option 1 based on ADT system allows for a consistent distribution of ADT data between Airline, ATS, and RCC. But option 1 is not fully satisfactory in terms of Post-flight location accuracy. 121,5 MHz homing signal allows for autonomous on site search by SAR units.

The rationale based on the speeds ranging from 10 to 20 kts is not suitable for long range SRU performing a search. Those speeds are only relevant to Helicopters.

ICAO annex 6 is a common standard for every country and no SAR representative questioned the responsibility of operators to make ADT data available to ATS and RCC. The concern expressed was related to the awareness of the RCC when the aircraft is crashed. SAR representatives expressed their need to access the Post-flight data as well as the airline and the ATS. At that time, there was little communication on the ICAO ADT data repository (LADR) project. The LADR or any repository fulfilling the same function settles the problem regarding automatic notification and availability of datas. It allows operator, ATS, and RCC being able to get the data in line with their assigned responsibilities.

Current ELT are Post-flight devices and do not embed any ADT function. ELT-DT are the only ELT to be designed to be triggered in flight.

Option 1 is a major improvement for the rendering of the alerting service. The distribution by the LADR or any similar repository will allow stakeholders to coordinate according to the regulation and react fast.

ULD are not SAR devices.

	LADR or any similar repository allow RCC to get an automatic notification and to access the data as the same time as the other stakeholders (ATS and Airline) which are frontline when the aircraft in potential distress is still in flight. On page 108 : the following criteria is established : "aeroplanes with an MCTOM of 27 000 kg or less and aeroplanes with an MCTOM of 45 500 kg or less and an MOPSC of 19 or less" : Shouldn't the CofA date criteria also be cited?
response	First sub-comment, starting with ‘From a SAR perspective Option 1 has a low positive impact’: not accepted As explained in Section 4.4.1.2 of NPA 2020-03, according to Option 1, the operator is the recipient of the position information and must make this information ‘available to the appropriate organisations, as established by the State of the Operator’, including, as a minimum, the relevant ATS unit (in charge of the alerting service in the airspace where the aeroplane is indicated to be by the data transmitted by the system), and the RCC or SPOC responsible for the area where the aeroplane is indicated to be according to data transmitted by the system. According to ICAO Annex 6, Part I standards, the data does not need to be delivered to an RCC or an ATS unit; it only needs to be made available to them, and it may be manually validated before being made available. This cannot be considered a major improvement in the early detection of an event, compared to the current situation where ELT messages are delivered to a SPOC within minutes of the transmission by an ELT. In addition, Option 1 does not bring any significant benefit to ATS units regarding the alerting service, compared to the current situation; see the response to comment No 368. Second sub-comment, starting with ‘Option 1 based on ADT system allows for a consistent distribution of ADT data’: noted This comment does not consider the fact that ICAO Annex 6, Part I, Section 6.17 and, therefore, Option 1 allow replacing the automatic ELT by a means to locate an aircraft in distress, which complies with ICAO Annex 6, Part I, Section 6.18. In practice, with Option 1, the 121.5-MHz homing capability that is provided by the automatic ELT would also be lost. Third sub-comment, starting with ‘The rationale based on the speeds ranging from 10 to 20 kts’: noted Section 4.4.1.2 of NPA 2020-03 does not specify the mobile asset used. This sub-comment supports the fact that an accuracy of 6 NM for the position of the point of end of flight is insufficient for SAR purposes. Fourth sub-comment, starting with ‘ICAO annex 6 is a common standard for every country and no SAR representative questioned the responsibility of operators to make ADT data available to ATS and RCC’: not accepted

EASA organised a workshop in July 2018 with the SAR representatives of 8 States (Spain, UK, Norway, Ireland, Canada, USA, Switzerland, France), and the minutes of the workshop, which were reviewed by the participants, state the following:

'SAR share doubts about the capability of an operator to properly manage an alert, in particular notifying alert and transmitting relevant information in a timely manner to the competent ATSU or the competent SAR service. Many smaller operators don't have the resource and the organisation to meet the expectations.

— There can also be the reverse problem (major operator flying into an area where ANSP are lacking resource and/or competence).

— Also going through the operator increases the number of intermediaries between the aircraft and the RCC, which decreases the reliability of alerting.'

In addition, the ICAO LADR cannot be considered part of Option 1, as it is only a project. In addition, it is not sufficient to create 'any other repository' to avoid the risk of excluding ELT(DT)-based solutions; see the responses to comments Nos 200 and 369.

Fifth sub-comment, starting with 'Current ELT are Post-flight devices and do not embed any ADT function': not accepted

All ELTs can be manually activated in flight. See the response to comment No 325.

Sixth sub-comment, starting with 'Option 1 is a major improvement for the rendering of the alerting service': not accepted

See the responses to the first and fourth sub-comment.

Seventh sub-comment, starting with 'ULD are not SAR devices': noted

The scope of NPA 2020-03 does not only include SAR, but also the retrieval of the aircraft wreckage for the purpose of safety investigation (see Section 2.2 of NPA 2020-03). In addition, point CAT.IDE.A.285 allows replacing the low-frequency ULD by a means compliant with point CAT.GEN.MPA.210. Therefore, ULDs are one of the technologies addressed.

Eighth sub-comment, starting with 'LADR or any similar repository allow RCC to get an automatic notification': not accepted

See the response to the fourth sub-comment.

Ninth sub-comment, starting with 'On page 108 : the following criteria is established': noted

The quoted sentence does not discuss the applicability date, as aeroplanes with an MCTOM of 27 000 kg or less and aeroplanes with an MCTOM of 45 500 kg or less and a maximum operating passenger seating configuration (MOPSC) of 19 or less are outside the scope of point CAT.GEN.MPA.210 due to their MCTOM and/or MOPSC, regardless of the date of first issuance of the individual Certificate of Airworthiness.

comment	*376* comment by: *DGAC France* **Paragraph 4.4.1.3 Option 2** Option 2 is close to option 0 when there is only a Post-flight function. Without requiring an ADT function for any solution, option 2 lessens the possibilities and consistencies of option 1 in terms of aircraft tracking and alerting service. For optional ADT function and data transmitted in flight, the NPA is not compliant with the sharing of responsibilities between ATS, Airline.Cospas-Sarsat distributes automatically only to SPOC. From this point of view, option 2 may be a risk for Cospas-Sarsat. We reiterate our comment that ULD are not SAR devices. DGAC recommends to modify wording "[...] in case of a survivable accident, data that is received within 20 min[...]" as follows : "received by the communication infrastructure". As commented previously in Option 1, for aeroplanes models not within the scope of the CS, shouldn't the CofA date criteria also be cited?
response	First sub-comment, starting with 'Option 2 is close to option 0 when there is only a Post-flight function': not accepted Compared to Option 0, Option 2 brings a decisive advantage: the solutions compliant with Option 2 also work in the case of a non-survivable accident, i.e. under environmental and crash conditions that go well beyond the crash testing conditions applicable to an ELT(AF) or ELT(AP). Even in non-survivable accidents, CPO No 9 under Option 2 specifies that the data received should allow locating the point of end of flight with a 6-NM position accuracy. This is reflected in Table 4 of Section 4.4.1.3 of NPA 2020-03. Second sub-comment, starting with 'For optional ADT function and data transmitted in flight': partially accepted The choice between Option 1 and Option 2 has no impact on the responsibilities or working methods of RCCs or ATS units. Regarding the recipient of the data, in response to other comments, the proposed amendments were modified so that the data corresponding to activation signals and deactivation signals is not required any more to be made available to ATS units, and the term 'SAR centre' was replaced by 'SPOC'; see the responses to comments Nos 35 and 480. Third sub-comment, starting with 'We reiterate our comment that ULD are not SAR devices': noted ULDs fall entirely within the scope of NPA 2020-03. See the response to comment No 375.

Fourth sub-comment, starting with 'DGAC recommends to modify wording': partially accepted

The communication infrastructure is defined in CS ACNS.E.LAD.010, in Section 3.3.2 of NPA 2020-03, and its definition was slightly modified in response to comment No 257.

Fifth sub-comment, starting with 'As commented previously in Option 1, for aeroplanes models not within the scope': noted

See the response to comment No 375.

comment | _377_ | comment by: _DGAC France_

Paragraph 4.4.4.2 Option 1

Option 1 does not exclude ELT-DT. On the contrary, ELT-DT are designed as ADT devices to comply with GADSS. In addition, the LADR or any similar repository allows for distributing any data from any solution or devices that national regulations may require in the future.

Proper distribution networks to each system which distributes directly either to airline, or to ATS, or to RCC shall be considered as "last resort networks" since they do not allow to automatically share data between all stakeholders.

By comparison with option 1 (ICAO), only ADFR improves the POST-FLIGHT data over water.

Impact on harmonisation with ICAO and other regulators : In ICAO standards, the ADT function of any ADT device is to track the aircraft when encountering a potential distress. Getting a position information is the primary responsibility of ATS /Airline in charge of tracking the aircraft in flight and of the alerting service.For an ADT function, there is no reason why automatic delivery to RCC and only automatic availability to ATS should be required while the NPA ignores the responsibility of Airline in some airspaces where the ATS is not in charge of tracking the aircraft.

response

First sub-comment, starting with 'Option 1 does not exclude ELT-DT': not accepted

See the response to comment No 200.

Second sub-comment, starting with 'By comparison with option 1 (ICAO), only ADFR improves the POST-FLIGHT data over water': not accepted

All solutions that meet Option 2, including its CPO No 7, improve the situation with regard to locating accidents over water. All eligible solutions must meet CS ACNS.E.LAD.340.

CPO No 7: 'The system should perform its intended function in case of accidents over water as well as over land.'

One of the strengths of Option 2 is that the same CPOs are applicable to all solutions.

Hence, all three types of solutions that are specifically addressed in Section 3 of Subpart E of CS-ACNS (solutions based on an ADFR, an ELT(DT), or HRT) must meet all the CSs in that section.

Third sub-comment, starting with 'Impact on harmonisation with ICAO and other regulators': not accepted

The responsibility of an ATS unit is not to obtain position information or to track an aircraft, but to provide ATS. In this context, position information may be presented to an air traffic controller (ATCO) for providing the ATC service of the flight information service.

With regard to the operator, see the response to comment No 338.

comment | *378* comment by: *DGAC France*

Paragraph 4.4.4.3 Option 2

Compared to option 1, option 2 lessens the awareness of the alerting service. When allowing and ADT function, option 2 is not compliant with ICAO. When requiring automatic delivery to the competent RCC, EASA is very prescriptive since focused on Cospas-Sarsat network

But Cospas-Sarsat does not comply with this option 2 requirements since the SPOC is not always the RCC in charge of dealing with the ATS when there is an emergency phase, or the one in charge of conducting the SAR operation in a given area. Let us keep in mind that 20 % of SPOC are not responsive.

Option 2 may imply major impacts on RCC regarding systems, networks, human, ressources, and legal problem when dealing with an aircraft in flight. For Post-flight data, since Cospas-Sarsat network is not open to competing alerting systems, any newcomer may impose new networks, softwares, interfaces, or procedures to RCCs.

From a SAR perspective, see previous comment on 4.4.1.3 - Option 2 - P111

<u>Economic impact on EASA member States :</u> only tracking systems (AT or ADT) may allow a quick rough assessment of the energy of the aircraft before the impact.

response | First sub-comment, starting with 'Compared to option 1, option 2 lessens the awareness of the alerting service': not accepted

With regard to the alerting service, see the response to comment No 368.

In addition, Option 2 is not 'focussed on Cospas-Sarsat' network, as it allows using other transmission services, provided that they achieve the CPOs. These CPOs are meant to ensure that the performance achieved by a non-ELT-based solution will be satisfactory for SAR purposes. For this, the performance specifications applicable to the international COSPAS-SARSAT programme and its components (satellites, LUT, MCCs) are a reference, as they involved many SAR authorities and were validated by years of experience.

Second sub-comment, starting with 'But Cospas-Sarsat does not comply with this option 2 requirements': not accepted

With regard to the difference between SPOC and RCC: the concept of 'competent SAR centre' was replaced by 'competent SPOC' (see the response to comment No 35), which clarifies and ensures that ELT-based solutions that use the international COSPAS-SARSAT programme will achieve the Option 2 objectives.

With regard to the COSPAS-SARSAT findings regarding non-responsive SPOC: the scope of NPA 2020-03 is limited to providing adequate information for SAR and investigation purposes, and does not include the internal organisation of national SAR authorities and RCCs.

However, if Option 1 were implemented, the percentage of operators failing to correctly respond to the activation of a system for locating an aircraft in distress would probably be significantly higher than 20 %. Particularly smaller operators might not have sufficient resources and lack the training to discharge their responsibilities. In addition, for smaller operators, the activation of a system for locating an aircraft in distress during one of their flights is probably a seldom event; therefore, it is doubtful whether they can gather experience to properly address such events.

Third sub-comment, starting with 'Option 2 may imply major impacts on RCC regarding systems': not accepted

This comment includes a statement without giving concrete examples. Option 2 was created with the essential objective not to significantly impact RCCs. See the response to comment No 428.

Fourth sub-comment, starting with 'From a SAR perspective, see previous comment': not accepted

See the response to comment No 376.

Fifth comment, starting with 'Economic impact on EASA member States': not accepted

This comment presumably implies that with Option 1, having an indication that the energy at crash impact is such that the accident cannot be survivable, money would be saved as no SAR mobile facilities would be needed to be deployed.

This is unlikely to work in practice, as historical accidents show that even with a high speed of impact, there can be survivors: examples are the accident of the A310, registered 7O-ADJ, near the Comoros Islands, on 30.6.2009 (Yemenia Airways 626), and the accident of the A330, registered 5A-ONG, in Libya, on 12.5.2010 (Afriqiyah Airways 771).

In addition, the decision not to deploy SAR mobile facilities based on such criteria would be both socially and legally unacceptable.

comment

379 comment by: *DGAC France*

Paragraph 4.5.1.1 Table 12

Option 1 should be assessed as “low positive” since there is an improvement in :

- Early in flight detection of a potential distress;

- Consistent distribution service to ATS, Airline, and RCC;

- Enhancement in coordination for survivable distress cases and alerting service.

Option 2: From a SAR perspective, see previous comment on 4.4.1.3 - Option 2 - P111

From RCC perspective, distribution service is a major concern.

response

Not accepted

The above points were addressed in the responses to comments Nos 368, 375, 376, 377, and 378.

comment

380 comment by: *DGAC France*

Paragraph 4.5.1.2

The expression “ risk of exposure of SAR teams” does not seem appropriate. The risks for SAR units are related to environmental conditions and to the ability for the RCC in charge of a SAR operation to coordinate any means on the area.

Option 1 is already a major improvement in the alerting system and the reaction time of all stakeholders.

response

Not accepted

The term used in Section 4.5.1.2 of NPA 2020-03 is ‘risk exposure of SAR teams’, not ‘risk of exposure of SAR teams’.

As this comment states, the ‘risks for SAR units are related to environmental conditions’ (adverse weather, rough terrain, night conditions, etc.), so that the more accurate the position of the point of end of flight, the smaller the search area to be covered by mobile SAR facilities and the shorter the exposure of SAR teams to risks associated with environmental conditions. By only setting an objective of 6 NM for the position accuracy of the point of end of flight, Option 1 permits that automatic ELTs that are installed on large aeroplanes are replaced with considerably less accurate locating means, which, in addition, have no 121.5-MHz homing capability, thus significantly degrading the information that is provided to RCCs after survivable accidents. A 6-NM position accuracy corresponds to a search area of 388 km^2. This is explained in Section 4.4.1.2 of NPA 2020-03.

comment *381* comment by: *DGAC France*

Paragraph 4.6.1

"Safety investigation report" : The word “Safety” is not appropriate when dealing with SAR, since SAR service is involved when the safety of a flight failed or may fail before a safe landing. To survive a crash is not part of “safety”, it is only about “survival”.

ULDs only serve the purpose of safety investigation when retrieving underwater pieces of a wreckage.

It is national SAR authorities’ responsibility to assess the safety of SRUs during a SAR operation.

response First sub-comment, starting with ‘Safety investigation report’: not accepted

The term ‘safety investigation report’ refers to a report that is produced by a safety investigation authority; refer to Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation.

In addition, safety is not limited to the safe conduct of the flight; see the response to comment No 350.

Second sub-comment, starting with ‘ULDs only serve the purpose of safety investigation’: noted

ULDs fall entirely within the scope of NPA 2020-03. See the response to comment No 375.

Third sub-comment, starting with ‘It is national SAR authorities’ responsibility to assess the safety of SRUs’: noted

Section 4.6.1 of NPA 2020-03 does not propose to change the assessment by SAR authorities of the safety of SAR teams.

comment | *418* comment by: *ENAIRE*

Point 4.3.3.2 in page 100 invites stakeholders, particularly SAR authorities and ANSPs, to share their views on enabling the remote control of the system by operators when this is implemented together with Option 2. As far as ENAIRE knows, current remote activation´s research and development projects assume that all remote ELT´s activation and deactivation requests by aircraft operators are only performed after prior validation by the relevant ATS unit. Should these validation mechanisms proved to be effective, then ENAIRE will consider remote activation and deactivation´s function as a positive SAR enhancement. In second place, it should be also stressed that remote activation capability is considered an optional function only. Therefore, some operators might work with lack of knowledge on the responsibilities of SAR centres and ATS units, or possess little practical experience with ELTs. This situation could be mitigated by further EASA action, such as reinforcing operators' SAR awareness or training and procedural requirements, for instance.

response | Noted

Thank you for sharing your views on the remote activation of the system. See also the response to comment No 191.

comment | *470* comment by: *FOCA Switzerland*

FOCA CH comment:

ad "How it could be achieved - options":

We support option no 2.

response | Noted

EASA thanks you for your comment.

comment | *472* comment by: *GSA*

Page 100-Section 4.3.3.2-Question to stakeholders regarding remote activation and remote deactivation

4.3.3.2 Question to stakeholders regarding remote activation and remote deactivation

EASA was made aware of ongoing research and development projects that aim at providing to operators the capability to remotely control the activation and/or deactivation of ELTs.

Such capability raises several issues, and for the time being, no satisfactory operational concept for the use of this capability is known to EASA. The main issues are the following:

An operational concept for remote beacon activation has been developed in the frame of EUROCAE WG98 SG-1, MASPS ED-277 which has been concluded and submitted for open consultation as of 27 May 2020 for 60 days until end of July 2020.

This operational concept has been discussed and validated with ANSPs and RCC as well as airlines.

— the potential impact on SAR centres and ATS units in terms of false alerts or missed alerts as according to CPO 22, the distribution service should automatically make data corresponding to activation and deactivation signals available to the relevant ATS unit and the competent SAR centre;

The concern of EASA was already taken into consideration in the proposed MASPS. The concept of operations described in the EUROCAE MASPS for aircraft ELT(DT) remote activation via RLS is based on the applicable procedures ruling the DESTRESFA phase declaration/termination and downstream to this procedures. No impact on the rate of false/missed alert has therefore to be attributed to the functionality.

The aircraft operator can only proceed with the remote activation request once the relevant ATSU has declared DETRESFA in line with the applicable regulations following an escalation process. At the same time, the pertinent SAR centre (RCC) is informed according to the applicable regulations. The service of remote activation is conditional to the DETRESFA declaration.

The Conops requires a validation evidence from the corresponding ATSU. In this manner, the user interface for the aircraft operator includes a statement (or evidence) that the relevant ATSU has truly declared DETRESFA. This approach has been discussed and validated with ATSUs.

In an analogous manner, for deactivation, the service is conditional the declaration of the end of DESTRESFA by the corresponding ATSU. The aircraft operator can only request the deactivation once the relevant ATSU has declared end of DETRESFA and the pertinent SAR centre (RCC) has given permission to deactivate the beacon. Then, the RCC and national authority are notified. The aircraft operator includes in the user interface a statement that the relevant ATSU did truly declare end of DETRESFA.

The MASPS ED-277 requires the implementation of technical mechanisms to prevent human error that will be ensured to avoid any unintentional misuse of the service. In addition, the access to the service will be protected by a very strict policy and with the state of the art access control technologies.

The above mechanisms ensures effective control on the use of this capability by eligible aircraft operators.

— an operator does not immediately see the consequences of remote activation or remote deactivation of the means compliant with CAT.GEN.MPA.210 unless they also receive data corresponding to activation and deactivation signals;

The data corresponding to the activation/deactivation signals are distributed to all relevant actors. According to the concept of operations, as described in the MASPS ED-277, the aircraft operator does see immediately (within a few minutes) the consequences of activation / deactivation.

For activation, the operator will receive the confirmation that the request has been processed, beacon activated and continuous 4D position;

For deactivation, the operator will receive the confirmation that the request has been processed, and beacon deactivated.

— in ICAO Annexes, the operator has no central role in the management of emergencies, unlike the ATS units and SAR centres (refer to ICAO Annex 11, Chapter 5 and to ICAO Annex 12);

The concept of operations described in the MASPS ED-277 for aircraft ELT(DT) remote activation via RLS does not affect the processes of the management of emergencies as described in ICAO applicable documents. Consequently, the central role of ATSU and SAR centres is therefore unchanged. The Conops does also reflect the key role of aircraft operators in tracking an aircraft in distress according to ICAO Annex 6, section 6.18.3, ICAO Doc 10054, section 2.4.2.1 and the ICAO GADSS Conops, section 3.2.9.

— most operators have limited knowledge of the responsibilities of SAR centres and ATS units for the management of emergencies and particularly, for the management of ELT messages;

The MASPS ED-277 for remote activation is fully aligned with the ICAO Annexes 11, 12 and 6.

The Conops defines rigorous conditions and procedures to be met by eligible aircraft operators before having access to this service. In particular, they have to establish a Service Level Agreement (SLA) with the provider of the remote activation service, including the description of the service, conditions of use, obligations of the parties and consequences in case of misuse.

— most operators have little practical experience, as an ELT is seldom activated on an aeroplane of their fleet; and

The remote activation feature as defined in the MASPS ED-277 is fully aligned with ICAO Annexes 11, 12 and 6. The SLA is a binding instrument that will ensure the eligible aircraft operator to follow the pertinent procedures.

In addition, regular tests of the remote activation/deactivation by the aircraft operator (the airline AOC) are required to ensure the processes will operate smoothly, in particular, those between the aircraft operator with a) ATSU and b) the provider of the remote activation service.

— there is no international mechanism to control the appropriate use by operators of the remote activation and deactivation capability, and sanction the misuse of that capability (especially when the impacted SAR centres and ATS units are in another country than the country of the operator, or even on another continent).

The remote activation feature, as defined in the MASPS ED-277, is fully aligned with ICAO Annexes 11, 12 and 6. The concept of operations described in the MASPS for aircraft ELT(DT) remote activation via RLS does not affect the processes of the management of emergencies as described in ICAO applicable documents and the central role of ATSU and SAR centres is therefore unchanged.

The SLA will represent the binding instrument to ensure that this process is respected.

response

Noted

This comment is based on the content of draft ED-277 in May 2020. In the meantime, ED-277 was finalised and published in February 2021. While ED-277 does not fully address the issues that are enumerated in Section 4.3.3.2 of NPA 2020-03, EASA was invited to comment on a draft version of ED-277, and that draft document was modified accordingly.

However, the scope of ED-277 only includes the remote control of ELT(DT)s, while the scope of NPA 2020-03 is not limited to this technology.

See also the response to comment No 191.

comment

475 comment by: *IATA*

IATA Members consider that remote activation is a useful function in a distress / abnormal situation and request the possibility to use it. The function could be introduced in existing in existing tools and procedures under restricted and controlled environment. The Operators are aware of the risk of false alerts or inappropriate uses raised in the document. The risk can be mitigated / removed by introducing stringent conditions for granting of access to this function.

response	Noted EASA thanks you for your comment. See the response to comment No 191.

comment	*476* comment by: *IATA* Autonomous control - there appears to be an inferred ability to switch off the system remotely or on the flightdeck. The intent of the word autonomous might benefit from disambiguation. Is it autonomous in that it requires no crew input or autonomous in that it cannot be interfered with?
response	Noted This comment is unclear. While the term 'autonomous' is used in ICAO Annex 6, Part I, Section 6.18, and Appendix 9, and in the ICAO GADSS ConOps, it is not used in NPA 2020-03.

comment	*489* comment by: *Transport Canada Civil aviation* ***Representation 7*** *4.1.3.1/page 93 of 150* **Comment summary** We have observed a typo (minor). **Suggested resolution** First accident mentioned on Table 2 took place in COLOMBIA, it is written *Columbia*.
response	Noted EASA thanks you for your comment.

7. Appendices — 7.1. Appendix 1 — ICAO Annex 6, Part I provisions relating to location of aircraft in distress, ELTs, and ULDs	p. 129-132

comment	*75* comment by: *LBA* LBA comment: The LBA appreciates the sinopsis in the appendices of chapter 7. However, in order to ensure a uniform application in Europe, we would welcome even more the explicit use of the EFOD terms (target level of implementation of SARPs): "No Difference", "Different in character or other means of compliance", "More exacting or exceeds", "Less protective or partially implemented or not implemented.
response	Noted EASA prepares the ICAO EFOD compliance checklists for the EASA Member States. However, CAT operators based in the EASA Member States must comply with Part-CAT of the Air OPS Regulation, not with ICAO Annex 6 Part I. With regard to ICAO Annex 6, Part I, Section 6.18.1, EASA indicated the following in the ICAO EFOD compliance checklists: 'Partially implemented. CAT.GEN.MPA.210 is not applicable to aeroplanes with MCTOM of less than 45 500 kg and MOPSC of less than 19.'

comment	*382* comment by: *DGAC France* ULD shall not be included in devices useful for locating an aircraft in distress, but to locate the wreckage underwater. Underwater, an aircraft is no longer in distress: it is merely a wreckage which sank. ULD are not useful to find survivors, since there is no requirement for SRU to detect ULD signals. <u>SARP OACI 6.18 :</u> The EU requirements not fully transposes ICAO standard, since there is no requirement for early detection of an inflight event neither in CAT GEN MPA 210 nor the NPA. <u>OACI Appendix 9 :</u> - 2.1 and 2.2 : The EU requirements not fully transposes ICAO standard, since there is no requirement for early detection of an inflight event neither in CAT GEN MPA 210 nor the NPA. In addition, the distribution service of this NPA excludes the operator and does not allow data distribution in line with RCC responsibility.

- 2.3 : This is the reason why the operator shall access the data the same way as the other stakeholders, especially when the operator is in charge of tracking the aircraft.The distribution service in the NPA is not compliant the sharing of responsibilities between stakeholders for an in flight ADT function transmission.

response

First sub-comment on ULDs: noted

ULDs fall entirely within the scope of NPA 2020-03, which is not limited to SAR but also includes safety investigations. See the response to comment No 375.

Second sub-comment on ICAO Annex 6, Part I, Section 6.18: noted

The scope of NPA 2020-03 includes the provision of means of compliance to point CAT.GEN.MPA.210 and not implementing the ADT as described in the ICAO GADSS ConOps. In addition, point CAT.GEN.MPA.210 meets the same objective as ICAO Annex 6, Part I, Section 6.18.1, which according to ICAO Annex 6, Part I, Appendix 9 is 'to establish the location of an accident site within 6 NM radius'. Transmitting a position every minute is only one solution for achieving this objective.

Third sub-comment on ICAO Annex 6, Part I, Appendix 9: not accepted

The distribution service that is described in NPA 2020-03 does not 'exclude the operator' and is harmonised with how the international COSPAS-SARSAT programme currently distributes the ELT messages to the SPOC that are designated by States. The scope of NPA 2020-03 includes the provision of means of compliance to point CAT.GEN.MPA.210 and not implementing the ADT as described in the ICAO GADSS ConOps.

comment

484 comment by: *Transport Canada Civil aviation*

Representation 2

Section 7.1/ page 129 to132 Appendix 1

Comment summary

ICAO SARP State: 6.18.1 All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021, shall autonomously transmit information from which a position can be determined by the operator at least once every minute, *when in distress*, in accordance with Appendix 9.

Whereas CAT.GEN.MPA.210 states:

The following aeroplanes shall be equipped with robust and automatic means to accurately determine, *following an accident during which the aeroplane is severely damaged*, the location of the point of end of flight:

(1) all aeroplanes with an MCTOM of more than 27 000 kg, with an MOPSC of more than 19 and first issued with an individual CofA on or after 1 January 2023; and

(2) all aeroplanes with an MCTOM of more than 45 500 kg and first issued with an individual CofA on or after 1 January 2023.

Suggested resolution

It is suggested that EASA clarifies how they will reconcile the difference of '*distress'* versus *'Accident where the aeroplane is severely damaged'?* Especially in an operational context where it could be feasible to have a distress situation (e.g. medical emergency, compromised flight deck security) but there is no severe damage to the aeroplane?

response

Noted

The difference between point CAT.GEN.MPA.210 and ICAO Annex 6, Part I, Section 6.18 ('Location of an aeroplane in distress') is that the latter prescribes a specific solution to address the high-level requirement of point CAT.GEN.MPA.210. As stated in ICAO Annex 6, Part I, Appendix 9, 'Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.' Hence, the objective of the ICAO Annex 6, Part I, Section 6.18 provisions is not to locate the aircraft as soon as it is in distress, but to locate it after it had an accident.

Further, 'when in distress' in ICAO Annex 6, Part I, Section 6.18, refers to a distress condition. ICAO Annex 6, Part I, Appendix 9 states: 'An aircraft is in a distress condition when it is in a state that, if the aircraft behaviour event is left uncorrected, can result in an accident.' Therefore, a medical emergency is outside the scope of ICAO Annex 6, Part I, Section 6.18. In addition, ICAO Doc 10054 states: 'The location of an aeroplane in distress, as it pertains to ADT, does not primarily consider aeroplanes that are operating within normal parameters, even though the aeroplane status could have entered one of the three emergency phases and requires immediate assistance as defined in Annex 11 (e.g. a hijacking scenario).'

7. Appendices — 7.2. Appendix 2 — Comparison between Option 1, Option 2, and ICAO Annex 6, Part I provisions	p. 133-136

comment

384 comment by: *DGAC France*

Page 133 :

	CPO 3 is not compliant with section 6.18.1 since: - It does not require in flight transmission - It does not tell the difference between ADT function and Post-flight function - It does not require the operator to get the data through the distribution service Automatic activation : Option 2 only meets part of the objectives since there is no requirement : - For inflight activation of all solutions - For considering any activation, whatever happens afterwards: return to better flight conditions (restart of one or all engines after all engines failure) **Page 134 :** CPO 5 is not clear about the fact that it deals with the ADT function of the solution. It does not make sense to activate a classic ELT (all ELT except ELT-DT) in flight due to electrical failure, since they are not ADT systems compliant with ICAO annex 6 standard (see ED237). CPO 20 is not fully compliant since solutions with an ADT function are not required for any solution. **Page 135:** CPO 18 does not transpose ICAO/annex 6/appendix 9/section 2.3 principles where there is a consistency in coordination procedures between ATS and Airline when dealing with Aircraft tracking and ADT systems which both aim at providing a position information of an aircraft in flight. ICAO describes a coordination process being initiated at Airline-ATS level to be extended at ATS-RCC level when an emergency phase is decided by the ATS.The NPA describes the opposite process, not applicable to an aircraft in flight, starting from the RCC to the ATS, then from ATS to Airline, then from ATS to RCC after an emergency phase is declared. The NPA is focused on a post-accident procedure and does not allow for a suitable coordination for an aircraft in flight. Comparison between NPA and ICAO/Annex 6/§6.18.3 :The NPA does not take into account Airline responsibility regarding ADT function.
response	First sub-comment on CPO No 3: not accepted See the response to comment No 372. Second sub-comment on automatic activation: not accepted Deactivation, including the transmission of activation signals, is addressed by CPOs Nos 3, 6, and 20; see Appendix 3 to NPA 2020-03. On the contrary, Option 1 (implementing ICAO Annex 6 Part I) does not address the transmission of deactivation signals.

Third sub-comment on CPOs Nos 5 and 20: not accepted

CPO No 5 is applicable to all solutions that meet point CAT.GEN.MPA.210. With regard to the in-flight activation of an ELT, see the response to comment No 325. CPO No 20 is about the information content of the signals transmitted by the airborne system, not about the conditions under which the system is activated.

Fourth sub-comment on CPO No 18: not accepted

Aircraft tracking should not be confused with locating an aircraft in distress. Aircraft tracking is meant to support the operational control over the flights that is performed by the operator; therefore, the aircraft tracking data should be sent to and monitored by the operator. Systems that are used to implement ICAO Annex 6, Part I, Section 6.18 transmit position information 'when in distress' (Section 6.18.1), i.e. the aircraft 'is in a state that, if the aircraft behaviour event is left uncorrected, can result in an accident' (see ICAO Annex 6, Part I, Appendix 9, Section 2.2). In that case, making the operator a mandatory intermediate for the assessment of the information that is transmitted by an activated system degrades the information service to RCCs, compared to the automatic transmission of ELT 406-MHz signals to SPOC, which is currently performed by the international COSPAS-SARSAT programme. Further, the objective of making data available to the relevant ATS unit was deleted in response to comment No 480.

7. Appendices — 7.3. Appendix 3 — Language and rationale of the Option 2 CPOs p. 137-149

comment *387* comment by: *DGAC France*

Page 137 :

The definition of "competent SAR centre" is not in line with ICOA annexes 11 and 12, neither with the ability of Cospas-Sarsat to distribute systematically to the RCC in charge of receiving the emergency phase or in charge of the SRR or sub-SRR.

Page 139 :

CPO 3 – text : Item b) and item d): these items are not consistent with the Post-flight function of a system (for instance an ELT-AF) which does not aim at transmitting in flight. It must be clear that these items are related to a Post-flight function of the solution.

CPO 3 – justification : Item b) is very clear about the fact that there are two kinds of transmission pre-crash and post-crash.

- Pre-crash transmission is in keeping with an ADT function of a solution
- Post-crash transmission is in keeping with a POST-FLIGHT function of a solution.

Item d) is also focused on a pre-crash transmission (in flight deactivation of the signal) thus implying the use of the ADT function of the solution. The example given in this item fosters the need for ATS to get as quick as possible the data transmitted by the ADT function of the solution, with a higher priority than RCC. Automatic delivery to RCC and only automatic availability to ATS is not consistent. In addition, Airline must also get the data when in an aircraft tracking airspace.

Page 140 :

CPO 5 text : Item b) is very clear about the fact that it deals with an aircraft in flight even though it is not in keeping with ICAO requirements in case of an electrical failure in flight (GADSS).

CPO 5 – justification : An automatic ELT is not designed to transmit in flight.For transmission in flight only an ADT function of a solution or an ADT system (ELT-DT) shall be used.

CPO 6 also encompasses requirements when there is an ADT function in the system (item a) and b)).

Page 142 :

CPO 10 : Cospas-Sarsat data distribution plan aim at transmitting automatically to SPOC, which are not always the RCC competent neither for receiving the alert from the ATS, nor to conduct the SAR operation.Distribution service is not consistent for ADT function data transmitted in flight.

Page 143 :

CPO 11 : This CPO refers to the manual activation of an ADT function of a solution.

Page 145 :

CPO 17 : In flight transmissions, must include the impact on ATS and Airline which are frontline in terms of responsibility.

CPO 18 : How will the operator inform the ATS, since this NPA does not require the operator to get the data transmitted by the solution?

This NPA proposes a distribution service based on automatic delivery to RCC and mere availability to the ATS, whereas ATS is in charge of informing the competent RCC of the development of the situation.

Page 146 :

CPO 19 : There is no requirement for ATS. Will ATS use the same format?

Format related to an ADT function transmission must be harmonised with LADR format. Cospas-Sarsat organisation does not allow competing data to be transmitted through Cospas-Sarsat ground network.

CPO 20 :When referring to GADSS Concept of operation, the NPA deals with ADT systems. Consequently, telling the difference between ADT function and POST-FLIGHT function is needed.

Page 148 :

CPO 22 – Distribution Service - Text : This CPO is the main difficulty for SAR services, since this NPA does not tell the difference between the ADT function and the Post-flight function of the system.

“Automatic delivery” to RCCs and only “Automatic availability” to ATS is a major inconsistency for data transmitted in flight (ADT function of a any solution). Data transmitted in flight shall be delivered as a priority to the authority responsible for tracking the aircraft (ATS or airline), and to the alerting service (ATS).

RCC are not responsible to investigate if an aircraft is still in flight. This is the responsibility of ATS.

Automatic notification must also be acceptable, to ensure consistency with ICAO repository concept of operation.

CPO 22 – justification:

- 1st bullet : As mentioned in this first paragraph, Cospas-Sarsat system and beacons are currently designed to deal with signal sent after an accident occurred. This function is a Post-flight function which is related to a signal transmitted from the ground or sea to a SPOC through Cospas-Sarsat MCCs.

	- 2nd bullet : Manual activation of an ELT-AF (or all other types of ELT, except ELT-DT) is possible, but these beacons are not designed to transmit a moving position information, especially in the LEOSAR environment where several hours are needed to locate the beacon. In terms of concept of operation, "classic" ELTs (all ELTs except ELT-DT) are part of LEOSAR concept. They are meant to indicate a fixed position. Thus, an in flight manual activation of an ELT-AF is not relevant in the frame of ICAO/GADSS or the requirements for the ADT function of a solution. Annex 6 states that any ADT system (whose ELT-DT for Cospas-Sarsat) is related to another operational concept than the one for "classic" ELTs. - 3rd bullet : When activation signals are received from an aircraft in flight, ATS and Operator must get access in priority to the data. If automatic delivery must be requested by EASA, ATS and Airline shall benefit from this delivery since there are responsible for tracking the aircraft. For an ADT function transmission, automatic notification of RCC as requested by ICAO is satisfactory. - 4th bullet : There must be a difference between ADT function and Post-flight function. The distribution service proposed in this NPA is only consistent with a Post-flight signal when automatic delivery to SPOC by Cospas-Sarsat. - 5th bullet : For ADT function data, this is a discrepancy with ICAO/Annex 6 where the operator is responsible to make data available to ATS and RCC. This means that operator shall get the ADT data as well as ATS and RCC. This is consistent with operator's responsibility in terms of aircraft tracking. For a given event in flight, the distribution service and associated distribution network at the RCC level shall be the same for any solution. It shall be harmonised with ICAO standards to allow a global use by Airlines, ATS, and RCCs.
response	First sub-comment, on page 137: partially accepted The term 'SAR centre' was replaced by 'SPOC' in those cases when it refers to the SPOC that is designated by a State for complying with ICAO Annex 12. The 'competent SPOC' is the SPOC competent for the SAR region(s) where the aircraft is indicated to be by the transmitted information (refer to the response to comment No 35). The competent SPOC is also the recipient of the information provided by the transmission service in CPO No 10. Consistently with ICAO Annex 12, the term 'SAR centre' was replaced by 'RCC' in those cases when it refers to the unit responsible for coordinating the conduct of SAR operations within a SAR region. Second sub-comment, on page 139 and CPO No 3: not accepted NPA 2020-03 does not make any distinction between in-flight and post-crash transmission, as this is not relevant for point CAT.GEN.MPA.210. See also the response to comment No 372. Third sub-comment, on page 140 and CPO No 5: not accepted

NPA 2020-03 does not make any distinction between in-flight and post-crash transmission, as this is not relevant for point CAT.GEN.MPA.210. Regarding in-flight activation of an automatic ELT, see the response to comment No 325.

Fourth sub-comment on CPO No 10: partially accepted

See the response to the first sub-comment.

Fifth sub-comment on CPO No 11: not accepted

The scope of NPA 2020-03 includes the provision of means of compliance to point CAT.GEN.MPA.210, and not implementing the ADT as described in the ICAO GADSS ConOps.

Sixth sub-comment on CPO No 17: not accepted

Option 2 does not require to transmit data that stems from an activated system to the operator of the aircraft concerned. In addition, more frequent erroneous automatic activation would only translate into a slight increase of the activity at the operational controls over the flights, whereas RCCs could be faced with a significant increase in false alerts that would have a detrimental effect on the effective conduct of SAR operations. The transmission of data to the ATS unit is not required any more (see the response to comment No 480); therefore, the impact on ATS units does not need to be considered.

Seventh sub-comment on CPO No 18: not accepted

See the response to comments Nos 266 and 275.

Eighth sub-comment on CPO No 19: noted

The transmission of data to the ATS unit is not required any more (see the response to comment No 480).

Ninth sub-comment on CPO No 20: not accepted

The scope of NPA 2020-03 includes the provision of means of compliance to point CAT.GEN.MPA.210, and not implementing the ADT as described in the ICAO GADSS ConOps.

Tenth sub-comment on CPO No 22: not accepted

With regard to the text of CPO No 22, see the response to comment No 372.

With regard to the justification of CPO No 22: not accepted

First bullet: automatic ELTs can be activated in flight, and the international COSPAS-SARSAT programme can detect and process the 406-MHz signals that are transmitted by an automatic ELT on a fast-moving aeroplane.

Second bullet: the MEOSAR constellation of the international COSPAS-SARSAT programme is being deployed, which has global coverage and the capability to immediately detect the signal of any type of ELT. In addition, 406-MHz signals that

are transmitted by an automatic ELT of second generation or that transmits an encoded position allow locating the aircraft with sufficient accuracy. Third bullet: the transmission of data to the ATS unit is not required any more (see the response to comment No 480). With regard to the transmission to the operator, see the response to comment No 170. Fourth bullet: NPA 2020-03 does not make any distinction between in-flight and post-crash transmission, as this is not relevant for point CAT.GEN.MPA.210. Point CAT.GEN.MPA.210 may be met by a solution that solely relies on in-flight transmission, or solely on post-crash transmission, or on a combination of in-flight and post-crash transmission. Fifth bullet: aircraft tracking (required by ICAO Annex 6, Part I, Section 3.5, and by point CAT.GEN.MPA.205) requires operators to track their flights during normal operations. Aircraft tracking should not be confused with locating an aircraft in distress (required by ICAO Annex 6, Part I, Section 6.18, and by point CAT.GEN.MPA.210). The distribution service for means compliant with point CAT.GEN.MPA.210 follows the same principle as the distribution service that is currently provided by the international COSPAS-SARSAT programme, i.e. distribution of the ELT messages to the SPOC that is designated for the SAR region(s) where the transmitting ELT is located. Such harmonisation will allow a successful implementation of point CAT.GEN.MPA.210.

3. Appendix — Attachments

Attachment to Cmnt nr. 206 - ADT NPA Discussion Waggener1.pdf

Attachment #1 to comment #206

NPA2020-03-Comment Orolia CS ACNS Manual Deactivation.pdf

Attachment #2 to comment #426