



European Aviation Safety Agency — Rulemaking Directorate
Comment-Response Document 2013-08

Requirements for service providers and the oversight thereof

CRD TO NPA 2013-08 — ANNEX A

RMT.0148 (ATM.001 (A)) & RMT.0149 (ATM.001(B)) AND RMT.0157 (ATM.004(A)) & RMT.0158 (ATM.004(B)) — 6.6.2014

EXECUTIVE SUMMARY

This Comment-Response Document (CRD) contains the comments received on Notice of Proposed Amendment (NPA) 2013-08 on 'Requirements for ATM/ANS providers and the oversight thereof' (published on 10 May 2013), and the responses provided thereto by the Agency.

Given the importance of the subject and the requests received, the Agency decided to extend the initially proposed standard 3-month consultation period by 12 weeks with the aim to provide stakeholders with the necessary time to ensure a constructive, coherent and consistent commenting. On 2 July 2013, the Agency organised a workshop in Cologne to present the NPA to the stakeholders and to facilitate the consultation process in general. Both the participants and the Agency itself evaluated the workshop as being very beneficial.

As a result of the public consultation, the Agency received 2 357 comments. The Agency expresses its appreciation to the stakeholders who have not only provided their individual comments on the draft proposals, but also expressed their coordinated views through the relevant European stakeholder groups. The Agency considers that the comments received contribute essentially to the improvement of the proposed rules.

The Agency reviewed the comments and provided responses thereto. In order to be able to take an informed decision, the Agency also carried out focussed consultation comprising a series of thematic meetings with the aim to commonly identify and analyse the issues and to establish guidance for the review of the proposals towards drafting the final Opinion. These meetings involved not only experts from the rulemaking groups of the subject RMTs (ATM.001 and ATM.004), but also new experts who contributed actively to the NPA consultation.

The Agency trusts that the responses in this CRD (Annexes C, D and E) satisfy the commentators insofar as they provide further clarification on the subjects addressed. Without prejudice to the final text to be proposed in the Agency's Opinion to be issued as the final step of the subject rulemaking activity, the resulting text (draft Regulation/AMC/GM — Annexes A and B) is also provided in the CRD in order to facilitate the understanding and the evaluation of the changes proposed in the responses to the comments. In addition, the overview of changes resulting from the NPA 2013-08 consultation is presented in the Explanatory Note to be found in Annex A.

**REACTIONS TO THIS CRD SHOULD BE SUBMITTED VIA THE CRT BY CLICKING THE 'ADD A GENERAL REACTION' BUTTON.
PLEASE INDICATE CLEARLY THE APPLICABLE PAGE AND PARAGRAPH.**

Applicability		Process map	
Affected regulations and decisions:	Regulations (EU) Nos 1034/2011 and 1035/2011	Terms of Reference (ATM.004):	30.8.2010
Affected stakeholders:	Member States, competent authorities/National Supervisory Authorities, service providers, Network Manager, and the Agency	Terms of Reference (ATM.001):	29.9.2010
Driver/origin:	Legal obligation (Basic Regulation, EASp and ICAO SARPs)	Concept Paper:	No
Reference:	N/A	Rulemaking group:	Yes
		RIA type:	Full
		Technical consultation during NPA drafting:	No
		Publication date of the NPA:	10.5.2013
		Duration of NPA consultation:	5 months and 3 weeks
		Review group:	No
		Focussed consultation:	Yes
		Publication date of the Opinion:	2014/Q4
		RMT.0148 (ATM.001 (A)) and RMT.0157 (ATM.004(A))	
		Publication date of the Decision:	2015/Q2
		RMT.0149 (ATM.001 (B))	

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I. CRD to NPA 2013-08 'Explanatory Note'

1. Procedural information

1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the 'Agency') developed this Comment-Response Document (CRD) in line with Regulation (EC) No 216/2008¹ (hereinafter referred to as the 'Basic Regulation') and the Rulemaking Procedure².

This rulemaking activity is included in the Agency's Rulemaking Programme under RMT.0148 (ATM.001) and RMT.0157 (ATM.004). The scope and timescale of the task were defined in the related Terms of Reference for ATM.001 and ATM.004.

On 10 May 2013 the Agency issued NPA 2013-08 on 'Requirements for ATM/ANS providers and the safety oversight thereof'.

The Agency organised a workshop on 2 July 2013 on the subject NPA to present the proposal to the stakeholders and to facilitate the understanding and the consultation process in general while the consultation was still ongoing. Over 120 participants attended the presentations, focussed on the new aspects proposed, given by EASA staff and by several ANSP or CAA representatives who were members of the rulemaking groups. The participants were given time for questions and remarks, which opportunity was well utilised with both well-founded comments and inquiries.

The public consultation period was prolonged, following the request of stakeholders, and ended on 31 October 2013. As a result of the public consultation, the Agency received 2 357 comments, whose distribution is shown in Table 1 and Figure 1 below.

		Pages	Segments	Comments	Users
NPA 2013-08 (A)	Explanatory Note	76	41	483	45
NPA 2013-08 (B)	Implementing Rule	98	122	1319	56
NPA 2013-08 (C)	AMC/GM	184	106	533	39
NPA 2013-08 (D)	RIA	71	8	18	7
NPA 2013-08 (E)	Appendix VII to EN	42	2	4	3
		471		2357	

Table 1: Distribution of comments received to NPA 2013-08 through the sub-NPAs

¹ Regulation (EC) No 216/2008 of the European Parliament and the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1), as last amended by Commission Regulation (EU) No 6/2013 of 8 January 2013 (OJ L 4, 9.1.2013, p. 34).

² The Agency is bound to follow a structured rulemaking process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as the 'Rulemaking Procedure'. See Management Board Decision concerning the procedure to be applied by the Agency for the issuing of Opinions, Certification Specifications and Guidance Material (Rulemaking Procedure), EASA MB Decision No 01-2012 of 13 March 2012.

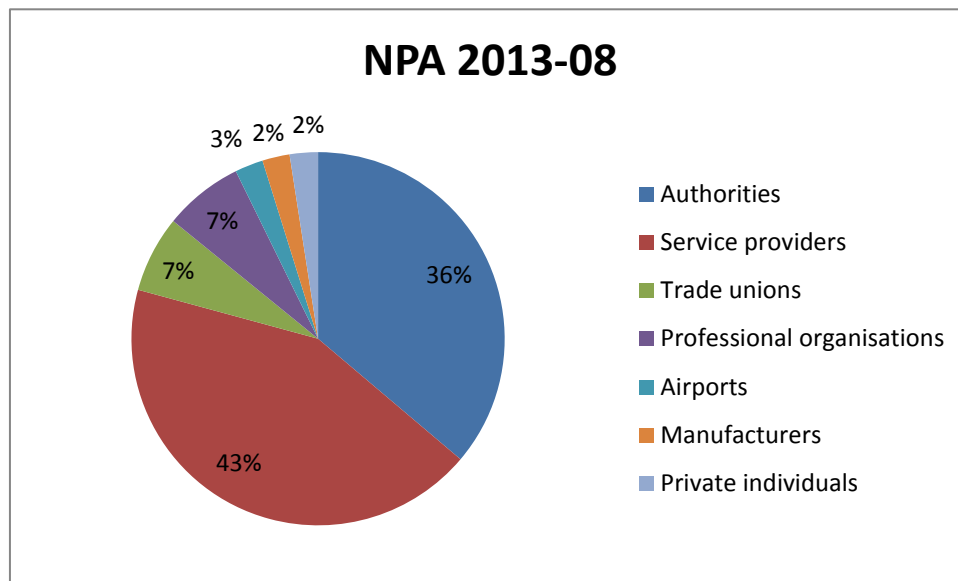


Figure 1: Distribution of the comments received according to stakeholders' sectors

The public consultation of NPA 2013-08 on the requirements for ATM/ANS providers and the safety oversight thereof was recognised by the Agency as a real benefit to the subject rulemaking activity as a lot of valuable comments accompanied with justifications were received, which largely facilitated the review of the proposed rule.

Furthermore, after the closure of the public consultation, the Agency carried out focussed consultation and held thematic meetings in January and February 2014 purposed to review the main topics commented on the proposed rules, including the accompanying Acceptable Means of Compliance (AMC) and Guidance Material (GM) The thematic meetings involved not only experts from the rulemaking groups, but also new experts who contributed actively to the NPA consultation. The purpose of these meetings was to gather advice on specific subjects that would facilitate the Agency in taking informed decisions for the CRD publication.

The thematic meetings covered the following subjects:

- definitions;
- requirements for competent authorities;
- changes (in general);
- application for limited certificate and declarations by flight information services providers;
- management system for service providers and the SMS requirements for air traffic services providers;
- specific human factors requirements for air traffic control service providers;
- specific requirements for the provision of meteorological services; and
- requirements for personnel training and competence assessment.

The thematic meetings provided the Agency with a better understanding of the comments and significantly contributed to the review of the proposal and to providing responses to the comments.

The process map on the title page contains the major milestones of this rulemaking activity.

1.2. The structure of this CRD and related documents

This CRD provides the full set of individual comments received to NPA 2013-08, and the responses provided thereto. The resulting rule text is provided in Chapter 3 of this CRD. In cases where (based on the comments received) the original proposal has been substantially reconsidered and amended, there is a note provided next to the title of the provision indicating whether the provision is revised ('*rev.*') or newly developed ('*new*') in order to facilitate the understanding and the evaluation of the changes proposed in the light of the responses to the comments. Such resulting text is, however, without prejudice to the final text to be proposed in the Agency's Opinion to be issued as the final step of the subject rulemaking activity.

The structure of this CRD is outlined below.

CRD to NPA 2013-08	
Annex A	CRD to NPA 2013-08 'Explanatory Note' and Resulting text of CRD to NPA 2013-08 (B)
Annex B	Resulting text of CRD to NPA 2013-08 (C)
Annex C	CRD to NPA 2013-08 (A),
Annex D	CRD to NPA 2013-08 (B),
Annex E	CRD to NPA 2013-08 (C), CRD to NPA 2013-08 (D), and CRD to NPA 2013-08 (E).

1.3. The next steps in the procedure

Stakeholders may provide reactions to this CRD regarding possible misunderstandings concerning their comments and the responses provided.

Such reactions should be received by the Agency not later than **15 August 2014** and should be submitted using the automated **Comment-Response Tool (CRT)** available at <http://hub.easa.europa.eu/crt>⁴.

The Opinion, which will contain the proposed repeal of Commission Regulations (EU) Nos 1034/2011⁵ of 17 October 2011 on safety oversight in air traffic management and air

⁴ In case of technical problems, please contact the CRT webmaster (crt@easa.europa.eu).

⁵ Commission Implementing Regulation (EU) No 1034/2011 of 17 October 2011 on safety oversight in air traffic management and air navigation services and amending Regulation (EU) No 691/2010 (OJ L 271, 18.10.2011, p. 15).

navigation services and amending Regulation (EU) No 691/2010, and 1035/2011⁶ of 17 October 2011 laying down common requirements for the provision of air navigation services and amending Regulations (EC) No 482/2008 and (EU) No 691/2010, will be addressed to the European Commission and will be published during the 4th quarter of 2014.

The Decision containing AMC and GM will be published by the Agency when the related Implementing Rule(s) is (are) adopted by the Commission.

⁶ Commission Implementing Regulation (EU) No 1035/2011 of 17 October 2011 laying down common requirements for the provision of air navigation services and amending Regulations (EC) No 482/2008 and (EU) No 691/2010 (OJ L 271, 18.10.2011, p. 23).

2. Overview of the changes resulting from the consultation

The comments received during the NPA 2013-08 consultation focussed mainly on definitions, change procedures, certificate template, personnel and SMS requirements. A significant amount of the comments focussed on the (missing) parts of the rule which are still to be developed and introduced as the outcome of certain other rulemaking tasks. Many comments highlighted also a lack of clarity on correct application and the use of the rule, in particular the application of AMCs and GMs. These focal concerns will be particularly addressed in this Chapter 2 of the Explanatory Note.

2.1. Evolution of the proposed Regulation

As explained in the Explanatory Note to NPA 2013-08, most of the Essential Requirements in points 5(a)(b) and (c) of Annex Vb to the Basic Regulation are implemented. With the adoption of Regulation (EU) No 923/2012⁷, the Essential Requirements in point 2(a) of the said Annex are partially implemented. In order to accommodate the implementation of the remaining objectives laid down in point 2(a) of Annex Vb to the Basic Regulation, the draft proposed Regulation contains placeholders that will be amended as a result of the work of separate rulemaking tasks. These tasks, part of the revised 4-year Rulemaking programme 2014-2017 adopted with ED Decision 2013/029/R, are as follows:

- RMT.0445 'Technical requirements and operational procedures for airspace design, including design procedures';
- RMT.0464 'Requirements for ATS';
- RMT.0473 'Technical requirements and operational procedures for MET';
- RMT.0477 'Technical requirements and operational procedures for AIS/AIM'; and
- RMT.0593 'Technical requirements and operational procedures for the provision of data for airspace users for the purpose of air navigation'.

Furthermore, one of the essential amendments to the proposed rule will result from the work performed under RMT.0469 on 'Assessment of changes to functional systems by service providers in ATM/ANS and the oversight of these changes by competent authorities'. Having duly considered the stakeholders' feedback from the NPA 2013-08 consultation and the advice gathered during the focussed review meetings organised, which provided the Agency with further valuable advice on how to proceed with the issue, the Agency is planning to publish an NPA as the outcome of RMT.0469 for consultation in parallel with CRD to NPA 2013-08. That NPA will propose provisions for 'assessment of changes to functional systems' to this draft Rule. Based on the outcome of these two NPAs, the Agency will issue a single Opinion during the 4th quarter of 2014. Furthermore, this Opinion will additionally include the outcome of the consultation of NPA 2014-07 on technical requirements for the provision of meteorological services as a result of the work under RMT.0473. Depending on the progress of the work under RMT.0593 on requirements for the provision of data, its outcome after the NPA consultation could also be included in the Opinion.

⁷ Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1).

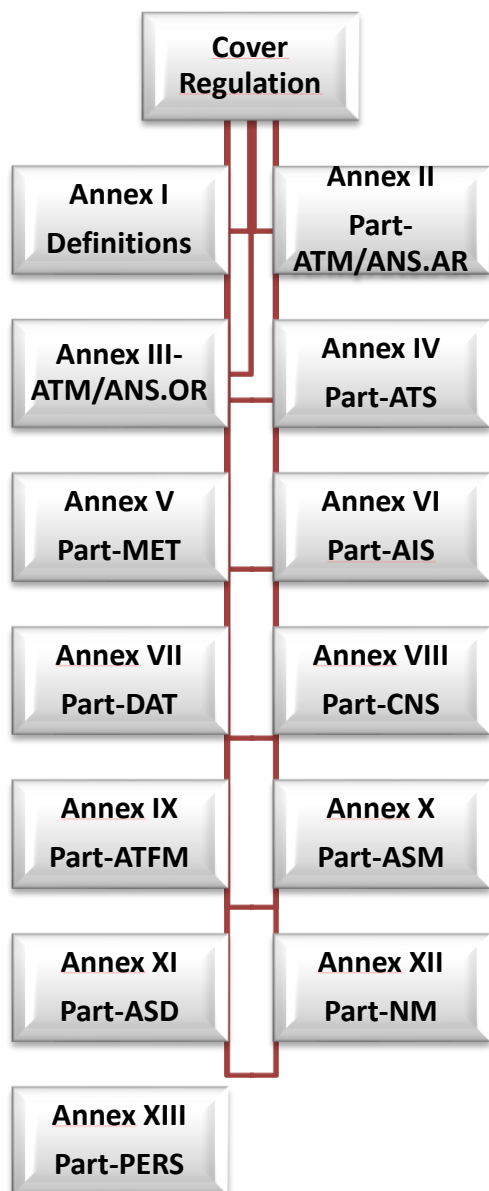
In reference to airspace design (ASD), the Agency has initiated the rulemaking task RMT.0445 with the aim to propose implementing measures purposed to ensure that the airspace structures and flight procedures are appropriately surveyed, designed and validated. The development of the subject implementing measures cannot in a timely manner be included in this Opinion as planned. The situation is similar to that of the recently established rulemaking task RMT.0464 on 'Requirements for ATS', aiming at the development of the necessary measures to implement the Essential Requirements in paragraph 2(c) of Annex Vb to the Basic Regulation concerning the provision of air traffic services. The general objective of this rulemaking task is to ensure that air traffic services are safely provided across the EU.

The rulemaking task on 'Technical requirements and operational procedures for AIS/AIM' is in progress and the subject NPA is anticipated to be published for consultation in the 4th quarter of 2014. The proposal will amend the dedicated Annex on specific requirements for the provision of AIS/AIM.

Many comments received indicated a need for an integration of Regulation (EC) No 255/2010⁸ and a development of the associated AMC and GM related to the specific requirements for the provision of ATFM and ASM. The Agency considers that developing AMC/GM by itself to implement Regulation (EU) No 255/2010 would necessitate more detailed understanding of the difficulties encountered by the States and a thorough consideration also by the European Commission. Furthermore, as an element of consideration, the ATM regulatory roadmap by the European Commission has included plans to revise the Regulation on ASM, particularly as regards the flexible use of airspace concept. Therefore, at this stage the Agency could only take note of these comments and would kindly invite a further discussion on the issue at the relevant forum.

⁸ Commission Regulation (EU) No 255/2010 of 25 March 2010 laying down common rules on air traffic flow management (OJ L 80, 26.3.2010, p. 10).

2.2. Structure and scope of the proposed Regulation



- **Cover Regulation**
- **Annex I:** Definitions
- **Annex II:** Requirements for Authorities
- **Annex III:** Common requirements for service providers
- **Annex IV:** Requirements for Air Traffic Services
- **Annex V:** Requirements for Meteorological Services
- **Annex VI:** Requirements for Aeronautical Information Services
- **Annex VII:** Requirements for Data provision
- **Annex VIII:** Requirements for Communication, Navigation & Surveillance
- **Annex IX:** Requirements for Air Traffic Flow Management
- **Annex X:** Requirements for Air Space Management
- **Annex XI:** Requirements for Air Space Design
- **Annex XII:** Requirements for the provision of other ATM network functions
- **Annex XIII:** Requirements for Personnel

Figure 2: Rule structure

Rule structure

Addressing several different services in this proposed Regulation requires introducing a relatively high number of definitions too. Therefore, the Agency considered it beneficial to follow the same approach already applied in other implementation rules to the Basic Regulation (such as air operations, air crew and aerodromes) by introducing a dedicated Annex I with all the definitions used in the various Parts. This necessitated a renumbering of the Parts. Figure 2 above represents the renumbered structure of the proposed Regulation.

Scope

A significant number of commentators indicated the discrepancies between the provider of ATM/ANS and the proposed definition of ATM/ANS provider. It is important to note here that 'ATM/ANS' is defined in Article 3 of the Basic Regulation. According to the said Article, 'ATM/ANS shall mean the air traffic management functions as defined in Article 2(10) of Regulation (EC) No 549/2004⁹, air navigation services defined in Article 2(4) of that Regulation, and services consisting in the origination and processing of data and formatting and delivering data to general air traffic for the purpose of safety-critical air navigation.' Based on an in-depth analysis of the comments received during the consultation process and the advice gathered during the thematic review meetings, the Agency came to propose replacing the term 'ATM/ANS provider' with 'service provider'. This idea was very well received by stakeholders at the thematic review meetings and it would be in line with ICAO and SES related initiatives by the European Commission.

With regard to airspace design (ASD), the Agency fully acknowledges that it is not clearly defined as an ATM/ANS service either in the Basic Regulation or in Regulation (EC) No 549/2004, thus, it may appear excessive to see it as an ATM/ANS service in the sense of Article 8b of the Basic Regulation. However, the Essential Requirements included in paragraph 2(i) of Annex Vb to the Basic Regulation introduce a clear regulatory need to ensure safe airspace structure and flight procedures design. While obviously any Implementing Rule, also in accordance with Article 8b(7)(b) of the Basic Regulation, should be 'proportionate to the type and complexity of the services provided', the Agency considers it most appropriate that the subject Rulemaking task (RMT.0445) will analyse and propose the best approach to regulate these design organisations. Therefore, in this proposed Regulation, ASD is now proposed to be removed from the definition of 'service provider' and from the certificate template; a solution which would be subject to further scrutiny by the relevant rulemaking group.

Additionally, the Agency agreed with many proposals by commentators to remove 'safety' from the title of the draft Regulation as the oversight to be carried out by the competent authorities goes beyond safety.

Consequently, the proposed new title of the draft Regulation results in 'Requirements for service providers and the oversight thereof'

Transitional provisions

The Agency also received major feedback on the proposed transitional provisions. Based on the ongoing work towards the issue within the 4th quarter of 2014 of the Opinion, the Agency takes good note of the comments and will duly consider them when the subject provisions are to be introduced. Transitional provisions obviously have to reflect the overall content of the proposed Regulation as well as the envisaged changes needed in its implementation.

In relation to ATSEP training, several comments requested including grandfathering measures for existing personnel that has already been assessed competent to perform its duties. The Agency sees the rationale for further flexibility provided that the competence assessment is properly conducted, including when in a new or changed work position.

⁹ Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation) - Statement by the Member States on military issues related to the single European sky (OJ L 96, 31.3.2004, p. 1).

Overview of the most significant changes in the 'Cover' Regulation	
NPA	CRD
Art. 1 – Subject matter and scope	Numerous changes are made in response to comments related to the scope.
Art. 2 – Definitions	Only four definitions are retained in the subject Article, the rest are moved to Annex I. Numerous changes in wording are made in response to comments. Notably, a definition of the 'service provider' is introduced.
	New 'Article 3 – Provision of services' is developed resulting from the revision of the former Article 3 (2) on the 'competent authority responsible for the operation in a given airspace'. The article is now addressed to the Member States, not the competent authorities.
Now Art. 4 (former Art.3) – Competent authority	The provision related to the 'competent authority responsible for the operation in a given airspace' is removed.
Now Art. 5 (former Art. 4)– Service providers	The rule on entities to comply with the respective Parts and Sub-parts is amended.
Now Art. 6 (former Art. 5) – Oversight capability	No substantial change.
Now Art. 7 (former Art. 6) – Declaration by flight information services providers	Subject provisions are reworded aiming at completeness and consistency; Article 6 determines 'who' is eligible to declare, ATM/ANS.OR.A.020 details the requirements to be met if declaring.
Former Art. 7 – Means of compliance	The related provision is removed and split in ATM/ANS.AR.A.015 and ATM/ANS.OR.A.020
Former Art. 8 – Flexibility provision	Removed
Now Art. 8 (former Art. 9) – Transitional provisions	N/A
Now Art. 9 (former Art. 10) – Repeal	N/A
Now Art.10 (former Art. 11) – Entry into force	No substantial change to former Article 11 – Entry into force.

2.3. Annex I – Definitions

Following several comments, the definition of ATSEP has been moved in the list of definitions of Annex I to the draft Regulation, including the associated GM. Commentators requested to introduce elements such as 'initial set-up', 'commission and decommission' as part of the definition, which the Agency did not find it appropriate to include. Indeed, the tasks of an ATSEP start when the system is in operation. However, the proposals made are

not considered to be in operational mode. Furthermore, the Agency agreed to add GM in order to further clarify the ATSEP definition.

2.4. Annex II – requirements for competent authorities (Part-ATM/ANS.AR)

General

A significant number of commentators requested the Agency to align as much as possible the provisions related to competent authorities with the existing ones relevant to other aviation domains (e.g. aircrew and air operations, aerodromes and on ATCO licensing) unless there is a sector-specific reason for them to be different. The Agency agreed that in many cases the authority responsible for the oversight of service providers is the same body as for other aviation undertakings. Following this principle, the text has been reviewed and in some places further aligned to clarify certain obligations and where possible, to try to minimise the burden on the competent authorities. For instance, the provision on oversight was split in 'Oversight' and 'Oversight programme', and the provision called formerly 'Oversight records' was renamed 'Record keeping'.

Changes (General)

One of the most commented topics during the NPA consultation were the provisions on 'general' changes. This issue was also thoroughly discussed at the thematic review meetings. As an outcome of the exhaustive elaboration of the subject (ATM/ANS.AR.C.025 (former ATM/AS.AR.C.020)), the provisions are significantly reworked to better clarify the issue, especially when it comes to the scope of the changes and their management.

Performance-based oversight (Option II)

The Agency asked for the opinion of stakeholders specifically on the implementation of performance-based oversight and proposed two different options to establish this principle in the Regulation. Option II was selected as the most suitable solution. This solution introduces further flexibility in the oversight planning under certain safety-related conditions.

Certificate template

A significant number of comments were received with regard to the service provider's certificate template. This issue was also thoroughly discussed at the thematic review meetings. Considering the feedback received, the Agency redrafted the service provider's certificate template orienting it towards the provision of services rather than the means used for their provision. Furthermore, considering the significant number of proposals, the Agency accepted introducing in the template the different types of MET services: meteorological watch office, aerodrome meteorological office, meteorological station, volcanic ash advisory centre, world area forecast centre and tropical cyclone advisory centre. This is consistent with the other services and provides for further clarity as regards different providers of meteorological services.

Overview of the most significant changes in Part-ATM/ANS.AR	
NPA	CRD
Subpart A – General requirements	No change
ATM/ANS.AR.A.001 – Scope	No change
ATM/ANS.AR.A.005 – Oversight functions	Numerous changes are made in response to comments.
	A new provision titled 'ATM/ANS.AR.A.010 – Oversight documentations' is added.
	A new provision 'ATM/ANS.AR.A.015 – Means of compliance' is introduced based on the reorganisation of the former Article 7.
Now ATM/ANS.AR.A.020 (former ATM/ANS.AR.A.010) – Information to the Agency	Editorial improvements.
Now ATM/ANS.AR.A.025 (former ATM/ANS.AR.A.015) – Immediate reaction to safety problem	No substantial change.
Now ATM/ANS.AR.A.030 (former ATM/ANS.AR.A.020) – Safety Directive	No substantial change.
Now ATM/ANS.AR.A.035 (former ATM/ANS.AR.A.025) – Oversight reporting	No substantial change.
Subpart B – Management	No change.
Now ATM/ANS.AR.B.001 (former ATM/ANS.AR.B.005) – Management system	The term 'ATM/ANS providers' is replaced by 'service provider'.
Now ATM/ANS.AR.B.005 (former ATM/ANS.AR.B.010) – Allocation of tasks to qualified entities	The provision is amended to better define the intent of the requirements. The former paragraphs (a)(3) and (4) are removed as the requirements are already addressed in Article 13 of the Basic Regulation. Furthermore, former paragraph (d)(3) is deleted due to duplication with the record keeping provision.
Now ATM/ANS.AR.B.010 (former ATM/ANS.AR.B.015) – Changes in the management system	No substantial change.
Now ATM/ANS.AR.B.015 (former	The title is changed from 'oversight records' to 'record keeping' to align with

ATM/ANS.AR.B.020) – Record keeping	the other aviation domains.
Subpart C – Oversight, certification, and enforcement	No change.
Now ATM/ANS.AR.C.001 (former ATM/ANS.AR.C.005) – Monitoring of safety performance	No substantial change.
Now ATM/ANS.AR.C.005 (former ATM/ANS.AR.C.010) – Certification declaration, and verification of service providers' compliance with the requirements	No substantial change.
Now ATM/ANS.AR.C.010 (former ATM/ANS.AR.C.015) – Oversight	The provision is split in 'Oversight' and 'oversight programme'.
New ATM/ANS.AR.C.015 – Oversight programme	The option towards more performance-based oversight introducing a maximum of 4 years oversight planning is adopted.
	A new provision 'ATM/ANS.AR.C.020 – Issue of certificate' is introduced.
Now ATM/ANS.AR.C.025 (former ATM/ANS.AR.C.020) – Changes	The title is changed and the related provision is significantly reworked to better address the scope of changes and their management.
ATM/ANS.AR.C.030	N/A
ATM/ANS.AR.C.035	N/A
	A new placeholder for the work under RMT.0469 is introduced with number 'ATM/ANS.AR.C.040'.
	A new requirement 'ATM/ANS.AR.C.045 – Declaration of flight information services providers' is added.
Now ATM/ANS.AR.C.050 (former ATM/ANS.AR.C.025) – Findings, corrective actions, and enforcement measures	No substantial change.

2.5. Annex III – Common requirements for service providers (Part-ATM/ANS.OR)

Application for a limited certificate & declaration by flight information services providers

Article 7 (former Article 6) implements Article 8b(3) of the Basic Regulation; 'Member States may decide that providers of flight information services shall be allowed to declare their capability and means of discharging their responsibilities associated with the services provided'. The criterion proposed by the Agency was drawn from proposals developed by the rulemaking group. As explained in the NPA (paragraph 41 of the Explanatory Note), they are 'based on the criteria and requirements already existing in Commission Implementing Regulation (EU) No 1035/2011 for FIS providers entitled to apply for derogation of some requirements'. Acknowledging comments received related to declaration and limited certificate, the provisions to ATM/ANS.OR.A.010 on 'Application for a limited certificate' and ATM/ANS.OR.A.015 (former ATM/ANS.OR.A.025) on 'Declaration by flight information service providers' are redrafted aiming at completeness and consistency. Article 7 determines now 'who' is eligible to declare, while ATM/ANS.OR.A.015 details the requirements to be met if declaring.

Furthermore, a new provision ATM/ANS.OR.A.030 on 'continued validity of a declaration of a FIS provider' was introduced, and, based on the comments received, the declaration template was moved to GM.

Changes

As explained in point 2.4, the provisions on 'changes' were the most commented and debated ones. As a result, ATM/ANS.OR.A.040(a) (former ATM/ANS.OR.A.035(a)) has been redrafted to clarify the different types of changes that require prior approval and those that do not. The approved by the competent authority procedure to notify and manage is the requirement concerning changes that do not require prior approval. The proposed rule clarifies that not all changes require an approval, thus, reducing the workload and improving efficiency (for both the competent authority and the service provider).

Occurrence reporting

Regulation (EU) No 376/2014¹⁰ of the European Parliament and of the Council of 3 April 2014 'on the reporting, analysis and follow-up of occurrences in civil aviation' was published on 24 April 2014. In line with a significant amount of proposals, the Agency shared the view to amend the relevant provision on 'occurrence reporting' and to refer to the newly adopted Regulation, instead of Directive 2004/42/EC¹¹, and its Commission Implementing Regulations. Furthermore, it is important to note that Article 23 of the said Regulation repeals Directive 2004/42/EC and Regulations (EC) No 1321/2007¹² and

¹⁰ Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007 (OJ L 122, 24.04.2014, p. 18).

¹¹ Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC (OJ L 143, 30.4.2004, p.87).

¹² Commission Regulation (EC) No 1321/2007 of 12 November 2007 laying down implementing rules for the integration into a central repository of information on civil aviation occurrences exchanged in accordance with Directive 2003/42/EC of the European Parliament and of the Council (OJ L 294, 13.11.2007, p. 3).

1330/2007¹³. However, these acts shall remain applicable until the date of application of Regulation (EU) No 376/2014. Article 24 of the same Regulation foresees that it shall apply from 15 November 2015 and not before the entry into force of the associated implementing measures.

Considering the reasons mentioned and given that the draft Regulation proposed with CRD to NPA 2013-08 could be in effect most probably after 15 November 2015, the reference to Directive 2003/42/EC in the Implementing Rule was removed and replaced by reference to Regulation (EU) No 376/2014. However, the Agency will make the necessary adjustments in the relevant AMC/GM as well, once the Commission Implementing acts to Regulation (EU) No 376/2014 are in place. Furthermore, the Agency will continue to support the Commission during the comitology process and will be ready to adjust the relevant provisions, if any necessity arises.

Management system

A significant number of comments focussed on the management requirement for service providers. In response to the comments, the Agency has amended some of the relevant provisions with a view to simplify or clarify the requirements. Moreover, the Agency has reviewed, updated and amended the relevant AMC and GM in order to provide the flexibility needed, especially for less complex service providers. Taking due consideration of the opinions received on a specific question asked by the Agency, the AMC referring to EN ISO 9001 certificate has been retained as AMC to the management system requirements.

Personnel requirements

The Agency has introduced a new provision on 'Personnel requirements' which sets up a requirement for the service provider to appoint an accountable manager, who has the authority to ensure that all activities can be financed and carried out in accordance with the applicable requirements. Moreover, taking due account of the feedback from the consultation, a view was shared that the provision on 'Organisational structure' would better relate to the personnel requirements, therefore, it has been integrated therein.

Security management

Some commentators invited the Agency to consider the cyber security aspects when referring to the security management system requirements applicable to the ANS and ATFM providers and the Network Manager. There are two parameters to be taken into account; the concept of information security threats and the concept of trust. The latter, in this particular situation, would result in the notion of 'trusted organisations'. The Agency, however, believes that this aspect is sufficiently covered in the Regulation as far as the service providers need to formalise agreements with operating organisations. Also, the Agency believes that extending the scope of Security management in this very Regulation needs to be addressed to the European Commission. Based on these aspects, the Agency decided not to include further specific requirements on the concept of trust, but instead to insert the notion of cyber security threats.

¹³ Commission Regulation (EC) No 1330/2007 of 24 September 2007 laying down implementing rules for the dissemination to interested parties of information on civil aviation occurrences referred to in Article 7(2) of Directive 2003/42/EC of the European Parliament and of the Council (OJ L 295, 14.11.2007, p. 7).

Overview of the most significant changes in Part-ATM/ANS.OR	
NPA	CRD
Subpart A – General requirements	The title is amended in response to comments received.
Now ATM/ANS.OR.A.001 (former ATM/ANS.OR.A.005) – Scope	No substantial change.
Now ATM/ANS.OR.A.005 (former ATM/ANS.OR.A.010) – Application for a service provider certificate	Former paragraph (c) is removed as a possibility of the issue of a certificate with 'open finding' was introduced.
Now ATM/ANS.OR.A.010 (former ATM/ANS.OR.A.015) – Application for a limited certificate	The proposal is modified so that an ANSP applying for a limited certificate under (b)(2) shall comply, as a minimum, with the requirements in (c)(1) to (4) and with the requirements in Annex IV. While the ICAO Annex 19 SMS framework is introduced in Annex IV, all exceptions are removed.
Now ATM/ANS.OR.A.015 (former ATM/ANS.OR.A.025) – Declaration by flight information services providers	The provision is redrafted aiming at completeness and consistency of the requirements to be met if declaring.
	A new provision 'ATM/ANS.OR.A.020 – Means of compliance' is introduced based on the reorganisation of the former Article 7.
Now ATM/ANS.OR.A.025 (former ATM/ANS.OR.A.020) – Continued validity	No substantial change.
	A new provision 'ATM/ANS.OR.A.030 – Continued validity of a declaration of flight information services provider' is introduced.
Now ATM/ANS.OR.A.035 (former ATM/ANS.OR.A.030) – Demonstration of compliance	No substantial change.
Now ATM/ANS.OR.A.040 (former ATM/ANS.OR.A.035) – Changes	The provision is significantly redrafted to better address the scope of the changes and their management.
Now ATM/ANS.OR.A.045 (former ATM/ANS.OR.A.040) – Changes to the functional system	N/A
Now ATM/ANS.OR.A.050 (former ATM/ANS.OR.A.045) – Facilitation of inspections, audits, and access	The requirements are redrafted to retain the intent, and to align with the ones applicable to aviation organisations in other domains.
Now ATM/ANS.OR.A.055 (former ATM/ANS.OR.A.050) – Facilitation of inspections, audits, and access	No substantial change.

Now ATM/ANS.OR.A.060 (former ATM/ANS.OR.A.055) – Immediate reaction to a safety problem	No substantial change.
Now ATM/ANS.OR.A.065 (former ATM/ANS.OR.A.060) – Occurrence reporting	The title is amended to better reflect the applicable requirements. Further improvements are introduced in response to comments received and to clarify the intent of the provisions.
	New 'ATM/ANS.OR.A.070 – Contingency plans' is introduced based on the former ATM/ANS.OR.C.035 as an outcome of the feedback received.
	New ATM/ANS.OR.A.075 – Open and transparent provision of services is introduced based on the former ATM/ANS.OR.C.030 in response to proposals received.
Subpart B - Management	No substantial change
Now ATM/ANS.OR.B.001 (former ATM/ANS.OR.C.005) – Scope	No substantial change
ATM/ANS.OR.B.010 – Organisational structure	Removed.
Now ATM/ANS.OR.B.005 (former ATM/ANS.OR.C.015) – Management system	Some improvements are introduced, without substantial changes.
	New placeholder is reserved as 'ATM/ANS.OR.B.010 – Change management procedures' to be introduced as an outcome of the work of RMT.0469.
Now ATM/ANS.OR.B.015 (former ATM/ANS.OR.C.020) – Contracted activities	The provision is redrafted to guarantee that the contracted activities are also carried out under the approval and oversight of the certified service provider in accordance with the applicable requirements, and to ensure that the competent authority is provided with access to the contractors' facilities and data for oversight purposes.
Now ATM/ANS.OR.B.020 (former ATM/ANS.OR.B.025) – Personnel requirements	The title is changed and the requirement for the service provider to appoint an accountable manager is introduced. The requirements in paragraph (b) are sourced from the former provision ATM/ANS.OR.B.010 – Organisational structure

Now ATM/ANS.OR.B.025 (former ATM/ANS.OR.C.030) – Facilities requirements	No substantial change.
Now ATM/ANS.OR.B.030 (former ATM/ANS.OR.C.035) – Record keeping	No substantial change.
Now ATM/ANS.OR.B.035 (former ATM/ANS.OR.C.040) – Operations manual	No substantial change.
	New Subpart C – ‘Specific organisational requirements for service providers other than ATS providers’ is reserved to address the assessment of changes to functional systems that will result from the work under RMT.0469.
Now Subpart D (former Subpart C) – Specific organisational requirements for ANS and ATF providers and the Network Manager	No substantial change.
Now ATM/ANS.OR.D.001 (former ATM/ANS.OR.C.005) – Scope	No substantial change.
Now ATM/ANS.OR.D.005 (former ATM/ANS.OR.C.010) – Business, annual, and performance plans	A reference to Regulation (EU) No 391/2013 ¹⁴ is introduced in paragraph (a)(1)(ii); the reference to Annex 11 is replaced by the reference to Annex 19 of ICAO.
Now ATM/ANS.OR.D.010 (former ATM/ANS.OR.C.015) – Security management	A new paragraph is introduced to address the cyber security threat aspects in response to comments received.
ATM/ANS.OR.D.015 (former ATM/ANS.OR.C.020) – Financial strength	No substantial change.
ATM/ANS.OR.D.020 (former ATM/ANS.OR.C.025) – Liability and insurance cover	The applicability of the provision is extended to the Network Manager as well.
Former ATM/ANS.C.030 – Open and transparent provision of services	Moved to Subpart A – General requirements
Former ATM/ANS.C.035 – Contingency plans	Moved to Subpart A – General requirements
ATM/ANS.OR.D.025 (former ATM/ANS.OR.C.040) – Reporting requirements	The applicability of the provision is extended to the Network Manager as well.

¹⁴ Commission Implementing Regulation (EU) No 391/2013 of 3 May 2013 laying down a common charging scheme for air navigation services (OJ L 128, 9.5.2013, p. 31).

2.6. Annex IV – Specific requirements for the provision of air traffic services (Part-ATS)

Alignment of the SMS framework with the ICAO SMS one

After due consideration of the stakeholders responses to the specific questions asked by the Agency in the Explanatory Note (questions in paragraphs 46 and 139) regarding ICAO Annex 19 SMS framework and the focussed consultation, the Agency acknowledges the overall preference to align with the ICAO framework. This is implemented in ATS.OR.200, replacing the existing Implementing Rule provision and as such applying only to ATS providers.

The Agency considers that the most appropriate implementation of the SMS framework is a combination of IR and AMC material, and as such, the four components of the ICAO SMS framework are retained in the IR and the elements thereof are adopted between IR and AMC.

It should be noted that according to Article 38 of the Chicago Convention, ICAO contracting States are obliged to notify ICAO of any differences between their regulations or practices and those prescribed in ICAO Standards – the ‘filing of differences’. Having acknowledged the applicability date of ICAO Annex 19 since 14 November 2013, the Agency considers that it is, indeed, necessary now to align the applicable SMS framework with the one as stemming from ICAO.

Furthermore, prior to Annex 19, the SMS framework as required by ICAO Annex 11 applied to air traffic services providers and as such there is no difference in the obligations of the State. Therefore, the Agency believes that by adopting the ICAO SMS framework the burden on States and ATS providers is reduced as meeting the rules means that Annex 19 SMS is also met especially as Regulation (EU) No 1035/2011 is being repealed.

To facilitate the alignment with ICAO SMS framework, a mapping between the initial NPA proposal and the revised one resulting with this CRD was performed. The remaining from NPA 2013-08 proposed provisions are rearranged either as AMC or GM, when reasonable. The subject and proposed approach were tabled and thoroughly discussed at the focussed review meetings, and were positively received by the stakeholders.

Cross reference table of ICAO SMS to the draft service providers rule		
ICAO SMS component	ICAO SMS elements	EASA reference to the new service providers proposal
1. Safety policy and objectives	1.1 Management commitment and responsibility	ATS.OR.200(a)(1)(i) AMC1 ATS.OR.200(a)(1)(i)
	1.2 Safety accountabilities	ATS.OR.205(a)(1)(ii) AMC1 ATS.OR.200(a)(1)(ii);(iii)
	1.3 Appointment of key safety personnel	ATS.OR.200(a)(1)(iii) AMC1 ATS.OR.200(a)(1)(ii);(iii)
	1.4 Coordination of emergency response planning	ATS.OR.200(a)(1)(iv) AMC1 ATS.OR.200(a)(1)(iv)
	1.5 SMS documentation	ATS.OR.200(a)(1)(v) AMC1 ATS.OR.200(a)(1)(v) AMC2 ATS.OR.200(a)(1)(v)
2. Safety risk management	2.1 Hazard identification	ATS.OR.200(a)(2)(i)
	2.2 Safety risk assessment and mitigation	ATS.OR.200(a)(2)(ii) AMC1 ATS.OR.205(a)(2)(ii)
3. Safety assurance	3.1 Safety performance monitoring and measurement	ATS.OR.200(a)(3)(i)
	3.2 The management of change	ATS.OR.200(a)(3)(ii)
	3.3 Continuous improvement of the SMS	ATS.OR.200(a)(3)(iii) AMC1 ATS.OR.200(a)(3)(iii)
4. Safety promotion	4.1 Training and education	ATS.OR.200(a)(4)(i)
	4.2 Safety communication	ATS.OR.200(a)(4)(ii)

Table 2: Cross-reference table*Section 3 – Specific human factors requirements for air traffic control services providers*

The proposed provisions addressing human factors requirements for air traffic control service providers were, in general, positively received. Some specific issues were subjected to various and controversial comments from stakeholders; the Agency has reconsidered these issues with the support of the ad hoc thematic review group. Additionally, an extensive review of the AMCs and GM was performed in order to respond to specific comments and to ensure alignment with the related draft Implementing Rule provisions. The Agency is considering the introduction of additional AMC and GM or the further development of existing ones when necessary.

– *Scope of the provisions*

Comments were received asking for a clarification of the term 'personnel providing an ATC service' in Chapter 5(b) of Annex Vb to the Basic Regulation, asking to either extend the applicability of provisions included in this Section to ATSEPs and to other categories of ATM/ANS personnel, or to explicitly limit the applicability to air traffic controllers. The Agency confirms that the term 'personnel providing an ATC service' in this context is to be understood as 'air traffic controllers'. Human factors and human performance requirements for ATSEPs were covered within this NPA under provision ATS.OR.225. On the basis of comments received, ATS.OR.225 has been amended and relevant provisions are now placed in either ATM/ANS.OR.B.010 or ATS.OR.220. More detailed requirements on the subject may be considered by the Agency at a later stage, if necessary.

– *Human factors in the SMS*

In response to comments received, and following the opinions of the thematic review group members, the requirement to manage operational risks arising from human factors addressed in this Section through the safety management system of the provider has been removed from the Implementing Rule. It has been placed as AMC to provision ATS.OR.200 addressing the safety management system. This change will ensure consistency with the overall safety management system regulatory framework for air traffic services providers, and at the same time ensure a proportionate recognition of the need to manage risks posed by air traffic controllers' fatigue, stress and problematic use of psychoactive substances.

– *Cognitive judgement*

Various comments were received regarding the term 'impaired cognitive judgement' in provision ATS.OR.305, requesting either to provide a definition, or to indicate its improper use in this context. The term 'impaired cognitive judgement' in the Essential Requirement in paragraph 5(b)(iii) of Annex Vb refers, according to paragraph 67 of Attachment 1 (page 67) of EASA Opinion 1/2008 'Extension of the EASA system to the regulation of ATM and ANS', to the influence of psychoactive substances on air traffic controllers and the safety risk that such influence may pose to the aviation safety. The provisions proposed with Section 3 aim at preventing the risk that the problematic use of psychoactive substances impacts the provision of air traffic control service and, in general, the safety of aviation operations. The proposed provisions are aligned with those in ICAO documents, in particular Annex 1 paragraph 1.2.7 and Doc 9654 AN/945 'Manual on Prevention of Problematic Use of Substances in the Aviation Workplace'. In order to establish clarity on the content and the objective of the requirements in ATS.OR.305 and ATS.OR.315, the term 'impaired cognitive judgement' is removed from the draft measures, which now refer to 'problematic use of psychoactive substances', for which a definition is provided.

– *Extensive regulatory coverage of human factors/human performance*

Some commentators expressed their dissatisfaction with the limited scope of human factors requirements in the NPA. The Agency acknowledges the importance of the careful consideration of human factors in the safety regulation addressing air traffic control provision, and is committed to propose adequate implementation of the Essential Requirement in Chapter 5(b)(iv) of Annex Vb. The Agency sees the

consideration of human factors/human performance as a transversal activity, to be progressed along with the development of the various provisions implementing the Essential Requirements concerning ATM/ANS as well as ATCO licensing. For example, with Opinion No 11/2013, the Agency has proposed provisions addressing licensing, training, competence and medical certification of air traffic controller, containing human factors requirements. The analysis of operational concepts stemming from SESAR deliverables and their impact on human factors and human performance, as well as further scientific developments, will be duly considered when preparing ATM/ANS safety regulation.

– *Alignment of fatigue management provisions with ICAO ATCP FRMS TF outcome*

Some commentators requested the Agency to delay the introduction of rules on air traffic controllers fatigue and rostering system until the entry into force of ICAO provisions concerning air traffic controller fatigue, being developed by the ICAO ATCO FRMS Task Force. However, other stakeholders requested to introduce, with this rulemaking task, a fatigue risk management system equivalent to that established by the EU law for air crew.

It should be reminded that the Agency has an obligation, stemming from the Basic Regulation, to develop implementing measures for the fulfilment of the Essential Requirements, in this case those in Chapter 5(b) of Annex Vb.

The proposed measures addressing air traffic controller fatigue and their rostering system were developed in accordance with the relevant Terms of Reference, and provide an initial set of provisions addressing air traffic controller fatigue. The Agency is aware of and actively involved in the ICAO ATCO FRMS Task Force. It will take due account of the results of this ICAO Task Force with a reassessment and, if necessary, an amendment of provisions proposed now, under another rulemaking task RMT.0486 already included in the EASA Rulemaking Programme 2014-2017

– *ATCO rostering system*

Based on the comments received and on the discussion held at the thematic review group meetings, the Agency saw a need to be more prescriptive as regards the definition of rostering systems as a tool to prevent and mitigate air traffic controller fatigue. Therefore, the elements of the rostering system which were previously included in AMC1 ATS.OR.330(b) have been elevated to Implementing Rules. This would not establish any quantitative definition of these elements, but requires the air traffic control service provider itself to determine each of the applicable elements in consultation with air traffic controllers or their representatives. Based on the amended approach, definitions of 'break', 'duty', 'duty period', 'rest period' and 'rostering system' are now provided in Annex I to the Cover Regulation.

2.7. Annex V – Specific requirements for the provision of meteorological services (Part-MET)

As explained in the NPA, this Annex related to meteorological services (MET) provision simply transposes ICAO Annex 3 Part I with no major changes, putting no additional obligations on providers of meteorological services in Europe. The comments received show that the proposed rules have been widely accepted in their current form and, therefore, only little technical modifications have been made. Many comments received

related to some technical and process clarification, editorial improvement, statement of current practice, reference number alignment, etc. All the proposed rules contained in the NPA have been maintained.

Several comments questioned the indissociable link between the NPA related to MET.OR (organisation requirements) and the one on MET.TR (technical requirements), with the consequence that it was difficult to comment on the MET.OR rules without knowing the content of the MET.TR rules which, at the time of NPA 2013-08, was not published. As the transposition of ICAO Annex 3 has been made in two separate phases, the Agency will, before the publication of the Opinion, integrate the MET.TR rules (NPA 2014-07) in the draft regulation on service providers (NPA 2013-08) in order to ensure that the complete MET package is available for comments before adoption of the MET rules.

The Agency also received some comments related to the non-synchronisation between the update cycles of EASA rulemaking with the ICAO Annex 3 update cycles. The Agency acknowledges the need to establish a maintenance mechanism which will allow the Agency to respond to the changing ICAO regulatory environment and the possibility of starting the work at the latest when ICAO publishes the State Letter concerning the intended changes.

With regard to the changes brought by Amendment 76 to ICAO Annex 3, the revised text is now updated with the latest version of ICAO Annex 3. This was only possible at the stage of the CRD process because at the time of the NPA drafting, said Amendment 76 was not adopted (applicable) (e.g. the term 'accidental' [release of radioactive materials into the atmosphere], which has now been removed from the text).

The revised text is also based on changes and improvements identified during the work done for the drafting of the MET.TR rules, meaning that some changes were brought to the draft resulting text before even receiving the comments on the NPA. Due to the fact that the work for both phases was conducted by the same MET experts, consistency and alignment between the MET.OR rules and MET.TR rules was easier to ensure.

Structural changes

As low-level flights forecasts are closely linked with AIRMET messages, the requirement related to 'Area forecasts for low-level flights' contained in Chapter 2 has been moved to Chapter 1 under 'meteorological watch office' requirements. This is simply a logical structural change without any content change.

A new requirement on 'Reporting of meteorological elements' has been introduced (MET.OR.252) as a consequence of a structural change made under the drafting of the MET.TR NPA. The main purpose is to ensure an appropriate link between MET.OR and MET.TR.

Finally, the title 'Warnings and alerts' has been replaced by 'Aerodrome warnings and wind shear warning and alerts' in order to better reflect the content of the requirement.

Specific consultation on the term 'level of attainable'

Stakeholders were invited to comment specifically on whether the term 'level of attainable' [accuracy] should be maintained or removed in MET.OR.100 'Quality of the data and information', and propose any other alternative wording that would provide the same objective. The majority of the comments were in favour of maintaining the term as it is used in the current Regulation (EU) No 1035/2011, thus, there is no change to the rule text, or the term used in ICAO Annex 3. In order to be consistent with the attachments A

and B of ICAO Annex 3, which are transposed in the text proposal, the Agency proposes to use the ICAO term and proposes the following text: 'The meteorological services provider shall confirm the *operationally desirable accuracy* of the information distributed for operations, including the source of such information, whilst also ensuring that such information is distributed in a timely manner, and updated as required.'

TAF

Clarification was requested on the validity requirement of a TAF (not more than one at a given time) which would fail to recognise that TAFs can overlap, while the requirement stipulates that an active TAF must be cancelled prior to the issuance of a later but overlapping TAF. The Agency underlines that the proposed requirement is transposed from ICAO Annex 3. The intent of the rule is to have one valid TAF. No additional implementation considerations are foreseen.

GAMET

In response to a comment on the absence of requirement for GAMET, the Agency's opinion is that regulating GAMET is currently not appropriate because of the current differences existing in Europe in the implementation of GAMET by the European MET community. Therefore, the Agency would like to have more certainty on GAMET and propose rules for this type of area forecast for low level flights, in consultation with the appropriate MET providers, only when a certain level of common understanding exists in Europe on this forecast.

Aerodrome warnings

Some comments consider the requirement to provide concise warnings at aerodromes too strict for several smaller aerodromes in Europe that may have only one aircraft and one arrival/departure a day, and requested for more flexibility. However, this requirement only applies when conditions adversely affect the operations. So, this requirement should not be applicable depending on an individual airport, but should be applied by any aerodrome where safety of operations is put at risk. Such meteorological conditions can occur at any aerodrome, even where only one aircraft is involved.

METAR

Some comments requested for clarification on the provisions related to METAR intervals and the half-hourly reports requirement on the basis that it is in contradiction with ICAO Annex 3, and that the provision of METAR must acknowledge the different needs of users in different airports. In addition, the comments underlined that producing regular half-hourly METAR will create an additional workload for the air traffic services. The Agency reminds that hourly METAR is the standard and half-hourly METAR are permissible when agreed in the framework of the regional air navigation agreement (EUR ANP), which is the case for the ICAO European region. Consequently, the norm is half-hourly METAR and, therefore, no SPECI.

In addition, taking into account the latest ICAO EUR/NAT B 13/12 MET of June 2013, the Agency has amended the relevant rule specifying that the issuance of METAR should commence at least *three* hours prior to the aerodrome resuming operations, and not 2 hours as it was previously the case according to the EUR ANP.

2.8. Requirements for personnel training and competence assessment (Part-PERS)

Scope

The scope has been subject to many comments because the explanation given in the NPA and the proposed definition of ATSEP created some confusion. The Agency did not intend to limit the scope of ATSEP training and competence assessment to ATM/CNS services only. The definition has now been revised in order to ensure the coverage of the necessary services defined in the EASA Basic Regulation. Therefore, the scope of the rules goes beyond ATM/CNS and covers all the systems on which ATSEP operate and that are necessary for the provision of services (e.g. services provided by Network Manager as well).

Transposition of the ATSEP CCC

With regard to the way the EUROCONTROL ATSEP CCC needs to be transposed, the Agency is of the opinion that the balance made between the mandatory elements and their means to comply is proportionate and provides enough flexibility to service providers according to their size, types of services and geographic location. It should be noted that the Agency received several comments supporting this approach. The proposal for the basic training, which created some concern for a few stakeholders, does allow service providers to develop their training syllabi according to their needs. Indeed, the proposal reproduces the EUROCONTROL ATSEP CCC, but offers optional training and leaves all the content of the training to AMC level. Service providers may comply with the objectives in the way they consider most appropriate to them.

Basic Training

Subjects	Mandatory/Optional	Topics+ sub-topics	objectives
1. Induction	mandatory	mandatory	AMC
2. Air Traffic Familiarisation	mandatory	mandatory	AMC
3. Aeronautical information services	Optional, if selected →	AMC	AMC
4. Meteorology	Optional, if selected →	AMC	AMC
5. Communication	Optional, if selected →	AMC	AMC
6. Navigation	Optional, if selected →	AMC	AMC
7. Surveillance	Optional, if selected →	AMC	AMC
8. Data Processing	Optional, if selected →	AMC	AMC
9. System monitoring and control	Optional, if selected →	AMC	AMC
10. Maintenance Procedures	Optional, if selected →	AMC	AMC

For subjects 1 and 2, the topics and sub-topics are mandatory, while all the objectives are contained in AMCs. In addition to subjects 1 and 2, a service provider may choose only the relevant subject according to its needs. Once the subject selected (3 to 10), the topics,

sub-topics and objectives are contained in AMCs. This gives more flexibility than what was initially proposed in the NPA. This approach offers the necessary proportionality to all kinds of service providers as they do not need to teach more subjects than necessary. Moreover, most of the elements are not mandatory. In practice, service providers will select from minimum 3 subjects to maximum 10 subjects.

Qualification training

Subjects	Mandatory/ Optional	Topics+ sub-topics	objectives
1. Safety	mandatory	mandatory	means of compliance
2. Health and Safety	mandatory	mandatory	means of compliance
3. Human factors	mandatory	mandatory	means of compliance
4. COM-VOICE	optional, selected →	if mandatory	means of compliance
5. COM-DATA	optional, selected →	if mandatory	means of compliance
6. NAV-DB	optional, selected →	if mandatory	means of compliance
7. NAV-DF	optional, selected →	if mandatory	means of compliance
8. NAV-VOR	optional, selected →	if mandatory	means of compliance
9. NAV-DME	optional, selected →	if mandatory	means of compliance
10. NAV-ILS	optional, selected →	if mandatory	means of compliance
11. NAV-MLS	optional, selected →	if mandatory	means of compliance
12. SUR-PSR	optional, selected →	if mandatory	means of compliance
13. SUR-SSR	optional, selected →	if mandatory	means of compliance
14. SUR-ADS	optional, selected →	if mandatory	means of compliance
15. DATA-DP	optional, selected →	if mandatory	means of compliance
16. SMC-COM	optional, selected →	if mandatory	means of compliance
17. SMC-NAV	optional, selected →	if mandatory	means of compliance

18.	SMC-SUR	optional, selected →	if	mandatory	means of compliance
19.	SMC-DATA	optional, selected →	if	mandatory	means of compliance

For the mandatory subjects 1 to 3, 'The Shared' qualification training, the topics and sub-topics are mandatory while the objectives are contained in AMC. In addition, for subjects 4 to 19, a service provider may choose only the stream(s) relevant to its activities. If one or more stream(s) is/are selected, the topics, sub-topics are mandatory while the objectives are contained in AMCs. The same approach as for the basic training applies where the 3 subjects in the 'Shared training' need to be selected, whereas only one stream can be selected. All the training objectives of the shared and selected streams can be complied with differently, if needed, by a service provider. In practice, service providers will select from minimum 4 subjects to maximum 19 subjects.

In conclusion, the transposition level proposed by the Agency offers a framework for service providers to establish the needs for their ATSEP within their actual operations and in line with their management systems. This approach also offers the necessary proportionality to all kinds of service providers according to the types of services they provide and the number of ATSEP they have, and can, therefore, be tailored to the activities of the service provider and to the task ATSEP will perform.

Identification of safety-related systems – ATSEP.OR.010

This provision has been removed from the draft proposal because the revised definition of 'ATSEP' now includes the notion of 'system', a term that will be defined in the NPA related to the 'Assessment of changes to functional systems by service providers in ATM/ANS and the oversight of these changes by competent authorities' (RMT.0469) and is included in the draft regulation. There is, therefore, no need to require from a service provider to identify the safety-related systems through its management system in order to identify the kind of systems ATSEP are working on as it was foreseen in the NPA.

ATSEP CCC

- *Maintenance* – Following several comments questioning how the Agency foresees to maintain and update the rules based on the ATSEP CCC, the Agency intends to ensure this update through a rulemaking task on the maintenance of the rules. Appropriate coordination with all stakeholders will be ensured on a regular basis in order for the Agency to amend the rules in a timely manner.
- *Editorial changes improvements* – With regard to editorial mistakes and inconsistencies stemming from the ATSEP CCC transposition work, the Agency has corrected numerous outdated references that were still contained in the objectives of the transposed CCC. For instance, references to old EU Regulations and past regulatory requirements have been deleted and inclusion of new EU regulations references (SERA and OPS) has been made as well as reference to the new ICAO Annex 19 Annex. Also, many changes were made following missing text or typo mistakes in the corpus of the AMCs related to the qualification training streams.

Additional guidance material

Following several proposals to complement the draft rules with additional material, some GMs have been added in order to clarify the requirements or to explain some specific situations. For instance, some comments reflected the need to better understand the circumstances and scenarios when maintenance must be carried out by an ATSEP. Also, the necessity for instructors and assessors to have the non-technical skills is regarded as important for stakeholders. The Agency has now included all the proposed AMC/GM.

Proposed further work at a later stage

In responding to comments, the Agency very often noted that comments requested for more detailed provisions. The Agency acknowledges that some areas may, indeed, need to be further addressed, but at the same time, explained that the main task of the Agency for regulating the training and competence assessment of ATSEP was limited to the transposition of the EUROCONTROL ATSEP CCC and to the development of general rules for the other training phases and for competence assessment provisions.

Safety requirements for engineering and technical personnel undertaking operational safety-related tasks

Several comments made a request to also regulate other categories of personnel undertaking safety-related tasks. As mentioned in the Explanatory Note to the NPA, the Agency stated that ATSEP is a category of personnel to be subject to common rules as necessary and that, in the future, the issue has to be carefully considered and other relevant personnel might be subject to a further proposal to be included in the same draft Regulation (Annex XIII).

Emergency training

Some comments received requested for clarification of the term 'emergency training' which is part of the continuation training. The Agency considered that the explanation provided by the Agency in the related GM (GM1 ATSEP.OR.120) was clear enough to understand the meaning.

Power supply and air conditioning

Some comments questioned the applicability of the ATSEP rules to 'power supply' and 'air conditioning' systems. Although it is acknowledged that both systems can be critical elements of the aviation safety chain and that personnel should, therefore, be appropriately trained in those areas, the Agency does not consider that this training should fall within the scope of the ATSEP training provisions. In general, ATSEP do not work on these systems, but rather control and manage the release of power and air conditioning systems, to and from operational service. In this situation, the person does not have, and is not expected to have, extensive knowledge of the aviation environment to provide the required service. Consequently, the vast majority of the Initial Training objectives would not be applicable to a power engineer.

II. Resulting text of CRD to NPA 2013-08 (B)

COVER REGULATION

Article 1

Subject matter and scope rev.

1. This Regulation lays down:
 - (a) requirements for service providers; and
 - (b) requirements to be applied by the competent authorities and the qualified entities acting on their behalf in order to exercise the oversight function of the service providers.
2. Unless Annexes III to XIII provide otherwise, the requirements referred to in 1(a) do not apply to:
 - (a) activities other than those defined in this Regulation by a service provider; and
 - (b) resources allocated to activities of the service provider other than those defined in this Regulation.

Article 2

Definitions rev.

For the purposes of this Regulation, the following definitions shall apply:

1. The definitions in Article 2 of Regulation (EC) No 549/2004¹⁵ and Article 3 of Regulation (EC) No 216/2008¹⁶; however, the definition of 'certificate' in Article 2(15) of Regulation (EC) No 549/2004 does not apply;
2. 'Service provider' means any legal or natural person providing aeronautical information services, services consisting in the origination and processing of data and formatting and delivering data to general air traffic for the purpose of safety-critical air navigation, air traffic services, communication, navigation and surveillance services, meteorological services, air traffic flow management, airspace management and ATM network functions, either individually or bundled for general air traffic;
3. 'Enforcement measures' means measures provided for in Article 7 of Regulation (EC) No 550/2004¹⁷ and Articles 10, 22a(d), 25, and 68 of Regulation (EC)

¹⁵ Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation) - Statement by the Member States on military issues related to the single European sky (OJ L 96, 31.3.2004, p. 1–9).

¹⁶ Regulation (EC) No 216/2008 of the European Parliament and the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1), as last amended by Commission Regulation (EU) No 6/2013 of 8 January 2013 (OJ L 4, 9.1.2013, p. 34).

¹⁷ Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation) (OJ L 96, 31.3.2004, p. 10).

No 216/2008, which shall include revocation, suspension, or limitation of certificates and may include financial penalties and other measures; and

4. 'Network Manager' means the body established on the basis of Article 6 of Regulation (EC) No 551/2004¹⁸ to perform the duties provided in that Article and in Regulation (EU) No 677/2011¹⁹;

Article 3

Provision of services new

1. Member States shall ensure that the appropriate services are provided in accordance with this Regulation, taking into account safety consideration. In doing so, when Member States adopt new additional provisions to complement this Regulation as well as any matters left to the decision of a competent authority under this Regulation, this shall follow the standards and recommended practices set by the Chicago Convention.
2. Member States shall publish the provisions in accordance with paragraph (1) through their aeronautical information publications, where appropriate. They shall also inform the Agency at the latest two months after the additional provisions have been adopted.

Article 4

Competent authority rev.

1. For the purpose of this Regulation, the competent authority for certification, receipt of declarations and oversight shall be:
 - (a) the national supervisory authority(ies) nominated or established by the Member State, in accordance with Article 4 of Regulation (EC) No 549/2004, where the service provider has its principal place of operation or, if any, its registered office;
 - (b) the competent authority(ies) nominated or established under agreements concluded among Member States in accordance with Article 2 paragraphs (3) to (6) of Regulation (EC) No 550/2004 for service providers where the responsibilities have been allocated differently from paragraph (a);
 - (c) the Agency for service provider in the airspace of the territory to which the Treaty applies and having its principal place of operation or, if any, its registered office located outside the territory subject to the provisions of the Treaty;
 - (d) the Agency for organisations providing pan-European services as well as for the Network Manager.

¹⁸ Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky (the airspace Regulation) - Commission statement (OJ L 96, 31.3.2004, p. 20).

¹⁹ Commission Regulation (EU) No 677/2011 of 7 July 2011 laying down detailed rules for the implementation of air traffic management (ATM) network functions and amending Regulation (EU) No 691/2010 (OJ L 185, 15.7.2011, p. 1).

2. If a Member State nominates or establishes more than one competent authority in accordance with paragraphs 1(a) and 1(b), the areas of competence of each competent authority shall be clearly defined in terms of responsibilities and geographic and airspace limitation, where appropriate. Coordination based on written arrangements shall be established between those entities to ensure effective oversight of all organisations subject to this Regulation within their respective remits.
3. When concluding an agreement on the supervision of service providers active in functional airspace blocks (FAB) or in cross border activities in which the Agency is the competent authority for at least one of the organisations, the Member States concerned shall coordinate with the Agency so as to ensure that points (1), (2) and (3) of ATM/ANS.AR.A.005 (b) are met.
4. The competent authority(ies) shall be independent of any service providers. This independence shall be achieved through adequate separation, at the functional level at least, between the competent authority and such service providers. Member States shall ensure that the competent authority(ies) exercises (exercise) its (their) powers impartially and transparently.
5. Member States shall notify the Agency of the names and addresses of the competent authority(ies), as well as any changes thereof.

Article 5

Service providers rev.

1. Service providers shall be certified, except when so decided by Member States in accordance with Article 7, and shall comply with the requirements in Annex III (Part-ATM/ANS.OR), Subparts A and B.
2. Service providers other than ATS providers shall comply, in addition to 1, with the requirements in Annex III (Part-ATM/ANS.OR), Subpart C.
3. An air navigation services (ANS) provider, an air traffic flow management (ATFM) provider and the Network Manager shall comply, in addition to 1, with the requirements in Annex III (Part-ATM/ANS.OR), Subpart D.
4. An air traffic services (ATS) provider shall comply, in addition to 1 and 3, with the requirements in Annex IV (Part-ATS).
5. A meteorological services (MET) provider shall comply, in addition to 1, 2 and 3, with the requirements in Annex V (Part-MET).
6. An aeronautical information services (AIS) provider shall comply, in addition to 1, 2 and 3, with the requirements in Annex VI (Part-AIS).
7. A data services (DAT) provider shall comply, in addition to 1 and 2, with the requirements in Annex VII (Part-DAT).
8. A communication navigation and surveillance services (CNS) provider shall comply, in addition to 1, 2 and 3, with the requirements in Annex VIII (Part-CNS).
9. An air traffic flow management (ATFM) provider shall comply, in addition to 1, and 3, with the requirements in Annex IX (Part-ATFM).

10. An airspace management (ASM) provider shall comply, in addition to 1 and 2, with the requirements in Annex X (Part-ASM).
11. *[to be introduced under RMT.0445]*.
12. The Network Manager shall comply, in addition to 1, 2 and 3, with the requirements in Annex XII (Part-NM).
13. Service providers shall comply, in addition to 1 to 12 as applicable, with the relevant requirements in Annex XIII (Part-PERS).

Article 6

Oversight capabilities

1. Member States and the Commission, where the Agency is the competent authority, shall ensure that competent authority(ies) has (have) the necessary capability to ensure the oversight of service providers operating under its (their) supervision and subject to its (their) oversight programme, including sufficient resources to fulfil the requirements of this Regulation. When ensuring the necessary capability, Member States and the Commission shall use the assessments produced by the competent authorities in accordance with paragraph 3.
2. Competent authorities for certification and oversight in accordance with Article 4(1) shall comply with the requirements laid down in Annex II.
3. The competent authority shall produce and update every two years, an assessment of the human resources needed to perform its oversight functions, based on the analysis of the processes required by this Regulation and their application.
4. Member States shall require competent authorities to ensure their personnel do not perform oversight activities when there is evidence that this could result directly or indirectly in a conflict of interest, in particular when relating to family or financial interest.
5. Personnel authorised by the competent authority to carry out certification and/or oversight tasks shall be empowered:
 - (a) to examine the relevant records, data, procedures and any other material relevant to the execution of the certification and/or oversight tasks;
 - (b) to take copies of, or extracts from such records, data, procedures, and other material;
 - (c) to ask for an oral explanation on site;
 - (d) to enter relevant premises, operating sites, or means of transport;
 - (e) to perform audits, investigations, assessments, inspections; and
 - (f) to take or initiate enforcement measures.
6. The tasks under paragraph 5 shall be carried out in compliance with the legal provisions applicable to the competent authority undertaking them.

Article 7

Declaration by flight information services providers *rev.*

When Member States decide that flight information services providers are allowed to declare their capability and means of discharging the responsibilities associated with the services provided, in accordance with Article 8b.3 of Regulation (EC) No 216/2008, these providers shall fulfil the criteria and requirements under ATM/ANS.OR.A.015.

Article 8

Transitional provisions

[to be introduced with the publication of the Opinion resulting from the work of RMT.0148 (ATM.001) and RMT.0157 (ATM.004) and RMT.0469]

Article 9

Repeal

[to be introduced with the publication of the Opinion resulting from the work of RMT.0148 (ATM.001) and RMT.0157 (ATM.004) and RMT.0469]

Article 10

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, ...

For the Commission

[...]

The President

ANNEX I new**DEFINITIONS OF TERMS USED IN ANNEXES II to XIII**

For the purposes of this Regulation, the following definitions shall apply:

1. 'Aerial work' means an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue or aerial advertisement, etc.;
2. 'Acceptable Means of Compliance (AMC)' means non-binding standards adopted by the Agency to illustrate means to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules;
3. 'Aerodrome flight information service' means flight information service and alerting service for aerodrome traffic at an aerodrome;
4. 'Aeronautical meteorological information' means a meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions;
5. 'Aerodrome meteorological office' means an office responsible to provide meteorological service for aerodrome;
6. 'Aeronautical meteorological station' means a station making observations and meteorological reports for use in air navigation;
7. 'Aeronautical fixed service (AFS)' means a telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services;
8. 'Aircraft' means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface;
9. 'AIRMET information' means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en route weather phenomena which may affect the safety of low-level aircraft operations, and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof;
10. 'Air traffic safety electronics personnel (ATSEP)' means any authorised personnel who are competent to operate, maintain, release from, and return into operations systems that are necessary for the provision of services;
11. 'Air traffic services unit' is a generic term meaning variously 'air traffic control unit', 'flight information centre', 'aerodrome flight information service unit' or 'air traffic services reporting office';
12. 'ASHTAM' means a special series of NOTAM notifying by means of a specific format change in the activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations;
13. 'Alternative means of compliance (AltMOC)' are those that propose an alternative to an existing AMC or those that propose new means to establish compliance with

- Regulation (EC) No 216/2008 and its Implementing Rules for which no associated AMC have been adopted by the Agency;
14. 'Altitude' means the vertical distance of a level, a point, or an object considered as a point, measured from mean sea level (MSL);
 15. 'Approach control service' means air traffic control service for arriving or departing controlled flights;
 16. 'Area control centre (ACC)' means a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction;
 17. 'Area control service' means air traffic control service for controlled flights in control areas;
 18. 'Area navigation (RNAV)' means a method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of them;
 19. 'ATM network functions' means the functions performed by the Network Manager in accordance with Regulation (EU) No 677/2011;
 20. 'Audit' means a systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which requirements are complied with;
 21. 'Break' means a period of time within the duty period when an air traffic controller is not required to perform duties, for recuperation purposes;
 22. 'Commercial air transport' means any aircraft operation involving the transport of passengers, cargo or mail for remuneration or other valuable consideration;
 23. 'Control area' means a controlled airspace extending upwards from a specified limit above the earth;
 24. 'Critical incident stress' means the manifestation of unusual and/or extreme emotional, physical and behavioural reactions of an individual following an event or incident;
 25. 'Duty' means any task that an air traffic controller is required to perform by the air traffic control service provider;
 26. 'Duty period' means a period which starts when an air traffic controller is required by the air traffic control service provider to report for or be available for or to commence duty and ends when the air traffic controller is free from duty;
 27. 'Fatigue' means a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase or workload (mental and/or physical activity) that can impair an individual's alertness and ability to safely perform his/her tasks;
 28. 'Flight information centre' means a unit established to provide flight information service and alerting service;
 29. 'Flight information region' means an airspace of defined dimensions within which flight information service and alerting service are provided;

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30. 'Flight level' means a surface of constant atmospheric pressure which is related to a specific pressure datum, 1 013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals;
 31. 'Flight test' is a generic term meaning variously or comprehensively 'flights for the development phase of a new design (aircraft, propulsion systems, parts and appliances)', 'flights to demonstrate compliance to certification basis or to type design for aircraft coming from the production line', 'flights intended to experiment new design concepts, requiring unconventional manoeuvres or profiles for which it could be possible to exit the already approved envelope of the aircraft', 'or flight test training flights';
 32. 'Forecast' means a statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace;
 33. 'Functional system' means [*to be developed and reintroduced under RMT.0469*];
 34. 'Guidance material (GM)' means non-binding material developed by the Agency that helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of Regulation (EC) No 216/2008, its Implementing Rules and AMC;
 35. 'General aviation' means any civil aircraft operation other than aerial work or commercial air transport;
 36. 'Gridded global forecasts' means forecasts of expected values of meteorological elements on a global grid with a defined vertical and horizontal resolution;
 37. 'Hazard' means any condition, event, or circumstance which could induce a harmful effect;
 38. 'Height' means the vertical distance of a level, a point or an object considered as a point, measured from a specified datum;
 39. 'Meteorological observation' means the measurement and/or evaluation of one or more meteorological elements;
 40. 'Meteorological report' means a statement of observed meteorological conditions related to a specified time and location;
 41. 'Meteorological watch office' means an office monitoring meteorological conditions affecting flight operations and providing information concerning the occurrence or expected occurrence of specified en route weather phenomena, natural and other hazards which may affect the safety of aircraft operations within a specified area of responsibility;
 42. 'NOTAM' means a notice distributed by means of telecommunication containing information concerning the establishment, condition, or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to personnel concerned with flight operations;
 43. 'OPMET' means operational aeronautical meteorological information;
 44. 'Pan-European services' means an activity which is designed and established for users within most or all Member States and which may also extend beyond the airspace of the territory to which the Treaty applies;

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45. 'Pre-eruption volcanic activity' means an unusual and/or increasing volcanic activity which could presage a volcanic eruption;
 46. 'Problematic use of psychoactive substances' means the use of one or more psychoactive substances by an individual, in a way that:
 - (a) constitutes a direct hazard to the user or endangers the lives, health, or welfare of others; and/or
 - (b) causes or worsens an occupational, social, mental or physical problem or disorder;
 47. 'Psychoactive substances' means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas caffeine and tobacco are excluded;
 48. 'Rescue coordination centre' means a unit responsible for promoting efficient organisation of search and rescue services, and for coordinating the conduct of search and rescue operations within a search and rescue region;
 49. 'Rest period' means a continuous and defined period of time, subsequent to and/or prior to duty, during which an air traffic controller is free of all duties;
 50. 'Rostering system' means the structure of duty and rest periods of air traffic controllers in accordance with legal and operational requirements;
 51. 'Risk' means the combination of the overall probability, or frequency of occurrence of a harmful effect induced by a hazard and the severity of that effect;
 52. 'Runway' means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft;
 53. 'Runway Visual Range (RVR)' means the range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line;
 54. 'Safety directive' means a document issued or adopted by a competent authority which mandates actions to be performed on a functional system or sets restrictions to its operational use to restore safety when evidence shows that aviation safety may otherwise be compromised;
 55. 'Safety Management System (SMS)' means a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies, and procedures;
 56. 'Search and rescue services unit' is a generic term covering, as the case may be, rescue coordination centre, rescue sub-centre or alerting post;
 57. 'SIGMET information' means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en route weather phenomena which may affect the safety of aircraft operations;
 58. 'Stress' means the outcomes experienced by an individual when faced with a potential cause ('stressor') of human performance modification. The experience of the stressor may impact the individual's performance negatively (distress), neutrally or positively (eustress), based on the individual's perception of his/her ability to manage the stressor;

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59. 'System and equipment training' means training designed to impart specific system/equipment knowledge and skills leading towards operational competence;
 60. 'Touchdown zone' means the portion of a runway, beyond the threshold, where, it is intended, landing aeroplanes first contact the runway;
 61. 'Tropical cyclone' is a generic term for a non-frontal synoptic-scale cyclone originating over tropical or subtropical waters with organised convection and definite cyclonic surface wind circulation;
 62. 'Tropical cyclone advisory centre (TCAC)' means a meteorological centre providing advisory information to meteorological watch offices, world area forecast centres and international OPMET databanks regarding the position, forecast direction and speed of movement, central pressure and maximum surface wind of tropical cyclones;
 63. 'Visibility' means visibility for aeronautical purposes, which is the greater of:
 - (a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background;
 - (b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background;
 64. 'Volcanic Ash Advisory Centre (VAAC)' means meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, area control centres, flight information centres, world area forecast centres and international OPMET databanks regarding the lateral and vertical extent and forecast movement of volcanic ash in the atmosphere following volcanic eruptions;
 65. 'World Area Forecast Centre (W AFC)' means a meteorological centre preparing and issuing significant weather forecasts and upper-air forecasts in digital form on a global basis direct to the Member States by appropriate means as part of the aeronautical fixed service; and
 66. 'World area forecast system (WAFS)' means a worldwide system by which world area forecast centres provide aeronautical meteorological en route forecasts in uniform standardised formats.

ANNEX II

REQUIREMENTS FOR COMPETENT AUTHORITIES — PROVISION OF SERVICES AND OTHER ATM NETWORK FUNCTIONS

(Part-ATM/ANS.AR)

SUBPART A — GENERAL REQUIREMENTS

ATM/ANS.AR.A.001 Scope rev.

This Annex establishes the requirements for the administration and management system to be complied with by the competent authorities responsible for the oversight of the application by service providers and the enforcement of Annexes III to XIII to this Regulation.

ATM/ANS.AR.A.005 Oversight function rev.

- (a) The competent authority shall exercise oversight of requirements applicable to service providers to monitor the safe provision of these activities and to verify that the applicable requirements and their implementing arrangements are met.
- (b) In addition to Article 4(1)(b) and (3) of this Regulation, the competent authorities concerned shall identify and allocate the responsibilities for safety oversight in a manner which ensures that:
 - (1) specific points of responsibility exist to implement each provision of this Regulation;
 - (2) they have visibility of the safety oversight mechanisms and their results; and
 - (3) relevant information exchange is ensured between competent authorities.

The competent authorities concerned shall regularly review the agreement and its practical implementation, in particular in the light of achieved safety performance.

ATM/ANS.AR.A.010 Oversight documentation new

The competent authority shall make available the relevant legislative acts, standards, rules, technical publications and related documents to its relevant personnel in order to perform their tasks and to discharge their responsibilities.

ATM/ANS.AR.A.015 Means of compliance new

- (a) The Agency shall develop Acceptable Means of Compliance that may be used to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules. When AMC are complied with, the related requirements of the Implementing Rules are met.
- (b) Alternative means of compliance may be used to establish compliance with the Implementing Rules.

- (c) The competent authority shall establish a system to consistently evaluate that all alternative means of compliance used by itself or by the service providers under its oversight allow the establishment of compliance with Regulation (EC) No 216/2008 and its Implementing Rules.
- (d) The competent authority shall evaluate all alternative means of compliance proposed by a service provider in accordance with ATM/ANS.OR.A.020 by analysing the documentation provided and, if considered necessary, conducting an inspection of the service provider.

When the competent authority finds that the alternative means of compliance are in accordance with the Implementing Rules, it shall without undue delay:

- (1) notify the applicant that the alternative means of compliance may be implemented and, if applicable, amend the approval or certificate of the applicant accordingly;
 - (2) notify the Agency of their content, including copies of all relevant documentation; and
 - (3) inform other Member States about alternative means of compliance that were accepted.
- (e) When the competent authority itself uses alternative means of compliance to achieve compliance with Regulation (EC) No 216/2008 and its Implementing Rules it shall:
 - (1) make them available to all service providers and persons under its oversight; and
 - (2) notify the Agency without undue delay.

The competent authority shall provide the Agency with a full description of the alternative means of compliance, including any revisions to procedures that may be relevant, as well as an assessment demonstrating that the Implementing Rules are met.

ATM/ANS.AR.A.020 Information to the Agency rev.

- (a) The competent authority shall without undue delay notify the Agency in case of any significant problems with the implementation of Regulation (EC) No 216/2008 and its Implementing Rules, or any relevant safety aspects of Regulations (EC) Nos 549/2004, 550/2004, 551/2004 and 552/2004 (the Single European Sky legislation).
- (b) The competent authority shall provide the Agency with safety-significant information stemming from the occurrence reports it has received.

ATM/ANS.AR.A.025 Immediate reaction to safety problem

- (a) Without prejudice to Regulation (EU) No 376/2014²⁰, the competent authority shall implement a system to appropriately collect, analyse, and disseminate safety information.
- (b) The Agency shall implement a system to appropriately analyse any safety information received from the competent authorities and without undue delay provide to Member States and the Commission, as appropriate, any information, including recommendations or corrective actions to be taken, necessary for them to react in a timely manner to a safety problem involving service providers subject to Regulation (EC) No 216/2008 and its Implementing Rules.
- (c) Upon receiving the information referred to in (a) and (b), the competent authority shall take adequate measures to address the safety problem, including the issuing of safety directives in accordance with ATM/ANS.AR.A.030.
- (d) Measures taken under (c) shall immediately be notified to the service providers which need to comply with them under Regulation (EC) No 216/2008 and its Implementing Rules. The competent authority shall also notify those measures to the Agency and, when combined action is required, the other competent authorities concerned.

ATM/ANS.AR.A.030 Safety directives

- (a) The competent authority shall issue a safety directive when it has determined the existence of an unsafe condition in a functional system requiring immediate action.
- (b) The safety directive shall be forwarded to the service providers concerned and contain, as a minimum, the following information:
 - (1) the identification of the unsafe condition;
 - (2) the identification of the affected functional system;
 - (3) the actions required and their rationale;
 - (4) the time limit for completing the actions required; and
 - (5) its date of entry into force.
- (c) The competent authority shall forward a copy of the safety directive to the Agency and any other competent authorities concerned.
- (d) The competent authority shall verify the compliance of service providers with the applicable safety directives.

²⁰ Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007 (OJ L 122, 24.4.2014, p. 18).

ATM/ANS.AR.A.035 Oversight reporting

The competent authority shall contribute to the annual reports by the Member States, as required by Article 12 of Regulation (EC) No 549/2004, on oversight actions pursuant to this Regulation.

SUBPART B – MANAGEMENT (ATM/ANS.AR.B)**ATM/ANS.AR.B.001 Management system rev.**

- (a) The competent authority shall establish and maintain a management system, including as a minimum:
- (1) documented policies and procedures to describe its organisation, means and methods to achieve compliance with Regulation (EC) No 216/2008 and its Implementing Rules. The procedures shall be kept up to date and serve as the basic working documents within that competent authority for all related tasks;
 - (2) a sufficient number of personnel, including inspectors, to perform its tasks and discharge its responsibilities. Such personnel shall be qualified to perform their allocated tasks and have the necessary knowledge, experience, initial, on-the-job and recurrent training to ensure continuing competence. A system shall be in place to plan the availability of personnel, in order to ensure the proper completion of all related tasks;
 - (3) adequate facilities and office accommodation to perform the allocated tasks;
 - (4) a formal process to monitor compliance of the management system with the relevant requirements and adequacy of the procedures, including the establishment of an internal audit process and a safety risk management process. Compliance monitoring shall include a feedback system of audit findings to the senior management of the competent authority to ensure implementation of corrective actions as necessary; and
 - (5) a person or group of persons, ultimately responsible to the senior management of the competent authority for the compliance monitoring function.
- (b) The competent authority shall, for each field of activity included in the management system, appoint one or more persons with the overall responsibility for the management of the relevant task(s).
- (c) The competent authority shall establish procedures for participation in a mutual exchange of all necessary information and assistance with other competent authorities concerned, including all findings raised and follow-up actions taken as a result of oversight of service providers exercising activities in the territory of a Member State, but certified by the competent authority of another Member State or the Agency.
- (d) A copy of the procedures related to the management system and their amendments shall be made available to the Agency for the purpose of standardisation.

ATM/ANS.AR.B.005 Allocation of tasks to qualified entities rev.

- (a) If the competent authority allocates tasks related to the initial certification or continuous oversight of service providers subject to Regulation (EC) No 216/2008 and its Implementing Rules, then they shall only be allocated to qualified entities. When allocating tasks, the competent authority shall ensure that it has:
- (1) a system in place to initially and continuously assess that the qualified entity complies with Annex V to Regulation (EC) No 216/2008. This system and the results of the assessments shall be documented; and
 - (2) established a documented agreement with the qualified entity, approved by both parties at the appropriate management level, which clearly defines:
 - (i) the tasks to be performed;
 - (ii) the declarations, reports and records to be provided;
 - (iii) the technical conditions to be met when performing such tasks;
 - (iv) the related liability coverage; and
 - (v) the protection given to information acquired when carrying out such tasks.
- (b) The competent authority shall ensure that the internal audit process and the safety risk management process required by ATM/ANS.AR.B.001(a)(4) cover all certification or continuous oversight tasks performed on its behalf.

ATM/ANS.AR.B.010 Changes in the management system

- (a) The competent authority shall have a system in place to identify changes that affect its capability to perform its tasks and discharge its responsibilities as defined in Regulation (EC) No 216/2008 and its Implementing Rules. This system shall enable it to take action, as appropriate, to ensure that the management system remains adequate and effective.
- (b) The competent authority shall update its management system to reflect any change to Regulation (EC) No 216/2008 and its Implementing Rules in a timely manner, so as to ensure effective implementation.
- (c) The competent authority shall notify the Agency of changes affecting its capability to perform its tasks and discharge its responsibilities as defined in Regulation (EC) No 216/2008 and its Implementing Rules.

ATM/ANS.AR.B.015 Record keeping rev.

- (a) The competent authority shall establish a system of record keeping providing for adequate storage, accessibility, and reliable traceability of:
- (1) the management system's documented policies and procedures;
 - (2) training, qualification, and authorisation of personnel as required by ATM/ANS.AR.B.001(a)(2);
 - (3) the allocation of tasks, covering the elements required by ATM/ANS.AR.B.005, as well as the details of tasks allocated;

- (4) certification and/or declaration processes;
 - (5) designations of air traffic services and metrological services providers, as appropriate;
 - (6) oversight of service providers exercising activities within the territory of the Member State, but certified by the competent authority of another Member State or the Agency, as agreed between these authorities;
 - (7) the evaluation and notification to the Agency of alternative means of compliance proposed by service providers and the assessment of alternative means of compliance used by the competent authority itself;
 - (8) ongoing compliance of service providers, including the reports of all audits, covering findings, corrective actions, and date of action closure, and observations as well as other safety-related records;
 - (9) enforcement measures taken;
 - (10) safety information, safety directives and follow-up measures ; and
 - (11) the use of flexibility provisions in accordance with Article 14 of Regulation (EC) No 216/2008.
- (b) The competent authority shall maintain a list of all service provider certificates issued and declarations received.
- (c) All records shall be kept for a minimum period of 5 years after the certificate ceases to be valid or the declaration is withdrawn, subject to the applicable data protection law.

SUBPART C – OVERSIGHT, CERTIFICATION, AND ENFORCEMENT (ATM/ANS.AR.C)

ATM/ANS.AR.C.001 Monitoring of safety performance rev.

- (a) The competent authorities shall regularly monitor and assess the safety performance of the service providers.
- (b) The competent authorities shall use the results of the monitoring of safety performance in particular within their risk-based oversight.

ATM/ANS.AR.C.005 Certification, declaration, and verification of service providers' compliance with the requirements rev.

- (a) Within the framework of ATM/ANS.AR.B.001(a)(1), the competent authority shall establish a process in order to verify:
 - (1) service providers' compliance with applicable requirements set out in Annexes III to XIII to this Regulation, and any applicable conditions attached to the certificate before the issue of a certificate. The certificate shall be issued in accordance with Appendix I to this Part;
 - (2) compliance with any safety-related obligations in the designation act issued in accordance with Article 8 of Regulation (EC) No 550/2004;

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- (3) continued compliance with the applicable requirements of the service providers certified by or making declarations to the competent authority;
 - (4) implementation of safety objectives, safety requirements, and other safety-related conditions identified in declarations of verification of systems, including any relevant declaration of conformity or suitability for use of constituents of systems issued in accordance with Regulation (EC) No 552/2004;
 - (5) *[To be introduced under RMT.0469]*;
- and
- (6) the implementation of safety directives, corrective actions, and enforcement measures.
- (b) The process referred to in paragraph (a) shall:
- (1) be based on documented procedures;
 - (2) be supported by documentation specifically intended to provide oversight personnel with guidance to perform their functions;
 - (3) provide the organisation concerned with an indication of the results of the oversight activity;
 - (4) be based on audits, reviews and inspections conducted by the competent authority;
 - (5) with regard to certified service providers, provide the competent authority with the evidence needed to support further action, including measures foreseen by Article 9 of Regulation (EC) No 549/2004, Article 7(7) of Regulation (EC) No 550/2004, and by Articles 10, 25, and 68 of Regulation (EC) No 216/2008 in situations where requirements are not complied with; and
 - (6) with regard to service providers making declarations, provide the competent authority with the evidence to take, if appropriate, remedial action which may include enforcement actions including, where appropriate, under national law.

ATM/ANS.AR.C.010 Oversight *rev.*

- (a) The competent authority, or qualified entities as delegated by it, shall conduct audits.
- (b) The audits referred to in paragraph (a) shall:
 - (1) provide the competent authority with evidence of compliance with applicable requirements and with implementing arrangements;
 - (2) be independent of any internal auditing activities undertaken by the service provider;
 - (3) cover complete implementing arrangements or elements thereof, and processes or services;
 - (4) determine whether:
 - (i) implementing arrangements comply with the applicable requirements;

- (ii) actions taken comply with the implementing arrangements and applicable requirements;
 - (iii) the results of actions taken match the results expected from the implementing arrangements;
 - (5) *[To be introduced under RMT.0469]*; and
 - (6) *[To be introduced under RMT.0469]*.
- (c) The competent authority shall, on the basis of the evidence at its disposal, monitor the continuous compliance of the service provider under its supervision.

ATM/ANS.AR.C.015 Oversight programme *new*

- (a) The competent authority shall establish and update annually an oversight programme taking into account the specific nature of the service providers, the complexity of their activities, the results of past certification and/or oversight activities and shall be based on the assessment of associated risks. It shall include audits, which shall:
- (1) cover all the areas of potential safety concern, with a focus on those areas where problems have been identified;
 - (2) cover all the service providers under the supervision of the competent authority;
 - (3) cover the means implemented by the service provider to ensure the competency of personnel;
 - (4) ensure that audits are conducted in a manner commensurate with the level of the risk posed by the service provider operations and services provided;
 - (5) ensure that for service providers under its supervision, an oversight planning cycle not exceeding 24 months is applied.

The oversight planning cycle may be reduced if there is evidence that the safety performance of the service provider has decreased.

For a service provider certified by the competent authority, the oversight planning cycle may be extended to a maximum of 36 months if the competent authority has established that during the previous 24 months:

- (i) the service provider has demonstrated an effective identification of aviation safety hazards and management of associated risks; and
- (ii) the service provider has continuously demonstrated under ATM/ANS.OR.A.040 and ATM/ANS.OR.A.045 that it has full control over all changes; and
- (iii) no level 1 findings have been issued; and
- (iv) all corrective actions have been implemented within the time period accepted or extended by the competent authority as defined in ATM/ANS.AR.C.050.

If, in addition to the above, the service provider has established an effective continuous reporting system to the competent authority on the safety

performance and regulatory compliance of the service provider, which has been approved by the competent authority, the oversight planning cycle may be extended to a maximum of 48 months;

- (6) ensure follow-up of the implementation of corrective actions;
 - (7) be subject to consultation with the service providers concerned and notification thereafter; and
 - (8) indicate the envisaged interval of the inspections of the different sites, if any.
- (b) The competent authority may decide to modify the objectives and the scope of pre-planned audits and include additional audits, wherever that need arises.
 - (c) The competent authority shall decide which arrangements, elements, services, functions, physical locations, and activities are to be audited within a specified time frame.
 - (d) Audit observations and findings issued in accordance with ATM/ANS.AR.C.050 shall be documented. The latter shall be supported by evidence, and identified in terms of the applicable requirements and their implementing arrangements against which the audit has been conducted.
 - (e) An audit report, including the details of the findings and observations, shall be drawn up and communicated to the service provider concerned.

ATM/ANS.AR.C.020 Issue of certificates *new*

- (a) Following the process laid down in ATM/ANS.AR.C.005(a), upon receiving an application for an issue of a certificate for a service provider, the competent authority shall verify the service provider's compliance with the applicable requirements.
- (b) The competent authority may require any audits, inspection or assessment it finds necessary before the issue of the certificate.
- (c) The certificate shall be issued for an unlimited duration. The privileges of the activities that the service provider is approved to conduct shall be specified in the service provisions conditions attached to it.
- (d) The certificate shall not be issued where a level 1 finding remains open. In exceptional circumstances, finding(s), other than level 1, shall be assessed and mitigated as necessary by the service provider and a corrective action plan for closing the finding(s) shall be approved by the competent authority prior to the certificate being issued.

ATM/ANS.AR.C.025 Changes *rev.*

- (a) Upon receiving a notification for a change in accordance with ATM/ANS.OR.A.045, the competent authority shall comply with ATM/ANS.AR.C.030, ATM/ANS.AR.C.035 and ATM/ANS.AR.C.040.
- (b) Upon receiving a notification for a change in accordance with ATM/ANS.OR.A.040(a)(2) that requires prior approval, the competent authority shall:

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- (1) verify the service provider's compliance with the applicable requirements before issuing the change approval.
 - (2) take immediate appropriate action, without prejudice to any additional enforcement measures, when the service provider implements changes requiring prior approval without having received competent authority approval as defined in (1).
- (c) To enable a service provider to implement changes to its management system and/or safety management system, as applicable, without prior approval in accordance with ATM/ANS.OR.A.040 (b), the competent authority shall approve a procedure defining the scope of such changes and describing how such changes will be notified and managed. In the continuous oversight process, the competent authority shall assess the information provided in the notification to verify whether the actions taken comply with the approved procedures and applicable requirements. In case of any non-compliance, the competent authority shall:
- (1) notify the service provider about the non-compliance and request further changes; and
 - (2) in case of level 1 and level 2 findings, act in accordance with ATM/ANS.AR.C.050

ATM/ANS.AR.C.030 [To be introduced under RMT.0469]

ATM/ANS.AR.C.035 [To be introduced under RMT.0469]

ATM/ANS.AR.C.040 [To be introduced under RMT.0469]

ATM/ANS.AR.C.045 Declarations of flight information services providers
new

- (a) Upon receiving a declaration from a provider of flight information services intending to provide such services, the competent authority shall verify that the declaration contains all the information required by ATM/ANS.OR.A.015 and shall acknowledge receipt of the declaration to that service provider.
- (b) If the declaration does not contain the required information, or contains information that indicates non-compliance with applicable requirements, the competent authority shall notify the provider of flight information services concerned about the non-compliance and request further information. If necessary, the competent authority shall carry out an audit of the provider of flight information services. If the non-compliance is confirmed, the competent authority shall take action as defined in ATM/ANS.AR.C.050.
- (c) The competent authority shall keep a register of the declarations of providers of flight information services under its oversight.

**ATM/ANS.AR.C.050 Findings, corrective actions, and enforcement measures
rev.**

- (a) The competent authority shall have a system to analyse findings for their safety significance and decide on enforcement measures on the basis of the safety risk posed by the service provider's non-compliance.
- (b) In circumstances where no or very low additional safety risk would be present with immediate appropriate mitigation measures, the competent authority may accept the services provision to ensure continuity of service whilst corrective actions are being taken.
- (c) A level 1 finding shall be issued by the competent authority when any serious non-compliance is detected with the applicable requirements of Regulation (EC) No 216/2008 and its Implementing Rules, with the service provider's procedure and manuals, with the terms of conditions or certificate, or with the content of a declaration which poses a significant risk to flight safety or otherwise calls into question the service provider's capability to continue operations.

Level 1 findings shall include, but not be limited to:

- (1) promulgating operational procedures and/or providing a service in a way which introduces a significant risk to flight safety;
 - (2) obtaining or maintaining the validity of the service provider's certificate by falsification of submitted documentary evidence;
 - (3) evidence of malpractice or fraudulent use of the service provider's certificate; and
 - (4) the lack of an accountable manager.
- (d) A level 2 finding shall be issued by the competent authority when any other non-compliance is detected with the applicable requirements of Regulation (EC) No 216/2008 and its Implementing Rules, with the service provider's procedures and manuals or with the terms of conditions or certificate, or with the content of a declaration.
 - (e) When a finding is detected, during oversight or by any other means, the competent authority shall, without prejudice to any additional action required by Regulation (EC) No 216/2008 and this Regulation, as well as Regulations (EC) Nos 549/2004, 550/2004, 551/2004, and 552/2004 and their Implementing Rules, communicate the finding to the service provider in writing and require corrective action to address the non-compliance(s) identified.
 - (1) In the case of level 1 findings, the competent authority shall take immediate and appropriate action, and may, if appropriate, limit, suspend or revoke in whole or in part the certificate while ensuring the continuity of services provided that safety is not compromised, and in the case of the Network Manager, it shall inform the Commission. The measure taken shall depend upon the extent of the finding, and shall remain until successful corrective action has been taken by the service provider.
 - (2) In the case of level 2 findings, the competent authority shall:

- (i) grant the service provider a corrective action implementation period included in an action plan appropriate to the nature of the finding; and
 - (ii) assess the corrective action and implementation plan proposed by the service provider and, if the assessment concludes that they are sufficient to address the non-compliance(s), accept them.
- (3) Where the service provider fails to submit an acceptable corrective action plan, or to perform the corrective action within the time period accepted or extended by the competent authority, the finding may be raised to a level 1 finding, and action taken as laid down in (e)(1).
- (f) For those cases not requiring level 1 and 2 findings, the competent authority may issue observations.

APPENDIX 1 TO ANNEX II rev.
CERTIFICATE FOR SERVICE PROVIDER
EUROPEAN UNION
COMPETENT AUTHORITY
SERVICE PROVIDER CERTIFICATE

[CERTIFICATE NUMBER/ISSUE No]

Pursuant to Regulation (EU) No .../... (and to Regulation (EU) No .../....) and subject to the conditions specified below, the [competent authority] hereby certifies

[NAME OF THE SERVICE PROVIDER]

[ADDRESS OF THE SERVICE PROVIDER]

as a Service Provider with the privileges, as listed in the attached service provision conditions.

CONDITIONS:

This certificate is limited to the conditions and the scope of providing services as listed in the attached service provision conditions.

This certificate is valid whilst the certified service provider remains in compliance with Regulation (EU) No .../... and other applicable regulations and, when relevant, with the procedures in the service provider's documentation as required by Regulation (EU) No .../..., Part-XXXX.

Subject to compliance with the foregoing conditions, this certificate shall remain valid unless the certificate has been surrendered, superseded, limited, suspended or revoked.

Date of issue:

Signed:

[Competent authority]

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**SERVICE PROVIDER
CERTIFICATE**

SERVICE PROVISION CONDITIONS

Attachment to service provider's certificate number:

[CERTIFICATE NUMBER/ISSUE No]

[NAME OF THE SERVICE PROVIDER]

has obtained the privileges to provide the following scope of services:

'Delete lines as appropriate'

Services	Type of Service	Scope of Service	Limitations*
Air Traffic Services (ATS)	Air Traffic Control (ATC)	Area Control Service	
		Approach Control Service	
		Aerodrome Control Service	
	Flight Information Service (FIS)	Aerodrome Flight Information Service (AFIS)	
		En route Flight Information Service (En route FIS)	
	Advisory Service	n/a	
Conditions**			

Services	Type of Service	Scope of Service	Limitations*
Air Traffic Services (ATS) for flight test***	Air Traffic Control (ATC)	Area Control Service	
		Approach Control Service	
		Aerodrome Control Service	
	Flight Information Service (FIS)	Aerodrome Flight Information Service (AFIS)	
		En route Flight Information Service (En route FIS)	

	Advisory Service	n/a	
Conditions**			

Services	Type of Service	Scope of Service	Limitations*
Communication, navigation or surveillance services (CNS)	Communications (C)	Aeronautical Mobile Service (air-ground communication)	
		Aeronautical Fixed Service (ground-ground communications)	
		Aeronautical Mobile Satellite Service (AMSS)	
	Navigation (N)	Provision of NDB signal-in-space	
		Provision of VOR signal-in-space	
		Provision of DME signal-in-space	
		Provision of ILS signal-in-space	
		Provision of MLS signal-in-space	
		Provision of GNSS signal-in-space	
	Surveillance (S)	Provision of data from Primary Surveillance (PS)	
		Provision of data from Secondary Surveillance (SS)	
		Provision of Automatic Dependent Surveillance (ADS) Data	
Conditions**			

Services	Type of Service	Scope of Service	Limitations*
Aeronautical Information Services (AIS)	AIS	Provision of the whole AIS service	
Conditions**			

Services	Type of Service	Scope of Service	Limitations*
Data Services (DAT)	DAT	[to be introduced under RMT.0593]	

Conditions**	
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Services	Type of Service	Scope of Service	Limitations*
Meteorological Services (MET)	MET	Meteorological Watch Office	
		Aerodrome Meteorological Offices	
		Meteorological Stations	
		VAAC	
		WAFC	
		TCAC	
Conditions**			

Services	Type of Service	Scope of Service	Limitations*
Air Traffic Flow Management (ATFM)	ATFM	Provision of the local ATFM	
Conditions**			

Services	Type of Service	Scope of Service	Limitations*
Air Space Management (ASM)	ASM	Provision of the local ASM (Pre-tactical/ASM Level 2 and tactical/ASM Level 3) service	
Conditions**			

Services	Type of Service	Scope of Service	Limitations*
ATM network functions	Design of ERN	n/a	
	Scarce resources	Radio frequency	
		Transponder code	
	ATFM	Provision of the central ATFM	
Conditions**			

Date of issue:

Signed: [Competent authority]

For the Member State/EASA

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* as prescribed by the competent authority

** where necessary

*** if the competent authority considers it necessary.

ANNEX III

COMMON REQUIREMENTS FOR SERVICE PROVIDERS

(Part-ATM/ANS.OR)

SUBPART A – GENERAL REQUIREMENTS (ATM/ANS.OR.A)

ATM/ANS.OR.A.001 Scope *rev.*

This Annex establishes the requirements to be met by a service provider subject to Regulation (EC) No 216/2008 and Regulations (EC) Nos 549/2004, 550/2004, 551/2004 and 552/2004.

ATM/ANS.OR.A.005 Application for a service provider certificate *rev.*

- (a) Application for a service provider certificate or an amendment to an existing certificate shall be made in a form and manner established by the competent authority, taking into account the applicable requirements of Regulation (EC) No 216/2008 and Regulations (EC) Nos 549/2004, 550/2004, 551/2004 and 552/2004 and their Implementing Rules.
- (b) To obtain the certificate, the service provider shall comply with:
 - (1) the general common requirements set out in this Annex; and
 - (2) the specific requirements set out in Annexes III to XIII to this Regulation according to the services and activities it provides.

ATM/ANS.OR.A.010 Application for a limited certificate *rev.*

- (a) Notwithstanding ATM/ANS.OR.A.010(b), the air traffic services provider may apply for a certificate limited to the airspace under the responsibility of the Member State where its principal place of operation or, if any, registered office is located, when it provides or plans to provide services only with respect to one or more of the following categories:
 - (1) aerial work;
 - (2) general aviation;
 - (3) commercial air transport limited to aircraft with less than 10 tonnes of maximum take-off mass or less than 20 passenger seats;
 - (4) commercial air transport with less than 10 000 movements per year, regardless of the maximum take-off mass and the number of passenger seats; for the purposes of this provision, 'movements' means, in a given year, the average over the previous three years of the total number of take-offs and landings.
- (b) In addition, the following air navigation service providers may also apply for a limited certificate:

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- (1) an air navigation service provider, other than a provider of air traffic services, with a gross annual turnover of EUR 1 000 000 or less in relation to the services they provide or plan to provide;
 - (2) an air navigation service provider providing aerodrome flight information services by operating regularly not more than one working position at any aerodrome.
- (c) As determined by the competent authority, an air navigation service provider applying for a limited certificate under (a) or (b)(1) shall comply, as a minimum, with:
- (1) ATM/ANS.OR.B.001 Technical and operational competence and capability;
 - (2) ATM/ANS.OR.B.005 Management system;
 - (3) ATM/ANS.OR.B.020 Personnel requirements; and
 - (4) ATM/ANS.OR.A.075 Open and transparent provision of services in this Annex; and
 - (5) the specific requirements set out in Annexes IV, V, VI and VIII to this Regulation according to the type of services it provides.
- (d) As determined by the competent authority, the air navigation service provider applying for a limited certificate under (b)(2) shall comply, as a minimum, with the requirements in (c)(1) to (c)(4) and with the specific requirements set out in Annex IV.
- (e) An applicant for a limited certificate shall submit an application to the competent authority in a form and manner established by the competent authority.

**ATM/ANS.OR.A.015 Declaration by flight information services providers
rev.**

- (a) Pursuant to Article 7, a flight information services provider may declare its capability and means of discharging the responsibilities associated with the services provided subject to the following criteria:
- (1) flight information services are provided by operating regularly not more than one working position; or
 - (2) the services provided are of a temporary nature as agreed with the competent authority.
- (b) A flight information services provider declaring its activities shall:
- (1) provide the competent authority with all the relevant information prior to commencing operations, in a form and manner established by the competent authority;
 - (2) provide the competent authority with a list of the alternative means of compliance used, in accordance with ATM/ANS.OR.A.020;
 - (3) maintain compliance with the applicable requirements and with the information given in the declaration;

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- (4) notify the competent authority of any changes to its declaration or the means of compliance it uses through submission of an amended declaration; and
 - (5) provide its services in accordance with its operations manual and comply with all the relevant provisions contained therein.
- (c) Before ceasing the provision of such services, the provider shall notify the competent authority.
- (d) A flight information services provider declaring its activities shall comply with the following requirements:
- (1) ATM/ANS.OR.A.001 Scope;
 - (2) ATM/ANS.OR.A.035 Demonstration of compliance;
 - (3) ATM/ANS.OR.A.050 Facilitation of inspections, audits, and access;
 - (4) ATM/ANS.OR.A.055 Findings and corrective actions;
 - (5) ATM/ANS.OR.A.060 Immediate reaction to a safety problem;
 - (6) ATM/ANS.OR.A.065 Occurrence reporting;
 - (7) ATM/ANS.OR.B.001 Technical and operational competence and capability;
 - (8) ATM/ANS.OR.B.005 Management system;
 - (9) ATM/ANS.OR.B.020 Personnel requirements;
 - (10) ATM/ANS.OR.B.035 Operations manuals; and
 - (11) ATM/ANS.OR.D.020 Liability and insurance cover
- in this Annex; and
- (12) the specific requirements set out in Annex IV.
- (e) A flight information services provider declaring its activities shall only start operation after receiving the acknowledgement of receipt of the declaration from the competent authority.

ATM/ANS.OR.A.020 Means of compliance *new*

- (a) Alternative means of compliance to the AMC adopted by the Agency may be used by the service provider to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules.
- (b) When the service provider wishes to use an alternative means of compliance, it shall, prior to implementing it, provide the competent authority with a full description of the alternative means of compliance. The description shall include any revisions to manuals or procedures that may be relevant, as well as an assessment demonstrating compliance with Regulation (EC) No 216/2008 and its Implementing Rules.

A service provider may implement these alternative means of compliance subject to prior approval by the competent authority and upon receipt of the notification as prescribed in ATM/ANS.AR.A.015(d).

ATM/ANS.OR.A.025 Continued validity of a certificate rev.

- (a) A service provider's certificate shall remain valid subject to:
- (1) the service provider remaining in compliance with the relevant requirements of Regulation (EC) No 216/2008 and Regulations (EC) Nos 550/2004 and 551/2004 and their Implementing Rules, taking into account the provisions related to the handling of findings as specified under ATM/ANS.AR.C.050;
 - (2) the competent authority being granted access to the service provider's facility, document, records, data, procedures, or any other material relevant to its activity as defined in ATM/ANS.OR.A.055 to determine continued compliance with the relevant requirements of Regulations (EC) Nos 216/2008, 549/2004, 550/2004, 551/2004 and 552/2004 and their Implementing Rules; and
 - (3) the certificate not being surrendered or revoked.
- (b) Upon revocation or surrender, the certificate shall be returned to the competent authority without delay.

ATM/ANS.OR.A.030 Continued validity of a declaration of a flight information services provider new

A declaration made by the flight information services provider in accordance with ATM/ANS.OR.A.015 shall remain valid subject to:

- (a) the flight information services remaining in compliance with the relevant requirements of Regulation (EC) No 216/2008 and its Implementing Rules, taking into account the provisions related to the handling of findings as specified under ATM/ANS.AR.C.050;
- (b) the competent authority being granted access to the flight information services provider's facility, document, records, data, procedures, or any other material relevant to its activity as defined in ATM/ANS.OR.A.050 to determine continued compliance with the relevant requirements of Regulation (EC) No 216/2008 and its Implementing Rules; and
- (c) the declaration not being withdrawn by the provider of such services or deregistered by the competent authority.

ATM/ANS.OR.A.035 Demonstration of compliance

A service provider shall provide all the relevant evidence to demonstrate compliance with the applicable requirements at the request of the competent authority.

ATM/ANS.OR.A.040 Changes – general rev.

- (a) The notification and management of:
- (1) a change to the functional system or a change that affects the functional system shall be carried out in accordance with ATM/ANS.OR.A.045; and
 - (2) a change to the provision of service, the service provider's management system and/or safety management system, that does not affect the functional system, shall be carried out in accordance with point (b).

- (b) Any change defined in (a)(2) shall require prior approval before implementation unless such a change is notified and managed in accordance with a procedure approved by the competent authority as laid down in ATM/ANS.AR.C.025(c).

ATM/ANS.OR.A.045 Changes to the functional system

[To be introduced under RMT.0469]

ATM/ANS.OR.A.050 Facilitation of inspections, audits, and access rev.

A service provider shall facilitate inspections and audits by the competent authority or by a qualified entity acting on its behalf. In doing so, for the purpose of determining compliance with the relevant requirements of Regulations (EC) Nos 216/2008, 549/2004, 550/2004, 551/2004 and 552/2004 and their Implementing Rules, the service provider shall grant access to any facility, document, records, data, procedures, or any other material relevant to its activity subject of certification or declaration, whether it is contracted or not, to any person authorised by the competent authority.

ATM/ANS.OR.A.055 Findings and corrective actions

After receipt of notification of findings from the competent authority, the service provider shall:

- (a) identify the root cause of the non-compliance;
- (b) define a corrective action plan that shall be approved by the competent authority; and
- (c) demonstrate corrective action implementation to the satisfaction of the competent authority within the period agreed with that authority as defined in ATM/ANS.AR.C.050(e).

ATM/ANS.OR.A.060 Immediate reaction to a safety problem

A service provider shall implement any safety measures, including safety directives, mandated by the competent authority in accordance with ATM/ANS.AR.A.025(c) .

ATM/ANS.OR.A.065 Occurrence reporting rev.

- (a) A service provider shall report to the competent authority, and to any other organisation required by the State where the service provider is providing services, any accident, serious incident and occurrence as defined in Regulations (EU) Nos 996/2010 and 376/2014 of the European Parliament and of the Council²¹.
- (b) Without prejudice to point (a), the service provider shall report to the competent authority and to the organisation responsible for the design of system and constituents, if different from the service provider, any malfunction, technical defect, exceeding of technical limitations, occurrence, or other irregular

²¹ Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and repealing Directive 94/56/EC (OJ L 295, 12.11.2010, p. 35).

circumstance that has or may have endangered the safety of services and that has not resulted in an accident or serious incident.

- (c) Without prejudice to Regulations (EU) Nos 996/2010 and 376/2014, the reports referred to in points (a) and (b) shall be made in a form and manner established by the competent authority and contain all the pertinent information about the condition known to the service provider.
- (d) Reports shall be made as soon as practicable, but in any case within 72 hours of the service provider identifying the condition to which the report relates unless exceptional circumstances prevent this.
- (e) Where relevant, the service provider shall produce a follow-up report to provide details of actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified. This report shall be produced in a form and manner established by the competent authority.

ATM/ANS.OR.A.070 Contingency plans *rev.*

A service provider shall have in place contingency plans for all the services they provide in the case of events which result in significant degradation or interruption of its operations.

ATM/ANS.OR.A.075 Open and transparent provision of services *rev.*

- (a) A service provider shall provide its services in an open and transparent manner. It shall publish the conditions of access to its services and changes thereto and establish a consultation process with the users of its services on a regular basis or as needed, either individually or collectively.
- (b) A service provider shall not discriminate on grounds of nationality or identity of the user or the class of users in accordance with the applicable Union law.

SUBPART B – MANAGEMENT (ATM/ANS.OR.B)

ATM/ANS.OR.B.001 Technical and operational competence and capability

A service provider shall be able to provide its services in a safe, efficient, continuous and sustainable manner, consistent with any foreseen level of overall demand for a given airspace. To this end, it shall maintain adequate technical and operational capacity and expertise.

ATM/ANS.OR.B.005 Management system *rev.*

- (a) A service provider shall implement and maintain a management system that includes:
 - (1) clearly defined lines of responsibility and accountability throughout the service provider, including a direct accountability of the accountable manager;

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- (2) a description of the overall philosophies and principles of the service provider with regard to safety, quality, and security of its services, as applicable, collectively constituting a policy, signed by the accountable manager;
 - (3) the means to verify the performance of the service provider's organisation in reference to the performance indicators and performance targets of the management system;
 - (4) a formal process to identify changes within the service provider's organisation which may affect established processes, procedures and services;
 - (5) *[to be introduced under RMT.0469]*;
 - (6) *[to be introduced under RMT.0469]*;
 - (7) a formal process to review the management system, identify the causes of substandard performance of the management system, determine the implications of such substandard performance, and eliminate or mitigate such causes;
 - (8) a formal process to ensure that personnel are trained and competent to provide the services in a safe, efficient, continuous and sustainable manner. In this context, policies for the recruitments and training of personnel shall be established; and
 - (9) a formal means for communication that ensures that all personnel are fully aware of the management system, that conveys critical information, and explains why particular actions are taken and why procedures are introduced or changed.
- (b) A service provider shall document all management system key processes, including a process for making personnel aware of their responsibilities, and its amendment procedure.
 - (c) A service provider shall establish a function to monitor compliance of the organisation with the relevant requirements and the adequacy of the procedures. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure effective implementation of corrective actions as necessary.
 - (d) *[to be introduced under RMT.0469]*;
 - (e) The management system shall be proportionate to the size of the service provider and the complexity of its activities, taking into account the hazards and associated risks inherent in those activities.
 - (f) Within the management system, the service provider shall establish formal interfaces with the relevant service providers and aviation undertakings to:
 - (1) ensure that the aviation safety hazards entailed by its activities are identified, and evaluated and the associated risks are managed and mitigated as appropriate; and
 - (2) provide its services in accordance with the requirements of this Regulation.

- (g) In the case that the service provider holds also an aerodrome operator certificate, it shall ensure that the management system covers all activities in the scope of its certificates.

ATM/ANS.OR.B.010 Change management procedures

[To be introduced under RMT.0469]

ATM/ANS.OR.B.015 Contracted activities *rev.*

- (a) A service provider shall ensure that when contracting or purchasing any part of its activities to external organisations, the contracted or purchased activity, system, or constituent conforms to the applicable requirements.
- (b) When a service provider contracts any part of its activities to an organisation, it shall ensure that the contracted organisation works under its approval and oversight. The service provider shall ensure that the competent authority is given access to the contracted organisation, to determine continued compliance with the applicable requirements.

ATM/ANS.OR.B.020 Personnel requirements *new*

- (a) A service provider shall appoint an accountable manager, who has the authority over ensuring that all activities can be financed and carried out in accordance with the applicable requirements. The accountable manager shall be responsible for establishing and maintaining an effective management system.
- (b) A service provider shall define the authority, duties and responsibilities of the nominated post holders, in particular of the management personnel in charge of safety, quality, security, finance, and human resources-related functions as applicable.

ATM/ANS.OR.B.025 Facilities requirements

A service provider shall ensure that there are adequate and appropriate facilities to perform and manage all tasks and activities in accordance with the applicable requirements.

ATM/ANS.OR.B.030 Record keeping *rev.*

- (a) A service provider shall establish a system of record keeping that allows adequate storage and reliable traceability of all its activities, covering in particular all the elements indicated in ATM/ANS.OR.B.005.
- (b) The format and the retention period of the records shall be specified in the service provider's management system procedures.
- (c) Records shall be stored in a manner that ensures protection against damage, alteration, and theft.

ATM/ANS.OR.B.035 Operations manuals rev.

- (a) A service provider shall provide and keep up to date their operations manuals relating to the provision of their services for the use and guidance of operations personnel.
- (b) They shall ensure that:
 - (1) operations manuals contain the instructions and information required by the operations personnel to perform their duties;
 - (2) relevant parts of the operations manuals are accessible to the personnel concerned; and
 - (3) the operations personnel are informed of amendments to the operations manual applying to their duties in a manner that enables their application as of their entry into force.

**SUBPART C – SPECIFIC ORGANISATIONAL REQUIREMENTS FOR SERVICE PROVIDERS OTHER THAN ATS PROVIDERS (ATM/ANS.OR.C)
new**

[To be introduced under RMT.0469]

**SUBPART D – SPECIFIC ORGANISATIONAL REQUIREMENTS FOR ANS AND ATFM PROVIDERS AND THE NETWORK MANAGER (ATM/ANS.OR.D)
rev.****ATM/ANS.OR.D.001 Scope**

This Subpart establishes the requirements to be met by air navigation services (ANS) and air traffic flow management (ATFM) providers and the Network Manager with respect to further responsibilities in addition to those established in Subparts A, B and C, as applicable.

ATM/ANS.OR.D.005 Business, annual, and performance plans rev.

- (a) BUSINESS PLAN
 - (1) Air navigation services and air traffic flow management providers shall produce a business plan covering a minimum period of five years. The business plan shall:
 - (i) set out the overall aims and goals of the air navigation services and of the air traffic flow management providers, and its strategy towards achieving them in consistency with any overall longer term plan of the air navigation services provider or of the air traffic flow management provider and with the relevant European Union requirements for the development of infrastructure or other technology;

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- (ii) contain performance targets in terms of safety, capacity, environment, and cost-efficiency, as may be applicable in the context of Regulation (EU) No 391/2013²².
- (2) The information listed in points (i) and (ii) shall be aligned with the functional airspace block performance plan referred to in Article 11 of Regulation (EC) No 549/2004 and, as far as safety data is concerned, consistent with the State Safety Programme referred to in Standard 3.1.1 of Annex 19 to the Convention on International Civil Aviation in its first edition of July 2013, as applicable.
 - (3) Air navigation services and air traffic flow management providers shall provide safety and business justifications for major investment projects including, where relevant, the estimated impact on the appropriate performance targets referred to in point (1)(ii) and identifying investments stemming from the legal requirements associated with the implementation of the Single European Sky ATM Research Programme (SESAR).
- (b) ANNUAL PLAN
- (1) Air navigation services and air traffic flow management providers shall produce an annual plan covering the forthcoming year which shall further specify the features of the business plan and describe any changes to it.
 - (2) The annual plan shall cover the following provisions on the level and quality of service, such as the expected level of capacity, safety, environment, and cost-efficiency, as may be applicable:
 - (i) information on the implementation of new infrastructure or other developments, and a statement on how they will contribute to improving the performance of the air navigation services provider or of the air traffic flow management provider, including level and quality of services;
 - (ii) performance indicators consistent with the national or functional airspace block performance plan referred to in Article 11 of Regulation (EC) No 549/2004 against which the performance level and quality of service may be reasonably assessed;
 - (iii) information on the measures foreseen to mitigate the safety risks identified by the air navigation services and air traffic flow management provider, including safety indicators to monitor safety risk and, where appropriate, the estimated cost of mitigation measures; and
 - (iv) the air navigation services and air traffic flow management providers' expected short-term financial position as well as any changes to or impacts on the business plan.

²² Commission Implementing Regulation (EU) No 391/2013 of 3 May 2013 laying down a common charging scheme for air navigation services (OJ L 128, 09.5.2013, p. 31).

(c) PERFORMANCE PART OF THE PLANS

The air navigation services and the air traffic flow management providers shall make the content of the performance part of the business plan and of the annual plan available to the Commission on request under the conditions set by the competent authority in accordance with national law.

ATM/ANS.OR.D.010 Security management *rev.*

- (a) A provider of air navigation services and air traffic flow management and the Network Manager shall, as an integral part of the management system required in ATM/ANS.OR.B.005, establish a security management system to ensure:
- (1) the security of their facilities and personnel so as to prevent unlawful interference with the provision of services; and
 - (2) the security of operational data they receive, or produce, or otherwise employ, so that access to it is restricted only to those authorised.
- (b) The security management system shall define:
- (1) the procedures relating to security risk assessment and mitigation, security monitoring and improvement, security reviews, and lesson dissemination;
 - (2) the means designed to detect security breaches and to alert personnel with appropriate security warnings; and
 - (3) the means of containing the effects of security breaches and to identify recovery action and mitigation procedures to prevent re-occurrence.
- (c) A provider of air navigation services and air traffic flow management and the Network Manager shall ensure the security clearance of their personnel, if appropriate, and coordinate with the relevant civil and military authorities to ensure the security of their facilities, personnel and data.
- (d) A provider of air navigation services and air traffic flow management and the Network Manager shall undertake the necessary measures to protect its systems and constituents in use against information security threats.

ATM/ANS.OR.D.015 Financial strength

ECONOMIC AND FINANCIAL CAPACITY

The air navigation services and air traffic flow management provider shall be able to meet its financial obligations, such as fixed and variable costs of operation or capital investment costs. It shall use an appropriate cost accounting system. It shall demonstrate its ability through the annual plan as referred to in ATM/ANS.OR.D.005(b), as well as through balance sheets and accounts as practicable under its legal statute, and regularly undergo an independent financial audit.

ATM/ANS.OR.D.020 Liability and insurance cover

- (a) A provider of air navigation services and air traffic flow management and the Network Manager shall have in place arrangements to cover liabilities related to the execution of its tasks in accordance with the applicable law.

- (b) The method employed to provide the cover shall be appropriate to the potential loss and damage in question, taking into account the legal status of the provider of air navigation services and/or of the air traffic flow management and the Network Manager and the level of commercial insurance cover available.
- (c) A provider of air navigation services or air traffic flow management and the Network Manager which avail themselves of services of another service provider shall ensure that the agreements cover the allocation of liability between them.

ATM/ANS.OR.D.025 Reporting requirements

- (a) A provider of air navigation services and air traffic flow management shall provide an annual report of their activities to the relevant competent authority.
- (b) For air navigation services and air traffic flow management providers, the annual report shall cover their financial results without prejudice to Article 12 of Regulation (EC) No 550/2004, as well as their operational performance and any other significant activities and developments in particular in the area of safety.
- (c) The Network Manager shall, in accordance with Article 20 of Regulation (EU) No 677/2011, provide an annual report of its activities. This report shall cover its operational performance, as well as significant activities and developments in particular in the area of safety.
- (d) The annual report required in (a) and (c) shall include as a minimum:
 - (1) an assessment of the level of performance of services generated;
 - (2) for air navigation services and air traffic flow management providers, the performance of the air navigation services and air traffic flow management providers compared to the performance targets established in the business plan referred to in ATM/ANS.OR.C.010(a), reconciling actual performance against the annual plan by using the indicators of performance established in the annual plan;
 - (3) for the Network Manager, the performance compared to the performance objectives established in the Network Strategy Plan under Article 2 (24) of Regulation (EU) No 677/2011, reconciling actual performance against the Network Operational plan under Article 2(23) of Regulation (EU) No 677/2011 by using the indicators of performance established in the Network Operational plan;
 - (4) an explanation for differences with the targets, and identify measures for closing any gaps during the reference period referred to in Article 11 of Regulation (EC) No 549/2004;
 - (5) developments in operations and infrastructure;
 - (6) the financial results, as long as they are not published separately in accordance with Article 12(1) of Regulation (EC) No 550/2004;
 - (7) information about the formal consultation process with the users of its services; and
 - (8) information about the human resources policy.

- (e) Air navigation services and air traffic flow management providers and the Network Manager shall make the content of the annual report available to the Commission and the Agency on request, and to the public under the conditions set by the competent authority in accordance with national law.

ANNEX IV

SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC SERVICES

(Part-ATS)

SUBPART A – ADDITIONAL ORGANISATION REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC SERVICES (ATS.OR)

Section 1 – General requirements

ATS.OR.100 Ownership

- (a) An air traffic services provider shall notify to the competent authorities:
- (1) their legal status, their ownership structure, and any arrangements having a significant impact on control over their assets;
 - (2) any links with organisations not involved in the provision of air navigation services, including commercial activities in which they are engaged either directly or through related undertakings, which account for more than 1 % of their expected revenue; furthermore, they shall notify any change of any single shareholding which represents 10 % or more of their total shareholding.
- (b) An air traffic services provider shall take all necessary measures to prevent any situation of conflict of interests that could compromise the impartial and objective provision of their services.

ATS.OR.105 Open and transparent provision of service

In addition to ATM/ANS.OR.A.075 of Annex III and where a Member State decides to organise the provision of specific air traffic services in a competitive environment, that Member State may take all appropriate measures to ensure that the providers of these specific air traffic services shall neither engage in conduct that would have as its object or effect the prevention, restriction or distortion of competition, nor shall they engage in conduct that amounts to an abuse of a dominant position in accordance with applicable national and European Union law.

1. Section 2 – Safety of services

ATS.OR.200 Safety management system rev.

- (a) An air traffic services provider shall have in place a safety management system (SMS), which may be an integral part of the management system required in ATM/ANS.OR.B.005, that includes the following components:

(1) SAFETY POLICY AND OBJECTIVES

- (i) Management commitment and responsibility regarding safety which shall be included in the safety policy;
- (ii) Safety accountabilities regarding the implementation and maintenance of the SMS and the authority to make decisions regarding safety;
- (iii) Appointment of a safety manager who is responsible for the implementation and maintenance of an effective SMS;
- (iv) Coordination of an emergency response planning with other service providers and aviation undertakings that interface with the ATS provider during the provision of its services; and
- (v) SMS documentation that describes all the elements of the SMS, the associated SMS processes and the SMS outputs.

(2) SAFETY RISK MANAGEMENT

- (i) a process to identify hazards associated to its services; and
- (ii) a process that ensures analysis, assessment and control of the safety risks associated with identified hazards.

(3) SAFETY ASSURANCE

- (i) Safety performance monitoring and measurement means to verify the safety performance of the organisation and validate the effectiveness of the safety risk controls;
- (ii) A process to identify changes which may affect the level of safety risk associated with its service and to identify and manage the safety risks that may arise from those changes; and
- (iii) A process to monitor and assess the effectiveness of the SMS to enable the continuous improvement of the overall performance of the SMS.

(4) SAFETY PROMOTION

- (i) Training programme that ensures that the personnel are trained and competent to perform their SMS duties; and
- (ii) Safety communication that ensures that the personnel are aware of the SMS implementation.

(b) *[To be introduced under RMT.0469]*

ATS.OR.205 Safety assessment of changes to the functional system

[To be introduced under RMT.0469]

ATS.OR.210 Safety criteria

[To be introduced under RMT.0469]

ATS.OR.215 Licensing and medical certification requirements for air traffic controllers

An air traffic services provider shall ensure that air traffic controllers are properly licensed and hold a valid medical certificate in accordance with Regulation (EU) No .../.....

**ATS.OR.220 Requirements for air traffic safety electronic personnel
rev.**

An air traffic services provider shall:

- (a) ensure that rostering arrangements for air traffic safety electronic personnel are in place to ensure sufficient capacity and continuity of service;
- (b) have procedures in place for cases where the physical or mental condition of the air traffic safety electronic personnel is in doubt; and
- (c) maintain a register of information on the numbers, status and deployment of air traffic safety electronic personnel specifying the locations and duties to which they are assigned, including any rostering methodology.

Section 3 – Specific human factors requirements for air traffic control service providers rev.**ATS.OR.300 Scope rev.**

This section establishes the requirements to be met by the air traffic control service provider with regard to human performance in order to:

- (a) prevent and mitigate the risk that air traffic control service is provided by air traffic controllers with problematic use of psychoactive substances;
- (b) prevent and mitigate the negative effects of stress on air traffic controllers to ensure the safety of air traffic; and
- (c) prevent and mitigate the negative effects of fatigue on air traffic controllers to ensure the safety of air traffic.

**ATS.OR.305 Responsibilities of air traffic control service providers with regard to the problematic use of psychoactive substances by air traffic controllers
rev.**

- (a) An air traffic control service provider shall develop and implement a policy, with related procedures, in order to ensure that the problematic use of psychoactive substances does not affect the provision of air traffic control service.
- (b) Without prejudice to provisions laid down in EU Directive 95/46/EC²³ and to the applicable national legislation on testing of individuals, the air traffic control services provider shall develop and implement an objective, transparent and non-discriminatory procedure for the detection of cases of problematic use of

²³ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (OJ L 281, 23.11.1995, p. 31).

psychoactive substances by air traffic controllers. This procedure shall take into account provisions laid down in 'ATCO.A.015' of Regulation (EU) No .../... (the air traffic controller licensing and medical certification requirements).

- (c) The procedure in (b) shall be approved by the competent authority.

ATS.OR.310 Stress rev.

An air traffic control service provider shall:

- (a) develop and maintain a policy for the management of air traffic controllers' stress, including the implementation of a critical incident stress management programme;
- (b) establish and maintain procedures for the identification of sources of air traffic controllers' occupational stress together with prevention, mitigation and monitoring strategies; and
- (c) provide air traffic controllers with education and information programmes on the prevention of stress, including critical incident stress, complementing human factors training provided in accordance with Section 5 of Subpart D of Annex I to Regulation (EU) No .../... (the air traffic controller licensing and medical certification requirements).

ATS.OR.315 Fatigue rev.

An air traffic control service provider shall:

- (a) develop and maintain a policy for the management of air traffic controllers' fatigue;
- (b) establish and maintain procedures for the identification of sources of air traffic controllers' occupational fatigue, together with prevention, mitigation and monitoring strategies;
- (c) provide air traffic controllers with education and information programmes on prevention of fatigue complementing human factors training provided in accordance with Section 5 of Subpart D of Annex I to Regulation (EU) No .../... (the air traffic controller licensing and medical certification requirements); and
- (d) make available staff support mechanisms and facilities.

ATS.OR.320 Air traffic controllers' rostering system(s) rev.

- (a) An air traffic control service provider shall develop, implement and monitor a rostering system in order to manage the risks of occupational fatigue of air traffic controllers through a safe alternation of duty and rest periods. Within the rostering system, the air traffic control service provider shall specify the following elements:
- (1) Maximum consecutive working days with duty;
 - (2) Maximum hours per duty period;
 - (3) Maximum time providing air traffic control service without breaks;
 - (4) The ratio of duty periods to breaks when providing air traffic control service;
 - (5) Minimum rest periods;

- (6) Maximum consecutive duty periods encroaching the time from midnight to 05.59, if applicable, depending upon the operating hours of the air traffic control unit concerned;
 - (7) Minimum rest period after a duty period encroaching the time from midnight to 05.59; and
 - (8) Minimum number of rest periods within a roster cycle.
- (b) An air traffic control services provider shall consult those air traffic controllers who will be subject to the rostering system, or, as applicable, their representatives, during its development and its application, to identify and mitigate risks concerning fatigue which could be due to the rostering system itself.

SUBPART B – TECHNICAL REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC SERVICES (ATS.TR)

Section 1 – General requirements

ATS.TR.100 Working methods and operating procedures for the provision of air traffic services *rev.*

- (a) An air traffic services provider shall be able to demonstrate that its working methods and operating procedures are compliant with:
- (1) Regulation (EU) No 923/2012²⁴; and
 - (2) the standards in the following Annexes to the Convention on International Civil Aviation as far as they are relevant to the provision of air traffic services in the airspace concerned:
 - (i) Annex 10 on aeronautical telecommunications, Volume II on communication procedures including those with PANS Status in its 6th edition of October 2001, including all amendments up to and including No 88-A; and
 - (ii) Without prejudice to Regulation (EU) No 923/2012, Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to and including No 49.
- (b) Notwithstanding (a), for air traffic services Units providing services for flight testing, the competent authority may specify additional or alternative conditions and procedures to those contained in (a) when so required for the provision of services for flight testing.

²⁴ Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1).

ANNEX V

SPECIFIC REQUIREMENTS FOR THE PROVISION OF METEOROLOGICAL SERVICES

(Part-MET)

SUBPART A — ADDITIONAL ORGANISATION REQUIREMENTS FOR THE PROVISION OF METEOROLOGICAL SERVICES (MET.OR)

Section 1 — General requirements

MET.OR.100 Meteorological data & information *rev.*

- (a) A meteorological services provider shall provide meteorological information to operators, flight crew members, air traffic services units, search and rescue services units, aerodrome operators, accident and incident investigation bodies, and other service providers and entities with the meteorological information necessary for the performance of their respective functions.
- (b) A meteorological services provider shall confirm the operationally desirable accuracy of the information distributed for operations, including the source of such information, whilst also ensuring that such information is distributed in a timely manner, and updated as required.

MET.OR.105 Retention of meteorological information

- (a) A meteorological services provider shall retain meteorological information issued for a period of at least 30 days from the date of issue.
- (b) This meteorological information shall be made available, on request, for inquiries or investigations and, for these purposes, shall be retained until the inquiry or investigation is completed.

MET.OR.110 Meteorological information exchange requirements

A meteorological services provider shall ensure it has systems and processes in place, as well as access to suitable telecommunications facilities to:

- (a) enable the exchange of operational meteorological information with other meteorological offices; and
- (b) provide the required meteorological information to the users in a timely manner.

MET.OR.115 Meteorological bulletins

The appropriate meteorological services provider shall provide meteorological bulletins to the relevant users, via the aeronautical fixed service or the public internet.

MET.OR.120 Notification of discrepancies to the World Area Forecast Centres (WAFC) rev.

The appropriate meteorological services provider using WAFS Binary Universal Form for the representation (BUFR) data shall notify the WAFC concerned immediately if significant discrepancies are detected or meteorological reported in respect of WAFS Significant Weather (SIGWX) forecasts concerning:

- (a) icing, turbulence, cumulonimbus clouds that are obscured, frequent, embedded, or occurring at a squall line, and sandstorms/dust storms; and
- (b) volcanic eruptions or a release of radioactive materials into the atmosphere, of significance to aircraft operations.

Section 2 – Specific requirements**Chapter 1 – Requirements for meteorological watch offices****MET.OR.200 Watch and other meteorological information**

Within its area of responsibility, the meteorological watch office shall:

- (a) maintain continuous watch over meteorological conditions affecting flight operations;
- (b) coordinate with the organisation responsible for the provision of NOTAM and/or ASHTAM to ensure that meteorological information on volcanic ash included in SIGMET and NOTAM and/or ASHTAM messages is consistent;
- (c) coordinate with volcano observatories to ensure that meteorological information on volcanic activity is received in an efficient and timely manner;
- (d) provide its associated area control center/flight information centre (ACC/FIC), and its associated VAAC with meteorological information received on pre-eruption volcanic activity, a volcanic eruption and volcanic ash cloud for which a SIGMET has not already been issued;
- (e) provide its associated ACC/FIC with meteorological information received on the release of radioactive materials into the atmosphere in the area or adjacent areas for which it maintains watch and for which a SIGMET has not already been issued; and
- (f) prepare and/or obtain forecasts and other relevant meteorological information necessary for the performance of the ATS units functions.

MET.OR.205 SIGMET messages

A meteorological watch office shall:

- (a) provide and disseminate SIGMET messages;
- (b) give a concise description in abbreviated plain language concerning the occurrence and/or expected occurrence of specified en route weather phenomena which may affect the safety of aircraft operations, and of the development of those phenomena in time and space;

- (c) ensure that the SIGMET message is cancelled when the phenomena are no longer occurring or are no longer expected to occur in the area covered by the SIGMET message;
- (d) ensure that the period of validity of a SIGMET message is not more than 4 hours, and in the special case of SIGMET messages for volcanic ash cloud and tropical cyclones, not more than 6 hours; and
- (e) ensure that SIGMET messages are issued not more than 4 hours before the commencement of the period of validity, and in the special case of SIGMET messages for volcanic ash cloud and tropical cyclones, as soon as practicable, but not more than 12 hours before the commencement of the period of validity, and updated at least every 6 hours.

MET.OR.210 AIRMET messages

A meteorological watch office shall:

- (a) provide and disseminate AIRMET messages;
- (b) give a concise description in abbreviated plain language concerning the occurrence and/or expected occurrence of specified en route weather phenomena, which have not been included in MET.OR.215 and which may affect the safety of low-level flights, and of the development of those phenomena in time and space;
- (c) cancel AIRMET information when the phenomena are no longer occurring or are no longer expected to occur in the area; and
- (d) ensure that the period of validity of an AIRMET message is not more than 4 hours.

MET.OR.215 Area forecasts for low-level flights

A meteorological watch office shall:

- (a) provide area forecast for low-level flights, when the density of traffic operating below flight level 100, or up to flight level 150 in mountainous areas, or higher, where necessary, warrants the routine issue and dissemination of area forecasts for such operations, as determined by the competent authority;
- (b) ensure that the frequency of issue, the form, and the fixed time or period of validity of area forecast for low-level flights and the criteria for amendments thereto, are as determined by the competent authority in agreement with the users; and
- (c) ensure that area forecasts for low-level flights prepared in support of the issuance of AIRMET information are issued every 6 hours for a period of validity of 6 hours and transmitted to the meteorological watch offices concerned not later than 1 hour prior to the beginning of their validity period.

Chapter 2 — Requirements for aerodrome meteorological offices

MET.OR.220 Forecasts and other meteorological information

An aerodrome meteorological office shall:

- (a) prepare and/or obtain forecasts and other relevant meteorological information necessary for the performance of its respective functions for flights with which it is concerned, as determined by the competent authority;
- (b) provide forecasts and/or warnings for local meteorological conditions on aerodromes for which it is responsible;
- (c) keep the forecasts and warnings under continuous review and issue amendments promptly when necessary, and cancel the forecasts that cannot be kept under continuous review;
- (d) provide briefing, consultation, and flight documentation to flight crew members and/or other flight operations personnel;
- (e) provide the users with other meteorological information, including climatological information, necessary for the performance of their respective functions, as determined by the competent authority;
- (f) provide its associated air traffic services unit, aeronautical information service unit and meteorological watch office with meteorological information received on pre-eruption volcanic activity, a volcanic eruption, or volcanic ash cloud;
- (g) provide, if applicable, meteorological information to search and rescue services units and maintain liaison with the search and rescue services unit(s) throughout a search and rescue operation;
- (h) provide meteorological information to relevant aeronautical information services units, as necessary, for the conduct of their functions;
- (i) prepare and/or obtain forecast and other relevant meteorological information necessary for the performance of the ATS units functions; and
- (j) provide its associated air traffic services unit, aeronautical information service unit and meteorological watch offices with meteorological information received on the release of radioactive materials into the atmosphere;
- (k) determine, in consultation with the operator the type and format of meteorological information to be provided; and the methods and means of providing that information.

MET.OR.225 Aerodrome forecasts (TAF)

- (a) An aerodrome meteorological office shall issue aerodrome forecasts (TAF) at a specified time, and shall provide a concise statement of the expected meteorological conditions at an aerodrome for a specified period.
- (b) When issuing TAF, the aerodrome meteorological office shall ensure that not more than one TAF is valid at an aerodrome at any given time.

MET.OR.230 Aerodrome forecasts – Landing (TREND)

- (a) An aerodrome meteorological office shall prepare forecasts for landing as determined by the competent authority.
- (b) This forecast for landing shall be issued in the form of a TREND forecast.

MET.OR.235 Aerodrome forecasts — Take-off rev.

An aerodrome meteorological office shall:

- (a) prepare forecasts for take-off as determined by the competent authority; and
- (b) supply forecasts for take-off to operators and flight crew members on request within the 3 hours before the expected time of departure.

MET.OR.240 Aerodrome warnings and wind shear warnings and alerts rev.

An aerodrome meteorological office shall:

- (a) give concise aerodrome warnings information of meteorological conditions which could adversely affect aircraft on the ground, including parked aircraft, and the aerodrome facilities and services;
- (b) prepare wind shear warnings for aerodromes where wind shear is considered a factor, in accordance with local arrangements with the appropriate ATS unit and operators concerned;
- (c) give concise meteorological information on the observed or expected existence of wind shear which could adversely affect aircraft on the approach path or take-off path or during circling approach between runway level and 1 600 ft (500 m) above that level and aircraft on the runway during the landing roll or take-off run. Where local topography has been shown to produce significant wind shears at heights in excess of 1 600 ft (500 m) above runway level, then 1 600 ft (500 m) shall not be considered restrictive;
- (d) issue, at aerodromes where wind shear is detected by automated, ground-based, wind shear remote-sensing or detection equipment, wind shear alerts generated by these systems; and
- (e) cancel warnings when the conditions are no longer occurring and/or no longer expected to occur at the aerodrome.

MET.OR.245 Meteorological information for use by operator or flight crew rev.

- (a) An aerodrome meteorological office shall provide operators and flight crew members, when available, with:
 - (1) forecasts, originating from the WAFS, of the elements listed in MET.OR.265(a)(1);
 - (2) METAR, including TREND forecasts, TAF or amended TAF for the aerodromes of departure and intended landing, and for take-off, en route and destination alternate aerodromes;
 - (3) forecasts for take-off;
 - (4) SIGMET and special air-reports;
 - (5) volcanic ash and tropical cyclone advisory information;

- (6) area forecasts for low-level flights in chart form prepared in support of the issuance of AIRMET information, and AIRMET information for low-level flights relevant to the whole route;
 - (7) aerodrome warnings for the local aerodrome;
 - (8) meteorological satellite images; and
 - (9) ground-based weather radar information.
- (b) Whenever the meteorological information to be included in the flight documentation differs materially from that made available for flight planning, the aerodrome meteorological office shall:
- (1) advise immediately the operator or flight crew concerned; and
 - (2) if practicable, provide the revised meteorological information in agreement with the operator.

Chapter 3 — Requirements for aeronautical meteorological stations

MET.OR.250 Meteorological reports and other meteorological information

- (a) An aeronautical meteorological station shall disseminate :
- (1) local routine and local special reports, only for dissemination at the aerodrome of origin; and
 - (2) METAR at half-hourly intervals for dissemination beyond the aerodrome of origin.
- (b) An aeronautical meteorological station shall inform the air traffic service units and aeronautical information service of an aerodrome of changes in the serviceability status of the automated equipment used for assessing runway visual range.
- (c) An aeronautical meteorological station shall report to the associated air traffic services unit, aeronautical information services unit, and meteorological watch office the occurrence of pre-eruption volcanic activity, volcanic eruptions, and volcanic ash cloud.
- (d) An aeronautical meteorological station shall establish a list of criteria to provide local special reports in consultation with the appropriate ATS units, operators and others concerned.

MET.OR.252 Reporting of meteorological elements *new*

An aeronautical meteorological station shall report:

- (a) surface, wind, direction, and speed;
- (b) visibility;
- (c) runway visual range;
- (d) present weather at the aerodrome and its vicinity;
- (e) clouds;
- (f) air temperature and dew point temperature;

- (g) atmospheric pressure; and
- (h) supplementary information.

MET.OR.255 Observing meteorological elements *rev.*

An aeronautical meteorological station shall observe and/or measure:

- (a) surface, wind, direction, and speed;
- (b) visibility;
- (c) runway visual range;
- (d) present weather at the aerodrome and its vicinity;
- (e) clouds;
- (f) air temperature and dew point temperature;
- (g) atmospheric pressure; and
- (h) Supplementary information.

Chapter 4 — Requirements for Volcanic Ash Advisory Centre (VAAC)

MET.OR.260 Volcanic Ash Advisory Centre responsibilities

In its area of responsibility, the VAAC shall:

- (a) when a volcano has erupted, or is expected to erupt, or volcanic ash is reported, provide advisory meteorological information regarding the extent and forecast movement of the volcanic ash cloud to:
 - (1) the European aviation crisis coordination cell;
 - (2) meteorological watch offices serving flight information regions in its area of responsibility which may be affected;
 - (3) operators, area control centres, and flight information centres serving flight information regions in its area of responsibility which may be affected;
 - (4) world area forecast centres, international OPMET databanks, international NOTAM offices, and centres designated by regional air navigation agreement for the operation of aeronautical fixed service satellite distribution systems; and
 - (5) other VAACs whose areas of responsibility may be affected.
- (b) coordinate with volcano observatories to ensure that meteorological information on volcanic activity is received in an efficient and timely manner;
- (c) provide the advisory meteorological information in (a) at least every 6 hours until such time as the volcanic ash cloud is no longer identifiable from satellite data, no further meteorological reports of volcanic ash are received from the area, and no further eruptions of the volcano are reported; and
- (d) maintain a 24-hour watch.

Chapter 5 — Requirements for World Area Forecast Centre (WAFC)

MET.OR.265 World Area Forecast Centre responsibilities

- (a) The world area forecast centre shall provide, in a digital form:
- (1) gridded global forecasts of:
 - (i) upper wind;
 - (ii) upper-air temperature and humidity;
 - (iii) geopotential altitude of flight levels;
 - (iv) flight level and temperature of tropopause;
 - (v) direction, speed, and flight level of maximum wind;
 - (vi) cumulonimbus clouds;
 - (vii) icing; and
 - (viii) turbulence; and
 - (2) global forecasts of significant weather (SIGWX) phenomena, including volcanic activity and release of radioactive materials.
- (b) The world area forecast centre shall ensure that world area forecast system products in digital form are transmitted using binary data communications techniques.

Chapter 6 — Requirements for Tropical Cyclone Advisory Centre (TCAC)

MET.OR.270 Tropical Cyclone Advisory Centre responsibilities

A tropical cyclone advisory centre shall issue:

- (a) issue advisory information concerning the position of the cyclone centre, its direction and speed of movement, central pressure, and maximum surface wind near the centre, in abbreviated plain language to:
- (1) meteorological watch offices in its area of responsibility;
 - (2) other TCACs whose areas of responsibility may be affected; and
 - (3) world area forecast centres, international OPMET databanks, and centres responsible for the operation of aeronautical fixed service satellite distribution systems; and
- (b) updated advisory information to meteorological watch offices for each tropical cyclone, as necessary, but at least every 6 hours.

SUBPART B – TECHNICAL REQUIREMENTS FOR THE PROVISION OF METEOROLOGICAL SERVICES (MET.TR)

Section 1 – General requirements

MET.TR.100 Working methods and operating procedures for the provision of meteorological services rev.

A meteorological services provider shall be able to demonstrate that their working methods and operating procedures are compliant with:

- (a) Regulation (EU) No 923/2012;
 - (b) Regulation (EU) No 139/2014²⁵, as applicable;
 - (c) the standards in the following Annexes to the Convention on International Civil Aviation as far as they are relevant to the provision of meteorological services in the airspace concerned:
 - (1) Without prejudice to Regulation (EU) No 923/2012, Annex 3 on meteorological service for international air navigation in its 18th edition of July 2013, including all amendments up to and including No 76;
 - (2) Without prejudice to Regulation (EU) No 923/2012, Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to and including No 49; and
 - (3) Regulation (EU) No 139/2014 and Annex 14 in the following versions:
 - (i) Volume I on aerodrome design and operations in its 6th edition of July 2013, including all amendments up to and including No 1-11A and as of 13 November 2014, also including amendment 11-B; and
 - (ii) Volume II on heliports in its 4th edition of July 2013, including all amendments up to and including No 5,
- as applicable.

²⁵ Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 44, 14.2.2014, p. 1).

ANNEX VI

SPECIFIC REQUIREMENTS FOR THE PROVISION OF AERONAUTICAL INFORMATION SERVICES

(Part-AIS)

SUBPART A — ADDITIONAL ORGANISATION REQUIREMENTS FOR THE PROVISION OF AERONAUTICAL INFORMATION SERVICES (AIS.OR)

Section 1 — General requirements

AIS.OR.100 Technical and operational competence and capability

- (a) An aeronautical information services provider shall ensure that information and data are available for operations in a form suitable for:
 - (1) flight operating personnel, including flight crew;
 - (2) flight planning, flight management systems, and flight simulators; and
 - (3) air traffic services providers which are responsible for flight information services, aerodrome flight information services, and the provision of pre-flight information.
- (b) Aeronautical information services providers shall ensure the integrity of data and confirm the level of accuracy of the information distributed for operations, including the source of such information, before such information is distributed.

SUBPART B — TECHNICAL REQUIREMENTS FOR THE PROVISION OF AERONAUTICAL INFORMATION SERVICES (AIS.TR)

Section 1 — General requirements

AIS.TR.100 Working methods and operating procedures for the provision of aeronautical information services *rev.*

An aeronautical information services provider shall be able to demonstrate that their working methods and operating procedures are compliant with the standards in the following Annexes to the Convention on International Civil Aviation as far as they are relevant to the provision of aeronautical information services in the airspace concerned:

- (a) Annex 3 on meteorological service for international air navigation in its 18th edition of July 2013, including all amendments up to and including No 76;
- (b) Annex 4 on aeronautical charts in its 11th edition of July 2009, including all amendments up to and including No 57; and

- (c) without prejudice to Regulation (EU) No 73/2010²⁶, Annex 15 on aeronautical information services in its 14th edition of July 2013, including all amendments up to and including No 37.

²⁶ Commission Regulation (EU) No 73/2010 of 26 January 2010 laying down requirements on the quality of aeronautical data and aeronautical information for the single European sky (OJ L 23, 27.1.2010, p. 6).

ANNEX VII

SPECIFIC REQUIREMENTS FOR THE PROVISION OF DATA FOR AIRSPACE USERS FOR THE PURPOSE OF AIR NAVIGATION

(Part-DAT)

[to be introduced under RMT.0593]

ANNEX VIII

SPECIFIC REQUIREMENTS FOR THE PROVISION OF COMMUNICATION, NAVIGATION, OR SUREVEILLANCE SERVICES

(Part-CNS)

SUBPART A – ADDITIONAL ORGANISATION REQUIREMENTS FOR THE PROVISION OF COMMUNICATION, NAVIGATION, OR SURVEILLANCE SERVICES (CNS.OR)

Section 1 – General requirements

CNS.OR.100 Technical and operational competence and capability

- (a) A communication, navigation, or surveillance services provider shall ensure the availability, continuity, accuracy, and integrity of their services.
- (b) A communication, navigation, or surveillance services provider shall confirm the quality level of the services they are providing, and shall demonstrate that their equipment is regularly maintained and, where required, calibrated.

CNS.OR.105 Requirements for air traffic safety electronic personnel rev.

A communication, navigation, or surveillance services provider shall comply with the requirements in ATS.OR.220.

SUBPART B – TECHNICAL REQUIREMENTS FOR THE PROVISION OF COMMUNICATION, NAVIGATION OR SURVEILLANCE SERVICES (CNS.TR)

Section 1 – General requirements

CNS.TR.100 Working methods and operating procedures for the provision of communication, navigation or surveillance services rev.

A communication, navigation, or surveillance services providers shall be able to demonstrate that their working methods and operating procedures are compliant with the standards of Annex 10 on aeronautical telecommunications to the Convention on International Civil Aviation in the following versions as far as they are relevant for the provision of communication, navigation, or surveillance services in the airspace concerned:

- (a) Volume I on radio navigation aids in its 6th edition of July 2006, including all amendments up to and including No 88-A;
- (b) Volume II on communication procedures, including those with PANS status in its 6th edition of October 2001, including all amendments up to and including No 88-A;
- (c) Volume III on communications systems in its 2nd edition of July 2007, including all amendments up to and including No 88-A;

- (d) Volume IV on surveillance radar and collision avoidance systems in its 4th edition of July 2007, including all amendments up to and including No 88-A; and
- (e) Volume V on aeronautical radio frequency spectrum utilisation in its 3rd edition of July 2013, including all amendments up to and including No 88-A.

ANNEX IX

SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC FLOW MANAGEMENT

(Part-ATFM)

SUBPART A – TECHNICAL REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC FLOW MANAGEMENT (ATFM.TR)

Section 1 – General requirements

ATFM.TR.100 Working methods and operating procedures for the provision of air traffic flow management

An air traffic flow management provider shall be able to demonstrate that their working methods and operating procedures are compliant with Regulation (EU) No 255/2010²⁷.

²⁷ Commission Regulation (EU) No 255/2010 of 25 March 2010 laying down common rules on air traffic flow management (OJ L 80, 26.3.2010, p. 10).

ANNEX X

SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIRSPACE MANAGEMENT

(Part-ASM)

SUBPART A – TECHNICAL REQUIREMENTS FOR THE PROVISION OF AIRSPACE MANAGEMENT (ASM.TR)

Section 1 – General requirements

ASM.TR.100 Working methods and operating procedures for the provision of air traffic flow management *new*

An airspace management provider shall be able to demonstrate that its working methods and operating procedures are compliant with Regulation (EC) No 2150/2005²⁸.

²⁸ Commission Regulation (EC) No 2150/2005 of 23 December 2005 laying down common rules for the flexible use of airspace (OJ L 342, 24.12.2005, p. 20).

ANNEX XI

SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIRSPACE DESIGN

(Part-ASD)

[to be developed and introduced under RMT.0445]

ANNEX XII

SPECIFIC REQUIREMENTS FOR THE PROVISION OF OTHER ATM NETWORK FUNCTIONS

(Part-NM)

SUBPART A – TECHNICAL REQUIREMENTS FOR THE NETWORK MANAGER (NM.TR)

Section 1 – General requirements

NM.TR.100 Working methods and operating procedures for the provision of air traffic management network functions

The Network Manager shall be able to demonstrate that its working methods and operating procedures are compliant with other European Union legislation and in particular with Regulation (EU) Nos 255/2010 and 677/2011.

ANNEX XIII

REQUIREMENTS FOR PERSONNEL TRAINING AND COMPETENCE ASSESSMENT

(Part-PERS)

SUBPART A – AIR TRAFFIC SAFETY ELECTRONIC PERSONNEL

Section 1 – General

ATSEP.OR.100 Scope rev.

This Subpart establishes the requirements to be met by the service provider with respect to the training and the competence assessment of Air Traffic Safety Electronics Personnel (ATSEP).

ATSEP.OR.105 Training and competence assessment programme

In accordance with ATM/ANS.OR.B.005(a)(8), the service provider employing ATSEP shall establish a training and competence assessment programme to cover the duties and responsibilities to be performed by ATSEP.

ATSEP.OR.110 Record keeping

In addition to ATM/ANS.OR.B.030, the service provider employing ATSEP shall maintain records of all the training completed by ATSEP as well as the competence assessment of ATSEP and make such records available:

- (a) on request, to the ATSEP concerned; and
- (b) on request, and with the agreement of the ATSEP, to the new service provider when the ATSEP changes the service provider.

ATSEP.OR.115 Language proficiency

The service provider shall ensure that ATSEP are proficient in the language(s) required to perform their duties.

Section 2 – Training requirements

ATSEP.OR.200 Training requirements – General rev.

A service provider employing ATSEP shall ensure that they:

- (a) have successfully completed:
 - (1) the basic training as set out in ATSEP.OR.205;
 - (2) the qualification training as set out in ATSEP.OR.210; and
 - (3) the system/equipment rating training as set out in ATSEP.OR.215; and
- (b) have completed continuation training in accordance with ATSEP.OR.220.

ATSEP.OR.205 Basic training rev.

- (a) The basic training shall comprise:
- (1) the subjects, topics, and sub-topics contained in Appendix 1 (Basic training — Shared) to this Annex; and
 - (2) where relevant to its activities, the subjects contained in Appendix 2 (Basic training — Streams) to this Annex.
- (b) A service provider may determine the most suitable entry level for its candidate ATSEP and, consequently, adapt the number and/or level of subjects, topics or sub-topics in (a) where relevant.

ATSEP.OR.210 Qualification training rev.

The qualification training shall comprise:

- (a) the subjects, topics, and sub-topics contained in Appendix 3 (Qualification training — Shared) to this Annex; and
- (b) where relevant to its activities, at least one of the qualification streams, contained in Appendix 4 (Qualification training — Streams) to this Annex.

ATSEP.OR.215 System and equipment rating training

- (a) The system and equipment rating training shall be applicable to the duties to be performed and include:
- (1) theoretical courses; and/or
 - (2) practical courses; and/or
 - (3) on-the-job training.
- (b) The system and equipment rating training shall ensure that candidate ATSEP acquire knowledge and skills pertaining to:
- (1) the functionality of the system and equipment;
 - (2) the actual and potential impact of ATSEP actions on the system and equipment; and
 - (3) the impact of the system and equipment on the operational environment.

ATSEP.OR.220 Continuation training rev.

The continuation training shall comprise refresher, equipment/systems upgrades and modifications, and/or emergency training.

Section 3 — Competence assessment requirements**ATSEP.OR.300 Competence assessment — General rev.**

A service provider employing ATSEP shall ensure that they:

- (a) have been assessed as competent before performing their duties; and
- (b) are subject to ongoing competence assessment in accordance with ATSEP.OR.305.

ATSEP.OR.305 Assessment of initial and ongoing competence *rev.*

A service provider employing ATSEP shall:

- (a) establish, implement, and document processes for:
 - (1) assessing the initial and ongoing competence of ATSEP;
 - (2) addressing a failure or degradation of ATSEP competence; and
 - (3) ensuring the supervision of personnel who have not been assessed as competent; and
- (b) define the following criteria against which initial and ongoing competence shall be assessed:
 - (1) technical skills;
 - (2) behavioural skills; and
 - (3) knowledge.

Section 4 – Instructors and assessors**ATSEP.OR.400 ATSEP training instructors** *rev.*

A service provider employing ATSEP shall ensure that:

- (a) ATSEP training instructors are suitably experienced and have appropriate knowledge in the field where instruction is to be given; and
- (b) on-the-job training instructors have the skills to intervene in instances where safety may be compromised during the training.

ATSEP.OR.405 Technical skills assessors *rev.*

A service provider employing ATSEP shall ensure that technical skills assessors are suitably experienced to assess the criteria defined in ATSEP.OR.305(b).

APPENDIX 1 TO ANNEX XIII (TO ATSEP.OR.205(a)(1))**Basic training – Shared****Subject 1: INDUCTION****TOPIC 1 BASIND – Induction**

- Sub-topic 1.1 BASIND – Training and Assessment Overview
- Sub-topic 1.2 BASIND – National Organisation
- Sub-topic 1.3 BASIND – Workplace
- Sub-topic 1.4 BASIND – ATSEP role
- Sub-topic 1.5 BASIND – European/Worldwide Dimension
- Sub-topic 1.6 BASIND – International Standards and Recommended Practices
- Sub-topic 1.7 BASIND – Data Security
- Sub-topic 1.8 BASIND – Quality Management
- Sub-topic 1.9 BASIND – Safety Management System
- Sub-topic 1.10 BASIND – Health and Safety

Subject 2: AIR TRAFFIC FAMILIARISATION**TOPIC 1 BASATF – Air Traffic Familiarisation**

- Sub-topic 1.1 BASATF – Air Traffic Management
- Sub-topic 1.2 BASATF – Air Traffic Control
- Sub-topic 1.3 BASATF – Ground-based Safety Nets
- Sub-topic 1.4 BASATF – Air Traffic Control Tools and Monitoring Aids
- Sub-topic 1.5 BASATF – Familiarisation

APPENDIX 2 TO ANNEX XIII (TO ATSEP.OR.205(a)(2)) rev.

Basic training – Streams

Subject 3: AERONAUTICAL INFORMATION SERVICES

Subject 4: METEOROLOGY

Subject 5: COMMUNICATION

Subject 6: NAVIGATION

Subject 7: SURVEILLANCE

Subject 8: DATA PROCESSING

Subject 9: SYSTEM MONITORING & CONTROL

Subject 10: MAINTENANCE PROCEDURES

APPENDIX 3 TO ANNEX XIII (TO ATSEP.OR.210(a)) rev.**Qualification training – Shared****Subject 1: SAFETY****TOPIC 1 – Safety management**

- Sub-topic 1.1 – Policy and Principles
- Sub-topic 1.2 – Concept of Risk and Principles of Risk Assessment
- Sub-topic 1.3 – Safety Assessment Process
- Sub-topic 1.4 – Air Navigation System Risk Classification Scheme
- Sub-topic 1.5 – Safety Regulation

Subject 2: HEALTH AND SAFETY**TOPIC 1 – Hazard awareness and legal rules**

- Sub-topic 1.1 – Hazard Awareness
- Sub-topic 1.2 – Regulations and Procedures
- Sub-topic 1.3 – Handling of Hazardous Material

Subject 3: HUMAN FACTORS**TOPIC 1 – Introduction to human factors**

- Sub-topic 1.1 – Introduction

TOPIC 2 – Working knowledge and skills

- Sub-topic 2.1 – ATSEP knowledge, skills and competence

TOPIC 3 – Psychological factors

- Sub-topic 3.1 – Cognition

TOPIC 4 – Medical

- Sub-topic 4.1 – Fatigue
- Sub-topic 4.2 – Fitness
- Sub-topic 4.3 – Work Environment

TOPIC 5 – Organisational and Social Factors

- Sub-topic 5.1 – Basic Needs of People at Work
- Sub-topic 5.2 – Team Resource Management
- Sub-topic 5.3 – Teamwork and Team Roles

TOPIC 6 – Communication

- Sub-topic 6.1 – Written Report
- Sub-topic 6.2 – Verbal and Non-verbal Communication

TOPIC 7 – Stress

- Sub-topic 7.1 – Stress
- Sub-topic 7.2 – Stress Management

TOPIC 8 – Human Error

- Sub-topic 8.1 – Human Error

APPENDIX 4 TO ANNEX XIII (TO ATSEP.OR.210(b))**rev.****Qualification training – Streams****1. COMMUNICATION – VOICE****Subject 1: VOICE****TOPIC 1 – Air-ground**

- Sub-topic 1.1 – Transmission/Reception
- Sub-topic 1.2 – Radio Antenna Systems
- Sub-topic 1.3 – Voice Switch
- Sub-topic 1.4 – Controller Working Position
- Sub-topic 1.5 – Radio Interfaces

TOPIC 2 – COMVCE – Ground-ground

- Sub-topic 2.1 – Interfaces
- Sub-topic 2.2 – Protocols
- Sub-topic 2.3 – Switch
- Sub-topic 2.4 – Communication chain
- Sub-topic 2.5 – Controller working position

Subject 2: TRANSMISSION PATH**TOPIC 1 – Lines**

- Sub-topic 1.1 – Lines Theory
- Sub-topic 1.2 – Digital Transmissions
- Sub-topic 1.3 – Types of Lines

TOPIC 2 – Specific links

- Sub-topic 2.1 – Microwave Link
- Sub-topic 2.2 – Satellite

Subject 3: RECORDERS**TOPIC 1 – Legal recorders**

- Sub-topic 1.1 – Regulations
- Sub-topic 1.2 – Principles

Subject 4: FUNCTIONAL SAFETY**TOPIC 1 – Safety attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional safety

- Sub-topic 2.1 – Functional safety

2. COMMUNICATION – DATA**Subject 1: DATA**

TOPIC 1 – Introduction to networks

- Sub-topic 1.1 – Types
- Sub-topic 1.2 – Networks
- Sub-topic 1.3 – External Network Services
- Sub-topic 1.4 – Measuring Tools
- Sub-topic 1.5 – Troubleshooting

TOPIC 2 – Protocols

- Sub-topic 2.1 – Fundamental Theory
- Sub-topic 2.2 – General Protocols
- Sub-topic 3.3 – Specific Protocols

TOPIC 3 – National networks

- Sub-topic 3.1 – National Networks

TOPIC 4 – European networks

- Sub-topic 4.1 – Network Technologies

TOPIC 5 – Global Networks

- Sub-topic 5.1 – Networks and Standards
- Sub-topic 5.2 – Description
- Sub-topic 5.3 – Global Architecture
- Sub-topic 5.4 – Air-Ground Sub-networks
- Sub-topic 5.5 – Ground-Ground sub-networks
- Sub-topic 5.6 – Networks on Board of the Aircraft
- Sub-topic 5.7 – Air-Ground Applications

Subject 2: TRANSMISSION PATH**TOPIC 1 – Lines**

- Sub-topic 1.1 – Lines Theory
- Sub-topic 1.2 – Digital Transmission
- Sub-topic 1.3 – Types of Lines

TOPIC 2 – Specific Links

- Sub-topic 2.1 – Microwave Link
- Sub-topic 2.2 – Satellite

Subject 3: RECORDERS**TOPIC 1 – Legal Recorders**

- Sub-topic 1.1 – Regulations
- Sub-topic 1.2 – Principles

Subject 4: FUNCTIONAL SAFETY**TOPIC 1 – Safety Altitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional Safety

Sub-topic 2.1 – Functional Safety

3. NAVIGATION – NON-DIRECTIONAL BEACON (NDB)

Subject 1: PERFORMANCE-BASED NAVIGATION

TOPIC 1 – Navigation Concepts

- Sub-topic 1.1 – Operational Requirements
- Sub-topic 1.2 – Performance-based Navigation
- Sub-topic 1.3 – Area Navigation Concept (RNAV)
- Sub-topic 1.4 – NOTAM

Subject 2: GROUND-BASED SYSTEMS – NDB

TOPIC 1 – NDB/Locator

- Sub-topic 1.1 – Use of the System
- Sub-topic 1.2 – Ground Station Architecture
- Sub-topic 1.3 – Transmitter Sub-system
- Sub-topic 1.4 – Antenna Sub-system
- Sub-topic 1.5 – Monitoring and Control Sub-systems
- Sub-topic 1.6 – On-board Equipment
- Sub-topic 1.7 – System Check and Maintenance

Subject 3: GLOBAL NAVIGATION SATELLITE SYSTEM

TOPIC 1 – GNSS

- Sub-topic 1.1 – General View

Subject 4: ON-BOARD EQUIPMENT

TOPIC 1 – On-board Systems

- Sub-topic 1.1 – On-Board Systems

TOPIC 2 – Autonomous Navigation

- Sub-topic 2.1 – Inertial Navigation

TOPIC 3 – Vertical Navigation

- Sub-topic 3.1 – Vertical Navigation

Subject 5: FUNCTIONAL SAFETY

TOPIC 1 – Safety attitude

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional Safety

- Sub-topic 1.1 – Functional Safety

4. NAVIGATION – DIRECTION FINDING (DF)

Subject 1: PERFORMANCE-BASED NAVIGATION

TOPIC 1 – Navigation Concepts

- Sub-topic 1.1 – Operational Requirements
- Sub-topic 1.2 – Performance-based Navigation
- Sub-topic 1.3 – Area Navigation Concept (RNAV)
- Sub-topic 1.4 – NOTAM

Subject 2: GROUND-BASED SYSTEMS – DF**TOPIC 1 – DF**

- Sub-topic 1.1 – Use of the System
- Sub-topic 1.2 – VDF/DDF Equipment Architecture
- Sub-topic 1.3 – Receiver Sub-system
- Sub-topic 1.4 – Antenna Sub-system
- Sub-topic 1.5 – Monitoring and Control Sub-systems
- Sub-topic 1.6 – System Check and Maintenance

Subject 3: GLOBAL SATELLITE NAVIGATION SYSTEM**TOPIC 1 – GNSS**

- Sub-topic 1.1 – General View

Subject 4: ON-BOARD EQUIPMENT**TOPIC 1 – On-board Systems**

- Sub-topic 1.1 – On-Board Systems

TOPIC 2 – Autonomous Navigation

- Sub-topic 2.1 – Inertial Navigation

TOPIC 3 – Vertical Navigation

- Sub-topic 3.1 – Vertical Navigation

Subject 5: FUNCTIONAL SAFETY**TOPIC 1 – Safety Attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional Safety

- Sub-topic 2.1 – Functional Safety

5. NAVIGATION – VHF OMNIDIRECTIONAL RADIO RANGE (VOR)**Subject 1: PERFORMANCE-BASED NAVIGATION****TOPIC 1 – Navigation Concepts**

- Sub-topic 1.1 – Operational Requirements
- Sub-topic 1.2 – Performance-based Navigation
- Sub-topic 1.3 – Area Navigation Concept (RNAV)
- Sub-topic 1.4 – NOTAM

Subject 2: GROUND-BASED SYSTEMS – VOR**TOPIC 1 – VOR**

- Sub-topic 1.1 – Use of the System
- Sub-topic 1.2 – Fundamentals of CVOR and/or DVOR
- Sub-topic 1.3 – Ground Station Architecture
- Sub-topic 1.4 – Transmitter Sub-system
- Sub-topic 1.5 – Antenna Sub-system
- Sub-topic 1.6 – Monitoring and Control Sub-system
- Sub-topic 1.7 – On-board Equipment
- Sub-topic 1.8 – System Check and Maintenance

Subject 3: GLOBAL SATELLITE NAVIGATION SYSTEM**TOPIC 1 – GNSS**

- Sub-topic 1.1 – General View

Subject 4: ON-BOARD EQUIPMENT**TOPIC 1 – On-board Systems**

- Sub-topic 1.1 – On-board Systems

TOPIC 2 – Autonomous navigation

- Sub-topic 2.1 – Inertial Navigation

TOPIC 3 – Vertical navigation

- Sub-topic 3.1 – Vertical Navigation

Subject 5: – FUNCTIONAL SAFETY**TOPIC 1 – Safety attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional safety

- Sub-topic 2.1 – Functional Safety

6. NAVIGATION – DISTANCE MEASURING EQUIPMENT (DME)**Subject 1: PERFORMANCE-BASED NAVIGATION****TOPIC 1 – Navigation concepts**

- Sub-topic 1.1 – Operational Requirements
- Sub-topic 1.2 – Performance-Based Navigation
- Sub-topic 1.3 – Area Navigation Concept (RNAV)
- Sub-topic 1.4 – NOTAM

Subject 2: GROUND-BASED SYSTEMS – DME**TOPIC 1 – DME**

- Sub-topic 1.1 – Use of the System
- Sub-topic 1.2 – Fundamentals of DME
- Sub-topic 1.3 – Ground Station Architecture
- Sub-topic 1.4 – Receiver Sub-system
- Sub-topic 1.5 – Signal Processing
- Sub-topic 1.6 – Transmitter Sub-system
- Sub-topic 1.7 – Antenna Sub-system
- Sub-topic 1.8 – Monitoring and Control Sub-system
- Sub-topic 1.9 – On-board Equipment
- Sub-topic 1.10 – System Check and Maintenance

Subject 3: GLOBAL SATELLITE NAVIGATION SYSTEM**TOPIC 1 – GNSS**

- Sub-topic 1.1 – General View

Subject 4: ON-BOARD EQUIPMENT**TOPIC 1 – On-board Systems**

- Sub-topic 1.1 – On-board Systems

TOPIC 2 – Autonomous Navigation

- Sub-topic 2.1 – Inertial Navigation

TOPIC 3 Vertical Navigation

- Sub-topic 3.1 – Vertical Navigation

Subject 5: FUNCTIONAL SAFETY**TOPIC 1 – Safety Attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional Safety

- Sub-topic 2.1 – Functional Safety

7. NAVIGATION – INSTRUMENT LANDING SYSTEM (ILS)**Subject 1: PERFORMANCE-BASED NAVIGATION****TOPIC 1 – Navigation concepts**

- Sub-topic 1.1 – Operational Requirements
- Sub-topic 1.2 – Performance-based Navigation
- Sub-topic 1.3 – Area Navigation Concept (RNAV)
- Sub-topic 1.4 – NOTAM

Subject 2: GROUND-BASED SYSTEMS – ILS**TOPIC 1 – ILS**

- Sub-topic 1.1 – Use of the System
- Sub-topic 1.2 – Fundamentals of ILS
- Sub-topic 1.3 – 2F-Systems
- Sub-topic 1.4 – Ground Station Architecture
- Sub-topic 1.5 – Transmitter Sub-system
- Sub-topic 1.6 – Antenna Sub-system
- Sub-topic 1.7 – Monitoring and Control Sub-system
- Sub-topic 1.8 – On-board Equipment
- Sub-topic 1.9 – System Check and Maintenance

Subject 3: GLOBAL SATELLITE NAVIGATION SYSTEM**TOPIC 1 – GNSS**

- Sub-topic 1.1 – General View

Subject 4: ON-BOARD EQUIPMENT**TOPIC 1 – On-board Systems**

- Sub-topic 1.1 – On-Board Systems

TOPIC 2 – Autonomous navigation

- Sub-topic 2.1 – Inertial Navigation

TOPIC 3 – Vertical Navigation

- Sub-topic 3.1 – Vertical Navigation

Subject 5: FUNCTIONAL SAFETY**TOPIC 1 – Safety Attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional Safety

- Sub-topic 2.1 – Functional Safety

8. NAVIGATION – MICROWAVE LANDING SYSTEM (MLS)**Subject 1: PERFORMANCE-BASED NAVIGATION****TOPIC 1 – Navigation Concepts**

- Sub-topic 1.1 – Operational Requirements
- Sub-topic 1.2 – Performance-based Navigation
- Sub-topic 1.3 – Area Navigation Concept (RNAV)
- Sub-topic 1.4 – NOTAM

Subject 2: GROUND-BASED SYSTEMS – MLS**TOPIC 1 – MLS**

- Sub-topic 1.1 – Use of the System
- Sub-topic 1.2 – Fundamentals of MLS
- Sub-topic 1.3 – Ground Station Architecture
- Sub-topic 1.4 – Transmitter Sub-system
- Sub-topic 1.5 – Antenna Sub-system
- Sub-topic 1.6 – Monitoring and Control Sub-system
- Sub-topic 1.7 – On-board Equipment
- Sub-topic 1.4 – System Check and Maintenance

Subject 3: GLOBAL SATELLITE NAVIGATION SYSTEM**TOPIC 1 – GNSS**

- Sub-topic 1.1 – General View

Subject 4: ON-BOARD EQUIPMENT**TOPIC 1 – On-board Systems**

- Sub-topic 1.1 – On-board Systems

TOPIC 2 – Autonomous navigation

- Sub-topic 2.1 – Inertial Navigation

TOPIC 3 – Vertical navigation

- Sub-topic 3.1 – Vertical Navigation

Subject 5: FUNCTIONAL SAFETY**TOPIC 1 – Safety attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional safety

- Sub-topic 2.1 – Functional Safety

9. SURVEILLANCE – PRIMARY SURVEILLANCE RADAR**Subject 1: PRIMARY SURVEILLANCE RADAR****TOPIC 1 – ATC surveillance**

- Sub-topic 1.1 – Use of PSR for Air Traffic Services
- Sub-topic 1.2 – Antenna (PSR)
- Sub-topic 1.3 – Transmitters
- Sub-topic 1.4 – Characteristics of Primary Targets
- Sub-topic 1.5 – Receivers
- Sub-topic 1.6 – Signal Processing and Plot Extraction
- Sub-topic 1.7 – Plot Combining
- Sub-topic 1.8 – Characteristics of Primary Radar

TOPIC 2 – SURPSR – Surface Movement Radar

- Sub-topic 2.1 – Use of SMR for Air Traffic Services
- Sub-topic 2.2 – Radar Sensor

TOPIC 3 – SURPSR – Test and Measurement

- Sub-topic 3.1 – Test and Measurement

Subject 2: HUMAN MACHINE INTERFACE (HMI)**TOPIC 1 – SURPSR – HMI**

- Sub-topic 1.1 – ATCO HMI
- Sub-topic 1.2 – ATSEP HMI
- Sub-topic 1.3 – Pilot HMI
- Sub-topic 1.4 – Displays

Subject 3: SURVEILLANCE DATA TRANSMISSION**TOPIC 1 – SDT**

- Sub-topic 1.1 – Technology and Protocols
- Sub-topic 1.2 – Verification Methods

Subject 4: FUNCTIONAL SAFETY**TOPIC 1 – SURPSR – Safety Attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – SURPSR – Functional Safety

- Sub-topic 2.1 – Functional Safety

Subject 5: DATA PROCESSING SYSTEMS**TOPIC 1 – System Components**

- Sub-topic 1.1 – Surveillance Data Processing Systems

10.SURVEILLANCE – SECONDARY SURVEILLANCE RADAR**Subject 1: SECONDARY SURVEILLANCE RADAR (SSR)****TOPIC 1 – SSR and Mono-pulse SSR**

- Sub-topic 1.1 – Use of SSR for Air Traffic Services
- Sub-topic 1.2 – Antenna (SSR)
- Sub-topic 1.3 – Interrogator
- Sub-topic 1.4 – Transponder
- Sub-topic 1.5 – Receivers
- Sub-topic 1.6 – Signal Processing and Plot Extraction
- Sub-topic 1.7 – Plot Combining
- Sub-topic 1.8 – Test and Measurement

TOPIC 2 – Mode S

- Sub-topic 2.1 – Introduction to Mode S
- Sub-topic 2.2 – Mode S System

TOPIC 3 – Multilateration

- Sub-topic 3.1 – MLAT in use
- Sub-topic 3.2 – MLAT Principles

TOPIC 4 – SURSSR – Environment

- Sub-topic 4.1 – SSR Environment

Subject 2: HUMAN MACHINE INTERFACE (HMI)**TOPIC 1 – HMI**

- Sub-topic 1.1 – ATCO HMI
- Sub-topic 1.2 – ATSEP HMI
- Sub-topic 1.3 – Pilot HMI
- Sub-topic 1.1 – Displays

Subject 3: SURVEILLANCE DATA TRANSMISSION**TOPIC 1 – SDT**

- Sub-topic 1.1 – Technology and Protocols
- Sub-topic 1.2 – Verification Methods

Subject 4: FUNCTIONAL SAFETY**TOPIC 1 – Safety attitude**

- Sub-topic 1.1 – Safety Attitude

TOPIC 2 – Functional safety

- Sub-topic 2.1 – Functional Safety

Subject 5: DATA PROCESSING SYSTEMS**TOPIC 1 – System components**

- Sub-topic 1.1 – Surveillance Data Processing Systems

11. SURVEILLANCE – AUTOMATIC DEPENDENT SURVEILLANCE**Subject 1: AUTOMATIC DEPENDENT SURVEILLANCE (ADS)****TOPIC 1 – General view on ADS**

Sub-topic 1.1 – Definition of ADS

TOPIC 2 – SURADS – ADS-B

Sub-topic 2.1 – Introduction to ADS-B

Sub-topic 2.2 – Techniques of ADS-B

Sub-topic 2.3 – VDL Mode 4 (STDMA)

Sub-topic 2.4 – Mode S Extended Squitter

Sub-topic 2.5 – UAT

Sub-topic 2.6 – ASTERIX

TOPIC 3 – ADS-C

Sub-topic 3.1 – Introduction to ADS-C

Sub-topic 3.2 – Techniques in ADS-C

Subject 2: HUMAN MACHINE INTERFACE (HMI)**TOPIC 1 – HMI**

Sub-topic 1.1 – ATCO HMI

Sub-topic 1.2 – ATSEP HMI

Sub-topic 1.3 – Pilot HMI

Sub-topic 1.1 – Displays

Subject 3: SURVEILLANCE DATA TRANSMISSION**TOPIC 1 – SDT**

Sub-topic 1.1 – Technology and Protocols

Sub-topic 1.2 – Verification Methods

Subject 4: FUNCTIONAL SAFETY**TOPIC 1 – Safety attitude**

Sub-topic 1.1 – Safety Attitude

TOPIC 2 – SURADS – Functional safety

Sub-topic 2.1 – Functional Safety

Subject 5: DATA PROCESSING SYSTEMS**TOPIC 1 – System components**

Sub-topic 1.1 – Surveillance Data Processing Systems

12.DATA – DATA PROCESSING**Subject 1: FUNCTIONAL SAFETY****TOPIC 1 – Functional Safety**

Sub-topic 1.1 – Functional Safety

Sub-topic 1.2 – Software Integrity and Security

TOPIC 2 – Safety Attitude

Sub-topic 2.1 – Safety Attitude

Subject 2: DATA PROCESSING SYSTEMS**TOPIC 1 – User requirements**

Sub-topic 1.1 – Controller requirements

Sub-topic 1.2 – Trajectories, Prediction and Calculation

Sub-topic 1.3 – Ground Safety Nets

Sub-topic 1.4 – Decision Support

TOPIC 2 – System Components Data

Sub-topic 2.1 – Processing Systems

Sub-topic 2.2 – Flight Data Processing Systems

Sub-topic 2.3 – Surveillance Data Processing Systems

Subject 3: DATA PROCESS**TOPIC 1 – Software process**

Sub-topic 1.1 – Middleware

Sub-topic 1.2 – Operating Systems

Sub-topic 1.3 – Configuration Control

Sub-topic 1.4 – Software Development Process

TOPIC 2 – Hardware platform

Sub-topic 2.1 – Equipment Upgrade

Sub-topic 2.2 – COTS

Sub-topic 2.3 – Interdependence

Sub-topic 2.4 – Maintainability

TOPIC 3 – Testing

Sub-topic 3.1 – Testing

Subject 4: DATA**TOPIC 1 – Data Essential Features**

Sub-topic 1.1 – Data Significance

Sub-topic 1.2 – Data Configuration Control

Sub-topic 1.3 – Data Standards

TOPIC 2 – ATM Data – Detailed structure

Sub-topic 2.1 – System Area

Sub-topic 2.2 – Characteristic Points

- Sub-topic 2.3 – Aircraft Performances
- Sub-topic 2.4 – Screen Manager
- Sub-topic 2.5 – Auto-coordination Messages
- Sub-topic 2.6 – Configuration Control Data
- Sub-topic 2.7 – Physical Configuration Data
- Sub-topic 2.8 – Relevant Meteo Data
- Sub-topic 2.9 – Alert and Error Messages to ATSEP
- Sub-topic 2.10 – Alert and Error Messages to ATCO

Subject 5: COMMUNICATION DATA**TOPIC 1 – Introduction to Networks**

- Sub-topic 1.1 – Types
- Sub-topic 1.2 – Networks
- Sub-topic 1.3 – External Network Services
- Sub-topic 1.4 – Measuring Tools
- Sub-topic 1.5 – Troubleshooting

TOPIC 2 – Protocols

- Sub-topic 2.1 – Fundamental Theory
- Sub-topic 2.2 – General Protocols
- Sub-topic 2.3 – Specific Protocols

TOPIC 3 – DATDP – National Networks

- Sub-topic 3.1 – National Networks

Subject 6: SURVEILLANCE PRIMARY**TOPIC 1 – ATC Surveillance**

- Sub-topic 1.1 – Use of PSR for Air Traffic Services

Subject 7: SURVEILLANCE SECONDARY**TOPIC 1 – SSR AND MSSR**

- Sub-topic 1.1 – Use of SSR for Air Traffic Services

TOPIC 2 – Mode S

- Sub-topic 2.1 – Introduction to Mode S

TOPIC 3 – Multilateration

- Sub-topic 3.1 – MLAT Principles

Subject 8: SURVEILLANCE – HMI**TOPIC 1 – HMI**

- Sub-topic 1.1 – ATCO HMI

Subject 9: SURVEILLANCE DATA TRANSMISSION**TOPIC 1 – Surveillance Data Transmission**

- Sub-topic 1.1 – Technology and Protocols

13.SYSTEM MONITORING AND CONTROL – COMMUNICATION**Subject 1: ANS STRUCTURE****TOPIC 1 – ANSP Organisation and Operation**

Sub-topic 1.1 – SMCCOM – ANSP Organisation and Operation

TOPIC 2 – ANSP Maintenance Program

Sub-topic 2.1 – Policy

TOPIC 3 – ATM Context

Sub-topic 3.1 – ATM Context

TOPIC 4 – ANSP Administrative Practices

Sub-topic 4.1 – Administration

Subject 2: ANS SYSTEM/EQUIPMENT**TOPIC 1 – Operational Impacts**

Sub-topic 1.1 – Degradation or Loss of System/Equipment Services

TOPIC 2 – SMCCOM – User Position Functionality and Operation

Sub-topic 2.1 – User Working Position

Sub-topic 2.2 – SMC Working Position

Subject 3: TOOLS, PROCESSES AND PROCEDURES**TOPIC 1 – Requirements**

Sub-topic 1.1 – SMS

Sub-topic 1.2 – QMS

Sub-topic 1.3 – SMS application in the working environment

TOPIC 2 – Maintenance Agreements with Outside Agencies

Sub-topic 2.1 – Principles of agreements

TOPIC 3 – SMC General Processes

Sub-topic 3.1 – Roles and responsibilities

TOPIC 4 – Maintenance Management Systems

Sub-topic 4.1 – Reporting

Subject 4: TECHNOLOGY**TOPIC 1 – Technologies and Principles**

Sub-topic 1.1 – General

Sub-topic 1.2 – Communication

Sub-topic 1.3 – Facilities

Subject 5: COMMUNICATION VOICE**TOPIC 1 – Air-Ground**

Sub-topic 1.1 – Controller Working Position

TOPIC 2 – Ground-Ground

Sub-topic 2.1 – Interfaces

Sub-topic 2.2 – Switch

Sub-topic 2.3 – Controller Working Position

Subject 6: COMMUNICATION – DATA**TOPIC 1 – European Networks**

Sub-topic 1.1 – Network Technologies

TOPIC 2 – Global Networks

Sub-topic 2.1 – Networks and Standards

Sub-topic 2.2 – Description

Sub-topic 2.3 – Global Architecture

Sub-topic 2.4 – Air-Ground Sub-networks

Sub-topic 2.5 – Ground-Ground Sub-networks

Sub-topic 2.6 – Air-Ground Applications

Subject 7: COMMUNICATION – RECORDERS**TOPIC 1 – Legal recorders**

Sub-topic 1.1 – Regulations

Sub-topic 1.2 – Principles

Subject 8: NAVIGATION – PBN NDB**TOPIC 1 – NAV Concepts**

Sub-topic 1.1 – NOTAM

14. SYSTEM MONITORING AND CONTROL – NAVIGATION**Subject 1: ANS STRUCTURE****TOPIC 1 – ANSP Organisation and Operation**

Sub-topic 1.1 – ANSP Organisation and Operation

TOPIC 2 – ANSP Maintenance Program

Sub-topic 2.1 – Policy

TOPIC 3 – ATM Context

Sub-topic 3.1 – ATM Context

TOPIC 4 – ANSP Administrative Practices

Sub-topic 4.1 – Administration

Subject 2: ANS SYSTEM/EQUIPMENT

TOPIC 1 – Operational Impacts

Sub-topic 1.1 – SMCNAV – Degradation or Loss of System/Equipment Services

TOPIC 2 – User Position Functionality and Operation

Sub-topic 2.1 – User Working Position

Sub-topic 2.2 – SMC Working Position

Subject 3: TOOLS, PROCESSES AND PROCEDURES**TOPIC 1 – SMCNAV – Requirements**

Sub-topic 1.1 – SMS

Sub-topic 1.2 – QMS

Sub-topic 1.3 – SMS application in the working environment

TOPIC 2 – Maintenance Agreements with Outside Agencies

Sub-topic 2.1 – Principles of agreements

TOPIC 3 – SMC General Processes

Sub-topic 3.1 – Roles and responsibilities

TOPIC 4 – SMCNAV – Maintenance Management Systems

Sub-topic 4.1 – Reporting

Subject 4: TECHNOLOGY**TOPIC 1 – SMCNAV – Technologies and Principles**

Sub-topic 1.1 – General

Sub-topic 1.2 – Communication

Sub-topic 1.3 – Facilities

Subject 5: COMMUNICATION – DATA**TOPIC 1 – SMCNAV – European Networks**

Sub-topic 1.1 – Network Technologies

TOPIC 2 – Global Networks

Sub-topic 2.1 – Networks and Standards

Sub-topic 2.2 – Description

Sub-topic 2.3 – Global Architecture

Sub-topic 2.4 – Air-Ground Sub-networks

Sub-topic 2.5 – Ground-Ground Sub-networks

Sub-topic 2.6 – Air-Ground Applications

Subject 6: COMMUNICATION – RECORDERS**TOPIC 1 – Legal Recorders**

Sub-topic 1.1 – Regulations

Sub-topic 1.2 – Principles

Subject 7: NAVIGATION – PBN NDB

TOPIC 1 – NAV Concepts

Sub-topic 1.1 – NOTAM

Subject 8: NAVIGATION – GROUND-BASED SYSTEMS - NDB**TOPIC 1 – NDB Locator**

Sub-topic 1.1 – Use of the System

Subject 9: NAVIGATION – GROUND-BASED SYSTEMS - DFI**TOPIC 1 – SMCNAV – DF**

Sub-topic 1.1 – Use of the System

Subject 10: NAVIGATION – GROUND-BASED SYSTEMS - VOR**TOPIC 1 – VOR**

Sub-topic 1.1 – Use of the System

Subject 11: NAVIGATION – GROUND-BASED SYSTEMS - DME**TOPIC 1 – DME**

Sub-topic 1.1 – Use of the System

Subject 12: NAVIGATION – GROUND-BASED SYSTEMS - ILS**TOPIC 1 – ILS**

Sub-topic 1.1 – Use of the System

15. SYSTEM MONITORING AND CONTROL – SURVEILLANCE**Subject 1: ANS STRUCTURE****TOPIC 1 – ANSP Organisation and Operation**

Sub-topic 1.1 – ANSP Organisation and Operation

TOPIC 2 – ANSP Maintenance Program

Sub-topic 2.1 – Policy

TOPIC 3 – ATM Context

Sub-topic 3.1 – ATM Context

TOPIC 4 – ANSP Administrative Practices

Sub-topic 4.1 – Administration

Subject 2: ANS SYSTEM/EQUIPMENT**TOPIC 1 – Operational Impacts**

Sub-topic 1.1 – SMCSUR – Degradation or Loss of System/Equipment Services

TOPIC 2 – User Position Functionality and Operation

Sub-topic 2.1 – User Working Position

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Subject 3: TOOLS, PROCESSES AND PROCEDURES

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TOPIC 2 – Maintenance Agreements with Outside Agencies

Sub-topic 2.1 – Principles of agreements

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Sub-topic 2.4 – Air-Ground Sub-networks

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Subject 7: NAVIGATION – PBN**TOPIC 1 – NAV Concepts**

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Subject 8: SURVEILLANCE – PRIMARY**TOPIC 1 – ATC Surveillance**

Sub-topic 1.1 – Use of PSR for Air Traffic Services

Subject 9: SURVEILLANCE – SECONDARY**TOPIC 1 – SSR AND MSSR**

Sub-topic 1.1 – Use of SSR for Air Traffic Services

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Subject 10: SURVEILLANCE – HMI**TOPIC 1 – HMI**

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Subject 11: SURVEILLANCE – DATA TRANSMISSION**TOPIC 1 – Surveillance Data Transmission**

Sub-topic 1.1 – Technology and Protocols

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