



European Aviation Safety Agency

European Plan for Aviation Safety

2016–2020

Final

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Executive summary

Europe plays a leading role as regards aviation safety¹. Despite the excellent safety performance of aviation in Europe, recent events remind us of the need to always remain vigilant and constantly search for weaknesses in the system before they manifest in an accident.

At the heart of this system is the concept of safety risks management, namely hazards identification, risks assessment and decision-making on the best course of action to mitigate those risks. The European Aviation Safety Agency (hereinafter referred to as the ‘Agency’), Member States (MS) and industry work closely together in this process. At European level, this process is coordinated by the Agency and documented in the **European Plan for Aviation Safety (EPAS)**.

The fifth edition of EPAS covers the five-year period between 2016 and 2020 and is now an integral part of the Agency’s programming activities. This means that the safety priorities identified in EPAS are addressed by specific actions in the Agency’s rulemaking or safety promotion programmes, specific actions in the State Safety Programmes (SSPs) or through focused oversight activities performed either by the Agency or the MS.

In comparison with previous editions, the current one is more data driven, providing a clear link with the Annual Safety Review (ASR) and with the Agency’s Rulemaking Programme. An increased emphasis has been put on using safety promotion and focused oversight activities to mitigate safety risks.

In terms of content, EPAS contains three categories of safety issues: systemic, operational and emerging.

The key safety actions to address **systemic issues** are:

- incorporate safety management principles in initial and continuing airworthiness;
- work with MS to implement the SSPs; and
- work with competent authorities (CAs) to ensure the availability of adequate personnel.

The key safety actions to address **operational issues** are:

- *for commercial air transport (CAT) by aeroplanes:*
 - review and promote new pilot training provisions in order to address the prevention of and recovery from upset scenarios;
 - identify measures to prevent loss of control during go-around or climb; and
 - introduce technology on board aircraft to mitigate the risk of runway excursions (REs).

¹ See Annual Safety Review 2014

http://easa.europa.eu/newsroom-and-events/general-publications?search=&publication_date%5Bvalue%5D%5Byear%5D=&publication_type%5B%5D=144&apply





- *for helicopter operations:*
 - strengthen design requirements for helicopter gearbox lubrication;
 - improve off-shore helicopter safety in Europe; and
 - develop risk awareness and training material to further improve helicopter safety through safety promotion.
- *for General Aviation (GA) operations:*
 - work with CAs to address the risk of airspace infringement in GA; and
 - develop risk awareness and training material to further improve GA safety, including on the transportation of dangerous goods.

The key safety actions to address **emerging issues** are:

- develop a road map to address cybersecurity threats in collaboration with the European Commission (EC), MS and industry;
- create harmonised EU rules for remotely piloted aircraft systems (RPAS); and
- evaluate whether the regulatory system adequately addresses safety risks arising from new and emerging business models.

Each action area includes the identification of safety issues as well as the objectives to be achieved and how to measure them. The coordinated actions proposed in this edition of EPAS are expected to make a difference in avoiding accidents and serious incidents, which is the ultimate goal that links all the activities together.

During the implementation, the progress on the actions and performance measures are monitored and evaluated. This feedback loop ensures effective implementation aiming at continuous improvement.





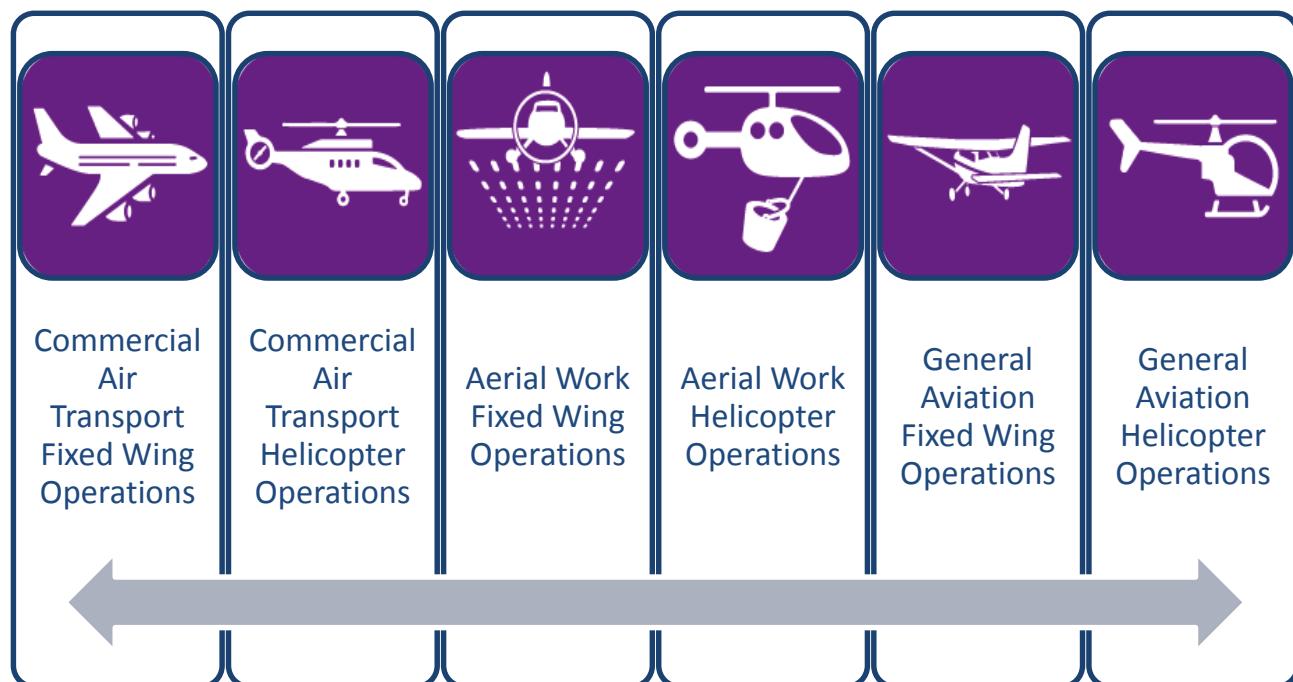
1. Safety performance

This chapter highlights the top risk areas for various aviation sectors. These areas are identified in the 2014 ASR and drive the actions in EPAS. The average numbers of **fatal accidents**, **non-fatal accidents** and **serious incidents** for EASA MS operators over the 10-year period between 2004 and 2013 have been used to prioritise the risk areas. The actual numbers for 2014 are also provided next to the average value.

In parallel, a number of detailed sector safety risk portfolios are under development in order to identify the underlying safety issues within the risk areas. The safety actions identified in this document address the key risk areas of such portfolios.

As the sector safety risk portfolios develop, they will be made available through the Agency website, along with associated analysis reports, so as to enable all members of the European aviation community to use them in their own safety management activities.

This edition of EPAS identifies top risk areas for the following sectors:

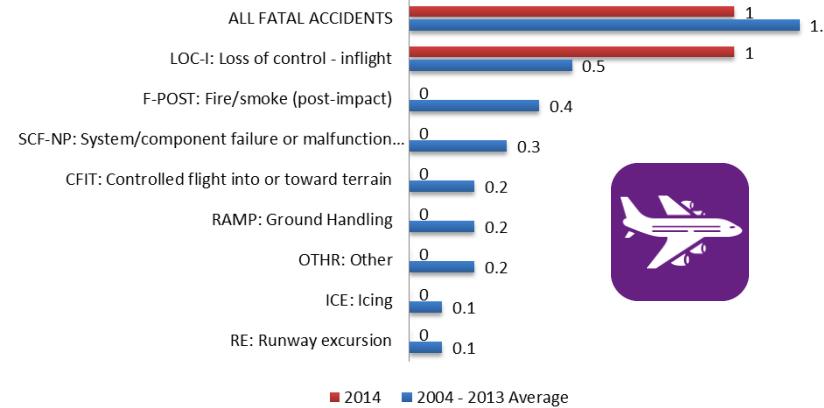




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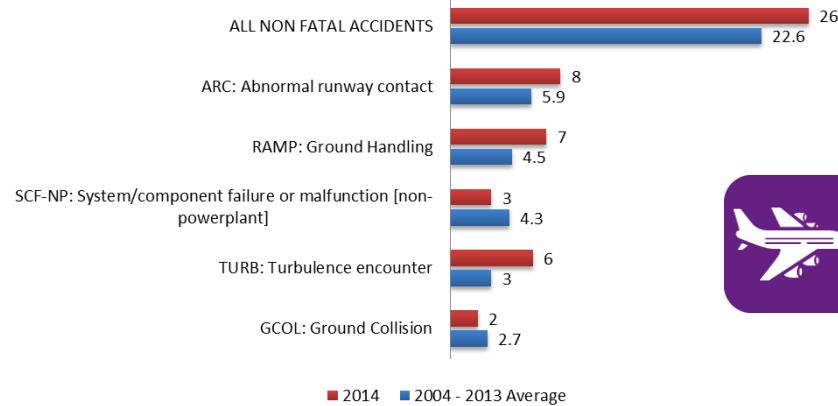
Safety performance

Commercial Air Transport - Fixed Wing Fatal Accidents



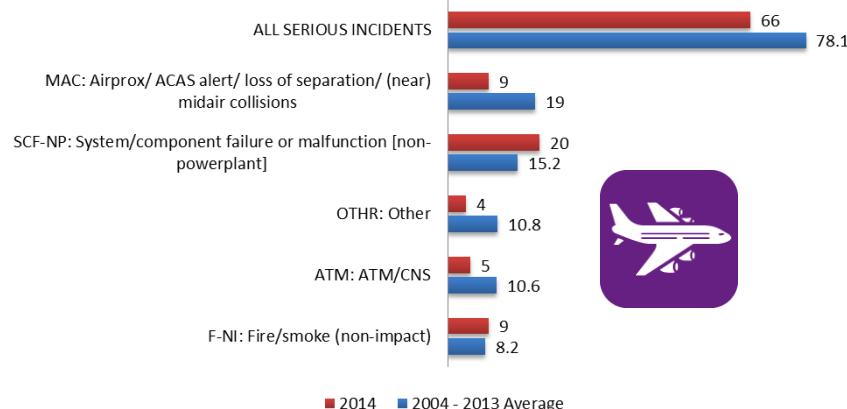
■ 2014 ■ 2004 - 2013 Average

Commercial Air Transport - Fixed Wing Non-Fatal Accidents



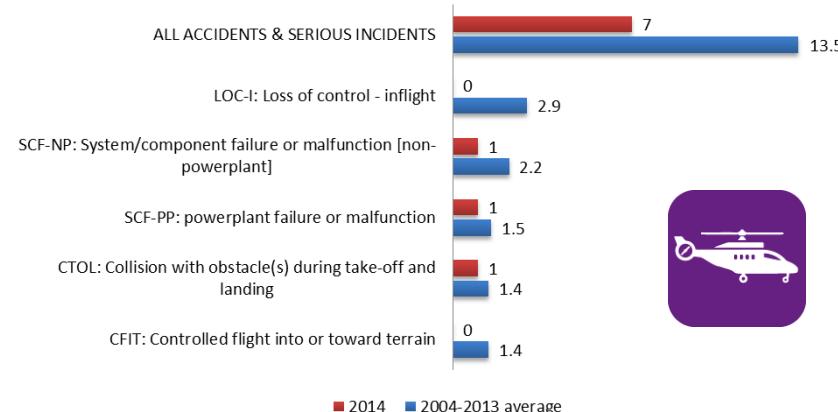
■ 2014 ■ 2004 - 2013 Average

Commercial Air Transport - Fixed Wing Serious Incidents



■ 2014 ■ 2004 - 2013 Average

Commercial Air Transport - Helicopters Accidents and Serious Incidents



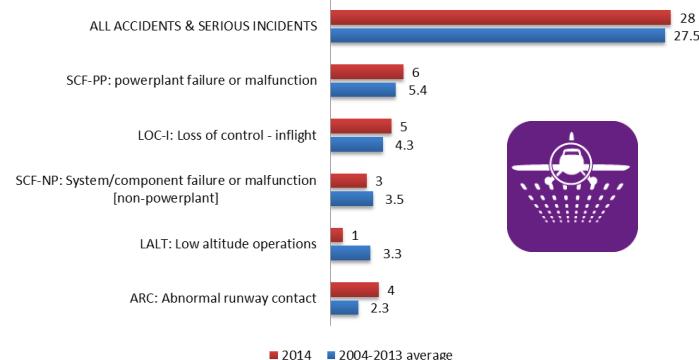
■ 2014 ■ 2004-2013 average



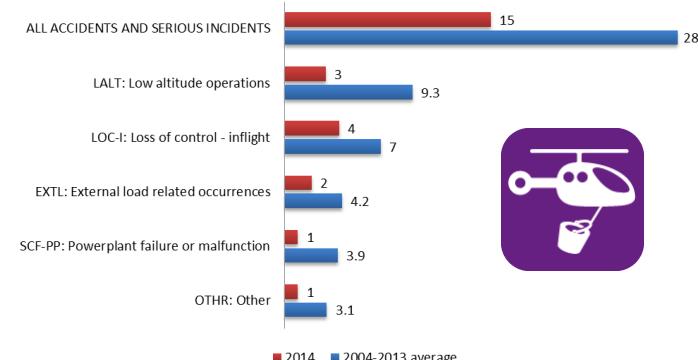
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Safety performance

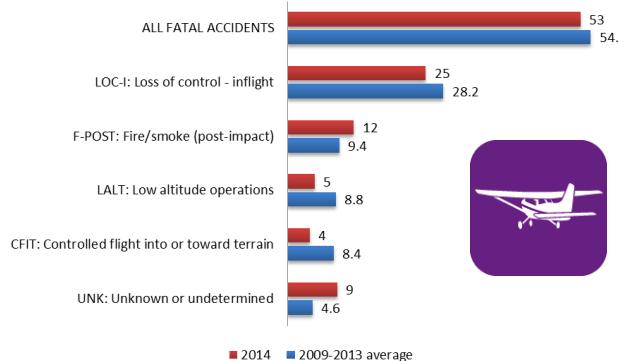
Aerial Work - Fixed Wing Accidents and Serious Incidents



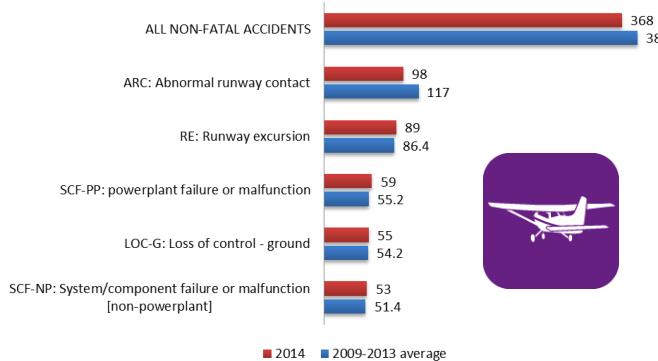
Aerial Work - Helicopters Accidents and Serious Incidents



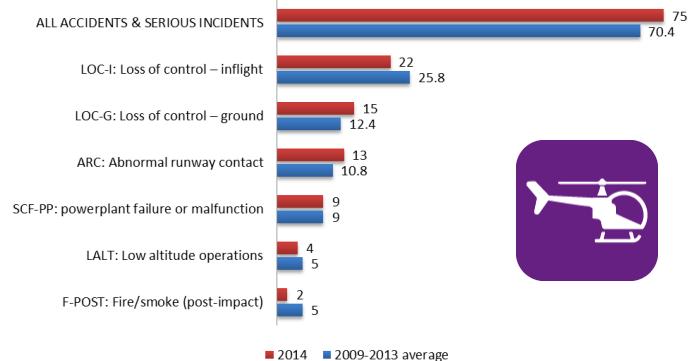
General Aviation - Fixed Wing Fatal Accidents



General Aviation - Fixed Wing Non-Fatal Accidents



General Aviation - Rotorcraft Accidents and Serious Incidents





2. Introduction

2.1. Objectives and principles

The main objective of EPAS is to create a common focus on European aviation safety issues as a continuation of the European work to increase aviation safety and to comply with ICAO standards. This approach improves traceability and reinforces commitment to the current initiatives while contributing to avoiding duplication, overlapping of safety initiatives and competition for resources.

While some safety issues stay at national level and are addressed within the SSP alone, there are other instances where common issues of pan-European scope require a collective action. Such actions are in the scope of the present publication.

The fifth edition of EPAS covers the five-year period between 2016 and 2020 and is now an integral part of the Agency's programming activities.

2.2. The European Aviation Safety Programme

In October 2011, the EC addressed a [communication](#)² to the Council and the European Parliament called 'Setting up an Aviation Safety Management System for Europe'. The communication set the strategy for aviation safety in Europe for the following years and supported the aim, set out in the [Transport White Paper](#)³, 'to raise the EU aviation safety performance to a level that matches or exceeds the best world standard'.

According to the communication, this is achieved by adding a proactive element to the current EU aviation safety system and publishing annual updates to EPAS detailing progress made in addressing identified safety risks at EU level. This is the scope of the present publication.

This communication is accompanied by a [Commission Staff Working Paper](#)⁴ describing the current aviation safety framework at European level prepared jointly by the EC and the Agency: the European Aviation Safety Programme (EASP).

In December 2015, the EC issued a [report](#)⁵ with the [second edition of the European Aviation Safety Programme](#)⁶ annexed to it. This new edition takes into consideration the legislative changes occurred since 2011 as well as the evolution of safety management in all areas. In addition, it strengthens safety promotion at EU level and describes the process to update and develop EPAS, giving it a truly European dimension.

² COM(2011) 670 final of 25.10.2011 — Setting up an Aviation Safety Management System for Europe.

³ COM(2011) 144 - WHITE PAPER - Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system

⁴ SEC(2011) 1261 final of 25.10.2011 – The European Aviation Safety Programme

⁵ COM(2015) 599 final of 7.12.2015 – The European Aviation Safety Programme

⁶ COM(2015)599 final of 7.12.2015 ANNEX 1 – The European Aviation Safety Programme Document 2nd edition





2.3. Link to the Agency's Strategic Plan

EPAS contributes to fulfilling one of the Agency's visions: *The Agency works on safety, in a proactive manner, helped by enhanced safety analysis capability.* EPAS is the documented output of a safety risk management process at EU level. The process is described in the second edition of the EASP and involves all the stakeholders in the EU aviation system. This process ensures that the MS, the industry and the Agency act on safety risks proactively, systematically and globally.

2.4. Link to the global aviation safety plan (GASP)

EPAS also takes into consideration the objectives and global accident categories identified in GASP.

The universal safety oversight audit programme (USOAP) audits have identified that States' inability to effectively oversee aviation operations remains a global safety concern. For that reason, the **GASP objectives** call for States to put in place robust and sustainable safety oversight systems and to progressively evolve them into more sophisticated means of managing safety. These objectives are aligned with ICAO's requirements for the implementation of the SSPs by States and safety management systems (SMS) by service providers. The GASP objectives are addressed in section **4.1. Safety management** of EPAS.

In addition to the GASP objectives, ICAO has identified **high-risk accident categories**. These categories were initially determined based on an analysis of accident data, for scheduled CAT operations, covering the 2006–2011 time period. Feedback from the regional aviation safety groups (RASGs) indicates that these priorities still applied during the development of the 2017–2019 GASP edition.

Runway safety events were identified as one of the main high-risk accident categories. Runway safety-related events include but are not limited to: abnormal runway contact, bird strikes, ground collisions, events related to damage from ground handling operations, REs, runway incursions (RIs), loss of control on the ground, collision with obstacle(s), and undershoots and overshoots. These safety issues are addressed in sections **5.1.4. Runway safety** and **5.1.5. Ground safety** of EPAS.

Controlled flight into terrain (CFIT) and loss of control in-flight (LOC-I) were identified as the other two high-risk accident categories. These types of accidents account for a small portion of accidents in a given year but are generally fatal and account for a large portion of the total number of fatalities. These safety issues are addressed in sections **Controlled flight into terrain**, and **Loss of control in flight** of EPAS.

2.5. Content and structure of EPAS

EPAS is divided in three issue categories, each one addressing the main safety areas and presented in the following chapters:

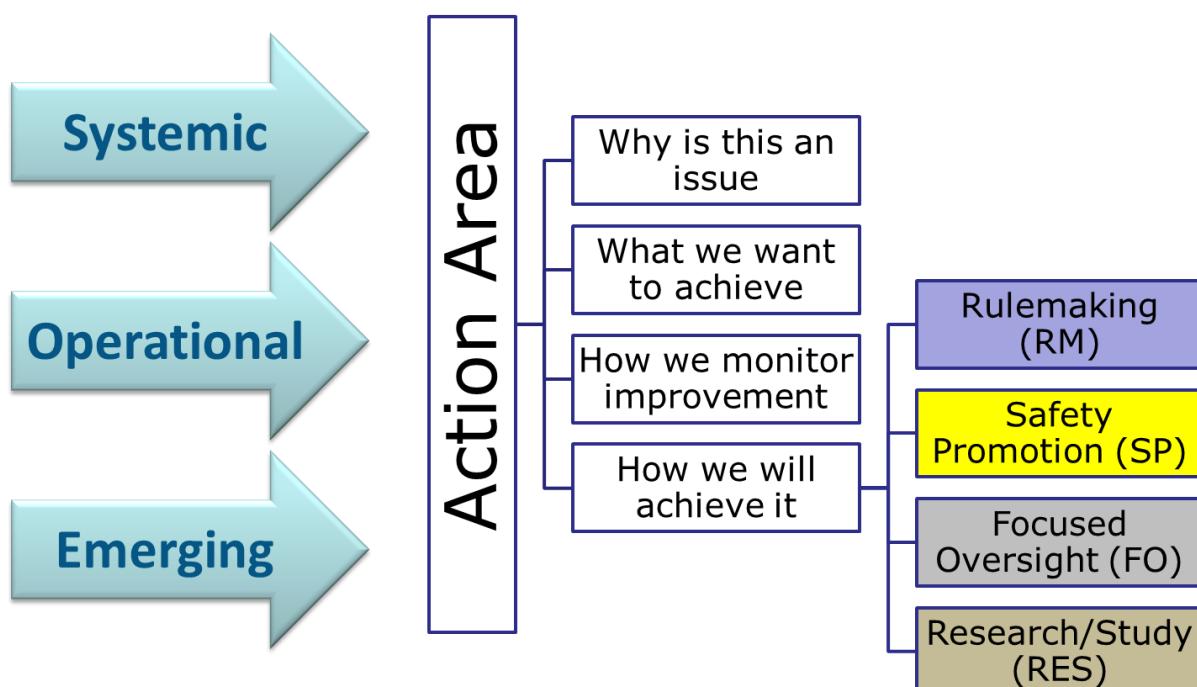
- Chapter 4 addresses systemic issues;
- Chapter 5 addresses operational issues; and
- Chapter 6 addresses emerging issues.

Within each of the above chapters and for each of the identified safety areas, the following information is provided:

- (a) rationale behind the safety issue (**why** it has been identified as an issue);
- (b) **what** it is to be achieved (objective);



- (c) how we intend to monitor improvement in the future; and
- (d) how we intend to achieve the objective; here, the various actions contributing to mitigate the identified risk in that area are described. The actions include:
 - issuing new or amending existing regulations;
 - focused oversight activities;
 - safety promotion; or
 - launching a research or a study as depicted below:



The present document is complemented by several annexes:

- [Annex A](#) contains a **status report** on the progress made on EPAS throughout 2014. In this Annex, the following information is provided for each action item: a summary of the work done, the action owner, an assessment of whether the action is progressing according to EPAS, possible deviations from EPAS, and an identification of the key deliverables.
- [Annex B](#) focuses on the actions owned by MS and summarises the feedback provided throughout the year.
- [Annex C](#) contains the results of an SSP phase implementation survey aimed at highlighting where MS are with SSP implementation.

At the end of this document:

- Appendix I presents the actions to be taken by the MS;
- Appendix II provides the spelled-out forms of the acronyms as well as the definitions of the terms used throughout the document; and





- Appendix III provides a brief description of the various working groups and initiatives at European level dealing with aviation safety.

2.6. Preparation and adoption

The content of EPAS is developed by the Agency in consultation with MS and industry. Said consultation takes place through the Agency' Advisory Bodies.

Once it is reviewed and approved, EPAS is submitted to the EASA Management Board (MB) for endorsement.

Following MB endorsement, it becomes a public document. Its content becomes then an integral part of the Agency's work programme and is implemented on a voluntary basis by the MS via their SSPs and safety plans at national level.

2.7. EPAS information

All EPAS related material can be found at www.easa.europa.eu/sms.

Inquiries concerning EPAS can be addressed via the dedicated mailbox: easp@easa.europa.eu





3. Strategic safety priorities — Update 2015

In 2015, a complete review of the EPAS actions was performed with a view to aligning the various programming activities. This has resulted in the publication of a new list of actions and an update of the various EPAS areas.

EPAS consists of three key issue categories:

- (1) **Systemic issues**, which affect aviation as a whole. These issues play a role in accident and incident causation. Given that they underlie operational issues, their improvement has an implicit effect on operational causes.

Changes 2015

Aircraft tracking, rescue operation and accident investigations are now considered systemic issues in order to encompass the activities that facilitate the investigation of accidents and serious incidents.

- (2) **Operational issues**, which are closely related to the events that are reported during operation. The relationship between this type of issues and the final outcomes or end states can be supported by data.

Changes 2015

Design and maintenance improvements, and ground safety within commercial air transport — fixed wing have been added to group the various activities being carried out to avoid technical failures and to mitigate risks on the ground respectively.

The above issues can be considered as the reactive elements of EPAS since they address problems that have already occurred and for which data is to some extent available. In order to balance the composition of EPAS with a more proactive or forward-looking element, a third category of issues named **emerging issues** has been also proposed.

- (3) **Emerging issues**. The safety data we can collect tells us about the past and it can be used to make predictions about the short-term future. This thinking takes us only so far given that aviation is a dynamic, innovative and progressive industry. To take a longer-term view, a means of foresight is needed. This area gives some consideration to safety issues derived from operations or regulations that have not been fully deployed and where data is not always available.

Changes 2015

The **new business models** emerging issue has been incorporated into EPAS in order to make sure that the current level of safety is maintained while new ways of doing business are introduced.

The **human factors and human performance** issue has been integrated within the other risk areas so that human factors aspects are considered in an integrated manner when risks are being mitigated. In order to be able to clearly identify those actions dealing with human factors aspects, an 'HF' marker has been added to the 'activity/sector' column of each of the actions.

Based on the above updates, the below table provides an overview of the action areas in the 2016–2020 EPAS.





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Strategic safety priorities — Update 2015

Driver	Issue category	Action area
Safety	Systemic issues	Safety management Aviation personnel Aircraft tracking, rescue operation and accident investigations
	Operational issues	Loss of control in-flight Design and maintenance improvements
		Commercial air transport by aeroplanes Mid-air collisions Runway safety Ground safety Controlled flight into terrain Fire, smoke and fumes
		Helicopter operations General Aviation
	Emerging issues	New products, systems, technologies and operations Regulatory and oversight considerations New business models





4. Systemic issues

This area addresses system-wide problems that affect aviation as a whole. In most scenarios, these problems become evident by triggering factors and play a significant role in the final outcome of a safety event. They often relate to deficiencies in organisational processes and procedures.

4.1. Safety management

(a) Issue/rationale

Management of safety in a systematic and proactive way enables authorities and organisations to set up management systems that take into consideration potential hazards before aviation accidents occur. This global move is at the core of ICAO Annex 19, which entered into force in November 2013.

Approach taken in the EU

When developing new EU harmonised aviation safety regulations in the fields of air operations, air crew, ATM/ANS and aerodromes, the Agency agreed on a common approach to regulating safety management, applying a ‘total system approach’. This led to strongly harmonised, yet proportionate and virtually identical common safety management requirements across these domains, complemented where necessary with additional, area-specific requirements. Common safety management requirements are embedded in the so-called ‘authority requirements’ and ‘organisation requirements’.

This currently covers the following areas:

- Air operators in commercial operations;
- Air operators in non-commercial operations of complex motor-powered aircraft;
- Approved pilot training organisations (ATOs);
- Holders of a flight simulator training device (FSTD) qualification certificate, not being an ATO or an air operator certificate (AOC) holder;
- Aeromedical centres;
- Aerodrome operators;
- Air navigation service providers (ANSPs); and
- Air traffic controller (ATCO) training organisations.

Through the ongoing rulemaking tasks RMT.0251 (MDM.055) and RMT.0550 (MDM.060), the above framework will be introduced in the areas of continuing and initial airworthiness organisations respectively.

This will concern more precisely the following types of organisations:

- Maintenance organisations (MOs);
- Continuing airworthiness management organisations (CAMOs);
- Design organisations; and
- Production organisations.





The safety actions related to safety management are aimed at introducing safety management requirements in the domains of initial and continuing airworthiness, ensuring a common understanding at international level, working with MS to implement the SSPs, and enabling the usage of flight data monitoring (FDM) programmes to identify safety risks and take action in a predictive manner.

(b) What we want to achieve (scope and objective)

Work with authorities and organisations to implement safety management.

(c) How we monitor improvement

Regulatory framework requiring safety management is in place across all aviation domains, and organisations and authorities are able to demonstrate compliance (a cross-domain SMS assessment tool is under development).

(d) How we want to achieve it

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0681	Alignment of implementing rules & AMC/GM with Regulation (EU) No 376/2014 Objective: Alignment of IRs & AMC/GM with Regulation (EU) No 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 and repealing Directive 2003/42/EC and Commission Regulations (EC) Nos 1321/2007 and 1330/2007.	ALL	EASA FS.5	Opinion/2016
RMT.0251	Embodiment of safety management system (SMS) requirements into Commission Regulations (EU) Nos 1321/2014 and 748/2012 Objective: With reference to ICAO Annex 19, the objective is to set up a framework for safety management in the initial and continuing airworthiness domain. Split task: (a) Part-M linked to OPS (CAMOs) (b) Part-145 linked to other organisation approvals (Part-147, Part 21 for production organisation approval (POA), design organisation approval (DOA)).	CAT/HF	EASA FS.5	Opinion/2018
RMT.0262	Embodiment of level of involvement (LOI) requirements into Part-21 Objective: To ensure compliance of Part-21 with the framework of safety management provisions of ICAO Annex 19. Introduction in Part-21 of a risk-based approach for the determination of the LOI of the Agency in product certification. This entails introduction of: <ul style="list-style-type: none">— systematic risk management (hazard identification, risk assessment and mitigation);— safety performance-based oversight allowing to focus on areas of greater risk;— safety awareness and promotion among all staff involved; and— improved effectiveness and efficiency of Part-21 IRs achieved by their streamlining and improved consistency.	CAT	EASA CT.7	Opinion/2016



European Plan for Aviation Safety 2016–2020

Systemic issues

SP

Action number

Action title and objective

Activity sector

Owner

Deliverable/date

SPT.057	Safety management system international cooperation Objective: Promote the common understanding of SMS and human factors principles and requirements in different countries, share lessons learned and encourage progress and harmonisation.	ALL/HF	EASA FS.5	Report/continuous
SPT.059	Safety management system implementation support in air traffic management Objective: Support to ANSP SMS implementation, specially outside the EU; develop a structured approach to the identification of safety key risk areas and to gathering information on operational safety and SMS best practices from the industry; harmonise SMS approaches in functional airspace blocks (FABs). Develop and promote SMS guidance and best practices for air traffic management (ATM).	ALL/HF	EASA FS.4	Methodology/ training material/best practice/continuous
SPT.060	Lack of experience on flight data monitoring-based indicators Objective: The Agency should further assess, together with MS, the benefits of FDM-based indicators for addressing national safety priorities.	CAT	EAFDM	Report/2016
SPT.062	Comparable risk classification of events across the industry Objective: Develop a common European risk classification scheme as mandated by Regulation (EU) No 376/2014.	ALL	NoA & MS	Report/2017
SPT.063	Continuous monitoring of air traffic management safety performance Objective: Develop and populate safety (key) performance indicators to measure ATM safety performance. Continuous monitoring and verification of the ANSPs performance achieved safety levels and trends.	ALL	EASA FS.4 & SM.1	Report/2017
SPT.074	Dissemination of information on accidents and serious incidents Objective: Improve dissemination of information about accident reports for the benefit of the operators and other stakeholders by distributing accident summaries with key findings and lessons learned.	ALL	EASA SM.1/HF	Accident summaries distributed/2016
SPT.076	Flight data monitoring precursors of aviation occurrences categories (LOC-I, CFIT) Objective: The Agency should, in partnership with the industry, establish good practice that is enhancing the practical implementation of operators' FDM programmes.	CAT	EOFDM	Report/2016
SPT.077	Good practices for an integration of an operator flight data monitoring programme with other operators' processes Objective: The Agency should, in partnership with the industry, establish good practice that is enhancing the practical implementation of operators' FDM programmes.	CAT	EOFDM	Report/2016





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Systemic issues

SP

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
MST.001	Member States to give priority to the work on State Safety Programmes Objective: Make SSPs consistently available in Europe in compliance with the GASP objectives.	ALL	MS	SSPs established/continuous
MST.002	Promotion of safety management system Objective: Encourage implementation of the methods, guidance, best practices, etc. presented in the safety promotion material developed by the ESSI teams (ECAST, EHEST and EGAST) ⁷ and the Safety Management International Collaboration Group (SMICG).	ALL/HF	MS	Best practice/continuous
MST.003	Member States should set up a regular dialogue with their national aircraft operators on flight data monitoring programmes Objective: States should set up a regular dialogue with their national aircraft operators on FDM programmes, with the objectives of: <ul style="list-style-type: none">— promoting the operational safety benefits of FDM;— fostering an open dialogue on FDM programmes that takes place in the framework of just culture; and— encouraging operators to include and further develop FDM events relevant for the prevention of RE, mid-air collision (MAC), CFIT and LOC-I, or other issues identified by the SSP.	CAT	MS	Report on activities performed to promote FDM/continuous

⁷ ESSI is the European Strategic Safety Initiative and includes 3 teams: European Commercial Aviation Safety Team (ECAST), dealing with Commercial Air Transport Safety; European General Aviation Safety Team (EGAST), dealing with General Aviation Safety; and European Helicopter Safety Team (EHEST), dealing with Helicopter Safety.





Special project

A project for implementing the recommendations made in July by the Task Force convened by the EU Commissioner for Transport, Ms Violeta Bulc, on the accident of Germanwings Flight 9525 was launched in October 2015.

The project is organised in four work packages (WPs): air operations, aircrew, IT and personal data. The WP on personal data will be implemented by the Commission and is therefore not impacting the Agency's activities and resources. For the remaining three WPs, the activities of the project are planned to be executed within 2016. The expected outputs from the WPs on air operations and aircrew are: acceptable means of compliance (AMC) and guidance material (GM) to existing implementing rules (IRs), safety promotion material and, if necessary, operational directives. The WP on IT will have as output a repository of aeromedical data to be deployed in the EASA MS by the end of 2016. If deemed necessary, a workshop to discuss the first set of the project's achievements with the affected stakeholders and ensure agreement on the next steps will take place in the first semester of 2016.

4.2. Aviation personnel

(a) Issue/rationale

As new technologies emerge on the market and the complexity of the system continues increasing, it is of key importance to have the right competencies and adapt training methods to cope with new challenges. It is equally important for aviation personnel to take advantage of the safety opportunities presented by new technologies.

The safety actions related to aviation personnel are aimed at introducing competency-based training in all licences and ratings, updating fatigue requirements and facilitating the availability of adequate personnel in CAs.

(b) What we want to achieve (scope and objective)

Ensure continuous improvement of aviation personnel competence.

(c) How we monitor improvement

Measurable improvement in aviation personnel competence at all levels (flight crews, ATCOs and CAs).

(d) How we want to achieve it





European Plan for Aviation Safety 2016–2020

Systemic issues

RM

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0194	Extension of competency-based training to all licences and ratings and extension of TEM principle to all licences and ratings Objective: More performance-based rulemaking will be addressed. The principles of competency-based training (CBT) shall be transferred to other licences and ratings, and the multi-crew pilot licence (MPL) should be reviewed in order to address the input from the ICAO MPL symposium and the European MPL Advisory Board. Some action items from the GA Road Map activity list such as modular training and CBT will be addressed as well.	ALL	EASA FS.3	Opinion/2018
RMT.0599	Evidence-based and competency-based training Objective: A complete review of the provisions contained in ORO.FC. It will also include the review of alternative training and qualification programmes (ATQPs) and the introduction of evidence-based training (EBT) and (CBT) in the field of recurrent training.	ALL/HF	EASA FS.3	Opinion/2018
RMT.0106	Certification specifications and guidance material for maintenance certifying staff type rating training Objective: Minimum standard for type rating training — ensuring appropriate competency level — safety; task linked to operational suitability data (OSD). The main objective is to improve the level of safety by requiring the applicant for a type certificate (TC) or restricted TC for an aircraft to identify the minimum syllabus of maintenance certifying staff type rating training, including the determination of type rating. This minimum syllabus, together with the requirements contained in Appendix III to Annex III (Part-66) to Commission Regulation (EU) No 1321/2014, will form the basis for the development and approval of Part-66 type training courses.	ALL	EASA FS.1	Decision/2018
RMT.0188	Update of EASA FCL implementing rules Objective: A complete first review of Part-FCL addressing a number of issues to be clarified or amended as identified by industry and MS. It also establishes a flight examiner manual (FEM) and a first draft of the learning objectives (LOs). Some of these corrections and clarifications also pertain to alleviations for the GA community.	ALL	EASA FS.3	Opinion/2017
RMT.0196	Improve flight simulation training devices (FSTDs) fidelity Objective: An ICAO harmonisation issue, as the main purpose is to include in the European provisions elements from ICAO Doc 9625 for the use of FSTDs in flight training. The task will also address three safety recommendations (SRs) and aims at including results and findings from the loss of control avoidance and recovery training (LOCART) and RMT.0581 working group results. Harmonisation with the Federal Aviation Administration (FAA) should be considered.	CAT/HE	EASA FS.3	Opinion/2018
RMT.0486	Alignment with ICAO on ATCO fatigue management provisions Objective: Alignment with ICAO on the subject provisions.	ALL/HF	EASA FS.4	Opinion/2018



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RM

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0544	Review of Part-147 Objective: To perform a review of the effectiveness of the implementation of Part-147.	ALL	EASA FS.1	Opinion/2018
RMT.0589	Rescue and firefighting services (RFFS) — Remission factor, cargo flights, etc. Objective: The objective of this rulemaking task is to ensure a high and uniform level of safety by establishing minimum medical standards for rescue and firefighting personnel required to act in aviation emergencies. It will also ensure that the level of protection for rescue and firefighting at aerodromes serving all-cargo or mail flights is proportionate to this type of traffic and their particular requirements. Finally, it will as well as ensure a clearer implementation of the remission factor in general. The RMT has been split in two sub-tasks: (a) 1st sub-task: Remission factor, cargo flights, etc. (b) 2nd sub-task: RFFS personnel physical and medical fitness standards.	HE/GA	EASA FS.4	Decision/2016 Opinion/2016
RMT.0595	Technical review and regular update of learning objectives and syllabi for commercial licences (IRs) Objective: Technical review of theoretical knowledge syllabi, learning objectives, and examination procedures for the air transport pilot licence (ATPL), MPL, commercial pilot licence (CPL), and instrument rating (IR).	CAT/HF	EASA FS.3	Decision/2018
RMT.0596	Review of provisions for examiners and instructors (Subparts J & K of Part-FCL) Objective: A complete review of the subparts of Part-FCL containing the provisions for examiners and instructors. Industry and MS experts requested this task as an urgent correction and alignment of the rules in place. It will also address some of the elements proposed by the Agency's examiner/inspector task force.	CAT/HF	EASA FS.3	Opinion/2018

FO

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
FOT.003	Unavailability of adequate personnel in competent authorities Objective: EASA Standardisation to monitor the availability of staff at the national aviation authorities (NAAs).	ALL	EASA FS.5	Report/annually
FOT.004	Unavailability of adequate personnel in competent authorities Objective: EASA to support CAs in: — defining the right competences needed to properly discharge their safety oversight responsibilities; and — providing training to their staff.	ALL/HF	EASA FS.5	Report/continuous





FO

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
FOT.005	<p>Unavailability of adequate personnel in competent authorities</p> <p>Objective:</p> <p>Promote the concept of 'pooling' available expertise among NAAs in order to make subject matter experts available in a cost-effective way, to those States that need resources.</p>	ALL	EASA FS.5	Report/2016

4.3. Aircraft tracking, rescue operation and accident investigations

(a) Issue/rationale

Safety investigation authorities have frequently raised the issue of lack of data to support investigations of light aircraft accidents. This is also related to the fact that light aircraft are not required to carry a flight recorder. As regards large aircraft, the advent of new technologies, as well as findings during safety investigations highlight the need to update the installation specifications for flight recorders.

The safety actions in this area are aimed at introducing normal tracking of large aircraft, improving the availability and quality of data recorded by flight recorders, assessing the need for in-flight recording for light aircraft and the need to introduce data link recording for in-service large aircraft.

(b) What we want to achieve (scope and objective)

Increase safety by facilitating the recovery of information by safety investigation authorities and thus helping to avoid future accidents.

(c) How we monitor improvement

Number of investigated accidents or serious incidents in which flight data is not recovered.

(d) How we want to achieve it



**RM**

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0249	Recorders installation and maintenance thereof — certification aspects Objective: The general objective of this rulemaking task is to improve the availability and quality of data recorded by flight recorders in order to better support safety investigation authorities in the investigation of accidents and incidents. More specifically, this rulemaking task is aimed at modernising and enhancing the specifications for flight recorder installation on board large aeroplanes and large rotorcraft.	CAT	EASA CT.7	Decision/2017
RMT.0271	In-flight recording for light aircraft Objective: Assess the need for in-flight recording and make proportionate suggestions for categories of aircraft and types of operation covered by the air operations rules for which there is no flight recorder carriage requirement. Define in-flight recording requirements for these aircraft. Define requirements for the use, preservation and serviceability of the new in-flight recording solutions.	CAT	EASA FS.2	Opinion/2017
RMT.0294	Data link recording retrofit for aircraft used in CAT Objective: Assess the need to introduce data link recording for in-service aircraft in line with ICAO Annex 6 Parts I and III.	CAT	EASA FS.2	Opinion/2021

Aircraft tracking

Furthermore, IRs on normal aircraft tracking were prepared by the EC (with the support of the Agency) in order to address challenges encountered by search and rescue teams and investigation authorities after the accidents of Air France flight AF447 and Malaysian Airlines MH370. These IRs were included in Regulation (EU) 2015/2338 as regards requirements for flight recorders, underwater locating devices and aircraft tracking systems. In parallel, AMC and GM on normal aircraft tracking were prepared by the Agency in order to facilitate the implementation of the IRs.





5. Operational issues

This area addresses the key safety issues that are brought to light by the analysis of occurrence data.

5.1. CAT by aeroplanes



This section addresses all types of CAT operations including business aircraft operations.

Through analysing the accident and serious incident categories, the following key safety risk areas for commercial air transport fixed wing operations have been identified in the 2014 ASR. The proposed initiatives focus on reinforcing the barriers or risk controls that help to prevent fatalities.

The action areas are ordered by the number of accidents and serious incidents, starting with LOC-I, which has shown the highest number of fatal accidents in the period from 2004 to 2013.

5.1.1. Loss of control in flight

(a) Issue/rationale



Loss of control usually occurs because the aircraft enters a flight regime which is outside its normal envelope, usually, but not always, at a high rate, thereby introducing an element of surprise for the flight crew involved.

It is the risk area with the most frequent fatal accidents, both in Europe and worldwide.

On average, there are three fatal accidents every year related to LoC-I worldwide and one every second year involving an EASA MS operator.

The safety issues with the potential to develop into a loss of control addressed in the EPAS are: unusual airplane attitudes with special focus on go-around and climb phases, startle effect as well as unintended or inappropriate rudder usage.

(b) What we want to achieve (scope and objective)

Further reduce the risk of accidents in this category.

(c) How we monitor improvement

The following indicators will be monitored:

LOC-I	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0.5	0.3	2.3
2014	1	0	2

(d) How we want to achieve it



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Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0581	Loss of control prevention and recovery training Objective: Review of the provisions for initial and recurrent training in order to address upset prevention and recovery training (UPRT). The review will also address the implementation of the ICAO documents and several SRs. Other aspects to be covered are manual aircraft handling of approach to stall and stall recovery (including at high altitude), the training of aircraft configuration laws, the recurrent training on flight mechanics and training scenarios (including the effect of surprise). This RMT is split in multiple deliverables. See the related Terms of Reference on the EASA website. Note: Recurrent and conversion training provisions related to UPRT already published in May 2015. They will be applicable as of May 2016.	ALL/HF	EASA FS.3	Opinion/2016
RMT.0397	Unintended or inappropriate rudder usage — rudder reversals Objective: <ul style="list-style-type: none"> — To propose an amendment of CS-25 to protect the aeroplane against the risk of unintended or inappropriate rudder usage. This may be achieved either by setting standards mitigating erroneous rudder inputs from pilots to ensure safe flight, or by proposing standards that will ensure pilots will not make the erroneous rudder input. — To determine if retroactive specifications are suitable for already certified large aeroplanes. In case of a positive answer, to propose Part-26/CS-26 standards, eventually including applicability criteria. Those standards may differ from the ones proposed for CS-25 amendment. 	CAT/HF	EASA CT.7	Decision/2019
RMT.0647	Loss of control or loss of flight path during go-around or climb Objective: The overall goal is to mitigate the safety risk (for large aeroplanes) of loss of control or loss of the flight path of the aircraft during the go-around or climb phases executed from a low speed configuration and close to the ground. The second objective is to prevent an excessive nose-up trim condition when transitioning from a low-speed phase of flight to go-around or climb when high level of thrust is applied. This may be achieved by different means, such as increasing the flight crew awareness of the low speed/excessive nose-up trim condition, or incorporating active systems preventing an unusual configuration (low speed/excessive nose-up trim condition) from developing.	CAT/HF	EASA CT.7	Decision/2017

SP

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
SPT.012	Promote the new European provisions on pilot training Objective: The objective is to complement the new regulatory package on UPRT with relevant safety promotion material.	ALL/HF	EASA SM.2	Report/2016
MST.004	Include loss of control in flight in national State Safety Programmes Objective: Loss of control in flight shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/HF	MS	SSP established/continuous





RES

Action number

Action title and objective

Activity sector

Owner

Deliverable/date

RES.005

Startle effect management

CAT/HF

EASA FS.3

Report/2016

Objective:

Identify the main training requirements for mitigating the effect and impact on CAT pilots of surprise and startle during unexpected in-flight events (potentially leading to loss of control) and develop a series of associated training exercises and scenarios for execution using FSTDs.

5.1.2. Design and maintenance improvements

(a) Issue/rationale



Design improvements may limit the probability of technical failures.

Technical failure is the most frequent cause of accidents and serious incidents in Europe. Excluding post-crash fires, it is also the second highest cause of fatal accidents.

The safety actions related to design and maintenance are aimed at bringing improvements in the following areas: assessment and coordination of the responsibilities of maintenance organisations, protection of occupants on board large aeroplanes through improved seat crashworthiness, engine bird ingestion, aeroplane-level safety assessments, tyre inflation pressures remaining within specifications, as well as the process to review the airworthiness status of the aircraft.

(b) What we want to achieve (scope and objective)

To improve overall safety in relation to bird ingestion, ditching, etc. through targeted design improvements.

(c) How we monitor improvement

The following indicators will be monitored:

SCF-NP System/component failure or malfunction [non-powerplant]	Fatal accidents	Non-fatal accidents	Serious incidents
	2004–2013 average	2014	2014
SCF-PP powerplant failure or malfunction	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 Average	0.3	4.3	15.2
2014	0	3	20
2004–2013 Average	0	0.8	4.8
2014	0	0	5

(d) How we want to achieve it





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Action number

Action title and objective**Activity sector****Owner****Deliverable/date**

RMT.0217	CAMOs' and Part-145 organisations' responsibilities Objective: Establishment of the principles to mitigate the risks linked to a faulty assessment and coordination of the responsibilities of CAMOs and Part-145 organisations, especially in complex, multi-tier and subcontracted maintenance.	CAT/HE/HF	EASA FS.1	Opinion/2017
RMT.0393	Maintenance check flights (MCFs) Objective: Establish operational requirements and crew competence criteria for the performance of maintenance check flights to reduce the probability of incidents and accidents of this type of flights. This will not be limited to operators subject to EU-OPS approval but to any operator performing these flights.	CAT/HE	EASA FS.1	Opinion/2016
RMT.0049	Specific risk and standardised criteria for conducting aeroplane-level safety assessments of critical systems Objective: To define a standardised criterion for conducting aeroplane-level safety assessment of specific risks that encompasses all critical aeroplane systems on large aeroplanes (i.e. in particular update AMC to CS 25.1309), based on the results of the Aviation Rulemaking Advisory Committee (ARAC) Airplane-level Safety Analysis Working Group (ASAWG). In addition, to amend AMC 25.1309 taking into account the latest updates of industry documents, such as ED79A/ARP4754A. To update CS 25.671 on safety assessment of flight control systems, based on the results of the ARAC Flight Controls Harmonisation Working Group (FCHWG). For both objectives, harmonisation with the FAA, the Transport Canada Civil Aviation (TCCA) and Agência Nacional de Aviação Civil (ANAC) will be ensured as much as possible.	CAT/HF	EASA CT.7	Decision/2017
RMT.0069	Seat crashworthiness improvement on large aeroplanes — Dynamic testing 16g Objective: The objective is to improve the protection of occupants on board large aeroplanes operated for commercial air transportation of passengers, when they are involved in a survivable impact accident. This improvement would be reached by introducing on large aeroplanes used for commercial air transportation that were type certified without the JAR-25 change 13 standard improvements, passengers and cabin crews seats meeting the improved standard for dynamic testing and occupant protection, already used for type certification of new large aeroplanes.	CAT	EASA CT.7	Opinion/2016
RMT.0453	Ditching parameters without engine power Objective: Amend CS-25 to require that ditching parameters can be attained by pilots without the use of exceptional skills, including without engine power.	CAT/HF	EASA CT.7	Decision/2018



RM

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0586	Tyre pressure monitoring system Objective: <ul style="list-style-type: none">— The specific objective is to propose a regulatory change to ensure that large aeroplanes tyres inflation pressures remain within the pressure specifications defined by the aircraft manufacturer.— The rulemaking proposal should consider better enforcing the operator's responsibility to ensure regular tyre pressure checks, and also the aircraft manufacturer's obligation to define the tyre pressure check procedures and intervals in the instructions for continuing airworthiness (ICA); as different practices exist in terms of content and presentation of the information in the aircraft maintenance manual (AMM), it could be proposed to better standardise this ICA item among manufacturers and aircraft.— Since a tyre pressure check legal obligation would not always guarantee that the tyres are correctly inflated (e.g. air leakage in the tyre/wheel assembly, maintenance error or negligence, failure/inaccuracy of the inflation equipment, operator not correctly performing the regular checks, etc.), the rulemaking proposal should also include the installation of a tyre pressure monitoring system which will alert the pilots when a tyre pressure is abnormal or out of tolerance..	CAT/HF	EASA CT.7	Decision/2018
RMT.0671	Engine bird ingestion Objective: A US ARAC group was tasked to work on several improvements to the bird ingestion requirements.	CAT	EASA CT.7	Decision/2017
RMT.0686	HP rotor integrity and loss-of-load (due to shaft failure) Objective: The task will review and amend CS-E 840 and CS-E 850 to address certification issues for new designs. There will be a US industry-led group which will be formed, to discuss the pre-rulemaking on this issue. European industry has raised this item and they would support EASA rulemaking on this issue preferring EASA to take the lead.	CAT	EASA CT.7	Decision/2019
RMT.0588	Aircraft continuing airworthiness monitoring — Review of key risk elements Objective: Considering the implementation experience (including Standardisation feedback), the objective is to review the current principles specified in AMC3 M.B.303(b) 'Aircraft continuing airworthiness monitoring', and the related GM1 M.B.303(b) and Appendix III to GM1 M.B.303(b). In particular, to assess: <ul style="list-style-type: none">— if the requirements adequately address the processing of key risk elements (KREs) requiring annual reviews to ensure that all regulatory references remain up to date; and— the appropriateness of each KRE, determine the need for additional KREs, review the adequacy and pertinence of typical inspection items included..	ALL	EASA CT.7	Decision/2018
RMT.0521	Airworthiness review process Objective: Performance of a full review of the airworthiness review process to introduce an improved framework to mitigate the risks linked to a faulty airworthiness review with potential safety consequences where the actual airworthiness status of the aircraft is below the standard.	ALL	EASA FS.1	Opinion/2017



5.1.3. Mid-air collisions

(a) Issue/rationale



A MAC is an accident where two aircraft come into contact with each other while both are in flight. Although there has been no major MAC in Europe in recent years, aircraft proximity (AIRPROX)-related occurrences are the second most critical risk area for all non-fatal accidents and serious incidents in Europe.

The safety actions related to MACs are aimed at bringing improvements in the following areas: collision and avoidance systems for small aeroplanes, provision of aeronautical information and data, implementation of performance-based navigation (PBN), as well as implementation of ground-based and airborne safety nets.

(b) What we want to achieve (scope and objective)

Further reduce the risk of MACs.

(c) How we monitor improvement

The following indicators will be monitored:

MAC Airprox/ACAS alert/loss of separation/ (near) mid-air collisions	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0	0	19
2014	0	0	9

(d) How we want to achieve it

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0376	Carriage of ACAS II equipment on aircraft other than aeroplanes in excess of 5 700 kg or 19 pax Objective: Set up the framework for reducing the risk of MACs.	CAT	EASA FS.4	Opinion/2018
RMT.0445	Technical requirements and operational procedures for airspace design, including procedure design Objective: Development of the necessary organisational and technical requirements on airspace design, thus ensuring that the specific safety objectives of the EASA Basic Regulation ⁸ are met; basically, the scope of the task is to establish the requirements for the design of flight procedures and ATS routes, to support the implementation of PBN operations and evaluate the need for extension to other airspace structures and flight procedures design; this will include an analysis of the need to be included in the ATM/ANS certification scheme.	CAT/HE	EASA FS.4	Opinion/2016

⁸ Regulation (EC) No 216/2008 of the European Parliament and of 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).





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Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0464	Requirements for air traffic services (ATS) Objective: Transposition of the relevant ICAO provisions on ATS. The objective is to define a sufficient level of harmonisation throughout the EU, based on mandatory and flexible requirements, and define proportionate and cost-efficient rules.	CAT/HE	EASA FS.4	Opinion/2017
RMT.0477	Technical requirements and operational procedures for aeronautical information services and aeronautical information management Objective: Development of the necessary harmonised requirements and AMC/GM for the provision of aeronautical information and data, mainly based on the transposition of ICAO Annex 15 and ICAO Annex 4. The task will also fulfil specific needs stemming from the single European sky (SES) implementation.	CAT/HE	EASA FS.4	Opinion/2017

SP

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
SPT.070	Ground-based air traffic management safety nets Objective: Develop high-level specifications complemented by safety promotion material for system safety defences (short-term conflict alert, approach path monitoring and area proximity warning).	CAT/HE/HF	EASA FS.4, ECTRL	Safety promotion material/2016
SPT.052	Promote the deployment of ground-based safety nets Objective: Launch an awareness campaign to promote and support, where appropriate, Europe-wide deployment of ground-based safety nets.	CAT/HE	EASA FS.4, ECTRL	Safety promotion material/2016
SPT.053	Study the performance and promote safe operations of airborne safety nets Objective: Prepare studies to further evolve airborne safety nets. These studies will collect information on the current performance of safety nets and forecast their performance for possible future operational environment. In addition, said studies will assess the performance implications of the envisaged changes to the safety nets.	CAT/HE/HF	EASA FS.4, ECTRL	Report/2016
MST.010	Include mid-air collisions in national State Safety Programmes Objective: MACs shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness. MS should implement actions of the European Action Plan for Airspace Infringement Risk Reduction.	CAT/HF	MS	SSP established/continuous





SP

Action number

Action title and objective

Activity sector

Owner

Deliverable/date

MST.024

Loss of separation between civil and military aircraft

CAT

MS

Report/2018

Objective:

Several EU MS have reported an increase in losses of separation involving civil and military aircraft and more particularly an increase in non-cooperative military traffic over the high seas. Taking into account this situation, and the possible hazard to civil aviation safety, the EC mandated the Agency to perform a technical analysis of the reported occurrences. The technical analysis issued a number of recommendations for the MS (the full report is available [here](#)) which they are encouraged to implement.

5.1.4. Runway safety

(a) Issue/rationale



This section deals both with REs and RIs.

According to the definition provided by ICAO, ‘an RE is a veer or overrun off the runway surface. RE events can happen during take-off or landing’.

An RI is defined as ‘any occurrence at an aerodrome involving the incorrect presence of an aircraft vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft’ (ICAO Doc 4444 – PANS-ATM).

Abnormal runway contact is often a precursor of REs, and together they comprise the most critical risk area for non-fatal accidents in EASA MS, whereas RI is the sixth most frequent risk area for all accidents and serious incidents.

The safety actions related to runway safety are aimed at bringing improvements in the following areas: introduction of on board technology to provide information to the pilot on remaining runway left available, aeroplane performance, prediction of wind shear in CAT operations, and fostering the implementation of the European Plan for the Prevention of Runway Excursions (EAPPRE).

(b) What we want to achieve (scope and objective)

Reduce the number of REs and RIs in fixed-wing commercial air transport.

(c) How we monitor improvement

The following indicators will be monitored:

RE Runway excursion	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0.1	2.6	5
2014	0	2	6

ARC Abnormal runway contact	Fatal accidents	Non-fatal accidents	Serious incidents
2004-2013 average	0	5.9	3
2014	0	8	3





RI-VAP Runway incursion – vehicle, aircraft or person	<i>Fatal accidents</i>	<i>Non-fatal accidents</i>	<i>Serious incidents</i>
2004-2013 average	0	0.2	5.9
2014	0	0	8

RI-A Runway incursion – animal	<i>Fatal accidents</i>	<i>Non-fatal accidents</i>	<i>Serious incidents</i>
2004-2013 average	0	0	0.1
2014	0	0	0

(d) How we want to achieve it

RM Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0570	Reduction of runway excursions Objective: The objective of this task is to increase the level of safety by reducing the number of REs through mandating existing technologies on aeroplanes that allow to measure the remaining runway left available and thus support pilot decision-making. Due to the nature of the comments received on NPA 2013-09, the Agency has decided to publish a new NPA on the reduction of REs. The proposal of the new NPA will put more emphasis on safety objectives against the risk of REs, while providing more flexibility in terms of design solutions. The means to achieve these objectives will be provided in a technical standard developed jointly by industry and NAAs with the support of an international standardisation body.	CAT	EASA CT.7	Decision/2017
RMT.0296	Review of aeroplane performance requirements for CAT operations Objective: — Develop regulatory material to provide improved clarity, technical accuracy, flexibility or a combination of these benefits for the EU operational requirements on aeroplane performance in CAT operations with the aim of reducing the number of accidents and serious incidents where aeroplane performance is a causal factor; and — Contribute to the harmonisation of the FAA and EU operational requirements on aeroplane performance in CAT operations.	CAT	EASA FS.2	Opinion/2017
RMT.0369	Prediction of wind shear for aeroplane CAT operations (IRs) Objective: Set up the framework leading towards reduction of the number of accidents and serious incidents caused by wind shear in CAT aeroplane operations by assessing the need to install and use predictive wind shear systems.	CAT	EASA FS.2	Opinion/2016



**SP**

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
SPT.075	Promoting the European Plan for the Prevention of Runway Excursions Objective: Study possibilities for mitigating the risk of REs through safety promotion, starting by evaluating the status of implementation of the EAPPRE proposals.	CAT/HF	ECAST	Report/per plan
MST.007	Include runway excursions in national State Safety Programmes Objective: REs should be addressed by the MS on their SSPs in close cooperation with the aircraft operators, air traffic control, airport operators and pilot representatives. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness. MS should implement actions suggested by the EAPPRE and monitor effectiveness.	CAT/HF	MS	SSP established/continuous
MST.011	Runway safety teams Objective: MS should audit their aerodromes to ensure that a local runway safety team is in place and is effective. MS will report on the progress and effectiveness.	ALL/HF	MS	Report/continuous
MST.014	Include runway incursions in national State Safety Programmes Objective: RIs should be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness. MS should implement actions suggested by the European Action Plan for the Prevention of Runway Incursions.	CAT/HF	MS	SSP established/continuous

5.1.5. Ground safety

(a) Issue/rationale



ground operations.

Ground safety includes both ground collisions and ground handling (GCOL/RAMP). Ground handling occurrences are the fourth most frequent risk area for fatal accidents. This risk area also leads to significant damage to aircraft and equipment, highlighting the need for greater safety efforts in

The safety actions related to ground safety are aimed at bringing improvements in the following areas: incorporation of weight and balance measuring systems and ground contamination of aircraft systems. The safety issues underlying these activities may manifest both on the ground as well as in the air, resulting, for example, in loss of control and RE accidents which are dealt with in sections 5.1.1 and 5.1.4 respectively. They have been placed in ‘ground safety’ instead in order to group the safety issues that occur in and around an aerodrome in the same place.

(b) What we want to achieve (scope and objective)

Further reduce the risk of accidents in this category.





(c) How we monitor improvement

The following indicators will be monitored:

RAMP Ground Handling	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0.2	4.5	2.5
2014	0	7	3

GCOL Ground Collision	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0	2.7	1.7
2014	0	2	1

(d) How we want to achieve it

RM Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0116	Real weight and balance of an aircraft Objective: The objective of this task is to propose an amendment of CS for large aeroplanes (CS-25) to require the aeroplane being equipped with a weight and centre of gravity measuring system. What is also envisaged is a proposal for a retroactive requirement for such system to be installed on already type-certified large aeroplanes (using a Part-26/CS-26 rule). Finally, this task will investigate the safety benefit which could be gained by requiring such system to be installed on CS-23 commuter aeroplanes; in case of a positive answer, a CS-23 amendment for commuters will be proposed. The rulemaking should consider the minimum operational performance specification (MOPS) which will be produced by the European Organisation for Civil Aviation Equipment (EUROCAE) WG-88.	CAT/HF	EASA CT.7	Decision/2019
RMT.0118	Analysis of on-ground wings contamination effect on take-off performance degradation Objective: <ul style="list-style-type: none">— To propose an amendment of CS-25 to require applicants performing an assessment of the effect of aircraft aerodynamic surfaces on-ground contamination on take-off performance and on aircraft manoeuvrability and controllability.— To propose a retroactive rule Part-26/CS-26 applicable to large aeroplane TC holders; this rule would require a similar analysis and means of protection as the ones proposed for amending CS-25. The retroactive rule may be limited in terms of applicability to a category of aircraft which would be the most vulnerable.	CAT/HF	EASA CT.7	Decision/2017

**SP**

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
MST.018	Include ground safety in national State Safety Programmes Objective: Ground safety issues shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/HE/HF	MS	SSP established/continuous

RES

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RES.001	Erroneous weight or centre of gravity Objective: Erroneous weight or centre of gravity have been identified as a potential safety issue leading to LOC-I accidents. The task is to perform a survey of approval processes for the use of the electronic flight bags (EFBs) with a focus on applications for performance calculations including weight and balance, and to identify best practices.	CAT/HF	EASA SM.1	Report/2016

5.1.6. Controlled flight into terrain

(a) Issue/rationale



CFIT occurs when an airworthy aircraft under the complete control of the pilot is inadvertently flown into terrain, water or an obstacle. The pilots are generally unaware of the danger until it is too late.

Whilst the installation of ground proximity warning systems (GPWS) has greatly reduced the risk of fatal CFIT accidents in recent years, CFIT is still a threat in some circumstances.

The safety actions related to CFIT are aimed at introducing terrain awareness warning systems (TAWS) in small turbine-powered aeroplanes.

(b) What we want to achieve (scope and objective)

Further reduce the risk of accidents in this category.

(c) How we monitor improvement

The following indicators will be monitored:

CFIT Controlled flight into or toward terrain	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0.2	0.1	1.3
2014	0	0	1





(d) How we want to achieve it

RM

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0371	<p>TAWS operation in IFR and VFR and TAWS for turbine-powered aeroplanes under 5 700 kg MTOM able to carry six to nine passengers</p> <p>Objective:</p> <p>Develop a regulatory framework for:</p> <ul style="list-style-type: none">— mitigation of the risks of accidents categorised as CFIT in turbine-powered aeroplanes having a maximum certified take-off mass below 5 700 kg or a maximum operational passenger seating configuration (MOPSC) of more than five and not more than nine; and— improvement of the terrain awareness warning system efficiency in reducing CFIT accidents.	CAT	EASA FS.2	Opinion/2016

SP

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
MST.006	<p>Include CFIT in national State Safety Programmes</p> <p>Objective:</p> <p>CFIT shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.</p>	CAT/HF	MS	SSP established/continuous

5.1.7. Fire, smoke and fumes

(a) Issue/rationale



Uncontrolled fire on board an aircraft, especially when it is in flight, represents one of the most severe hazards in aviation. Post-crash fire is also addressed in this section.

In-flight fire can ultimately lead to loss of control, either as a result of structural or control system failure, or again as a result of crew incapacitation. Fire on the ground can take hold rapidly and lead to significant casualties if evacuation and emergency response is not swift enough. Smoke or fumes, whether they are associated with fire or not, can lead to passenger and crew incapacitation and will certainly raise concern and invite a response. Even when they do not give rise to a safety impact, they can give rise to concerns and need to be addressed.

Fire is the fifth most frequent risk area for all serious incidents in the past 10 years in EASA MS.

The safety actions related to fire, smoke and fumes are aimed at reducing the risk of flame penetration and propagation in large aeroplanes, raise awareness on the risks associated with the transportation of lithium batteries, as well as investigate the quality level of the air inside the cabin of large transport aeroplanes.

(c) What we want to achieve (scope and objective)

Further reduce the risk of accidents in this category.





(d) How we monitor improvement

The following indicators will be monitored:

F-POST Fire/smoke (post-impact)	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0.4	0.4	0
2014	0	0	0

F-NI Fire/smoke (non-impact)	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	0	0.8	8.2
2014	0	0	9

(e) How we want to achieve it

RM Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0071	Additional airworthiness specifications for operations: Thermal/acoustic insulation material Objective: The general objective of this rulemaking task is to reduce the safety risks due to flame penetration and propagation in the fuselage by introducing retroactive specifications based on CS 25.856(a) and (b), applicable to already type-certified large aeroplanes.	CAT	EASA CT.7	Opinion/2016

SP Action number	Action title and objective	Activity sector	Owner	Deliverable/date
SPT.069	Transportation of lithium batteries Objective: The EASA Project on Lithium Battery Safety has two main objectives: <ul style="list-style-type: none">— To raise passenger awareness, therefore preventing them from unintentionally carrying non-allowed items while acknowledging the risks posed by lithium batteries.— To inform operators of the risks and best practices of transporting lithium batteries, and issue a recommendation in this regard. This should translate in fewer incidents.	CAT	EASA FS.2	Information to passengers and SIB/2016
MST.005	Include fire, smoke and fumes in national State Safety Programmes Objective: The safety issue related to fire, smoke and fumes shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/HF	MS	SSP established/continuous





RES

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RES.002	Research study on toxicity Objective: Characterise the toxic effect of the chemical compounds from oil pyrolysis being released to the cabin or pilot compartment. The characterisation shall be performed for all compounds acting together and also taking into account the cabin/pilot compartment reduced pressure environment (typically limited to 8 000 ft equivalent altitude), and also the mode of exposure.	CAT	EASA CT.7	Study report/2016
RES.003	Research study on cabin Air quality Objective: Investigate the quality level of the air inside the cabin of large transport aeroplanes and its health implications (follow-up from initial studies launched by the Agency).	CAT	EC (H2020)	Investigation report/2018
RES.004	Transport of lithium batteries by air Objective: Develop mitigating measures for the transport of lithium metal and lithium ion batteries on board an aircraft and determine the requirements/limitations to impose for such transport (e.g. quantity, packaging).	CAT	EC (H2020)	Report/2018

5.2. Helicopter operations



This area deals with CAT operations (including offshore operations) as well as aerial work performed by helicopters.

(a) Issue/rationale

The main categories of accidents and serious incidents in CAT by helicopters are LOC-I, system/component failures or malfunctions (SCFs) and collisions during conventional take-off and landing (CTOL)/CFIT. The low altitude operations category is the first one in aerial work operations with helicopters.

The safety actions on this section are aimed at strengthening the requirements for rotor drive system lubrication, eliminating differences in the demonstration of compliance with the yaw manoeuvre structural design requirements, enhancing post-ditching and water impact standards, addressing windshield misting and subsequent restriction of pilot vision as well as reviewing the suitability of single-engine helicopters engaged in low-level aerial work operations.

In addition, various safety promotion activities seek to improve helicopter safety through risk awareness and information dissemination.





(b) What we want to achieve (scope and objective)

Reduce the overall accident rate in helicopter operations.

(c) How we monitor improvement

The following indicators will be monitored:

TOTAL <i>EASA MS helicopter operators</i>	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	2.6	7.6	3.3
2014	1	5	1

(d) How we want to achieve it

RM Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0119	Yawing conditions Objective: In the past, different interpretations have been used for demonstrating compliance with the yaw manoeuvre structural design requirements prescribed under CS 27&29.351. Certification experience has shown that 27&29.351 is often a critical design condition and any variations in interpretation and application can have important repercussions on the strength level required for new designs. The objective is therefore to review the rationale and acceptability of CS 27&29.351 and associated AMC. If the standard is judged to be insufficient, to identify options to enhance the regulation and perform a regulatory impact assessment (RIA) to identify the implications of these options. A gap was identified in the regulations regarding aerodynamic design loads and therefore a new rule, separate from 27&29.351 and not limited to yaw motion, should be developed.	HE	EASA CT.7	Decision/2016
RMT.0120	Ditching occupant survivability Objective: This task aims at enhancing post-ditching and water impact standards for rotorcraft that could significantly enhance occupant escape and survivability. It will, in part, consider the recommendations arising from early work performed by the Joint Aviation Authorities (JAA) Water Impact, Ditching Design and Crashworthiness Working Group (WIDDCWG) and the Helicopter Offshore Safety and Survival Working Group (HOSSWG).	HE	EASA CT.7	Decision/2016
RMT.0127	Pilot compartment view Objective: This proposal addresses a safety issue related to rotorcraft windshield misting and subsequent restriction of pilot vision. The existing rules are unclear as to what is required and how compliance can be demonstrated. The specific objective is to mitigate the risks linked to restricted pilot vision, particularly during critical phases of flight (take-off, landing, low hover), by requiring a means to remove or prevent the misting of internal portions of transparencies in rotorcraft, thus to ensuring safe operations in all likely flight and operating conditions. In addition, the rulemaking task's scope is proposed to be extended to address the rules governing pilot vision in snow conditions, which are unclear, particularly in relation to piston- engine rotorcraft.	HE	EASA CT.7	Decision/2019



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Operational issues

RM

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0374	Review the suitability of single-engined helicopters engaged in aerial work Objective: Further to SR IRLD-2009-006, following a fatal accident occurred to a helicopter performing gas pipeline inspection, the aim is to review the suitability of single-engined helicopters engaged in low level aerial work operations.	HE	EASA FS.2	Opinion/2020
RMT.0608	Helicopter gearbox lubrication Objective: This task aims to strengthen the existing CS-29 requirements pertaining to rotor drive system lubrication. It proposes a harmonised action to address gaps identified in the existing requirements, clarify the intent of the rule and redefine test requirements to meet the intended safety standards. This will both reduce the potential for lubrication system failures from occurring and mitigate the consequences of any failure, should this happen.	HE	EASA CT.7	Decision/2016

SP

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
SPT.028	In cooperation with the IHST, promote safety by developing risk awareness and training material Objective: Improve helicopter safety in Europe through risk awareness and safety promotion.	HE/HF	ESSI — EHEST	Brochure/continuous
SPT.056	Improve helicopter safety in Europe Objective: EASA Study on 'Helicopter North Sea Operations Management Current Practices Safety Review'.	HE	ESSI — EHEST	Report/2016
SPT.038	Weather threats Objective: Improve helicopter safety in Europe through risk awareness and safety promotion.	HE	ESSI — EHEST	Brochure/2016
SPT.036	Video on performance and automation, and decision-making Objective: Improve helicopter safety in Europe through risk awareness and safety promotion.	HE/HF	ESSI — EHEST	Video/2016
SPT.034	Leaflet HE12 — Helicopter performance Objective: Improve helicopter safety in Europe through risk awareness and safety promotion.	HE	ESSI — EHEST	Brochure/2016





SP

Action number

Action title and objective

Activity sector

Owner

Deliverable/date

SPT.032

Leaflet HE 10 — Teaching and testing in flight simulation training devices)

HE/HF

ESSI — EHEST

Brochure/2016

Objective:

Improve helicopter safety in Europe through risk awareness and safety promotion.

MST.015

Helicopter safety events

HE

MS

Workshop/
continuous

Objective:

NAAAs, in partnership with industry representatives, to organise helicopter safety events annually or every two years. The EHEST material could be freely used and promoted.

5.3. General aviation safety



This area includes operations performed by gliders, balloons, microlights, as well as fixed-wing aerial work and GA operations performed both by fixed wing and rotorcraft.

(a) Issue/rationale

The main categories of accident in GA are ARC — hard landings and long landings, RE, LOC-I and SCFs. In all categories, risk awareness and airmanship are two important mitigating factors. It is recognised that safety promotion is the best vehicle to tackle this.

Safety promotion actions play an important role in this area. Actions are aimed at improving GA safety through risk awareness and information dissemination. Further actions focus on working with MS to reduce the risk of airspace infringement as well as inform pilots on the risks involved in transporting dangerous goods.

(b) What we want to achieve (scope and objective)

Improve GA pilot risk awareness and airmanship.

(c) How we monitor improvement

The following indicators will be monitored:

TOTAL EASA MS Data	Fatal accidents	Non-fatal accidents	Serious incidents
2004–2013 average	139.4	863.2	27.2
2014	112	789	41





(d) How we want to achieve it

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
SPT.044	Improve General Aviation safety in Europe through risk awareness and safety promotion Objective: Contribute to the improvement of risk awareness, sharing of good practices and safety promotion among the European GA community.	GA/HF	EGAST	Concept paper/2018
MST.016	Airspace infringement risk in General Aviation Objective: NAAs should play the leading role in establishing and promoting local implementation priorities and actions of the European Plan for Airspace Infringement Risk Reduction.	GA/HF	MS	Report/continuous
MST.017	Safety transportation of dangerous goods in General Aviation Objective: MS will develop a safety leaflet to inform pilots on the risks involved in transporting dangerous goods.	GA	MS	Brochure/2016





6. Emerging issues

This chapter addresses already emerging issues as well as issues that could potentially emerge in the immediate or near future. Giving consideration to safety issues derived from operations or regulations that have not been fully deployed, it incorporates a forward-looking element in EPAS.

6.1. New products, systems, technologies and operations

(a) Issue/rationale

This section addresses the introduction of new designs, technologies or types of operation for which regulatory updates are needed, and highlights some of the most relevant trends that will influence aviation in the years to come.

The safety actions in this area are aimed at mitigating the risks posed by cybersecurity and the flying over zones where an armed conflict exists as well as ensuring safe operations of RPAS by putting in place the regulatory framework.

(b) What we want to achieve (scope and objective)

Manage the introduction of new products, systems, technologies and operations.

(c) How we monitor improvement

Cybersecurity road map is published.

(d) How we want to achieve it

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0648	Aircraft cybersecurity Objective: The objective of this proposal is to mitigate the safety effects stemming from cybersecurity risks due to acts of unlawful interference with the aircraft onboard electronic networks and systems. To achieve this, CSs and/or AMC of CS-25 and CS-29 should be amended.	CAT/HE	EASA CT.7	Decision/2017
RMT.0266	Powered lift (tilt rotor) pilot licensing and operations Objective: To develop IRs for powered lift pilot licensing and operations.	CAT	EASA FS.2	Decision/2020
RMT.0414	Operations and equipment for high performance aircraft (HPA) Objective: Review of IRs/AMC/GM in relation to the operation of HPA.	CAT/GA	EASA FS.2	Opinion/2019



**SP**

Action number

Action title and objective

Activity sector

Owner

Deliverable/date

SPT.071**Cybersecurity road map**

CAT/HE

EASA, EC & MS

Road map/2016

Objective:

Citizens travelling by air are more and more exposed to cybersecurity threats. In order for the new generation of aircraft to have their systems connected to the ground in real time, ATM technologies require internet and wireless connections between the various ground centres and the aircraft. The multiplication of network connections increases the vulnerability of the whole system.

The concrete actions to be taken will be identified in a road map developed jointly by the EC and the Agency in close cooperation with EU MS and industry. This road map should be developed in order to avoid duplication and prevent jeopardising the effort already initiated by the industry.

Furthermore, a cybersecurity strategy is being implemented in the EU for the protection of EU citizens against cybercrime. This strategy, together with the EU aviation strategy, will pave the way for a secure and safe air transport system.

SPT.072**Aviation computer emergency response team (AV-CERT)**

ALL

EASA SM.1, industry and MS

Team + Hosting environment/2016

Objective:

The team is intended to be one key component of an aviation cybersecurity assurance system. Its mission is to provide information and assistance to European aviation stakeholders in implementing proactive measures to reduce the risks of computer security incidents as well as in responding to such incidents when they occur. In addition to these main tasks, it will offer support to European aviation stakeholders on the prevention of and response to information-related security incidents by:

- raising cybersecurity awareness (cybersecurity promotion initiatives);
- advising the Agency and the EC on aviation cybersecurity policy/regulatory matters; and
- advising the EC, MS or the European Aviation Crisis Coordination Cell (EACCC) in case of an aviation cybersecurity crisis.

SPT.078**Disseminate information on conflict zones**

ALL

EU Task Force

Information dissemination/continuous

Objective:

In the aftermath of the B777 MH17 accident, an EU high-level task force is working to define further actions to be taken at European level in order to provide common information on risks arising from conflict zones.

Remote Piloted Aircraft Systems (RPAS)

The lack of harmonised rules at EU level makes RPAS operations dependent on an individual authorisation from every MS, which is a burdensome administrative process that stifles business development and innovation.

In order to remove restrictions on RPAS operations at the EU level, so that all companies can make best use of the RPAS technologies to create jobs and growth while maintaining a high and uniform level of safety, the Agency is engaged in developing relevant IRs under RMT.0230.

The principles that will guide the regulatory framework have been summarised in the [Riga Declaration](#).





SP

Action
number

Action title and objective

Activity sector

Owner

Deliverable/date

MST.020

Loss of radar detection

CAT/HE

MS

Report/2017

Objective:

On 5 and 10 June 2014, there were several occurrences of radar losses from ATC displays in central Europe. These events resulted in reduced capacity in some of the affected ATC sectors, in introduction of flow measures and in delays. As this type of events may also have a serious impact on safety, the Agency was mandated by the EC to perform a technical investigation and propose recommendations.

The technical investigation concluded that the source of the interference was a system or installation which over-interrogated the transponders on board aircraft not only at rates beyond their requirements but also beyond design limits.

MS are encouraged to implement the recommendations of the technical report and to consider implementation of other mitigation techniques against loss of detection of aircraft as a result of secondary surveillance radar (SSR) over-interrogation.

6.2. Regulatory and oversight considerations

(a) Issue/rationale

By introducing authority requirements, and in particular strict requirements for MS on oversight, the rules developed under the first and second extension of the Agency scope have significantly strengthened the oversight requirements. In terms of efficiency, such rules have also introduced the concept of risk-based and cooperative oversight.

The following actions focus on supporting the implementation of these new requirements by updating inspector qualifications and enabling the implementation of risk-based oversight.

(b) What we want to achieve (scope and objective)

Improve MS oversight capacities and capabilities.

(c) How we monitor improvement

Significant increase in the number of EASA MS implementing risk-based oversight. Number of inspectors qualified to conduct risk-based oversight.

(d) How we want to achieve it



**RM**

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
RMT.0516	Update of the Rules on Air Operations (Air OPS Regulation — all Annexes & related AMC/GM) Objective: <ul style="list-style-type: none">— Improve the authority and organisation requirements of the Air OPS Regulation taking into account identified implementation issues;— Better identify inspector qualifications;— Take into account new business models, as appropriate;— Take into account the development of and lessons learned from the implementation of SMS;— Align with the Occurrence Reporting Regulation (Regulation (EU) No 376/2014);— Ensure compliance with the ICAO Standards And Recommended Practices (SARPs);— Address identified safety issues such as pax seating and briefing;— GA Road Map issues.	CAT/HE	EASA FS.2	Opinion/2016

FO

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
FOT.002	Integrate the EU risk picture within the programming of oversight of Member States Objective: The Agency will study possibilities to use the risk picture provided by EPAS to support the transition to a more risk-based oversight approach.	ALL	EASA FS.5 and SM.2	Best practices/continuously
FOT.009	Conduct of audits within risk-based oversight Objective: Develop and test a concept, share best practices and develop enforcement strategies to enable the performance of audits by NAAs taking into consideration the risk-based oversight concept.	ALL/HF	EASA FS.5	Concept development, and best practices /2018

6.3. New business models

(a) Issue/rationale

Due to the increased complexity of the aviation industry, the number of interfaces between organisations, their contracted services and regulators has increased. NAAs should work better together (cooperative oversight) and the Agency should evaluate whether the existing safety regulatory system adequately addresses current and future safety risks arising from new and emerging business models.

(b) What we want to achieve (scope and objective)

Upon the request of MS, the Agency tasked a working group of NAAs to assess airlines' emerging 'new' business models and to identify related safety risks posed to the aviation system.





Key recommendations made by the working group of NAAs

- The Agency and MS to promote **cooperative oversight** and disseminate best practices on how NAAs can better work together and participate in the oversight of organisations/persons certified by the CA of another MS (SPT.065).
- **Management systems** of the operator should capture new hazards that are introduced by different employment models within an individual operator, increased mobility of pilots, safety-critical services provided by non-certified service providers and (long-term) leasing (SPT.066).
- Obtain better EU-wide **occurrence reporting data** for NAAs to provide an opportunity to benchmark an operator's safety culture. Therefore, continue, repeat and widen the scope of the survey of Network of Analysts to better identify potential hazards of new business models on occurrence reporting. All NAAs should participate in the survey. The survey should include raw data on occurrence reports from individual operators in order to obtain consistency in the type of occurrences analysed. NAAs should use the results of their oversight on occurrence reporting as a performance indicator of the safety culture within an operator (SPT.067).
- MS need **suitably qualified staff** to assess the effectiveness of operators' management systems to mitigate new risks stemming from developing business models (RMT.0516, see section 6.2).
- MS to have a thorough understanding of operators' **governance structure**. In particular, influence of financial stakeholders and of the controlling management personnel, where such personnel are located outside the scope of approval (SPT.067).

EASA further recommendations

On cooperative oversight:

- Applicable authority requirements on 'cooperative oversight' require NAAs to consider into their oversight also operators, certified by another NAA, based on safety priorities and past oversight activities. Cooperative oversight and the requirement to ensure risk-based oversight, create an obligation for NAAs to consider oversight of operators that they do not certify. As a matter of priority, Agency standardisation actions will ensure that applicable authority requirements regarding cooperative oversight are adhered to.
- In parallel, the Agency will continue to support NAAs in the practical implementation of cooperative oversight, e.g. existing trial projects (UK, NO, FR, CZ), as well as via exchange of best practices and guidance.

On operator's management systems:

- The Agency will ensure that EASA's standardisation inspections focus on implementation of operator's management systems, in particular as regards the consideration paid to specific safety risks, such as new forms of employment, safety culture and the governance structure of the operator.

On occurrence reporting:

- The Agency will ensure that authorities obtain better EU-wide occurrence reporting data, to allow NAAs to benchmark an operator's safety culture. The Agency will ensure that the survey of Network of Analysts is continued. All NAAs should participate in the survey. The survey should include raw data on occurrence reports from individual operators in order to obtain consistency in the type of occurrences analysed. NAAs should use the results of their oversight on occurrence reporting as a performance indicator of the safety culture within an operator.

**(c) How we monitor improvement**

Significant increase in the number of States making use of the cooperative oversight provisions for organisations/persons certified by the CA of another MS.

(d) How we want to achieve it

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
FOT.007	Cooperative oversight Objective: Part-ARO requires that the scope of the oversight of activities performed in the territory of a MS by organisations established or residing in another MS shall be determined on the basis of the safety priorities. In assessing these safety priorities, the 'local' CA shall participate in a mutual exchange of all necessary information and assistance with the other CAs concerned. The Agency will ensure that EASA's standardisation inspections monitor whether such authority requirements are adhered to. The objective is to ensure that each organisation's activities are known to the relevant authorities and that those activities are adequately overseen, either with or without an agreed transfer of oversight tasks. In parallel, the Agency will continue to support NAAs in the practical implementation of cooperative oversight, e.g. existing trial projects (UK, NO, FR, CZ), as well as via exchange of best practices and guidance.	ALL	EASA FS.2	Feedback from Standardisation inspections/2016
FOT.008	Operator's management systems Objective: The Agency will ensure that EASA's standardisation inspections have due regard to the ability of CAs to evaluate and oversee the operator's management systems, in particular as regards the consideration paid to specific safety risks, such as safety culture, the governance structure of the operator, and any other feature that may introduce new risks.	ALL/HF	EASA FS.2	Feedback from Standardisation inspections/2017

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
SPT.067	Better EU-wide occurrence reporting data for NAAs Objective: Obtain better EU-wide occurrence reporting data for NAAs to provide an opportunity to benchmark an operator's safety culture. Therefore, continue, repeat and widen the scope of the survey of Network of Analysts to better identify potential hazards of new business models on occurrence reporting. All NAAs should participate in the survey. The survey should include raw data on occurrence reports from individual operators in order to obtain consistency in the type of occurrences analysed. NAAs should use the results of their oversight on occurrence reporting as a performance indicator of the safety culture within an operator.	ALL	EASA SM.1	Occurrence reporting survey/2016
SPT.073	Operator's management systems Objective: Develop safety promotion material (in the form of best practices) to support operator's management systems with capturing new hazards that could be introduced by certain aspects of different business models (new form of employment, long-term wet leasing, complex governance structure, remote base operations, etc.). This will be done by a working group with representatives from industry and MS and facilitated by the Agency.	ALL/HF	EASA FS, industry and MS	Best practices/2017



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Emerging issues

SP

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
MST.021	Cooperative oversight Objective: MS to implement cooperative oversight and disseminate best practices on how NAAs can better work together and participate in the oversight of organisations/persons certified by another MS.	ALL	MS	NAA group on cooperative oversight/2016
MST.022	Operator's management systems Objective: Management systems of the operator should capture new hazards that are introduced by different employment models within an individual operator, increased mobility of pilots, safety-critical services provided by non-certified service providers and (long-term) leasing. MS will ensure this happens through oversight activities and provide SMS data to the Agency.	ALL/HF	MS	Analysis of results of SMS data obtained from NAAs/2017
MST.023	Better EU-wide occurrence reporting data for NAAs Objective: MS to provide occurrence reporting data in order to benchmark operator's safety culture. All NAAs should participate in the survey. The survey should include raw data on occurrence reports from individual operators in order to obtain consistency in the type of occurrences analysed. NAAs should use the results of their oversight on occurrence reporting as a performance indicator of the safety culture within an operator.	ALL	MS	Occurrence reporting survey/2016
MST.019	Better understanding of operators' governance structure Objective: NAAs to have a thorough understanding of operators' governance structure. In particular, influence of financial stakeholders and of the controlling management personnel, where such personnel are located outside the scope of approval.	ALL	MS	Research or guidance material/2017



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Appendix I — Member States actions

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
Systemic issues — Safety management				
MST.001	Member States to give priority to the work on State Safety Programmes Objective: Make SSPs consistently available in Europe in compliance with the GASP objectives.	ALL	MS	SSP established/continuous
MST.002	Promotion of safety management system Objective: Encourage implementation of safety promotion material developed by ESSI Teams (ECAST, EHEST and EGAST) and SMICG.	ALL/HF	MS	Best practice/continuous
MST.003	Member States should set up a regular dialogue with their national aircraft operators on flight data monitoring programmes Objective: MS should set up a regular dialogue with their national aircraft operators on FDM programmes, with the objectives of: <ul style="list-style-type: none">— promoting the operational safety benefits of FDM;— fostering an open dialogue on FDM programmes that takes place in the framework of just culture; and— encouraging operators to include and further develop FDM events relevant for the prevention of RE, MAC, CFIT and LOC-I, or other issues identified by the SSP.	CAT	MS	Report on activities performed to promote FDM/continuous
Operational issues — CAT by aeroplanes				
Loss of Control In-Flight				
MST.004	Include Loss of Control In Flight in national State Safety Programmes Objective: Loss of control in flight shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/HF	MS	SSP established/continuous
Mid-air collisions				
MST.010	Include MAC in national State Safety Programmes Objective: MACs shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness. MS should implement actions of the European Action Plan for Airspace Infringement Risk Reduction.	CAT/HF	MS	Report/continuous
MST.024	Loss of separation between civil and military aircraft Objective: Several EU MS have reported an increase in losses of separation involving civil and military aircraft and more particularly an increase in non-cooperative military traffic over the high seas. Taking into account this situation, and the possible hazard to civil aviation safety, the EC mandated the Agency to perform a technical analysis of the reported occurrences. The technical analysis issued a number of recommendations for the MS (the full report is available here) which they are encouraged to implement.	CAT/HF	MS	Report/2018



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Member States actions

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
Runway safety				
MST.007	Include runway excursions in national State Safety Programmes Objective: REs should be addressed by the MS on their SSPs in close cooperation with the aircraft operators, ATC, airport operators and pilot representatives. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/HF	MS	SSP established/continuous
Ground safety				
MST.018	Include ground safety in national State Safety Programmes Objective: The ground safety issue shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/HE/HF	MS	SSP established/continuous
Controlled flight into terrain				
MST.006	Include controlled flight into terrain in national State Safety Programmes Objective: CFIT shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/ HF	MS	SSP established/continuous
Fire, smoke and fumes				
MST.005	Include fire, smoke and fumes in national State Safety Programmes Objective: This safety issue shall be addressed by the MS on their SSPs. This will include, as a minimum, agreeing on a set of actions and measuring their effectiveness.	CAT/HF	MS	SSP established/continuous
Operational issues — Helicopters				
MST.015	Helicopter safety events Objective: NAAs in partnership with industry representatives, to organise helicopter safety events annually or every two years. The EHEST material could be freely used and promoted.	HE	MS	Workshop/continuous



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Member States actions

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
Operational issues — General Aviation				
MST.016	Airspace infringement risk in General Aviation Objective: NAAs should play the leading role in establishing and promoting local implementation priorities and actions.	GA/HF	MS	Report/continuous
Emerging issues — New products, systems, technologies and operations				
MST.020	Loss of radar detection Objective: On 5 and 10 June 2014, there were several occurrences of radar losses from ATC displays in central Europe. These events resulted in reduced capacity in some of the affected ATC sectors, in introduction of flow measures and in delays. As this type of events may also have a serious impact on safety, the Agency was mandated by the EC to perform a technical investigation and propose recommendations. The technical investigation concluded that the source of the interference was a system or installation which over-interrogated the transponders on board aircraft not only at rates beyond their requirements but also beyond design limits. MS are encouraged to implement the recommendations of the technical report and to consider implementation of other mitigation techniques against loss of detection of aircraft as a result of SSR over-interrogation	CAT/HE	MS	Report/2017
Emerging issues — New business models				
MST.019	Better understanding of operators' governance structure Objective: NAAs to have a thorough understanding of operators' governance structure. In particular, influence of financial stakeholders and of the controlling management personnel, where such personnel are located outside the scope of approval.	CAT/HE	MS	Research or guidance material/2017
MST.021	Cooperative oversight Objective: MS to implement cooperative oversight and disseminate best practices on how NAAs can better work together and participate in the oversight of organisations/persons certified by another MS.	ALL	MS	NAA group on cooperative oversight & trial project on cooperative oversight/2016
MST.022	Operator's management systems Objective: MS to provide occurrence reporting data in order to benchmark operator's safety culture. All NAAs should participate in the survey. The survey should include raw data on occurrence reports from individual operators in order to obtain consistency in the type of occurrences analysed. NAAs should use the results of their oversight on occurrence reporting as a performance indicator of the safety culture within an operator.	ALL/HF	MS	analysis of results of SMS data obtained from NAAs/2017



European Plan for Aviation Safety 2016–2020

Member States actions

Action number	Action title and objective	Activity sector	Owner	Deliverable/date
Operational issues — General Aviation				
MST.023	Better EU-wide occurrence reporting data for NAAs Objective: MS to provide occurrence reporting data in order to benchmark operator's safety culture. All NAAs should participate in the survey. The survey should include raw data on occurrence reports from individual operators in order to obtain consistency in the type of occurrences analysed. NAAs should use the results of their oversight on occurrence reporting as a performance indicator of the safety culture within an operator.	ALL	MS	Occurrence reporting survey/2016





Appendix II — Acronyms and definitions

Acronyms

AIRPROX	aircraft proximity	EFB	electronic flight bag
AMC	acceptable means of compliance	EGAST	European General Aviation Safety Team
AMM	aircraft maintenance manual	EHEST	European Helicopter Safety Team
ANAC	Agência Nacional de Aviação Civil (NAA of Brazil)	EME	Emerging
ANS	air navigation service	EOFDM	European Operators Flight Data Monitoring Forum
ANSP	air navigation service provider	EPAS	European Plan for Aviation Safety
AOC	air operator certificate	ESSI	European Strategic Safety Initiative
ARAC	Aviation Rulemaking Advisory Committee	EU	European Union
ASAWG	Airplane-level Safety Analysis Working Group	EUROCAE	European Organisation for Civil Aviation Equipment
ASR	Annual Safety Review	FAA	Federal Aviation Administration
ATM	air traffic management	FAB	functional airspace block
ATPL	air transport pilot licence	FCHWG	Flight Controls Harmonisation Working Group
ATQP	alternative training and qualification programme	FCL	flight crew licensing
ATS	air traffic services	FDM	flight data monitoring
AV-CERT	aviation computer emergency response team	FEM	flight examiner manual
CA	competent authority	FO	focused oversight
CAMO	continuing airworthiness management organisation	FRM	fatigue risk management
CAST	Commercial Aviation Safety Team (US)	FSTD	flight simulator training device
CAT	commercial air transport	FTL	flight time limitation
CBT	competency-based training	GA	General Aviation
CFIT	controlled flight into terrain	GASP	Global Aviation Safety Plan
CPL	commercial pilot licence	GM	guidance material
DOA	design organisation approval	GPWS	ground proximity warning system
EACCC	European Aviation Crisis Coordination Cell	HE	helicopter
EAFDM	European Authorities Coordination Group on Flight Data Monitoring	HF	human factors
EAPPRE	European Action Plan for the Prevention of Runway Excursions	HOSSWG	Helicopter Offshore Safety and Survival Working Group
EASA	European Aviation Safety Agency	IATA	International Air Transport Association
EASP	European Aviation Safety Programme	ICA	instructions for continuing airworthiness
EBT	evidence-based training	ICAO	International Civil Aviation Organization
EC	European Commission	IHST	International Helicopter Safety Team
ECAC	European Civil Aviation Conference	IR	instrument rating
ECAST	European Commercial Aviation Safety Team	JAA	Joint Aviation Authorities
ECTRL	EUROCONTROL	KRE	key risk element
		LO	learning objective
		LOCART	loss of control avoidance and recovery training





European Plan for Aviation Safety 2016–2020

Acronyms and definitions

LOC-I	loss of control in-flight
LOI	level of involvement
MAC	mid-air collision
MOPS	minimum operational performance specification
MOPSC	maximum operational passenger seating configuration
MPL	multi-crew pilot licence
MS	Member State
NAA	national aviation authority
NoA	network of analysts
LOC-I	loss of control in-flight
MB	Management Board
MPL	multi-crew pilot licence
OSD	operational suitability data
PBN	performance-based navigation
POA	production organisation approval
RIA	regulatory impact assessment
RASG	regional aviation safety group
RE	runway excursion
RES	Research/Study
RFFS	Rescue and firefighting services
RI	runway incursion
RM	rulemaking
RPAS	remotely piloted aircraft systems
SARPs	Standards And Recommended Practices
SCF	system/component failures or malfunction
SES	single European sky
SMICG	Safety Management International Collaboration Group
SMS	safety management system
SP	safety promotion
SR	safety recommendation
SSP	State Safety Programme
SSR	secondary surveillance radar
SYS	systemic
TAWS	terrain awareness warning system
TC	type certificate
TCCA	Transport Canada Civil Aviation
UPRT	upset prevention and recovery training
USOAP	Universal Safety Oversight Audit Programme
WIDDCWG	Water Impact, Ditching Design and Crashworthiness Working Group
WP	work package





Definitions

Aerial work

Aerial Work is 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.

Airborne safety nets

Airborne safety nets provide alerts and resolution advisories directly to the pilots. Warning times are generally short, up to 40 seconds. Pilots are expected to immediately take appropriate avoiding action.

Airspace infringement

Airspace infringement occurs when an aircraft penetrates an area into which special clearance is required without having such clearance.

Commercial air transport

Commercial air transport operations involve the transportation of passengers, cargo and mail for remuneration or hire.

Controlled flight into terrain

Controlled Flight Into Terrain (CFIT) occurs when an airworthy aircraft under the complete control of the pilot is inadvertently flown into terrain, water, or an obstacle. The pilots are generally unaware of the danger until it is too late.

European Aviation Safety Programme

European regional approach to the ICAO requirements of State Safety Programmes. It contains an integrated set of regulations and activities to improve safety within EASA Member States. It is published as a Commission Staff Working Paper⁹ developed jointly by the European Commission and the Agency. The latest version is available at <http://easa.europa.eu/easa-and-you/safety-management/safety-management-system/sms-europe>.

General Aviation

General Aviation means all civil aviation operations other than commercial air transport or an aerial work operation.

Ground-based safety nets

Ground-based safety nets are an integral part of the ATM system. Using primarily ATS surveillance data, they provide warning times of up to two minutes. Upon receiving an alert, air traffic controllers are expected to immediately assess the situation and take appropriate action.

Mid-air collision

A mid-air collision (MAC) is an accident where two aircraft come into contact with each other while both are in flight.

Local Runway Safety Team

Local Runway Safety Teams (LRSTs) are aerodrome-centric, multi-organisational groups of experts providing practical suggestions to resolve runway incursion causal factors. More than 100 LRSTs have been established at European airports, as a consequence of which, the safety of runway operations has increased although incidents continue to be reported.

Loss of Control In-Flight

Loss of control in-flight (LOC-I) usually occurs because the aircraft enters a flight regime which is outside its normal envelope, usually, but not always at a high rate, thereby introducing an element of surprise for the flight crew involved.

Occurrences

Any safety-related event which endangers or which, if not corrected or addressed, could endanger an aircraft, its occupants or any other person and includes in particular an accident or serious incident.

Runway excursion

According to the definition provided by ICAO, a runway excursion (RE) is a veer or overrun off the runway surface. Runway excursion events can happen during take-off or landing.

Runway incursion

A runway Incursion (RI) is defined as 'any occurrence at an aerodrome involving the incorrect presence of an aircraft vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft'. (ICAO Doc 4444 - PANS-ATM)

Safety management system

A safety management system (SMS) is a systematic approach to manage safety, including the necessary organisational structures, accountabilities, policies and procedures (ICAO). ICAO through various Annexes to the Chicago Convention has incorporated requirements for service providers in various domains of aviation to have an SMS.

State Safety Programme

According to the ICAO definition, a State Safety Programme (SSP) it is an integrated set of regulations and activities aimed at improving safety. ICAO requires contracting States to implement SSPs.

⁹ EC SEC(2011) 1261 final European Aviation Safety Programme.





Appendix III — Working groups

EAFDM

[Web Link](#)

The Agency and NAAs have formed a group of experts called the European Authorities Coordination Group on FDM (EAFDM). It is a voluntary and independent safety initiative with the following objectives:

- a. contribute to improving the implementation of FDM programmes and to making FDM programmes more safety effective;
- b. contribute to the EASA objective of a high and uniform level of safety in Europe; and
- c. contribute to a better overview of air transport operational safety in Europe for EASA and NAAs.

Among the topics covered by EAFDM are:

- Development of national FDM forums;
- Oversight of FDM programs by NAAs; and
- FDM-based indicators.

ECAST

[Web Link](#)

The European Commercial Aviation Safety Team (ECAST) is a component of the European Strategic Safety Initiative (ESSI). ECAST addresses large fixed-wing aircraft operations, and aims to further enhance commercial aviation safety in Europe, and for European citizen worldwide. It was launched in October 2006.

ECAST is a partnership between EASA, other European regulators and the aviation industry. ESSI is based on the principle that industry can complement regulatory action by voluntary committing to cost-effective safety enhancements. ECAST cooperates with CAST and with other major safety initiatives worldwide, in particular under the Cooperative Development of Operational Safety and Continuing Airworthiness Programme (COSCAP).

EGAST

[Web Link](#)

European General Aviation Safety Team (EGAST) is a component of the European Strategic Safety Initiative (ESSI). General Aviation (GA) is a high priority for the Agency. EGAST creates a forum for sharing best practices, improving data sources, and promoting safety.

EGAST's mission is to promote and initiate for all sectors of General Aviation best practices and awareness in order to improve safety, thereby reducing the accident rates. The team may make non-binding recommendations. EGAST will help the Agency and the industry focus their resources on combined safety promotion efforts to reach the goal of reducing accidents.

EHEST

[Web Link](#)

Launched on November 2006, the European Helicopter Safety Team (EHEST) brings together manufacturers, operators, research organisations, regulators, accident investigators and a few military operators from across Europe. EHEST is the helicopter branch of the ESSI, and also the European component of the International Helicopter Safety Team (IHST).

EHEST is committed to the goal of reducing the helicopter accident rate by 80 % by 2016 worldwide, with emphasis on improving European safety.

EOFDM

[Web Link](#)

The European Operators Flight Data Monitoring (EOFDM) forum is a project of a voluntary partnership between European aeroplane operators and the European Aviation Safety Agency (EASA) in order:





- a) a.to facilitate the implementation of FDM programmes,
- b) b.to help operators in drawing the maximum safety benefits from an FDM programme.

The EOFDM is a voluntary safety initiative working under the aegis of ECAST, which means that its programme takes into consideration ECAST safety priorities and EOFDM co-chairs regularly report to ECAST on its activities.

The EOFDM is primarily dedicated to European aeroplane operators, but it is also open to aircraft manufacturers, flight crew associations, research and education institutions and regulators. Non-European organisations are welcome to join this safety initiative

- carrying out analysis of safety data to support the European Plan for Aviation Safety (EPAS) and SSPs, as well as identifying emerging issues for possible inclusion in the future;
- sharing experiences, good practice and developing safety analysis projects across Europe to enable the European aviation community to exploit the ECCAIRS European Central Repository for the benefit of all; and
- providing analysis support to existing EASA groups such as the European Strategic Safety Initiative (ESSI) and the European Human Factors Advisory Group (EHFAG).

ESSI

[Web Link](#)

The European Strategic Safety Initiative (ESSI) is an aviation safety partnership between EASA, other regulators and the industry. ESSI's objective is to further enhance safety for citizens in Europe and worldwide through safety analysis, implementation of cost-effective action plans, and coordination with other safety initiatives worldwide. ESSI was launched in June 2006 by the Agency as a ten year programme and has three pillars: ECAST, EHEST and EGAST.

NoA

[Web Link](#)

The Agency has recently established a Network of Analysts (NoA) to provide a formal process to analyse safety data at a European level. The membership of the NoA is drawn from the NAAs and investigation authorities of all EASA MS.

The NoA focuses on:

- understanding what barriers exist to the provision of the best possible safety data, and developing ways to improve safety data across Europe;
- agreeing the classification of aircraft accidents in EASA MS;

SM ICG

[Web Link](#)

The SMS International Collaboration Group (SMICG) — created in February 2009 — is a collaboration activity between aviation authorities in order to promote a common understanding of SMS principles and requirements in different countries, share lessons learned and encourage progress and harmonisation. The SMICG consists of a core group and a participant group. The core group is comprised of authorities with resources and expertise for product development. It includes members from the FAA, EASA (supported by FOCA of Switzerland), the DGAC of France, AESA Spain, the CAA of the Netherlands, ENAC Italy, Trafi Finland and UK CAA, TCCA, CASA of Australia, JCAB of Japan, CAA of New Zealand and ANAC of Brazil. The participant group tests and reviews the core group's work products and resources. Additionally, the Civil Aviation Department of Hong Kong (CAD HK), ICAO, and the UAE General Civil Aviation Authority (UAE GCAA) are observers to this group.