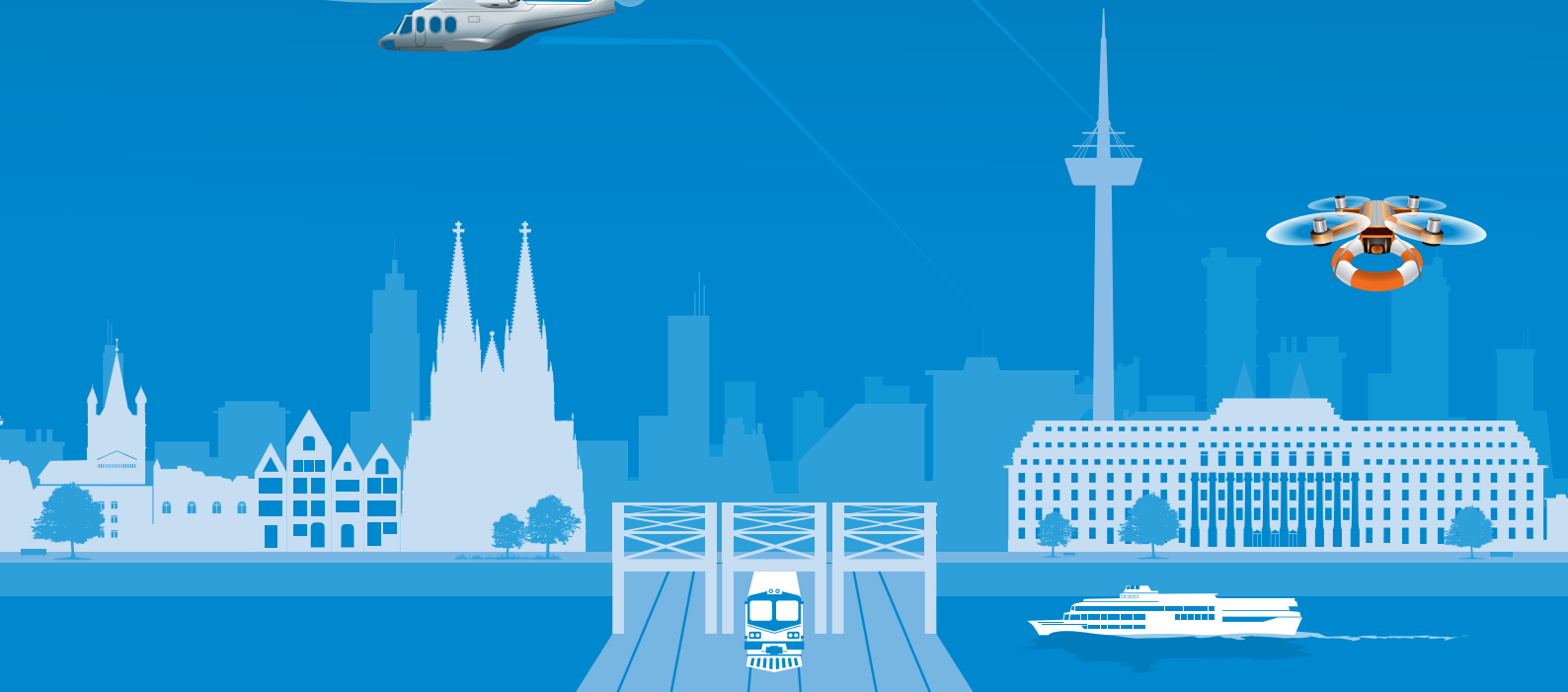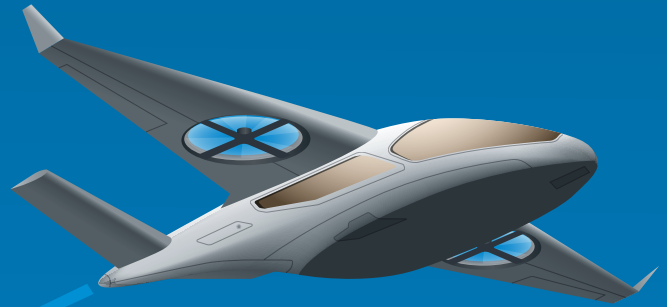# EASA

European Union Aviation Safety Agency

THE EUROPEAN PLAN *for*
AVIATION SAFETY
(EPAS 2020-2024)

Part 1 EPAS 2020-2024

Foreword by the Executive Director

Europe has consistently led the way in regional aviation safety planning. This year, the European Union Aviation Safety Agency (EASA) is publishing the 9th edition of the European Plan for Aviation Safety (EPAS). This is the cornerstone for safety planning within ICAO's Europe and North Atlantic regions (EUR-NAT) and provides the foundation on which individual Member States build their own State Plans for Aviation Safety.

This edition of the EPAS has been enhanced to correspond better with the safety risk portfolios presented in the EASA Annual Safety Review (ASR) 2019. The two documents taken together demonstrate the maturity of the European Safety Risk Management Process.

Drawn up in close collaboration with its various stakeholders, the EPAS lays out the current and future work EASA will be undertaking in coming years to support the introduction of new technologies and innovative solutions. These developments have the potential to further improve the level of safety whilst creating a level playing field for new business models and operating concepts.

The increasing importance of environmental protection is also fully recognised in the EPAS, where actions related to ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the implementation of ICAO environmental standards are included.

The actions contained in the plan cover a wide field, spanning rulemaking, safety promotion, research, evaluation and Member States' focused oversight. It plays an important role in prioritising these actions, so as to ensure that aviation safety and environmental protection is maintained and steadily improved at European level.

Overall, the aspiration is to ensure that safety standards are not compromised as air traffic density, and the safety risks associated with that, grow over the next decade.

Patrick Ky
Executive Director

European Plan for Aviation Safety (EPAS) 2020-2024

European Union Aviation Safety Agency, 13th of November 2019

Volume I

1. Executive Summary

2017 was considered the safest year ever in commercial aviation history; but events in 2018 and 2019 have reminded us that safety can never be taken for granted. This edition of the European Plan for Aviation Safety (EPAS) emphasises the importance of identifying and mitigating risks at European level and worldwide , while at the same time taking account of changing societal demands in areas such as innovation, security, capacity and environment. Ensuring aviation is a safe, secure and environmentally friendly form of transport for EU citizens is at the core of the New Basic Regulation, which entered into force on 11 September 2018.

The 2020-2024 EPAS edition fosters the safe integration into the aviation system of **new technologies, innovative solutions and operating concepts** . The first building blocks of the regulatory framework for the operation of drones are already in place. While this work is still continuing, regulatory actions to enable concepts such as urban air mobility or technologies such as novel propulsion systems are now already part of EPAS. This edition contains a set of recommendations to prevent incidents such as those that took place in Gatwick in December 2018 as well as an ambitious roadmap to accompany industrial strategies and developments in the domain of artificial intelligence (AI) in the coming years.

EASA has an explicit mandate to protect the **environment, climate and human health**. The Agency is thus stepping up, its actions to create a cleaner, quieter and more sustainable aviation system in this EPAS edition. Initiatives include actions to increase CO_2 efficiency, use of electric and hybrid technology as well as sustainable aviation fuels. Furthermore, EASA continues evolving its certification process and integrating effective standards such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). An environmental label is being developed to increase transparency and support decision-making. In the area of circular economy, the Agency is working to establish a monitoring approach for aviation.

As **air traffic** continues growing, Europe's skies are becoming more congested. The report of the Wise Persons Group on the future of the Single European Sky issued in April 2019, as well as the proposal for the future architecture of the European airspace put forward by the SESAR Joint Undertaking (SJU) in collaboration with the Network Manager nominated by the European Commission (EC) and Eurocontrol, include a number of recommendations and proposed actions that will be addressed within ATM/ANS-related actions included in this EPAS edition.

The multiplication of network connections and the surge in digitalisation of aviation systems increases the vulnerability to **cybersecurity** threats. This EPAS edition consolidates our strategy for cybersecurity in all domains. In addition, with the preparatory phase now finalised, the regulatory work to develop safety requirements for **groundhandling** has started**.**

The actions included in this edition also seek to reduce the number of rotorcraft accidents through the implementation of the **Rotorcraft Safety Roadmap** and to make general aviation (GA) safer and cheaper through **General Aviation Roadmap 2.0**. The Agency has launched several related safety promotion initiatives and is now starting to adapt design and production rules that are more proportionate to the risks ('Part 21 Light').

Data and information sources feeding EPAS include not only occurrence data (feeding the domain SRPs), but also oversight and standardisation data and related information (feeding the Standardisation Annual Report (SAR), as well as the ATM Master Plan.

2. Introduction

EPAS constitutes the regional safety plan for EASA Member States, setting out the strategic priorities, strategic enablers, main risks affecting the European aviation system and the necessary actions to mitigate those risks to further improve aviation safety. EPAS sets an aspirational safety goal to achieve constant safety improvement with a growing aviation industry (refer to **Section 4.2**).

According to the EUROCONTROL seven-year forecast report issued in February 2019, the forecast growth rate of instrument flight rules (IFR) movements for 2020 is 3.0 % to reach 11.65 million flights (compared to a 2.8 % growth rate in 2019 / 11.31 million flights). From 2021 onwards, the forecast reflects slower economic growth, with European flight growth expected to slow down from an average of 3.2 % per year (2016-2020) to around 1.8 % per year (2021-2025)[1]. Even though growth rates will be lower than initially forecasted, the increase in traffic will require extra efforts from all stakeholders to reach the safety goal.

EPAS strategic priorities are derived from the EU Aviation Strategy with due regard to the continued increase in traffic volumes. Main safety risks are determined through the European safety risk management (SRM) process, in close coordination with States and Industry. The EPAS covers a five-year period and is reviewed and updated on a yearly basis.

This EPAS edition constitutes the 9th edition of the European safety action plan. This plan was initially termed 'European Aviation Safety Plan' (EASp). Since its 5th edition (covering 2016-2020), EPAS incorporates the EASA Rulemaking Programme, thus creating a single source for all programmed actions, supported by a single programming process. The main objective of EPAS is to further improve aviation safety and environmental protection throughout Europe, while ensuring a level playing field, as well as efficiency/proportionality in regulatory processes. EPAS is a key component of the safety management system (SMS) at the European level, which is described in the European Aviation Safety Programme[2] (EASP). The regional approach complements national approaches offering a more efficient means of discharging State obligations for safety management in the EU's aviation system.

EASP defines the aviation safety framework at European level. The objective of EASP is to ensure that the system for the management of aviation safety in the EU delivers the highest level of safety performance, uniformly enjoyed across the whole Union, and continuing to improve over time, while taking into account other important objectives such as environmental protection. It explains the functioning of the European aviation system to manage the safety of civil aviation in the EU in accordance with Regulation (EU) 2018/1139[3] (the 'Basic Regulation'). It describes the processes, roles and responsibilities of the different actors and lays down general principles for European safety management, including safety action planning. EASP functionally corresponds, at EU level, to the State Safety Programme (SSP) as described in International Civil Aviation Organization (ICAO) Annex 19 'Safety Management'. It is prepared by the EC, in consultation with Member States and EASA, and updated as required.

In December 2015, the EC issued the second edition of EASP[4]. This edition took into consideration the legislative changes occurred since 2011 as well as the evolution of safety management in all areas. In addition, it strengthened safety promotion at EU level and described the process to update and develop EPAS, giving it a truly European dimension.

---

[1] https://www.eurocontrol.int/publication/seven-year-forecast-flight-movements-and-service-units-february-2019
[2] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0670:FIN:EN:PDF
[3] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018R1139
[4] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0599

The Basic Regulation introduced a dedicated chapter on aviation safety management, thereby creating a strong legal basis not only for EASP and EPAS, but also for the establishment and maintenance of SSPs and State Plans for Aviation Safety (SPAS) at Member State level.

The development of EPAS relies on dedicated stakeholder groups, in particular:

— the Member States' Advisory Body (MAB) that provides advice on strategic priorities;

— the Stakeholders Advisory Body (SAB) that reviews strategic orientation and performance indicators from an industry perspective; and

— the Technical/Sectorial Bodies (TeB, TeC, Sectorial Committees, representing Member States and industry respectively) that provide technical and operational advice as well as feedback on implementation.

The Basic Regulation requires EASA Member States to consider relevant risks and actions defined in EPAS within their national safety action planning process. In return, EPAS defines a number of specific actions addressed to and owned by Member States, to support the implementation of effective SSPs and SPAS.

The implementation of EPAS, as well as of SSP and SPAS, is supported by a specific stakeholder advisory body, the Safety Management TeB (SM TeB). Its main purpose is to provide a forum to exchange information and address implementation issues in the area of State safety management, as well as to provide input and feedback on EPAS implementation in regard to systemic issues. The SM TeB also provides recommendations on further actions required to support EPAS, SSP and SPAS implementation. All EASA Member States are represented in the SM TeB; non-EASA European Civil Aviation Conference (ECAC) States are invited to attend as observers. In addition to being developed in accordance with the processes, roles and responsibilities described in EASP, EPAS is consistent with the ICAO global plans in the area of aviation safety and air navigation and ensures alignment with the SES ATM Master Plan.

Figure 1: Relationship between EPAS and other programmes and plans

2.1   Global Aviation Safety Plan (GASP)

EPAS supports the objectives and priorities of GASP. The purpose of GASP is to continually reduce fatalities, and the risk of fatalities, by guiding the development of a harmonised aviation safety strategy and the development and implementation of regional and national aviation safety plans. A safe aviation system contributes to the economic development of States and their industries. GASP promotes the implementation of a State's safety oversight system, a risk-based approach to managing safety as well as a coordinated approach to collaboration between States, regions and industry. One of the GASP goals is for States to improve their effective safety oversight capabilities and to progress in the implementation of SSPs. Thus, GASP calls for States to put in place robust and sustainable safety oversight systems that should progressively evolve into more sophisticated means of managing safety. These objectives are mainly addressed in **Section 5.1**.

In addition to addressing systemic safety, GASP addresses high-risk categories of occurrences, which are deemed global safety priorities. These categories were determined based on actual fatalities from past accidents, high fatality risk per accident or the number of accidents and incidents. The following high-risk categories have been identified for the 2020-2022 edition of the GASP:

— controlled flight into terrain;

— loss of control in flight;

— mid-air collision;

— runway excursion; and

— runway incursion.

These are consistent with the key risk areas identified through the European SRM process[5]. The GASP global priorities are addressed in **Sections: 6.1.1.1 Aircraft upset in flight (LOC-I)**, **6.1.1.2 Runway safety, 6.1.1.3 Airborne conflict (mid-air collisions)** and **6.1.1.4 Terrain collision**.

Since 2017, the ICAO Regional Office for the EUR/NAT region and EASA have been working together to develop a Regional Aviation Safety Plan (RASP) based on EPAS, thus allowing all States that are part of the EUR/NAT region to benefit from this approach. The aim of RASP is to facilitate the achievement of the GASP goals at a regional level. The Regional Aviation Safety Group (RASG)-EUR is the main body to monitor the EUR RASP implementation and to collect feedback from stakeholders with the assistance of ICAO and EASA. The first EUR RASP covering the period 2019-2023[6] was issued on 31 January 2019 following endorsement at the combined meeting of the coordination groups of the European Air Navigation Planning Group (EANPG) and RASG – EUR region (RASG-EUR) of ICAO. This made EUR-NAT the first ICAO region having its RASP adopted.

To support the EUR-RASP planning process, this EPAS edition provides references to corresponding GASP 2020-2022 Safety Enhancement Initiatives (SEIs) addressed to States or industry, covering both organisational challenges and operational risks. GASP SEIs addressed to the regions are considered implemented through the EU SMS at large, as described in EASP and implemented through EPAS. Consequently, they are not specifically referenced in EPAS.

---

5   EASA Annual Safety Review 2019

6   https://www.icao.int/EURNAT/EUR%20and%20NAT%20Documents/EUR%20Documents/EUR%20RASP/EUR%20RASP%202019-2023.pdf

2.2   ATM priorities

2.2.1   ATM Master Plan and Global Air Navigation Plan (GANP)

The purpose of **GANP**[7] is to drive the evolution of the global air navigation system to meet the evergrowing expectations of all sectors of aviation community, in a safe, secure and cost-effective manner while reducing the aviation environmental impact. To this end, GANP provides a series of operational improvements to increase capacity, efficiency, predictability, flexibility while ensuring interoperability of systems and harmonisation of procedures. GANP provides a global basis on which regional and national air navigation implementation plans are developed.

The **ATM Master Plan**[8] is the European planning tool for setting ATM priorities, aligned with the GANP and enabling the Single European Sky ATM Research (SESAR) 'Target Concept' to become a reality. The SESAR 'Target Concept' aims at achieving a high-performing ATM system by enabling airspace users to fly their optimum trajectories through effective sharing of information between air and ground. The ATM Master Plan is evolving and is built in collaboration with and for the benefit of all aviation stakeholders. The ATM Master Plan also provides stakeholders with a business view of what deployment will mean in terms of return on investment.

As required by Article 93 (c) of the Basic Regulation which stipulates that 'The Agency shall, where it has the relevant expertise and upon request, provide technical assistance to the Commission, in the implementation of the Single European Sky, in particular by contributing to the implementation of the ATM Master Plan (MP), including the development and deployment of the SESAR programme', an alignment between EPAS and the ATM MP needs to be accomplished. Furthermore, as EASA is the body responsible for the SES safety pillar and safety is one of the key performance indicators (KPIs) within the SES ATM Performance Scheme — through which the ATM Master Plan contributes to achieving these ambitions — the EPAS actions and ATM Master Plan solutions should be aligned where possible and the changes made in the 2019-2023 EPAS edition constituted an important step towards such alignment.

This alignment requires two actions. Firstly, that the ATM Master Plan identifies solutions that can mitigate related safety risks identified by the European aviation safety system, and secondly that EPAS makes references to those solutions from the ATM Master Plan that are actually mitigating those identified safety risks.

This alignment is ensured as follows[9]:

— Volume I is in line with the ATM Master Plan Level 1 (Executive View), Fourth Edition; and

— Volume II is aligned with the published solutions in the ATM Master Plan that aim at mitigating existing safety risks.

Future versions of both documents will mature in line with this alignment concept. For future editions, it is also envisaged to evolve to further align in terms of environment and interoperability of ATM systems. Both plans will also need to consider the recommendations stemming from the Report of the Wise Persons Group

---

7   https://www4.icao.int/ganpportal

8   https://www.atmmasterplan.eu/

9   The correspondence between this EPAS edition and the ATM MP actions is labelled in each applicable EPAS action in Volume II.

on the future of the Single European Sky[10] and the proposal for the future architecture of the European airspace[11] (refer to **Section 2.2.2**).

2.2.2   Future of the Single Sky and future architecture of the European airspace

For this EPAS planning cycle, EASA performed an initial analysis of relevant recommendations stemming from the Report of the Wise Persons Group on the future of the Single European Sky and the proposal for the future architecture of the European airspace, to determine the possible impact on EPAS.

The Wise Persons Group developed a set of ten recommendations on the future of the Single European Sky to enable additional ATM capacity in Europe, to be provided in a flexible and scalable manner, at reasonable costs, to deliver a more resilient ATM system, while continuing to ensure safety and security and meeting environmental concerns. The recommendations address the following priorities, with EUROCONTROL and SJU as main contributors:

—   a network-centric approach;

—   implementation of a digital European Sky;

—   evolving role for people delivering the ATM services; and

—   simplifying the regulatory framework.

In its initial analysis, EASA identified the following recommendations as directly relevant to its scope, for consideration in future EPAS planning cycles, on the basis of an agreed implementation roadmap/transition plan:

Recommendation 3: Implement a Digital European Sky based on an agreed roadmap building on the recommendations described in the Airspace Architecture Study (AAS), managed by the Infrastructure Manager, ensuring resilience of the system.

Recommendation 4: Create a new market for ATM data service providers as recommended by the AAS.

Recommendation 6: Facilitate the transition towards the Digital European Sky by reviewing current licensing and training requirements for ATCOs, with full involvement of staff representatives.

Recommendation 8: Establish a strong, independent and technically competent economic regulator at European level.

The AAS, complementing the Wise Person Group Report (WPGR), proposes a progressive transition strategy towards the Single European Airspace System in three consecutive 5 year-periods, while building on known good practices and quick-wins, as well as existing initiatives such as SESAR. The aim is to progressively enable additional capacity in order to cope with the significant growth in traffic, while maintaining safety, improving flight efficiency and reducing environmental impact.

In order to initiate the transition towards a Single European Airspace System, the following three high-level recommendations are made in the study to support the overall transition strategy:

—   Launch an airspace re-configuration programme supported by an operational excellence programme to achieve quick-wins;

---

[10]   https://ec.europa.eu/transport/modes/air/press-releases/2019-04-12-aviation-commission-receives-high-level-recommendations-air_en

[11]   https://www.sesarju.eu/node/3253

— Realise the de-fragmentation of European skies through virtualisation and the free flow of data among trusted users; and

— Create a legal and financial framework that rewards early movers.

The overall transition strategy is illustrated below:
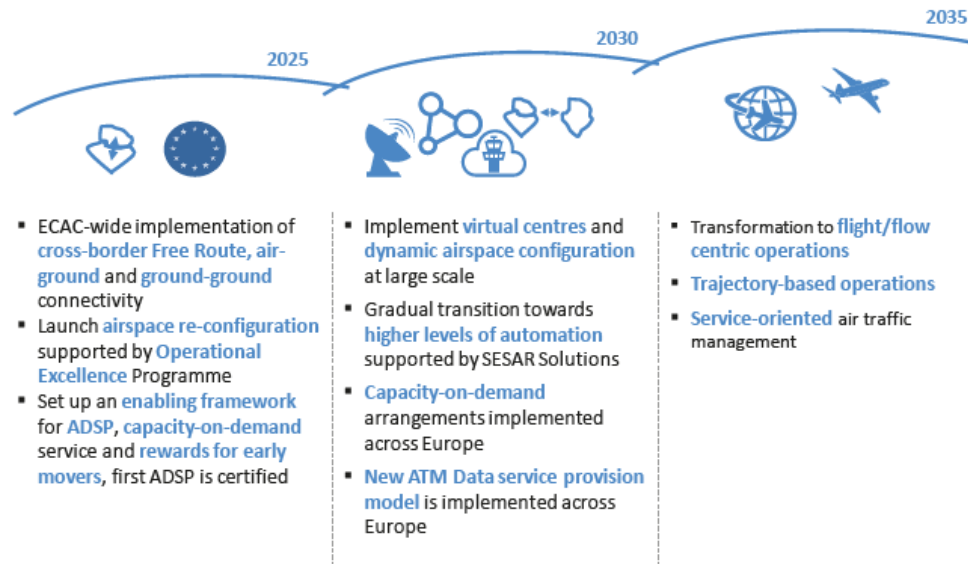
Figure 2: Airspace architecture transition strategy

In its initial analysis of the recommendations made both in the WPGR and in the AAS, EASA identified three main rulemaking topics:

— Air traffic controller (ATCO) mobility and training (WPRG Recommendation 6, AAS Recommendation 2);

— Cyber resilience (WPRG Recommendation 3); and

— Evolution of the ATS common requirements & airspace architecture (WPRG Recommendations 3 and 4, AAS Recommendation 1).

Regarding the first topic, one of the objectives will be to move from sector orientation to systems orientation, for increased flexibility and capacity. The related implementation actions will have an impact on RMT.0668 'Regular update of air traffic controller licensing rules (IRs/AMC & GM)'.

The second topic will have an impact on RMT.0720 'Management of information security risks'.

On the third topic, the proposal for the future architecture of the European airspace includes specific recommendations to improve the system, e.g. by creating distinct layers for generating of air navigation service provider (ANSP)-related data and the wider use of such data respectively, not limited to the ANSP having generated such data. The related implementation actions for those recommendations will have an impact on RMT.0719 'Regular update of air traffic management/air navigation services rules' and RMT.0476 'Regular update of the standardised European rules of the air'.

Finally, relevant WPRG and AAS recommendations will also have an impact on RMT.0682 'Implementation of the regulatory needs of the SESAR common projects'.

The details of such changes to existing rulemaking tasks may only be determined on the basis of an agreed implementation roadmap/transition plan and will thus only be considered for the next EPAS planning cycle.

2.3   How EPAS is developed

2.3.1   Better Regulation

The EC's Better Regulation Agenda[12] aims at delivering tangible benefits for European citizens and addressing the common challenges Europe faces. Thus, Better Regulation principles are applied in the development of EPAS.

Applying Better Regulation principles means for EASA that efforts must aim at:

—   a transparent and streamlined regulatory process that is supported by an efficient stakeholder consultation;

—   evidence-based decisions (through safety data analysis, impact assessment, monitoring and evaluation);

—   a plain and easily understandable language also for non-native English speakers;

—   communication and IT platforms that give stakeholders easy access to consulted deliverables and regulatory material, including soft law;

—   a regulatory approach that

—   is performance-based where appropriate;

—   respects the principles of subsidiarity and proportionality;

—   contributes to the competitiveness of the industry, without compromising safety; and

—   actors involved in the drafting of regulatory material that have been appropriately trained in drafting performance-based rules. To that end, EASA initiated a series of performance-based regulation drafting workshops for regulations officers.

Modern, proportionate rules that are fit for purpose are essential in aviation safety to uphold high common standards and ensure the competiveness of the European industry. Regulations should be as efficient and performance-based as possible, and as prescriptive as necessary to provide legal certainty.

Regulating elements of aviation safety by describing the desired outcome is not new. This so-called performance-based approach is intended to make aviation safer, more efficient and flexible. This approach promotes the principles of subsidiarity and proportionality by prescribing safety objectives instead of prescribing how to achieve them.

The expected benefits of performance-based regulations (PBRs) are:

—   **Resilience**: the increased complexity in operations and aviation activities, the dynamics of aviation business models, and fast and proliferating technological advancements require a regulatory framework capable of anticipating changes (technology-neutral regulations).

---

[12]   https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how_en

— **Flexibility**: by focusing on safety outcomes, PBRs provide flexibility and encourage innovation by not restricting a priori the means to control specific risks.

— **Safety management**: by providing a flexible implementation framework and focusing on safety outcomes, PBRs allow organisations and authorities to foster risk management capability and to better allocate resources against risks identified under their SMS and SSP.

To meet EC's Better Regulation Agenda, EASA must ensure that its regulatory proposals and other EPAS actions deliver maximum safety, economic, social and environmental benefits at minimum cost to citizens, businesses and workers, without creating unnecessary regulatory burden for Member States, the industry and EASA itself. To that end, EASA must prioritise and design the EPAS actions through a transparent process and based on evidence, understandable by those who are affected and backed up by the views of stakeholders. Evidence is gathered ex ante through a best intervention strategy (BIS) at the programming stage, and regulatory impact assessment (RIA) at the rule development stage (see **Section 2.3.4.3** or ex post through the evaluation process (see **Section 2.3.5**). About two thirds of the EPAS actions take the form of rulemaking tasks.

To be fully effective, Better Regulation must cover the entire regulatory cycle, i.e. the programming and planning phase, design of a proposal, adoption, implementation, application, evaluation and revision. In other words, the effort to equip the EU with state-of-the-art aviation safety rules must start already in the planning and programming phase. Efficient planning and programming in the context of Better Regulation means to take well-informed decisions which must be based on holistic risk management principles. Where there is no or limited data available, such as for innovative technologies or new ways of operating, decisions may have to rely on expert knowledge and/or the extrapolation of existing data from similar subjects.

Stakeholder consultation

In line with the principles of Better Regulation, EASA engages with its stakeholders via different channels and for different purposes, such as:

— EASA Advisory Bodies (ABs), Collaborative Analysis Groups (CAGs), and European Network of Analysts (NoAs) to identify the aviation issues to be further assessed;

— EASA AB consultation of BIS, RIAs, rulemaking ToRs and evaluation reports;

— AB consultation of the draft EPAS;

— Inclusion of stakeholder experts and representatives in rulemaking groups;

— Open public consultation of NPAs;

— Targeted consultation to groups of stakeholders (e.g. questionnaire for evaluation of existing rules);

— Work with groups of experts (e.g. focus groups).

2.3.2   The programming cycle

EPAS covers a five-year time frame. In line with Article 6(1) of the Basic Regulation, EPAS is updated on a yearly basis. Hence, EPAS is developed as a rolling five-year plan in close cooperation with stakeholders, drawing increasingly from an evidence-based approach. There are two distinct programming phases, each with a dedicated stakeholder consultation.

— During the 'strategic phase', the strategic priorities derived from the EU Aviation Strategy (see **Chapter 3**) are discussed and agreed with the EASA ABs, by means of a dedicated EPAS Strategy Workshop. SAB

and MAB take the lead in consolidating inputs from their domain sub-committees and provide EASA with the industry/Member State views on the strategic priorities.

— Based on these strategic priorities agreed/confirmed with the EASA ABs, a draft EPAS is then developed and provided to all ABs for detailed comments.

Following the AB consultation, the final draft EPAS is consolidated and presented for approval to the EASA Management Board (MB). Following its formal approval by the MB, it is published on the EASA website[13].

2.3.3   EPAS action types

Five different types of EPAS actions are defined to improve aviation safety, efficiency/proportionality, and address the level playing field and environmental protection as follows:

— **Rulemaking tasks (RMTs)**
   RMTs lead to new or amended regulatory material (implementing rules, acceptable means of compliance (AMC) or guidance material (GM)), but the related work is usually not limited to rules drafting. Depending on the scope and issues addressed, a rulemaking project may also include implementation support activities, such as the organisation of conferences, workshops, roadshows, the creation of frequently asked questions (FAQs), etc. An RMT may also be supported by a dedicated safety promotion task (SPT) managed in accordance with EASA's Safety Promotion Strategy (see **Section 3.2.2**), or by a research action (see **Section 3.2.1**).

   For confirmed RMTs, the information gathered for the BIS will be reviewed to provide the RIA as part of the NPA/Opinion. Information and data provided at the BIS stage will be updated, as necessary.

   Regular update tasks 'address miscellaneous issues of non-controversial nature' as described in Article 3 of MB Decision No 18/2015[14]. These tasks are programmed as and when subjects arise, and therefore do not follow a common timeline. Regular updates of the implementing rules and related AMC & GM are initiated when relevant data is available to support the need for an update, e.g. following a regular update of ICAO SARPS, updated industry standards or feedback from certification activities or to address minor issues raised by the stakeholders. Due to their nature (minor, non-controversial issues), an impact assessment is generally not required for these projects.

— **Safety promotion tasks (SPTs)**
   SPTs involve safety training, awareness/education and dissemination of safety relevant information to further engage and interact with relevant aviation stakeholders in order to positively influence or change individual behaviour with the ultimate objective of achieving predetermined aviation safety objectives. It includes the promotion of safety topics, rulemaking and awareness, communicating about safety intelligence, priorities and actions and other tasks to raise awareness with individuals, as well as organisations. SPTs can involve a wide range of deliverables that include guides, videos, text for use in websites and printed media, social media and outreach activities.

   Note: EASA undertakes additional, regular or ad hoc implementation support/safety promotion activities, in the form of thematic workshops, roadshows, conferences and events. Furthermore, in certain cases, information needs to be disseminated quickly in reaction to a safety issue (e.g. publication of a Safety Information Bulletin (SIB). While all of these support the EPAS objectives, not

---

all of them qualify for a formal EPAS action.Where such an activity can be conducted as part of normal operational tasks, the EPAS prioritisation mechanisms do not apply.

— **Research actions (RES)**

RES actions are innovation- and/or efficiency-related research projects to support the safe integration of new technologies and concepts, and to measure the improvement of the environmental performance of the aviation sector. RES actions may also be triggered by the need to better understand a safety issue in view of determining intervention strategies in the future, or to assess the effectiveness of existing regulations, as an alternative to evaluations. The research projects included in EPAS are those triggered by safety recommendations (SRs) addressed to EASA and those either already covered by a funding source or likely to be funded by the start of the reference period of a given EPAS.

— **Evaluation tasks (EVTs)**

EVTs are used to assess if existing aviation regulations and related initiatives (e.g. SPTs) are delivering the expected results at minimum cost. For further details, refer to **Section 2.3.6**.

— **Member State tasks (MSTs)**

MSTs are actions that are owned by Member States and that have to be considered for their SPAS, together with the main risks identified in EPAS relevant for the State, as required by Article 8 of the Basic Regulation. MSTs may derive from operational safety issues identified in the ASR, safety priorities identified in GASP or through the EASA Standardisation process (hence supported by Standardisation data). Related actions are defined in close collaboration with Member States, through the different ABs. Safety priorities include, but are not limited to, maintaining effective oversight capabilities, the implementation of effective SSPs and related State safety action planning. Most MSTs take the form of continuous actions to ensure continuous monitoring of the underlying safety risks and regular monitoring on progress of those Member State actions. Results of such monitoring are discussed with Member States during the regular Technical Body (TeB) meetings. EASA may further support the implementation of specific MSTs through thematic workshops, targeted implementation support actions, training sessions, etc. During such implementation support actions, different implementation approaches, difficulties or best practices are brought up and discussed to enhance collaboration amongst Member States and between Member States and EASA, as well as to further strengthen oversight capabilities and support State safety management. Activities to support the implementation of MSTs are not captured as distinct EPAS actions.

Note: This EPAS edition no longer includes any action type 'FOT' for 'Focussed Attention Topics'. The corresponding issues are now addressed within the scope of MST actions.

2.3.4   How actions are prioritised in EPAS

The proposed candidate issues (safety and non-safety ones) are recorded in a Candidate Issue Register (CIR). This register is an internal repository for all received proposals, from internal and external sources (see Figure 4). The prioritised candidate issues are then further assessed with a view to finding the most cost-effective approach to tackle them. The outcome is a BIS report, which is consulted with the ABs. It is only after the AB validation that the actions proposed in the BIS report become EPAS actions.
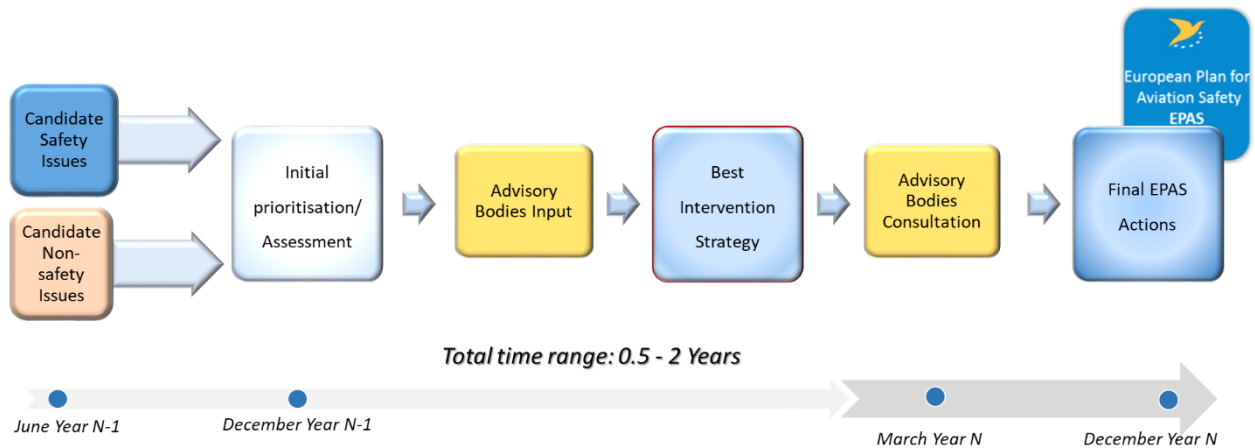
Figure 3: Key steps to prioritise actions in EPAS

2.3.4.1 EPAS inputs

> **How to submit a new proposal to be included in EPAS**
>
> A new proposal, such as a new candidate issue or a proposal for a new EPAS action to be included in EPAS can be submitted at any moment in the programming cycle. For this purpose, a '**Candidate Issue Identification form**'[15] is available on the EASA website.
>
> This form replaces the old Rulemaking Proposal Form. It is meant to encompass a larger range of proposals for actions, besides rulemaking, such as: safety promotion, research, evaluation, as well as the identification of new issues in the EPAS areas of safety, environmental protection, level playing field or efficiency/proportionality.

In addition to the individual proposals submitted via the Candidate Issue Identification form, EASA collects proposals from other sources, including safety and non-safety issues. For each proposal, core data is recorded in the CIR.

---

15 https://www.easa.europa.eu/rulemaking-proposal-candidate-issue-identification-form
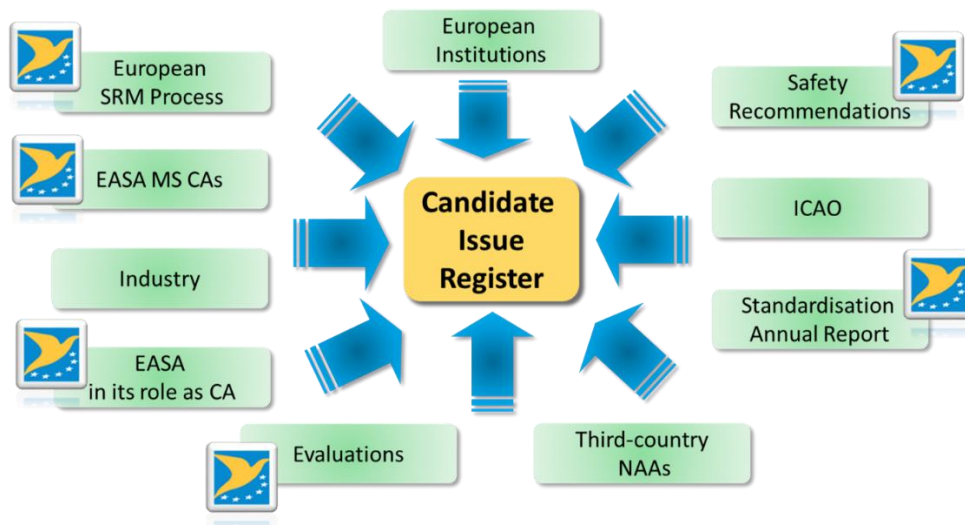
Figure 4: EPAS inputs

An initial review of the received candidate issues is carried out in order to allow for initial prioritisation. Candidate issues are clustered according **to the four EPAS drivers**, as follows:

— **Safety:** The actions in this category are driven by the need to increase or maintain the current level of safety in the aviation sector.

The main sources for safety candidate issues are the European SRM process and SRs addressed to the Agency following the investigation of accidents and serious incidents. The Standardisation process provides an additional source.

The European SRM process, shown in Figure 5 below, includes the following main steps:

— Identification of candidate safety issues, preliminary assessment;

— Development of domain specific safety risk portofolios (SRPs), with the advice from the European NoAs and the CAGs;

— Formal assessement of each identified safety issue within the domain SRPs, to identify potential actions for EPAS;

— Potential actions for EPAS are then further processed as explained in **Sections 2.3.4.2** and **2.3.4.3**; and

— EPAS implementation is monitored as explained in **Sections 2.5** and **4.2**. This serves two purposes, firstly to monitor the changes that have resulted from the implementation of safety actions. Secondly, it also serves to monitor the aviation system so that new safety issues can be identified.

A detailed description of the European SRM process is provided in the ASR[16] (see ASR 2019 — Introduction).

---

16   EASA Annual Safety Review 2019
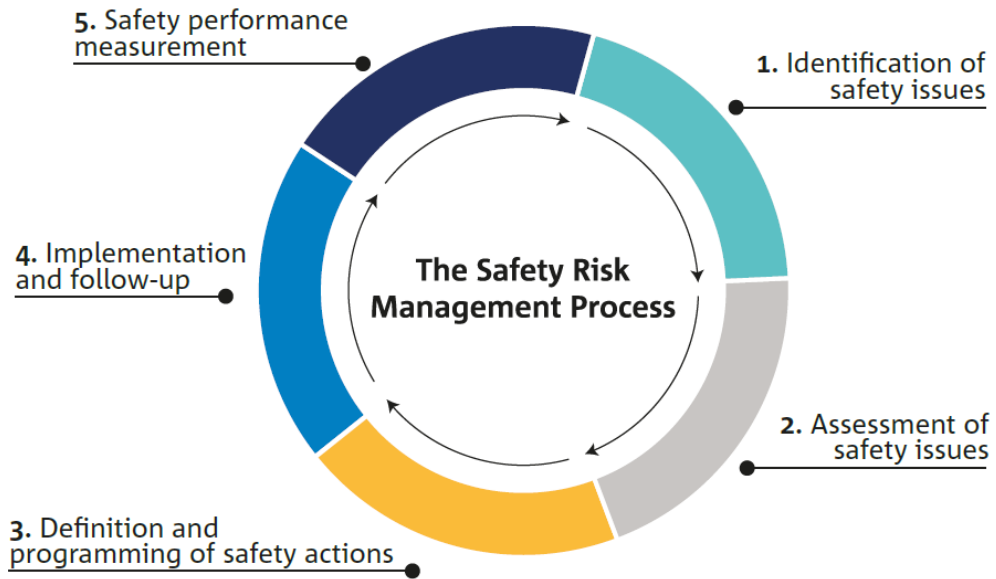
Figure 5: European SRM process

— **Environment**: The actions in this category are driven by the need to improve the current environmental protection in the aviation sector, while striving to ensure a level playing field globally.

Main sources for environmental candidate issues are the ICAO Standards and Recommended Practices (SARPs) and the European Aviation Environmental Report (EAER)[17] (refer to **Section 3.1.4**).

— **Efficiency/proportionality**: The actions in this category are primarily driven by the need to ensure that rules are cost-effective in achieving their objective, as well as proportionate to the risks identified. Having included an action in this category by no means signals that there are no related safety objectives; however, the effects on efficiency and proportionality prevail over those on safety.

Main sources for efficiency and proportionality issues are feedback from industry and NAAs, channelled through the ABs, as well as the results of evaluations.

— **Level playing field:** The actions in this category are mainly driven by the need to ensure that all players in a certain segment of the aviation market can benefit from the same set of rules, thereby promoting innovation, supporting fair competition and ensuring free movement of persons and services. This is particularly important for technological or business advancements where common 'rules of the game' need to be defined for all actors. 'Level playing field' may either relate to ensuring standardisation within EASA Member States or address the need to harmonise with the rules of main EASA counterparts, such as the Federal Aviation Administration (FAA), Transport Canada Civil Aviation (TCCA) or Agência Nacional de Aviação Civil (ANAC) Brazil, in order to ensure fair competition or facilitate the free movement of goods, persons and services. Actions in this category will directly contribute to maintaining or even increasing the current level of safety. Main sources for level playing field actions are feedback from EASA Standardisation, feedback from industry and NAAs, as well as rulemaking coordination with the main EASA counterparts.

---

[17] www.easa.europa.eu/eaer

These four drivers should be understood as *main* drivers. A number of actions could well fall under several of these drivers, but only the most relevant one will be indicated for each EPAS action.

2.3.4.2 Initial prioritisation

New candidate issues/proposals can be submitted to EASA at any moment in the programming cycle. However, considering that the EPAS edition for Year N + 1 will require the final actions to be validated by early December of Year N at the latest, the initial prioritisation process for the received candidate issues should start between 6 months to 2 years before December Year N. Therefore, the processing duration for candidate issues may range between 6 months and 2 years , depending on the nature of each candidate issue. Refer to Figure 3.

The initial prioritisation intends to generate a ranked list of issues/actions considering a number of prioritisation criteria, including:

— legal obligation to act;

— the link with the EPAS strategic priorities (**Section 3.1**);

— potential safety, economic, social and environmental consequences, if the action proposed is not endorsed; and

— workload at EASA, Member States and industry level to develop the action.

Strategic priorities get a higher ranking when setting rulemaking priorities. However, the timing of the related actions often needs to consider other parameters, in addition to the strategic priority ranking. Prioritisation is done across domains but also within a domain: e.g. if an issue is small in absolute terms (across domains) but fundamental for a specific domain to be resolved, it is then considered as key.

The resulting list of issues/actions is then reviewed and endorsed internally by EASA and a decision is made on issues/actions that will be further assessed to determine Best Intervention Strategies (BIS).

The above initial prioritisation step does not apply to RES actions that follow a separate process for initial prioritisation, nor to MSTs, which mainly commit resources at Member State level. Proposals for new MSTs or changes to existing MSTs are discussed and agreed at the level of the TeBs (domain TeBs for operational issues and SM TeB for systemic issues).

2.3.4.3 Best intervention strategies

Further to the initial prioritisation, the retained actions are grouped per topic and then related issues are analysed and impacts assessed, to propose the BIS. A list of BIS topics and their status is available in Appendix D.

Evidence should be included to support the analysis performed. For safety issues, this is normally provided through the related safety issues assessment (SIA) performed as part of the European SRM process (see **Section 2.3.4.1** and Figure 5).

Stakeholders are considered throughout the analysis, not only focusing on the ones mostly and directly affected, but also taking a wider view on other stakeholders.

The assessment of impacts is proportionate to the extent of the impacts and the controversial elements considered. The bigger and/or the more controversial the issue is, the more detailed will the assessment be.

For RMTs, during the development of the BIS, the Agency will also assess the suitability for a performance-based rule, based on the following criteria:

— measurability;

— need for flexibility;

— impact on innovation;

— impact on bilateral agreements;

— impact on level playing field;

— efficiency gains (through a performance-based solution); and

— need for interoperability.

One domain where rules have been reviewed in line with PBR principles is GA. EASA is engaged in developing simpler, proportionate, lighter and better rules for GA. This is achieved in line with the GA Roadmap[18] created in partnership with the EC and stakeholders by addressing the recognised importance of GA and its contribution to the European economy and a safe European aviation system. The GA Roadmap 2.0 was issued in March 2019[19].

Impact assessment methodologies

The methodologies applied to assess the impacts could be one or a combination of the following: cost-benefit analysis (CBA), cost-effectiveness analysis (CEA), multi-criteria analysis (MCA):

— **CBA:** Full CBA should be used when the most significant part of both costs and benefits can be quantified and monetised. It entails identifying and evaluating expected economic, environmental and social benefits and costs of the proposed public initiatives. A measure is considered to be justified where net benefits can be expected from the intervention.

— **CEA:** This method is used when the fixed objective would be difficult to monetise, e.g. in the aviation sector, the prevention of a fatality. It requires calculating the net cost needed to achieve the objective, and then comparing the net cost per 'unit of effectiveness' of each option. It is an alternative to CBA in cases where it is difficult to value benefits in monetary terms.

— **MCA:** This method is undertaken to make a comparative assessment between options for which the impacts are a mixture of qualitative, quantitative and monetary data. The aim is to combine a range of positive and negative impacts into a single framework to allow easier comparison.

Most of the impact assessments developed by EASA use MCA, as it would be very difficult to monetise all elements for each criterion and to evaluate the impacts with the same unit of measurement. In some cases, a detailed CBA or CEA is performed, for instance, on economic criteria. In this case, the result of the analysis can then be integrated into the MCA, comparing options across all relevant criteria.

---

18   Available on EASA website: https://www.easa.europa.eu/newsroom-and-events/news/easa-ga-roadmap.

19   https://www.easa.europa.eu/document-library/general-publications/ga-roadmap-2019-update-%E2%80%93-making-ga-safer-and-cheaper

Current developments

In line with Article 89 of the Basic Regulation, EASA shall take into account, in its decision-making, the interdependencies between civil aviation safety and socio-economic factors. Investing resources in a thorough assessment of the risks, impacts and possible side effects of proposed actions, before they are confirmed in EPAS, is expected to increase efficiency. These early assessments shall be carried out in partnership with the Member States and the industry stakeholders who have to be prepared to support EASA with their expert knowledge already during the planning phase.

Accordingly, EASA gives much importance to social impacts in its impact assessments and is working to further improve its methodology in this regard. The social impact assessment methodology to be developed will enable a more precise assessment of the social impacts of future EASA activities, more specifically in the case of RMTs. This methodology will be progressively improved throughout its implementation, based on feedback received from stakeholders.

2.3.4.4 BIS output for EPAS

A BIS report is drafted summarising the main findings of the impact assessment and proposing actions ('intervention strategy'). The BIS report is consulted with the ABs. AB comments will be addressed and the BIS report will be updated accordingly. Following consultation and feasibility check from the resource point of view, the actions are considered in subsequent EPAS planning cycles (refer to Figure 1).

The output of the BIS could be any one or a combination of the following types of EPAS actions:

— RMTs;

— SPTs;

— RES; and

— MSTs.

As a general rule, the BIS is updated on an annual basis for traceability purposes. The update serves the purpose of monitoring the evolution of the identified issues/problems and envisaged actions. In case there are new issues/priorities to be addressed in the BIS, the BIS cycle (assessment of issues/new actions) needs to be completed and the updated BIS is consulted with the ABs.

2.3.5 Regular updates

The aviation industry is complex and rapidly evolving. The corresponding rules need to be updated regularly to ensure that they are fit for purpose, cost-effective, can be implemented in practice, and are in line with the latest ICAO SARPs. The vehicle to address these miscellaneous issues of non-controversial nature are systematic rulemaking projects called regular updates.

This EPAS edition includes 29 regular update RMTs, with about half of them relating to the update of relevant Certification Specifications (CS).

2.3.6 Evaluation

In line with the Better Regulation principles, EASA assesses the performance of the rules and non-rulemaking actions. Evaluations (EVTs) are used to assess if aviation regulations and related initiatives (e.g. SPTs) are delivering the expected results at minimum cost.

These EVTs intend to conclude whether the existing rules/non-rulemaking actions are fit for purpose and whether/in which areas improvements are needed. An EVT will draw conclusions on whether the rules/actions continue to be justified or whether they should be modified to improve their effectiveness and/or eliminate excessive burden.

The EVT is intended to answer the following questions:

—   Is the rule/action useful to the stakeholders? — criterion 'relevance'

—   Have the objectives been reached with the results? — criterion 'effectiveness'

—   Are the spent resources proportionate to the achieved results? — criterion 'efficiency'

—   Are the rules/actions consistent with others which are interrelated to them? — criterion 'coherence'

—   Does the EU regulatory framework provide an added value compared to the national system? — criterion 'EU added value'.

In addition, a standard feature of any EVT of existing rules is to assess the potential for introducing more performance-based elements following a thorough assessment. The outcome of the EVT includes a list of recommendations that are then further analysed in the BIS for the issues identified.

Several criteria are taken into account to decide on future EVTs to be conducted by EASA:

—   Legal obligation to undertake an evaluation of the rules;

—   Feedback on the controversy, complexity of the rules/non-rulemaking actions, whether they generate safety risks and/or regulatory inefficiencies. This feedback is gained by analysing the flexibility provisions (Basic Regulation Articles 70 and 71), requests for alternative means of compliance (AltMoC), requests from stakeholders, feedback by the ABs on regulatory gaps/inefficiencies, permanently open findings from EASA Standardisation, etc;

—   Rules/non-rulemaking actions have reached a level of implementation to enable an evaluation based on sufficient evidence (sufficient time, e.g. 5 years elapsed after the adoption of the rules/non-rulemaking actions).

The result of the analysis is reflected in the list of EVTs as included in EPAS 2020-2024.

It should be noted that the EVT concept is equally applicable to rules and non-rulemaking actions. In this regard, EASA initiated a first EVT project on safety promotion activities related to European operators flight data monitoring (EOFDM) coordination, paving the way for more assessments of this kind.

Evaluation reports are published on EASA's website[20].

2.4   How EPAS is structured

The 2020-2024 EPAS edition comprises two distinct volumes:

—   **Volume I** provides the executive summary as well as an introduction, describes the strategy and includes the key indicators. It consists of **Chapters 1** to **4**.

—   **Volume II** contains the detailed list of EPAS actions. It consists of **Chapters 5** to **16**.

Both volumes are supported by a number of appendices providing further details or assisting the reader.

---

[20]   https://www.easa.europa.eu/document-library/general-publications?publication_type%5B%5D=2481

Volume I

Volume I provides an executive summary with the main highlights of each edition. This is followed by an introductory chapter where the link with other planning documents at European and global level is explained. **Chapter 2 Introduction** explains how EPAS is developed and presents the structure of the document, how actions are presented as well as how new proposals to be included in EPAS can be submitted.

The overall structure of **Chapter 3 Strategy** remains basically unchanged in this edition.

Section 3.1 'Strategic priorities' addresses the following priorities:

— 3.1.1 Systemic safety

— 3.1.2 Operational safety

— 3.1.3 Safe integration of new technologies and concepts

— 3.1.4 Environment

Section 3.2 'Strategic enablers' includes the following enablers:

— 3.2.1 Research

— 3.2.2 Safety promotion

— 3.2.3 International cooperation

— 3.2.4 Digitalisation

— 3.2.5 Technical training

— 3.2.6 Oversight and standardisation

The text in these sections is updated to reflect the latest developments.

Section 3.3 'New Basic Regulation' is maintained to update the information on priorities guiding the implementation of the Basic Regulation, as provided with EPAS 2019-2023.

Chapter 4 Performance provides key indicators for EPAS monitoring, including:

— 4.1 Key indicators in terms of EPAS actions and action completion

— 4.2 Safety performance with an outline for EPAS safety performance metrics

— 4.3 Performance information on environmental protection (with reference to the EAER)

Volume II

The structure of Volume II is entirely reviewed to provide a clearer link with the SRPs (ASR) and facilitate the identification of actions relevant for different stakeholder groups:

— All systemic safety & competence of personnel issues are grouped within **Chapter 5**, which is further subdivided into 6 distinct sections to address the various action areas.

— All actions other than those related to systemic safety & competence of personnel, corresponding to drivers 'safety', 'level playing field' and/or 'efficiency/proportionality' are grouped per **domain** (see **Chapters 6** to **15**). Within each of those chapters, actions are grouped per driver. For the driver 'safety', a further grouping per key risk area is applied where a significant number of actions is included (this concerns **Chapters 6** and **8** mainly).

— Following the reorganisation of chapters in Volume II from driver to operational/technical domains, regular update tasks are no longer grouped in a specific chapter under the driver 'efficiency/proportionality', they are now included in the respective **domain** chapter.

— All actions corresponding to the driver 'environment' continue to be included as a separate chapter, now **Chapter 16**.

The new structure for Volume II is as follows:

Ch.	Title
5	**Systemic safety & competence of personnel**
5.1	Safety management
5.2	Human factors and human performance
5.3	Competence of personnel
5.4	Aircraft tracking, rescue operations and accident investigation
5.5	Impact of security on safety
5.6	Oversight and standardisation
6	**Flight operations — aeroplanes**
6.1	CAT & NCC[21] operations
6.2	Specialised operations (SPO)
7	**Rotorcraft**
8	**General Aviation[22]**
9	**Design and production**
10	**Maintenance and continuing airworthiness management**
11	**Air traffic management/air navigation services**
12	**Aerodromes**
13	**Groundhandling**
14	**Unmanned aircraft systems**
15	**New technologies and concepts**
15.1.1	New business models
15.1.2	New products, systems, technologies and operations
15.1.3	SESAR deployment
15.1.4	All-weather operations (AWOs)
16	**Environmental protection**
16.1	Noise, local air quality and climate change standards
16.2	Market-based measures

A table that shows the correspondence between the structure of the 2019-2023 EPAS edition and that of the 2020-2024 one is included in **Appendix H: Volume II — new structure**.

Within each chapter/section, actions are grouped per EPAS action type (RMT, SPT, RES, EVT, MST) and within each action type, they are listed in ascending order of the unique EPAS action reference number.

Where an action is relevant to more than one domain, its full description will be included in the main domain Chapter, and a reference to it added in the other domain Chapter(s).

---

[21] Non commercial operations with complex motor-powered aircraft.

[22] Non-commercial operations with aeroplanes with MTOMs below 5 700 kg, all operations with balloons and sailplanes.

Example:

- An action for flight crew training in the rotorcraft domain is included with its full description in **Section 5.3** 'Competence of personnel'. In addition, a reference to it is provided in **Chapter 7** 'Rotorcraft'.

How individual actions are presented

RMT.xxxx	Title			
(1) text	*(2) text*			
Status	*(3) text*			
Reference(s)	*(4) text*			
Dependencies	*(5) text*			
Affected stakeholders	*(6) text*			
Owner	*(7) acronym*	*Full name of the EASA Department, if applicable*		
Priority	*(8) text*	**RM Procedure** *(9) acronym*	**Harmonisation**	*(10) Yes/No*

PLANNING MILESTONES				
SubT **ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1-n *(11) date/reference or year/quarter*	*(11) date/reference or year/quarter*	*(11) date/reference or year/quarter*	*(11) date/reference or year/quarter*	*(11) date/reference or year/quarter*

CHANGES SINCE LAST EDITION
(12) text

Figure 6: EPAS action template for RMTs

For each EPAS action, a unique reference and title are provided. Tasks newly added with this edition are identified by using red colour in the **action number** and by adding 'new' in the status field (3).

For RMTs, the following information is provided:

(1) 'Main driver': safety, efficiency/proportionality, level playing field, environment; where applicable, 'HF' will be added to indicate that the action has a strong human factors component;

(2) 'Action description': issue, objective and rationale;

(3) 'Status': new, ongoing, completed, on-hold, de-prioritised, merged, etc.;

(4) 'Reference(s)': related actions in other plans (e.g. ATM Master Plan, GASP) or other important reference documents, including Safety Recommendations (SRs), where relevant;

(5) 'Dependencies': other EPAS actions that enable or affect the implementation of this EPAS action. Note that such dependencies are not necessarily bi-directional;

(6) 'Affected stakeholders';

(7) 'Owner of the action': e.g. EASA department;

(8) 'Priority': YES or NO, on the basis of the strategic priorities defined in **Chapter 3**;

(9) 'RM Procedure': the applicable rulemaking (RM) procedure in accordance with EASA MB Decision No 18/2015 'Rulemaking Procedure'. Possible entries are:

— DP: Direct publication: Article 15 of the Rulemaking Procedure;

— AP: Accelerated procedure: Article 16 of the Rulemaking Procedure; or

— ST: Standard procedure.

(10) 'Harmonisation': an indication as to whether the RMT aims at harmonising the rules with those of third countries[23], in order to alleviate differences between EASA and other aviation authorities (currently: Brazil, USA, Canada) under a Bilateral Aviation Safety Agreement (BASA) with the EU, or, while ensuring an equivalent level of safety. Possible entries are: Yes/No.

Note 1: An entry 'no' does not mean that EASA is not coordinating the activity with the bilateral partners.

Note 2: Alignment with ICAO SARPs is not indicated through the harmonisation field, but explained in the task description.

(11) 'Planning milestones': date/reference or year/quarter for each deliverable. The *rulemaking process deliverables* are: ToR, NPA, Opinion and Decision. The *legislative process deliverable* is the Commission Implementing Rule (IR). IRs may take the form of delegated acts (DA) or implementing acts (IA), depending on the topic and domain.

— Where the documents are already delivered, the document reference and the publication date are provided in date format: dd/mm/yyyy.

— For documents yet to be delivered, the planned date for publication is provided in year and quarter format: yyyy Qn.

— In case a RMT has several subtasks, a separate line will provide deliverables and planning milestones for each subtask (1-n), and where different, applicable RM procedure will be indicated next to the SubT nb.

(12) 'Changes since last edition': Any changes in the scope of the given task since the previous EPAS edition. If not applicable or for tasks newly added for this edition n/a.

---

[23] The intention of harmonising rules can materialise in common rulemaking activities with bilateral partners developing the same or similar rule text, in EASA developing a rule harmonised with a rule that already exists within the regulatory framework of a bilateral partner, or in close cooperation with the bilateral partners.

XYZ.xxx	Title	
(1) text	*(2) text*	
Status	*(3) text*	
Reference(s)	*(4) text*	
Dependencies	*(5) text*	
Affected stakeholders	*(6) text*	
Owner	*(7) acronym*	*Full name of the action owner*

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
(8) text	*(9) date/reference or year/quarter*

CHANGES SINCE LAST EDITION
(10) text

Figure 7: EPAS action template for MSTs and SPTs

(1) 'Main driver': safety, efficiency/proportionality, level playing field, environment;

(2) 'Action description': issue, objective and rationale;

(3) 'Status': new, ongoing, completed, on-hold, de-prioritised, merged, etc.;

(4) 'Reference(s)': related actions in other plans (e.g. ATM Master Plan, GASP) or other important reference documents;

(5) 'Dependencies': other EPAS actions that enable or affect the implementation of this EPAS action. Note that such dependencies are not necessarily bi-directional.

(6) 'Affected stakeholders';

(7) 'Owner of the action': e.g. EASA department; Safety Promotion Network (SPN), Member States;

(8) 'Deliverable(s)': type of deliverable (report, best practice, guidance material, study, etc.);

(9) 'Timeline': planning milestone for the deliverable:

— Where the deliverable is already published/available, the date is provided in date format: dd/mm/yyyy.

— For deliverables yet to be published/made available, the planned date for completion is provided in year and quarter format: yyyy Q (1-2-3-4).

— In case an action has several subtasks, a separate line will provide deliverables and planning milestones for each subtask (1-n).

The same logic applies to EVT actions. In addition to the above information, the planning milestone/delivery date for the EVT ToR is provided.

(10) 'Changes since last edition': Any changes in the scope of the given task since the previous EPAS edition. If no such changes are made or for tasks newly added for this edition: n/a.

XYZ.xxx	Title	
(1) text	*(2) text*	
Status	*(3) text*	
Reference(s)	*(4) text*	
Dependencies	*(5) text*	
Affected stakeholders	*(6) text*	
Owner	*(7) acronym*	*Full name of the action owner*
PLANNING MILESTONES		
Starting date	**Interim Report**	**Final Report**
(8) year/quarter	*(8) year/quarter*	*(8) year/quarter*
CHANGES SINCE LAST EDITION		
(9) text		

Figure 8: EPAS action template for RESs

(1) 'Main driver': safety, efficiency/proportionality, level playing field, environment;

(2) 'Action description': issue, objective and rationale;

(3) 'Status': new, ongoing, completed, on-hold, de-prioritised, merged, etc.;

(4) 'Reference(s)': related actions in other plans (e.g. ATM Master Plan, GASP) or other important reference documents;

(5) 'Dependencies': other EPAS actions that enable or affect the implementation of this EPAS action. Note that such dependencies are not necessarily bi-directional;

Note: This information will be succesuflly completed through future updates, hence in many cases this is left blank.

(6) 'Affected stakeholders';

(7) 'Owner of the action': e.g. EASA department; EC (H2020); SESAR

(8) 'Planning milestones: The planned date for the start of the research project, the interim report and final report is provided in year and quarter format: yyyy Q (1-2-3-4);

(9) 'Changes since last edition': Any changes in the scope of the given task since the previous EPAS edition. If not applicable or for tasks newly added for this edition: n/a.

Appendices

EPAS is complemented by 9 appendices with additional information in support of or for easy access to the information provided in Volumes I and II:

— Appendix A: Opinions, Decisions and other deliverables published in 2019;

— Appendix B: Deliverables expected in 2020;

— Appendix C: New actions, deleted actions and de-prioritised actions overview;

— Appendix D: Overview of new and ongoing Best Intervention Strategies to be launched/progressed in 2019-2020;

— Appendix E: European Commission's strategic priorities for aviation;

— Appendix F: Acronyms and definitions;

— Appendix G: Working Groups and Bodies having a role in EPAS;

— Appendix H: Volume II – new structure;

— Appendix I: Index.

2.5   How EPAS is monitored

Section 4.2 presents an outline for EPAS safety performance metrics reflecting the EPAS strategic priorities in the area of safety and the high-level safety objective set out in the Basic Regulation to 'establish and maintain a high uniform level of civil aviation safety in the Union'.

The efficiency of actions included in EPAS in relation to environmental protection will continue to be monitored as part of the EAER (refer to **Section 4.3).**

Regarding the actions owned by , in the past EASA monitored those actions by means of a dedicated online survey. The survey was addressed to all EASA Member States , as well as non-EASA Member States applying EPAS, and initiated once EPAS was published and sought States' feedback on the status of implementation of EPAS MSTs. The results were summarised in an implementation report[24].

In accordance with Chapter II of the Basic Regulation, Member States are required to develop a SPAS, taking into consideration the actions they own in EPAS and providing justifications when such actions are not considered relevant to them. Accordingly, SPAS will be the primary tool for Member States to report on action implementation. States are expected to provide an up-to-date SPAS at least annually or, where the SPAS is not updated annually, a report on the implementation of EPAS actions. Implementation of the SPAS is also foreseen to be monitored by the Agency as part of the standardisation activities. EASA made available an online platform for Member States to upload their SSP, SPAS and any other relevant material. This online platform, hosted on the EASA SharePoint site for the EASA ABs[25], is also intended to facilitate the exchange of information amongst Member States on EPAS and SSP implementation.

For the remaining EPAS actions (RMT, SPT, RES and EVT), feedback on implementation is regularly provided during AB meetings. Most of the deliverables planned in EPAS are published on the EASA website (see rulemaking process[26], safety promotion[27], research projects[28] and evaluation of rules[29]).

---

24 Latest States' implementation report on EPAS 2017-2021: https://www.easa.europa.eu/document-library/general-publications/states-implementation-report-epas-2017-2021

25 https://imf.easa.europa.eu/case/eab/mabtebs/SSPDocuments/Forms/AllItems.aspx

26 https://www.easa.europa.eu/document-library/rulemaking-process-overview

27 https://www.easa.europa.eu/document-library/safety-promotion

28 https://www.easa.europa.eu/document-library/research-projects

29 https://www.easa.europa.eu/document-library/general-publications?publication_type%5B%5D=2481

3. Strategy

In the 2017-2021 programming cycle, EASA introduced the notion of strategic priorities for EPAS. The strategic priorities were initially based on the EC's Aviation Strategy[30] and EASA's strategic plan. The safety priorities are based on the European SRPs published in the ASR. The efficiency and level playing field priorities are based on stakeholder feedback. The environmental priorities are aligned with the EAER 2019[31].

EASA consulted these priorities with stakeholders in February and March 2019, including the organisation of a one-day workshop with the members of SAB. The comments received led to a number of adjustments and improvements, notably the identification of priorities to be addressed first. In Volume II, the actions linked to strategic priorities are identified in the field 'Priority'.

Moreover, civil-military cooperation is a crucial element to foster. Although only individual States can improve civil-military cooperation, within a regional approach in areas of highly fragmented airspace and in case of air encounters, certain facilities and services can be facilitated by EASA with limited effort, so as to ensure the safety, regularity and efficiency of civil aviation, while ensuring that requirements for military air operations are met. The regional approach may support the promotion of a common understanding, the sharing of best practices and the monitoring of their practical implementation.

How priorities are established

In the previous edition, the rulemaking activities were prioritised to take into consideration the need to make resources available to tackle Basic Regulation responsibilities (not only related to rulemaking), as explicitly requested by the EASA MB back in April 2018. The Basic Regulation roadmap (see **Section 3.3.2**) clearly identifies the areas where work was planned to start within the 2019-2021 range; therefore, not all new responsibilities will be tackled immediately. The prioritisation takes into account the compromise to continue working towards mitigating major safety risks across domains and addressing the strategic priorities agreed with industry and States, which are described in this Chapter.

In 2019, EASA re-assessed the activities that were postponed in the previous EPAS edition. This resulted in the reprioritisation of a number of rulemaking projects. Priority was given to those tasks that were more advanced and for which positive benefits (safety or economic) were identified. These RMTs will be resumed. The related timelines can be found in Volume II.

Chapters 5 to **16** contain the full list of EPAS actions that are programmed for the next 5 years.

Appendix C: **New actions, deleted actions and de-prioritised actions overview** includes the overview of all tasks that remain on the list of de-prioritised tasks, as compared to the 20 tasks in the previous edition.

---

30   https://www.europeansources.info/record/communication-on-an-aviation-strategy-for-europe/

31   https://www.easa.europa.eu/eaer/system/files/usr_uploaded/219473_EASA_EAER_2019_WEB_LOW-RES.pdf

3.1 Strategic priorities

3.1.1 Systemic safety

3.1.1.1 Improve safety by improving safety management

Despite the fact that the last years have clearly brought continued improvements in safety across every operational domain, the latest accidents and serious incidents underline the complex nature of aviation safety and the significance of addressing human and organisational factor aspects. Aviation authorities and organisations should anticipate new emerging threats and associated challenges by developing SRM principles. Those principles will be strengthened by SMS implementation supported by ICAO Annex 19 and Regulation (EU) No 376/2014[32] on the reporting, analysis and follow-up of occurrences in civil aviation.

Key actions:

— Incorporate safety management requirements in initial and continuing airworthiness (RMT.0251)

— Support States in implementing State Safety Programmes (MST.001) and States Safety Plans (MST.028)

— Encourage international harmonisation of SMS implementation and human factors principles (MST.002 and SPT.057)

— Support the implementation of a robust oversight system across Europe (MST.032)

See **Section 5.1**.

3.1.1.2 Human factors

EASA monitors data relating to human performance and assesses feedback from stakeholders, through the Human Factors CAG (HF CAG) and through other regulatory and oversight activities. As the aviation system changes, it is imperative to ensure that human factors and the impact on human performance are taken into account, both at service provider and regulatory levels.

'Human factors' and 'human performance' are terms that are sometimes used interchangeably. While both human factors and human performance examine the capabilities, limitations and tendencies of human beings, they have different emphases:

— Human factors (HF) — this term focusses on why human beings function in the way that they do. The term incorporates both mental and physical processes, and the interdependency between the two.

— Human performance (HP) — the output of human factors is HP. This term focuses on how people do the things that they do.

Note: Throughout Volume II, actions with a strong HF component are identified by adding 'HF' below the driver indication.

The HF CAG prioritised a series of safety issues for a more in-depth analysis. These issues are systemic safety issues. Other CAGs address safety issues that also have HP elements[33]. The issues that have been recently completed, are underway or due to be started shortly are as follows:

---

[32] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0376&from=EN

[33] As a result, the HF CAG also provides expertise to assess HF-related safety issues identified by the other CAGs.

Safety issue assessments complete

— **Human factors competence for regulatory staff** — Without HF competencies, regulators cannot adequately oversee HF implementation in the aviation industry.

— **Design and use of procedures** — It is imperative for procedures to be designed so that they are usable, but this is increasingly difficult in the context of a complex system.

Safety issue assessments underway

— **Senior management knowledge, competence, and commitment to HF/HP** — Unless senior management takes the lead in implementing HF practices, the culture does not permeate through the organisation, with consequences for safety and efficiency.

— **Organisational and individual resilience** — Organisational and individual resilience are key factors in successfully managing safety, but there is little regulatory guidance on how to apply the concept.

— **Training effectiveness and competence** — There can be too large a gap between work as imagined and work as done, resulting in ineffective or negative training. Some changes to training regimes may exacerbate the problem.

New safety issue assessments for 2019/2020

— **Fatigue (quality sleep)** — Fatigue, including the aspect of quality sleep, has been identified by almost all the domain CAGs and the HF CAG as a safety issue, despite extensive research and regulation in this area. This aspect is to be taken up in the envisaged second assessment of the effectiveness of flight time limitations (FTLs) (see **Section 5.2.1.).**

The results of the in-depth analysis of the above issues may lead to the determination of additional actions for future EPAS editions.

3.1.1.3   Competence of personnel

As new technologies and new business models or operational concepts emerge on the market and the complexity of the system continues to increase, it is of key importance for aviation personnel to have the right competencies and for training methods to be adapted to cope with new challenges. It is equally important for aviation personnel to take advantage of the opportunity presented by new technologies to enhance safety.

The safety actions related to aviation personnel are aimed at introducing competency-based training for all licences and ratings and at facilitating the availability of appropriate personnel in competent authorities (CAs). The Agency shall take due account of requests to introduce competency-based training and assessment (CBTA) for all categories of aviation personnel to whom the concept is addressed: aircraft maintenance personnel, pilots, ATCOs, air traffic safety electronics personnel (ATSEP), and flight operations officers. A phased approach to gradually reach the level of maturity required for the full implementation has been adopted. Moreover, for ATCOs, the existing European' performance objective is structurally very similar to an ICAO competency unit. The safety actions for the introduction of the new training concept initially address pilots, through training organisations and operators. These actions will contribute to mitigating related safety issues, which play a role in improving safety across all aviation domains. Training and education are considered key enablers. See also **Section 3.2.6** for further details on technical training.

Key actions:

— Introduce evidence and competency based training and assessment for FCL and OPS, as appropriate (RMT.0194, RMT.0599 and SPT.012);

— Modernise the European pilot licensing and training system (RMT.0194).

3.1.1.4 Impact of security on safety

Cybersecurity

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 and the surge in digitalisation of aviation systems increases the vulnerability of the whole system. It is essential that the aviation industry and authorities share knowledge and learn from experiences to ensure systems are secure from individuals/organisations with malicious intent.

EASA signed a Memorandum of Cooperation (MoC) with the Computer Emergency Response Team (CERT-EU) of the EU Institutions on 10 February 2017. EASA and CERT-EU have established a European Centre for Cyber Security in Aviation (ECCSA)[34]. The ECCSA's mission is to provide information and assistance to European aviation manufacturers, airlines, maintenance organisations, ANSPs, aerodromes (ADR), etc. in order to protect critical elements of the system such as aircraft, navigation and surveillance systems, data links, etc. The ECCSA will cover the full spectrum of aviation. In addition to the information-sharing initiatives intended to be implemented through the ECCSA, the strategy to address cybersecurity risks should be focused on research and studies, event investigation and response, knowledge and competence building, international cooperation and harmonisation and regulatory activities and development of industry standards.

Key actions:

— Implement a regulatory framework for cybersecurity covering all aviation domains (RMT.0720);

— Introduce new cybersecurity provisions in the certification specifications (RMT.0648).

Conflict zones

Since the tragic downing of Malaysian Airlines flight MH17, there is a general consensus that States shall share their information about possible risks and threats in conflict zones. Numerous initiatives have been taken to inform the airlines about risks on their international flights.

Member States, European Institutions and EASA have established an alerting system with the objective of joining up available intelligence sources and conflict zone risk assessment capabilities in order to enable the publication of information and recommendations on conflict zone risks in a timely manner, for the benefit of all European Member States, operators and passengers. It complements national infrastructure mechanisms, when they exist, by adding, when possible, a European level common risk picture and corresponding recommendations.

---

[34] https://www.easa.europa.eu/eccsa

EASA acts as the coordinating entity for activities not falling directly under Member States' or the EC's responsibility and initiates the drafting, consultation and publication of Conflict Zone Information Bulletins[35], based on common EU risk assessment.

Key action:

— Disseminate information to air operators in order to mitigate the risk associated with overflying conflict zones (SPT.078).

3.1.1.5   Impact of socio-economic factors on safety

Article 89 of the Basic Regulation requires the Member States, the EC, the Agency and other Union institutions, bodies, offices and agencies to cooperate with a view to ensuring that interdependencies between civil aviation safety and related socio-economic factors are taken into account. In particular, it addresses the need to address socio-economic risks to aviation safety. EASA is also required to consult relevant stakeholders when addressing such interdependencies and every three years publish a review, which shall give an objective account of the actions and measures undertaken, in particular those addressing the interdependencies between civil aviation safety and socio-economic factors.

Key action:

— Set up a consultation process on interdependencies between civil aviation safety and socio-economic risks through SAB and the EU Aviation Social Dialogue platform.

3.1.1.6   Data4Safety

Data4Safety (also known as D4S) is a data collection and analysis programme that aims at collecting and gathering all data that may support the management of safety risks at European level. This includes safety reports (or occurrences), flight data (i.e. flight parameters recorded on board the aircraft), surveillance data (air traffic data), weather data — these being only a few from a much longer list.

More specifically, the programme will allow to identify better where the risks are (safety issue identification), determine the nature of these risks (risk assessment), and verify whether the safety actions are delivering the needed level of safety (performance measurement). It aims at developing the capability of discovering vulnerabilities in the system across terabytes of data.

An initial proof of concept (PoC) phase has been launched with a limited number of partners to test the technical challenges as well as the governance structure of such a programme. The PoC is planned to be completed early 2021 and the programme will then open gradually the membership to the European aviation safety system stakeholders. A number of key building blocks have been achieved, in particular:

— The partnership principles have been framed into a programme charter.

— The data protection rules have been agreed upon and captured into the rules and procedures document and in a data sharing and protection agreement template.

— The use cases for the PoC phase have been agreed upon and specified.

— The Big Data infrastructure has been set up and the initial set of data uploaded.

— Data scientists have now joined the programme and started to work on the advanced analytics.

---

[35]   https://www.easa.europa.eu/easa-and-you/air-operations/information-on-conflict-zones

D4S is, in essence, a collaborative partnership programme that aims at inferring safety intelligence. This is done by organising a massive collection of safety data and, equally important, organising the analytical capacity amongst all European aviation safety system stakeholders. This will take the collaborative work with the industry at a scale never achieved before in Europe.

D4S will therefore directly respond to the GASP SEI 11A (GASP 2020-2022 Appendix A ORG Roadmap § 3.1.1) 'Work with industry stakeholders to leverage best practices with safety information analysis.'

3.1.1.7   Civil-military coordination and cooperation

Closer cooperation is needed between the civil and the military, including at the level of State safety management, to achieve a safe and efficient use of airspace as well as to protect fundamental principles such as security, or interoperability.

Within Europe, a good example of civil-military cooperation in the ATM area is the implementation of flexible use of airspace (FUA), which is now evolving towards a more advanced concept. While this approach is desirable and commendable, it only accounts for the ATM aspects. A comprehensive approach could be introduced to address virtually all aviation areas.

Airworthiness

Military aviation is the prerogative and the responsibility of a Member States, it would be beneficial from committing further to leverage and consolidate efforts by both civil and military in developing their aviation capabilities by taking elements from the civil world.

EASA started to provide an effective support to military and industry applicants to ensure adequate and prioritised technical advice for appropriate airworthiness and safety solutions.

Some of the European military authorities have already recognised that the civil model can, in part, be extrapolated to military air systems. In those circumstances, they may move towards an 'as civil as possible, as military as necessary' approach through gradual convergence to civil standards for the design, manufacture and maintenance of military aircraft.

Safety intelligence and performance domains

The timely and accurate reporting of safety information at European level and beyond is critical to verify the achievement of global safety objectives and monitor the implementation of safety programme initiatives, such as EPAS.

Reliable military safety data sharing, primarily for aerodromes open to public use (dual-use platforms) and civil derivative aircraft (fixed wings and rotorcraft), would provide perspectives that are both global in nature as well as specific to individual areas, such as rotorcraft, where a substantial fleet is operated by the military.

Going forward, tools to allow for a comprehensive assessment of safety performance, including State and military aircraft, would be of strong benefit to the entire aviation system and would support the goal of ensuring the highest common level of safety and environmental protection for the European aviation system.

Aviation security (including cybersecurity)

There is a shared understanding and growing concern within the military community that security and especially cybersecurity may introduce considerable risk for aviation, as systems on board aircraft and the

European ATM System rely on increased connectivity. Moreover, effectively mitigating cyber-related risks is key to enabling unmanned aircraft systems (UAS) (or drones)[36] integration into non-segregated airspace.

The strategic orientations adopted by EASA in developing its cybersecurity roadmap and the setting up of the European Strategic Coordination Platform (ESCP) provide the military with an opportunity to cooperate in an area of common interest in the wider context of the European aviation system.

Airspace, ANS, aerodromes open to public use

To meet the aerodrome challenges of delivering sufficient capacity, civil and military aerodromes will need to make progress to achieve a seamless airspace and globally harmonised ANS, where civil-military cooperation is a crucial element to foster in the transition process.

Key to successful cooperation is the establishment of trust and transparency so that the needs and requirements of civil and military aerodromes and services providers could be fully understood and that over time an integrated model could be achieved.

With a regional approach in areas of highly fragmented airspace and aerodromes open to public use, certain facilities and services shall be arranged so as to ensure the safety, regularity and efficiency of civil aviation as well as to ensure the requirements of military air operations are met, in particular by promoting a common understanding of key principles, sharing best practices and monitoring their practical implementation.

Key action:

— Member States to consider civil-military coordination aspects where relevant for their State Safety Programme (MST.001).

3.1.2 Operational safety

3.1.2.1 Address safety risks in commercial air transport (CAT) aeroplane operations (airlines and air taxi, passenger/cargo) and NCC operations

During 2018, there were no fatal accidents involving European air operator certificate (AOC) holders performing CAT passenger/cargo. In this category, there were 14 non-fatal accidents; however, the number of non-fatal accidents was lower than the average of the previous 10-year period (23.1). In 2018, the number of serious incidents in this category increased in comparison with the average of the previous 10-year period, with 107 serious incidents recorded in 2018 in comparison with the 10-year period average of 81.3.

In the European NCC operations category, there were 3 non-fatal accidents in 2018, compared with an average of 1.4 per year over the previous decade. There was also 1 fatal accident, with 1 fatality. The number of serious incidents was also higher than usual, with 7 in 2018, compared with an average of 3.7 per year over the previous 10-year period.

This operational domain remains the greatest focus of the EASA safety activities. The CAGs and ABs will help EASA to learn more about the safety challenges faced by airlines and manufacturers.

The European SRM process identified the following as the most important risk areas for CAT aeroplane and NCC business operations:

---

[36] 'Unmanned aircraft systems (UAS)' is the legal and technical term used in the EASA Basic Regulation as well as in the delegated and implementing acts adopted on the basis thereof. 'Drones' is the popular term used to be understood by persons with no aviation background. Both terms are used in EPAS and refer to the same thing.

— <u>aircraft upset in flight (loss of control)</u>

Aircraft upset or loss of control is the most common accident outcome for fatal accidents in CAT aeroplane operations. It includes uncontrolled collisions with terrain, but also occurrences where the aircraft deviated from the intended flight path or intended aircraft flight parameters, regardless of whether the flight crew realised the deviation and whether it was possible to recover or not. It also includes the triggering of stall warning and envelope protections.

Key actions:

— Review and promote training provisions on recovery from upset scenarios (RMT.0196 and SPT.012);

— Member States to address loss of control in flight by taking actions at national level and measuring their effectiveness (MST.028).

See **Section 6.1.1.1**.

— <u>runway safety</u>

Runway excursion covers materialised runway excursions, both at high and low speed, and occurrences where the flight crew had difficulties in maintaining the directional control of the aircraft or of the braking action during landing, where the landing occurred long, fast, off-centred or hard, or where the aircraft had technical problems with the landing gear (not locked, not extended or collapsed) during landing. Runway excursions account for 81 high-risk occurrences recorded in the period 2013-2017 in CAT aeroplane and NCC operations.

Runway incursion refers to the incorrect presence of an aircraft, a vehicle or a person on an active runway or in its areas of protection, which can potentially lead to runway collision as the most credible accident outcome. Manifested or potential runway collisions account for 28 high-risk occurrences recorded in the period 2013-2017. Despite the relatively low number, the risk of the reported occurrences was demonstrated to be significant.

Key actions:

— Require on-board technology to reduce runway excursions (RMT.0570);

— Improve safety in relation to runway surface condition reporting and in-flight assessment of landing performance (RMT.0296 — Opinion No 02/2019 published on 22/02/2019);

— Promote and implement the European Action Plan for the Prevention of Runway Incursions (EAPPRI) and Excursions (EAPPRE) (RMT.0703 — Opinion No 03/2019 published on 24/06/2019);

— Member States to address runway safety by taking actions at national level and measuring their effectiveness (MST.028).

See **Section 6.1.1.2**

3.1.2.2 Rotorcraft safety improvement

The **Rotorcraft Safety Roadmap** was delivered in November 2018, and following endorsement by EASA, is available on the EASA website[37]. The roadmap was initiated by EASA who tasked a group of external experts to develop, jointly with EASA, a set of ambitious proposals. This roadmap contains proposals for actions in order to significantly reduce the number of rotorcraft accidents and incidents. The initial analysis of data showed that the activities have to focus on light conventional rotorcraft and small operators. General Aviation (GA) rotorcraft where the number of accidents is recognised to be higher, are also within the scope of the roadmap. The roadmap covers safety and transversal issues that need to be tackled through actions in various domains, including training, operations, initial and continuing airworthiness, environment and facilitation of innovation.

The vision of the roadmap is to '**achieve significant safety improvement for Rotorcraft with a growing and evolving aviation industry**'. The group analysed a significant amount of data and took a very close look at the European 'helicopter landscape' before defining its objectives and identifying the actions to meet these objectives. The following objectives are defined in order to deliver the vision stated above:

Improve overall rotorcraft safety by 50 % within the next 10 years: Most of the accidents can be attributed to operational causes and it is recognised that influencing behaviour in the wider community is a complex process where step changes are difficult to achieve in the short term. However, for accidents caused by technical failures, an ambitious target is set to reduce the number of accidents caused primarily by technical failures by one order of magnitude.

Make positive and visible changes to the rotorcraft safety trends within the next 5 years: The aim of this objective is to drive the implementation of the quick-wins that are identified and to rapidly progress a number of safety improvements. A key performance indicator (KPI) for the safety objectives is the number of rotorcraft accidents in Europe that result in at least a fatality or a serious injury. Additional KPIs are based on the European Risk Classification Scheme (ERCS), complemented by the data collection activity using D4S to build robust data on accident rates. Helicopter safety performance indicators are published as part of the EASA ASR.

Develop performance-based and proportionate solutions that help maintain competitiveness, leadership and sustainability of the European industry: This objective also aims at supporting the development of new business models and encourage innovation.

This specific set of rotorcraft objectives align with the EASA Strategic Objectives, which have been used to derive the strategic priorities for EPAS. The main elements of the roadmap were presented in several fora, including the Rotorcraft Committee (R.COM) and the Rotorcraft Symposium.

The actions are organised in accordance with the following work-streams:

- WS1 Safety Data,
- WS2 Safety Rating and market based solution to incentivise safety,

---

[37] https://www.easa.europa.eu/download/Events/Rotorcraft%20Safety%20Roadmap%20-%20Final.pdf

- WS3 Training Safety,
- WS4 Training Devices and simulators,
- WS5 Safety Promotion,
- WS6 Helicopter Design improvements,
- WS7 Net Safety Benefit and CS Modernisation,
- WS8 Simplify,
- WS9 Continued Aviation Education,
- WS10 Fostering EU financial support for safety improvements.

In 2019, the Agency created an internal team to evaluate and integrate the recommendations contained in the Roadmap document into the EASA work programme. It was decided not to launch new RMTs but to include the inputs from the Rotorcraft Safety Roadmap in the scope of the current RMTs.

The main subjects of the Roadmap were organised in work streams and are described below:

Safety Data : EASA will engage with Original Equipment Manufacturers (OEMs), operators and NAAs to collect and consolidate exposure data and other relevant statistics, such as flight hours or number of cycles of their products. A framework will be set up to exchange information with EASA in a manner which is mindful of personal data protection. In particular, the European NoAs will be used to facilitate the collection of data on fleet and flight hours from the NAAs. In order to enhance and promote reporting, new ways to report data, such as automatic reporting, will be investigated. The objective is to obtain enough data to enable us to work on accident rates instead of on numbers of accidents.

Training Safety and Training Devices and simulators: Training is seen both as a risk area and as an opportunity. A large number of the in-flight accidents happen during training. The use of flight simulator training devices (FSTDs) and the development of new training devices such as, but not limited to virtual reality (VR) should be strongly promoted for high-risk training scenarios. The changes will feed and be implemented within the context of RMT.0194, RMT.0196, RMT.0678 and RMT.0599.

Safety Promotion: In order to establish a sustainable and effective safety culture including the sharing of best practices, Safety Promotion is a fundamental activity. EASA is running actions such as SPT.082 'Support the development and implementation of flight crew operating manuals (FCOMs) for offshore helicopter operations' and SPT.094 'Helicopter safety and risk management'. Please refer to **Chapter 7** for all Safety Promotion actions related to Rotorcraft.

Helicopter Design improvements: When it comes to design, the roadmap contains a number of actions that are not visible in the public version of the documents or the presentations and are discussed between EASA and the respective OEMs.

CS Modernisation: This work stream will address the modernisation of the EASA CSs. Several RMTshave been initiated in that respect. EASA's rotorcraft team is engaged with industry and the other bilateral partner authorities on the modernisation of the CSs. Refer to the **Chapter 7** Rotorcraft and **Chapter 9** Design and Production with the list of RMTs directly relevant to rotorcraft safety. Some of these tasks pertain to Part-26 requirements.

Simplify: The Agency is planning the evaluation task EVT.0010 Helicopter operations in order to collect data and assess the regulatory burden put on small and medium-sized helicopter operators.

Evaluation of new concepts: The following new concepts were proposed and are evaluated:

— **Net Safety Benefit:** This task aims to establish a policy in order to introduce the net safety benefit concept in certification. Here, we are also going to evaluate technologies which are available. This activity has been initiated and is managed in the framework of the activities of the GA Roadmap in liaison with the EASA Technology for Safety (T4S) initiative. T4S is a working-group created and managed by EASA with participation from the industry and Member States aiming at facilitating the introduction of technologies having safety benefits in the cockpit of GA aircraft. It was initiated as part of the GA Roadmap.

— **Continued Aviation Education**: The Rotorcraft Safety Roadmap suggests to introduce a Continued Aviation Education (CAE) scheme using the Continued Medical Education (CME) experience, and assess applicability to various rotorcraft personnel playing key roles in safety: accountable managers, nominated personnel, pilots, instructors, examiners and inspectors, maintenance staff, and also GA pilots. This concept is currently being investigated.

Safety Rating: The next big concept proposed is the introduction of a voluntary rotorcraft safety rating scheme. Such a scheme is used in the automotive industry with the crash test programmes Euro NCAP[38]. It is a good way to give an incentive to the manufacturers to make safety improvements to their vehicles and differentiate themselves (from the competition). A comparative review of the current safety rating schemes of different industries has been conducted. It covered a wide range of test programmes used not only in transport but also in other industries — for example, in the food safety industry.

3.1.2.3 Address safety risks in GA in a proportionate and effective manner

In the last years, accidents involving recreational aeroplanes, i.e. non-commercially operated small aeroplanes with MTOMs below 5 700 kg, have led to an average of 86 fatalities per year in Europe (based on 2008-2017 figures, excluding fatal accidents involving microlight airplanes, gliders and balloons), which makes it one of the sectors of aviation with the highest yearly number of fatalities. In 2018, there were 49 fatal accidents causing 95 fatalities in non-commercial operations with small aeroplanes, and 16 fatal accidents causing 17 fatalities in the domain of sailplane operations (the 2008-2017 average is 28.6 fatalities per year in Europe). The GA roadmap is key to the EASA strategy in this domain. 2018 seems to show an improvement for gliders, and a deterioration for GA fixed wing. In order to support the monitoring of safety performance and prioritisation of EPAS actions in the area of GA, Member States are invited to collect data on their GA fleet, as well as on flight hours, to provide such data to EASA, through the Network of Analysts (NoA).

Although it is difficult to precisely measure the evolution of safety performance in GA due to lack of consolidated exposure data (e.g. accumulated flight hours), it is reasonable to assume that more initiatives and efforts are needed to mitigate risks leading to these fatalities.

---

[38] https://de.wikipedia.org/wiki/Euro_NCAP

The following have been achieved:

— Safety promotion task on airspace infringement (SPT.089), developed in cooperation with the Safety Promotion Network (SPN) of the Member States, now completed;

— Sunny Swift comics[39], the first 11 issues were published in all EU languages. Sunny Swift is now well accepted and becoming a connecting link to attract the attention of the end user to a safety topic and related information;

— Launch of the first EASA GA Safety Award at the Aero Friedrichshafen 2019;

— Basic instrument rating (NPA 2016-14), cooperation with EUROCONTROL to promote the results of RMT.0677 (SPT.088). Opinion No 01/19, stemming among others from RMT.0677, was published on 19/02/2019. In parallel, RMT.0379 'AWOs' will allow to promote IFR approaches on non-IFR airfields;

— 3rd workshop on 'Enhance See and Avoid' organised in the first quarter of 2019;

— 'GA and low level weather' workshop organised in the second quarter of 2019. On the same theme, a visual flight rules (VFR) into instrument meteorological conditions (IMC) simulator project was organised in the first quarter of 2019 as part of the safety promotion plan for GA.

To improve the dissemination of safety messages (MST.025), in 2018 EASA introduced the GA Community website[40] and organised its Annual Safety Conference on 'Promoting Safety Together: a vision for the future of General Aviation'. Other dissemination actions include the GA roadmap roadshows and continued participation in AERO Friedrichshafen, the 'global show for General Aviation'. The GA Community site has been reinforced in 2019 with a new **GA Safety Together Facebook page[41]** in order to reach a wider audience.

EASA, in cooperation with its ABs, launched GA Roadmap 2.0. It will concentrate on making GA safer and cheaper thanks to innovation and technology and on supporting the implementation of new or amended regulations.

Key actions:

— Improve the dissemination of safety promotion and training material by authorities, associations, flying clubs, insurance companies targeting flight instructors and/or pilots; to create a General Aviation Safety Promotion platform (SPT.092);

— Support the introduction of new business models (i.e. cost sharing platforms);

— Adapt design and production rules ('Part 21 Light') to become more proportionate to the risks (RMT.0689 is completed; all futher related actions are incorporated in RMT.0727);

— Bring data to the GA cockpits: weather, flight information services (FIS), and traffic information data should progressively be made available in all GA cockpits (SPT.087 + RES.021); and

— Support the implementation of new or amended regulations.

---

[39] https://www.easa.europa.eu/easa-and-you/general-aviation/sunny-swift-flight-instructor
[40] https://www.easa.europa.eu/community/ga
[41] https://www.facebook.com/easagasafetypromotion

3.1.3 Safe integration of new technologies and concepts

This strategic priority guides the introduction of new technologies, innovative solutions and operating concepts to support their safe integration into the aviation system and facilitate the emergence of such new technologies and solutions. It will require an evolution of the current European regulatory framework for aviation safety, initially designed for conventional fixed wing aircraft, rotorcraft, balloons and sailplanes. The existing framework relies on the active contribution of human beings, increasingly assisted by automation, be it on board or on the ground. Propulsion is mostly provided by piston or turbine engines using fossil fuels.

Many of the technologies and innovations emerging in the aviation industry bear significant potential to further improve the level of safety, e.g. by improving the collection and analysis of operational data, better condition monitoring of aircraft for the purpose of preventive maintenance, improved accessibility and better quality of meteorological information, etc.

Digitalisation and automation are rapidly increasing in aviation systems. While this has resulted overall in significantly improved safety, the trend towards increasing automation requires a renewed safety focus on the interactions between humans and automation. The next generation of automation will be using AI. This domain, no longer the province of science fiction, could well be the next 'game-changer' for aviation[42]. In the near future, new EPAS actions will be required to maximise related safety benefits, while mitigating any threats induced by the implementation of these new technologies.

To cope with the ever-growing complexity of the aviation system, EASA's work will increasingly focus on managing interfaces and interdependencies between aviation system 'components' with due consideration of the total aviation system. This focus is expected to increase the efficiency in rulemaking, certification and oversight processes, as well as more generally in risk management.

To regulate the safe integration of new technologies and concepts, the Agency will ensure that from inception (issuing the related ToRs), any new rulemaking activity will foresee consultation of relevant stakeholders in all affected aviation domains, to ensure that an appropriate cross-section of aviation interests from all domains is captured. This was done, for example, for RMT.0379 'All-weather operations', to ensure due consideration of the interactions among the different 'aviation system components' involved (aircraft, aerodromes, operational procedures, involved personnel, etc.).

In this fast-evolving context, EASA is putting significant effort in preparing the future with e.g. the identification of dedicated resources to innovative projects, the establishment of an Artificial Intelligence Task Force, the EASA Innovation Cell, the Certification Directorate reorganisation 'CT Roadmap 2020', research activities, etc.

EASA Innovation Cell

In March 2018, EASA launched the internal Innovation Cell, whose task is to coordinate actions supporting the safe introduction of innovation in the aviation market. The Innovation Cell is a cross-Directorate, non-hierarchical structure, coordinating internal actions along 6 principles:

---

[42] See AVIATION SAFETY – Challenges and ways forward for a safe future, Research & Innovation Projects for Policy, EC – Directorate General for Research and Innovation, January 2018: https://publications.europa.eu/en/publication-detail/-/publication/b4690ade-3169-11e8-b5fe-01aa75ed71a1/language-en/format-PDF/source-75248795

1. Organise innovation as part of our business: The Innovation Cell concentrates, coordinates and disseminates information and projects on innovation.

2. Learn: It is essential for EASA to learn as soon as possible about new technologies and principles. This can only be achieved through partnerships with industry. EASA staff can participate in innovative projects through Innovation Partnership Contracts (IPCs) and MoC on innovation.

3. Educate: The EASA approach to innovation needs to become a corporate value. The Innovation Cell animates an internal knowledge community of more than 100 persons to date who share information, discuss impacts, and collaborate on projects through an online platform.

4. Timely adapt regulations and methodologies: EASA acknowledges the need to adapt regulations and certification methodologies in line with the maturation of new technologies (e.g. blockchain and AI).

5. Be technology "agnostic": In times of technology proliferation, EASA acknowledges the need to move to performance-based rules, which do not prescribe a given technology, but provide a performance target.

6. Engage with new entrants: Innovation brings about a new 'breed' of stakeholders, such as drone manufacturers or operators, new digital companies, etc. EASA needs to integrate them into the community of stakeholders in order to take their views into account but also to educate them on the extremely high safety expectations of the aviation community.

The IPCs and MoC on innovation are being developed together with key industry stakeholders. Their objective is twofold: to ease the safe introduction of new technologies in the aviation market and to better prepare EASA to face innovation challenges by bridging the knowledge asymmetry with industry on new technologies. The current IPCs and MoC cover a wide spectrum of topics such as single-pilot operation concepts, the certification of Machine Learning (ML), new avionics concepts, virtualisation and digitalisation of ATM functions, electric and hybrid CAT, etc.

EASA Artificial Intelligence Roadmap

EASA is very active in implementing the EASA AI Roadmap that identifies the opportunities, challenges and impact of this emerging technology on the various domains under EASA's mandate, with a view to propose a corresponding action plan. It will allow the Agency to be prepared in accompanying industrial strategic changes and developments in the coming years. Further details can be found in **Section 3.1.3.1**

EASA CT Roadmap 2020

Among others, one of the main objectives of the CT Roadmap 2020 is to manage internal competencies and knowledge to be better prepared for handling new technological developments. This includes mapping all technical competencies available (within the Agency or through outsourcing) to develop strategic planning tools to anticipate future needs and adapt the available set of skills through development, mobility, retraining, outsourcing and recruitment.

Research

Research will play an important role in the safe integration of new technological advancements into the aviation system. An objective of EASA's research strategy[43] is the upstream support to research activities performed by industry, research centres and universities, by contributing the regulator's views and advice to ensure that the regulatory framework will not be an impediment to innovation. This on the one hand ensures that novel technologies meet the safety, security and environmental protection requirements and on the other hand assists is reducing 'time-to-market' of new products and new types of operation.

All these initiatives should support future enhancement of our global performance-/risk-based regulatory system fostering the introduction of new aircraft design and operating concepts, in a far more digital environment than we have today.

At the same time, new types of operations, aircraft or propulsion systems are emerging and their novel features may not be addressed in existing certification specifications and operational regulations, (including flight crew licensing, air operations, continuing airworthiness, aerodromes and ATM/ANS).

For example:

— **Electric and hybrid propulsion for aircraft**

   The market potential is considered significant with related effects on wealth and job creation. Environmental benefits for Europe are also potentially significant in terms of both gaseous emissions and noise.

— **Airships**

   There are at least two airship projects in Europe. These lighter-than-air aircraft are likely to be used in specialised operations in the medium term. The existing flight crew licensing, air operations, continuing airworthiness and aerodrome regulations will need to be adapted to incorporate this type of operation.

— **Supersonic and hypersonic aircraft**

   Although there are no supersonic aircraft being developed in Europe, it is very likely that such aircraft will be operated in Europe in the medium term.

   Specific landing and take-off noise regulations will need to be adapted for supersonic aeroplanes safeguarding the high level of environmental protection in Europe will need to be developed. In order to ensure a level playing field with subsonic aircraft, these supersonic landing and take-off noise regulations will be guided by the international noise certification standard for subsonic aeroplanes.

---

[43]   https://www.easa.europa.eu/easa-and-you/safety-management/research

It is expected that supersonic transport (SST) aeroplanes will be restricted to fly at supersonic speeds over high seas in order to avoid unacceptable situations to the public from sonic booms to begin with. There is a long-term ambition to work on the definition of a sonic boom noise certification standard for 'low-boom' SST aircraft that will safeguard no such unacceptable situations will be present. This is one precondition to facilitate supersonic flights over land. As regards emissions certification standards, SST aircraft and engine emissions regulations need to be developed and updated, respectively, to ensure environmental compatibility of supersonics.

— **Tilt-rotor aircraft**

There is currently one project under certification in the USA; such aircraft could thus be operated in Europe by mid-2021. Tilt rotor aircraft will require adaptation of the flight crew licensing, air operations, aerodromes and continuing airworthiness regulations in particular. For example, current air operations regulations only address fixed wing aircraft, helicopters and balloons.

— **Higher airspace (HA) operations**

There is currently a regulatory gap for operations in the 'higher airspace'. It is a dynamically evolving topic, driven by new technologies and demand. There is a need to further explore ways to tackle this gap, including, but not limited to, the definition of HA limits (upper and lower). This airspace would affect several types of aircraft including e.g. balloons, airships, and high-velocity vehicles, manned and unmanned. In the short term, a concept of operations will be defined in a project led by the EC. The outcome of this work will be analysed by EASA to determine the need for regulatory activities in the medium/long term (2-4 years). The EASA view on the emerging business cases to utilise HA in the short term is centred on operations in the field of high-altitude pseudo-satellites as a significant cost saving over traditional satellites. Other business cases cover micro-satellite launches and, in the longer term, supersonic transportation. Any definition of an upper limit to HA would need to cater for the operation of suborbital and space operations. As a subset of HA suborbital and space operations will have an impact in more areas than just airspace operations.

— **Suborbital aircraft and space operations**

Air operations regulations, for example, would need to be adapted and the impacts on the ATM system will need to be addressed in both the current airspace management and HA. Moreover, as suborbital aircraft are currently envisaged to use rockets to reach the fringe of space, fuelling of such rockets at airports would require the installation of dedicated, protected areas. This new type of operations will also call for further civil-military cooperation and coordination. Currently some European States are interested in developing horizontal spaceports to operate such suborbital aircraft

One suborbital aircraft project is currently being developed and tested in the USA ('SpaceShipTwo') this project is gaining significant media coverage at present, but has not yet been operated commercially with paying passengers on board. Some suborbital aircraft projects exist as well in Europe ('Spaceplane', the VSH student challenge project[44] to develop a suborbital manned airborne,

---

[44] VSH project is part of the Aerospace Student Challenge, which allows teams of European students, through collaborative work, to participate in the development of the project by addressing various aspects of the VSH system: propulsion, avionics, flight simulation but also maintenance, management, legal aspects, etc. while complying to the overall technical framework of the VSH. The name stands for VEHRA (Véhicule Hypersonique Réutilisable Aéroporté) Suborbital Habité, or Suborbital Manned ARHV (Airborne Reusable Hypersonic Vehicle), and the vehicle will be launched from a commercial aircraft, which will reach Mach 3.5 and an altitude of 100 km, the limits of space.

reusable hypersonic vehicle). Due to the challenges around the propulsion systems the level of safety for such operations will require careful consideration.

— **Reduced crew**

PART-ORO (Annex III to Regulation (EU) 965/2012[45] — the 'Air OPS Regulation) contains conditions and limitations addressing crew composition, FTL regimes and crew training. In the future, these conditions and limitations may evolve in order to potentially extend to allow for the possibility for large aeroplanes conducting CAT to be safely operated by a single pilot, provided that effective mitigations (e.g. ground assistance, advanced cockpit with workload alleviation means, capability to cope with an incapacitation, etc.) are in place, in order to ensure an equivalent level of safety in each of the relevant areas affected. Should new RMTs be added or existing ones be amended to enable these kinds of operations, there will be an engagement with all relevant stakeholders via the established channels.

In 2019, EASA started an internal project aiming to evaluate the impact of required changes (internal and external) on a variety of aspects:

— changes to the regulatory environment;

— interaction with ICAO; and

— changes in operators' business models and social impacts.

A new RES action is included in this edition to support this new project (RES.028). Further actions may be developed and included in subsequent EPAS editions.

3.1.3.1   Artificial intelligence (AI)

EASA AI Roadmap

AI, and more specifically the ML[46] field of AI, bears enormous potential for developing applications that would not have been possible with the development techniques that were used so far.

As concerns EASA, AI will affect most of the domains under its mandate. AI not only affects the products and services provided by the industry, but also triggers the rise of new business models and affects the Agency's core processes (certification, rulemaking, organisation approvals, and standardisation). This may in turn affect the competency framework of EASA staff.

AI is by essence multidisciplinary and will require a coordinated risk management approach, to ensure safety within the total aviation system.

EASA developed an AI Roadmap that aims at creating a consistent and risk-based 'AI trustworthiness' framework to enable the processing of AI/ML applications in any of the core domains of EASA, from 2025 onwards.

---

[45]   https://eur-lex.europa.eu/legal-content/de/TXT/?uri=CELEX%3A02012R0965-20160825

[46]   Machine learning (ML) — the ability of computer systems to improve their performance by exposure to data without the need to follow explicitly programmed instructions.

Scope of the EASA AI Roadmap

The current breakthrough is the use of data-driven learning techniques (Machine Learning (ML)/Deep Learning (DL)), which are disruptive and, by opposition to development techniques, cannot be addressed through traditional approaches. They raise the need for developing novel methods.

Version 1.0 of the EASA AI Roadmap will focus on ML techniques using, among others, learning decision trees or neural network (NN)[47] architectures. Further development in AI technology will require future adaptations to this Roadmap.
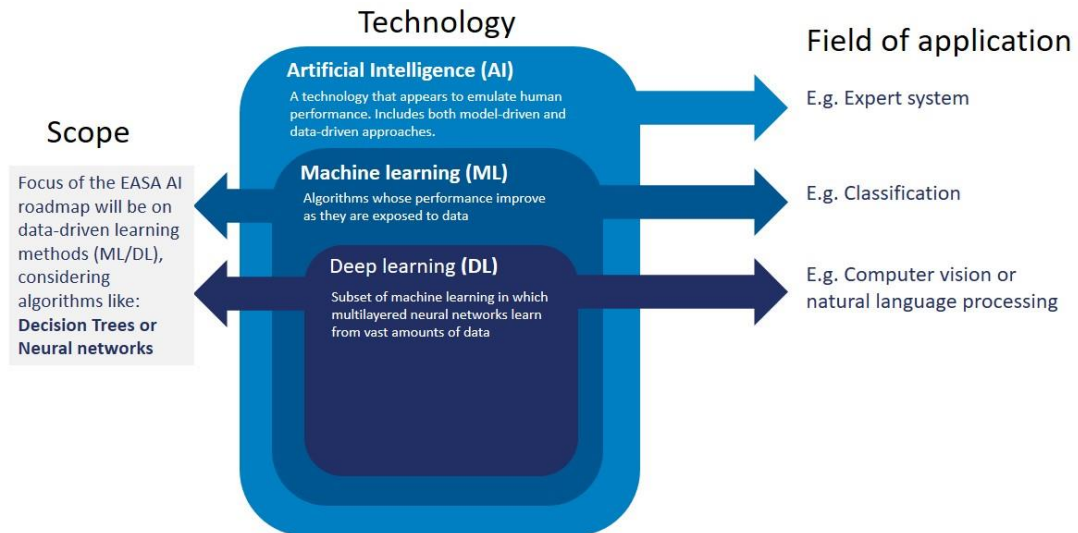
Figure 9: AI taxonomy in the EASA AI Roadmap

Challenges

The power of ML lies in the capability for a system to learn from a set of data rather than requiring development and programming of each necessary decision path. It also involves a consequent number of challenges, including:

— the traditional *development assurance frameworks are not adapted* to ML;

— the lack of standardised methods for *evaluation of the operational performance* of AI/ML;

— the issue of *bias* in data-driven approaches;

— the lack of *predictability* and *explainability* of the ML application behaviour;

— the *complexity* of architectures and algorithms; and

— *adaptive* learning processes (continuous learning in operations).

---

[47] **Neural network (NN)** — A computational graph which consists of connected nodes ('neurons') that define the order in which operations are performed on the input. Neurons are connected by edges which are parameterised by weights (and biases). Neurons are organised in layers, specifically an input layer, several intermediate layers, and an output layer.

Building blocks for the EASA AI Roadmap

The EASA approach is driven by the seven key requirements for trustworthy AI that were published in the report from the EC High Level Group of Experts on AI.
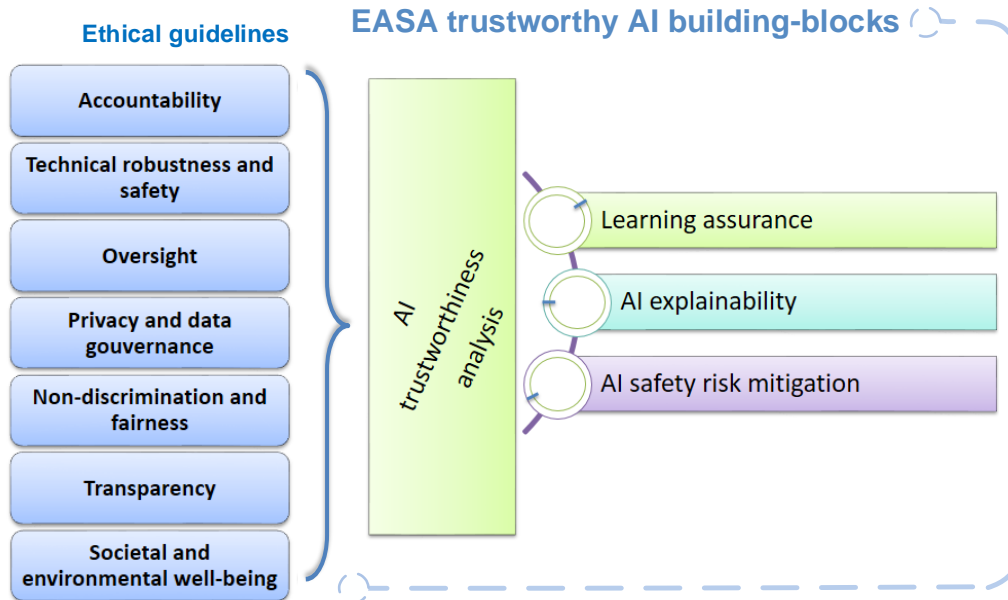
Figure 10: Relationship between AI Roadmap building blocks and AI trustworthiness

All four building blocks are anticipated to have an importance in gaining confidence in the trustworthiness of an AI/ML application.

The *AI trustworthiness analysis* should provide guidance to applicants on how to address each of the seven key guidelines in the specific context of civil aviation.

The objective of *learning assurance* is to gain confidence at an appropriate level that an ML application supports the intended functionality, thus opening the 'AI black box' as much as practicable.

Explainability of AI is a human-centric concept that deals with the capability to explain how an AI application is coming to its results and outputs.

AI safety risk mitigation is based on the anticipation that the 'AI black box' may not always be opened to a sufficient extent and that supervision of the function of the AI application may be suitable to the necessary extent.

Key objectives

The main action streams identified in the EASA AI Roadmap are to:

1. Develop the AI trustworthiness building blocks.
2. Ensure competency of EASA for first AI applications.
3. Influence the European AI research agenda and cover identified gaps.
4. Support the European Aviation leadership in AI.
5. Implement and support development of EU AI strategy and initiatives.

Timeline

The EASA AI Roadmap foresees a phased approach, the timing of which is aligned with the industry AI implementation timeline. *Phase I* will consist in developing a first set of guidelines necessary to approve first use of safety-critical AI, in partnership with the industry, mainly through IPCs, support to research, certification projects, and working groups. *Phase II* will build on the outcome of Phase I to develop regulations, AMC and GM for certification/approval of AI. A *Phase III* is foreseen to further adapt the Agency process and expand the regulatory framework to the future developments in the dynamic field of AI.
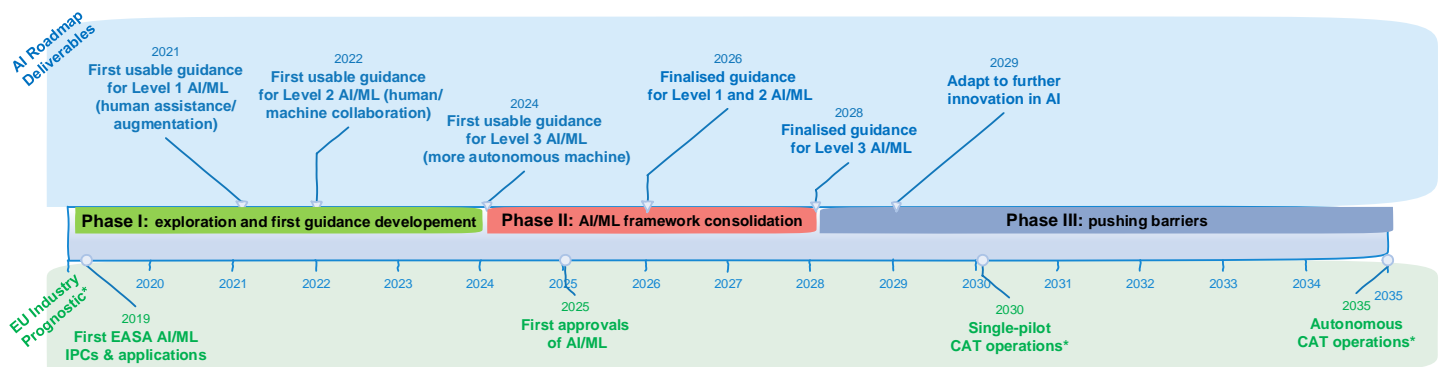
Figure 11: AI Roadmap phased approach

3.1.3.2 Engine/aircraft certification

In 2016, EASA, together with the FAA, initiated a dedicated Engine/Aircraft Certification Working Group (EACWG) to streamline the overall certification process by improving engine/aircraft interface certification and standard-setting practices. The EACWG aims at reducing unnecessary burden in the certification process and better address the interdependencies between aircraft and engine certification programmes of transport category aircraft with turbine engines. This work will also lead to better identifying and addressing gaps and overlaps when updating related CSs.

An effective and efficient certification process, combined with streamlined certification requirements and standards, will have clear safety benefits.

The EACWG identified a total of 29 recommendations, in the following areas:

— conducting a certification programme;

— understanding and developing the regulatory requirements;

— understanding if the engine/airframe certification interface is working effectively; and

— addressing specific rule and policy gaps.

A number of recommendations made were outside the scope of the EACWG, such as reviewing the operating regulations to determine whether discrepancies exist between certification and operational regulations.

The list of recommendations is included as Appendix D in the final report issued by the EACWG in June 2017[48].

---

[48] https://www.easa.europa.eu/sites/default/files/dfu/EACWG_final_report_June_2017.pdf

In September 2018, the Certification Management Team (CMT), following a request from EASA and the FAA, approved the creation of the Engine Aircraft Certification Tracking Board (EACTB).The EACTB is framed under the Certification Authorities for Bilateral Agreements & Certification Procedures (CABA).

The EACTB met on 16-18 April 2019. The April meeting was the 1st formal gathering of the group after its recognised constitution. The EACTB is co-led by EASA and the FAA, and is formed by authority and industry representatives of the aircraft and engine communities.

One recommendation, R2.6, is closed and the results are available in the EACWG final report.

The remaining 28 recommendations are prioritised by the EACTB to be able to proceed to their development in an orderly manner. The 2020-2024 EPAS edition focuses on the following 3 + 3 prioritised recommendations:

Top-3 CMT Items:

— R-2.8: Issue Papers to Policy

— R-4.6: Fire Prevention

— R-4.7: Electrical Wiring Interconnection System (EWIS)

Addtionally, 3 Items identified by the EACTB:

— R-4.1: F&R Testing

— R-4.5: Inhibit Engine Protection Systems

— R-4.4: Extended-range Twin-engine Operational Performance Standards (ETOPS)

The EACTB will be coordinating with the Certification Authorities for Propulsion (CAPP) and with the Certification Authorities for Transport Airplane (CATA) for the pursuing and progressing on the recommendations.

3.1.3.3 Ensure the safe operations of UAS (drones)

Common European rules for UAS operations and registration

To ensure the safe operation of drones and a level playing field within the European Union, EASA has developed common European rules. They contribute to the development of a common European market while ensuring safe operations and respecting the privacy and security of EU citizens.

On 28 February 2019, Europe got one step closer to harmonised rules for safe drone operation as the EASA Committee voted unanimously to approve the EC's proposal for an Implementing Act to regulate the operations of UAS in Europe and the registration of drone operators and of certified drones. Commission's Implementing Regulation (EU) 2019/947[49], accompanied by Commission's Delegated Regulation (EU) 2019/945[50], defining the technical requirements for drones, were published on 11 June 2019. The delegated Regulation is immediately applicable while the Implementing Regulation will become gradually applicable within a year from publication. By 2022, the transitional period will be completed and the regulation will be fully applicable.

With these Regulations, the proposed EASA general concept, establishing three categories of UAS operations ('open', 'specific' and 'certified' with different safety requirements, proportionate to the risk), is adopted at the European level and will be implemented.

Moreover, as the number of UAS operations increases, there is a need to establish unmanned traffic management (UTM) systems (named 'U-space' in Europe). There has been a huge development of U-space during the last year and it is expected that this will develop even faster in the years to come. The ATM Master Plan reflects the details about the integration of UAS in the EU airspace.

Key actions and future outlook

Following the publication of the EU Regulations, EASA published on 10 October 2019 the related AMC and the GM, cf. ED Decision 2019/021/R[51]. These AMC/GM include:

— a revised version of the draft AMC and GM that were published with Opinion No 01/2018[52];

— the specific operations risk assessment (SORA) as AMC to the risk assessment that is required in the 'specific' category;

— the first predefined risk assessment to assist operators when applying for an authorisation in the specific category; and

— explanations resulting from the discussions held with stakeholders during the approval of the regulation.

In parallel, EASA is working on the next regulatory actions that will enable safe operations of UAS and the integration of these new airspace users into the European airspace:

---

49 https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1570893991756&uri=CELEX:32019R0947

50 https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1570894011520&uri=CELEX:32019R0945

51 https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2019021r

52 EASA Opinion No 01/2018: Introduction of a regulatory framework for the operation of unmanned aircraft systems in the 'open' and 'specific' categories

— EASA's Opinion containing two standard scenarios that each allow the use of a declaration. These standard scenarios will be included in Appendix 1 to the Annex to the Implementing Act: EASA's Opinion No 05/2019[53] was published on 7 November 2019 (under RMT.0729);

— EASA's NPA for UAS in the 'certified' category, which will include a comprehensive package addressing all aviation domains (initial airworthiness, continuing airworthiness, remote pilot licences, aircraft operations, rule of the air, ATM/ANS and aerodromes) as well VTOL operations: the NPA is expected in Q4 2020 and is expected to include IFR operations of large cargo UAS in controlled airspace and UAS operations in an urban environment (under RMT.0729).

— EASA's Opinion on a high-level regulatory framework for the U-space[54] is expected by Q1 2020[55] (under RMT.0230).

EASA continues to assess the need for action in the field of UAS in particular in relation to the harmonised implementation of the adopted regulations for the 'open' and 'specific' categories, the development of the necessary regulations for the 'certified' category and the safe and harmonised development and deployment of U-space across the EU.

The safe integration of all new entrants into the airspace network will be one of the main challenges in relation to the integration of UAS technologies and related concepts of operation.

EASA Counter Drone (C-UAS)[56] Task Force — proposed action plan

The events in Gatwick/Heathrow in December 2018 showed that the unauthorised use of drones at or around aerodromes may — given the potential effect on aircraft safety and security — lead to unacceptable disruption of operations, affecting the air transportation system. Just after the events, an EASA internal Task Force was established to analyse the facts and develop an action plan in order to ensure that the aerodrome operators, aircraft operators and air traffic services (ATS) providers are prepared to prevent as far upstream as possible, and react to misuse of drones with minimum disruption of operations, while still being able to accommodate friendly drone operations. The ultimate goal of the proposed action plan is to maintain safety as a priority in case of misuse or unauthorised use of drones in the vicinity of aerodromes.

The analysis of the events in Gatwick in December 2018 has clearly identified the need to support aerodrome operators, aircraft operators and ATS providers to be better prepared to manage the presence of unauthorised drones around aerodromes, while ensuring the business continuity. This implies among others provision of guidance on roles and responsibilities between the different actors and on the various counter drone mitigations ranging from prevention, surveillance, detection and disruption of unauthorised drones.

EASA will be acting as the European coordinator of a roadmap to be developed and implemented with all involved stakeholders: the Member States (including NAAs and law enforcement authorities), the aerodrome operators, and aircraft operators, the ANSPs, Eurocontrol and the EC.

---

[53] https://www.easa.europa.eu/document-library/opinions/opinion-052019
[54] This task is also linked to RMT.0376 as there is a need for suitable conspicuity devices from the manned aviation when entering in the U-space airspace.
[55] While for the development of this Opinion the Agency follows the accelerated procedure of the rulemaking process, extensive consultation is organised through dedicated meetings and workshops to address all airspace users' concerns.
[56] Counter unmanned aircraft systems.

The first version of the action plan was distributed to the Member States and EASA stakeholders for review, endorsement and contribution during April - May 2019. The second version takes into account the feedback and proposals received.

The action plan at Issue 2, published on 11 June 2019, complements the EASA implementation plan for Commission's Implementing Regulation (EU) 2019/947 and Delegated Regulation (EU) 2019/945, and the rulemaking activities on U-Space.

The action plan[57] is articulated around five objectives, each objective being transposed into one concrete action.

— **Objective #1: Educate the public to prevent and reduce misuse of drones around aerodromes**

With the coming Implementing Rules on drones, the Member States will be able to define geographical zones, i.e. portions of airspace that facilitate, restrict or exclude UAS operations in order to address risks pertaining to safety, privacy, protection of personal data, security or the environment, arising from UAS operations. The UAS geographical zones available to the public should be using a common unique digital format.

Proposed action #1	
Coordinator	**EASA**
Actors	Eurocontrol and a TF of Member States
Timeline	9 months
Date of start	1st meetings held in EASA on 10 September 2019 and 23 October 2019. Follow-up meetings planned between December 2019 and May 2020.
Deliverables	Inputs for an ED Decision proposing AMC and GM to Article 15 of Commission Implementing Regulation (EU) 2019/947 providing a common and unique digital format to be used by Member States to make the UAS geographical zones available to the public.

— **Objective #2: Prepare aerodromes to mitigate risks from unauthorised drones use**

Preparation of aerodromes to mitigate potential misuse of drones in their vicinity includes the definition of roles and responsibilities of all involved actors for the following areas:

— information gathering (including detection methods);

— sharing of data;

— coordination of procedures;

— risk assessment taking into control security aspects; and

— training.

---

[57] These actions are taken in addition to the safety promotion action on drones: SPT.091.

The objective of the proposed action #2 is to develop guidance on definition of roles and responsibilities when sightseeing drones are identified in the vicinity of an aerodrome.

Proposed Action #2	
Coordinator	**EASA**
Actors	Member States (including NAAs and law enforcement authorities designated by the Member States), aerodrome operators, CAT Operators, ANSPs) (*)
Timeline	Task force will run from 11/2019 to Q3/2020
Estimated date of start	November 2019 ("Rules of Engagement" have been submitted for review through EASA MAB and SAB)
Deliverables	Manual with best practices on definition of roles and responsibilities when unauthorised drones are identified in the vicinity of an aerodrome

(*) Operational personnel (e.g. pilots through CAT operators and ATCOs through ANSPs) are expected to participate.

— **Objective #3: Support the assessment of the safety risk of drones to manned aircraft with scientific data**

Assessing the safety risk associated with the presence of an unauthorised malicious drone in the vicinity of an aerodrome, implies understanding the potential effect of a drone collision with manned aircraft. Currently, there is a lack of conclusive scientific evidence, which led EASA to launch a research project (RES.015) to gain understanding of the effects of potential collisions of mass market drones ('threat') with manned aircraft ('target'). This research project also aims at identifying and recommending drone design strategies. The first project deliverables will not be available before the end of 2021. Therefore, EASA proposes a short-term solution in the form of a workshop to share relevant scientific data (European or worldwide) which could be already available and used in the meantime.

Proposed action #3	
Coordinator	**EASA**
Actors	Relevant Member States and stakeholders
Timeline	Mid-term (6 to 12 months)
Estimated date for the workshop	Q1 2020
Deliverables	Report gathering any scientific data relevant to the consequences of a drone collision with manned aircraft

— **Objective #4: Ensure that C-UAS measures are swiftly considered and implemented from a global safety perspective**

While the responsibility for disrupting activity of misused or malicious drones falls under national law enforcement regulations, the choice of drone detection and drone disruption technologies is a challenge since they could create unintended safety hazards and unmitigated risks to other manned aircraft, authorised drones or aerodrome infrastructures.

EASA, with due regard for its responsibility for civil aviation, is following the European initiatives in the domain of drone detection and drone disruption technologies, and works closely with subject matter experts to make sure aviation safety objectives are preserved. It is expected that guidance material to

reduce unintended impact on aircraft or aerodrome equipment (e.g. communication, navigation and surveillance (CNS) equipment and NAV aids infrastructure) as well as to clarify the roles and responsibilities of stakeholders for C-UAS and law enforcement measures (including prosecution) are developed.

Proposed action #4	
Coordinator	**EASA**
Actors	Relevant Member States' law enforcement bodies, EC — Migration and Home Affairs (DG HOME), aerodrome operators
Timeline	12 months
Date of start	Q2 2019
Deliverables	Guidance material: — to ensure the integrity of 'no flight zones for drones' (including technical means for detection, identification, interception and intervention); — to support public education and awareness initiatives (communication mechanism); — to reduce unintended impact on aircraft or aerodrome equipment (e.g. CNS equipment and NAV aids infrastructure); and — to clarify the roles and responsibilities of stakeholders for C-UAS and law enforcement measures (including prosecution).

— **Objective #5: Support adequate occurrence reporting**

Occurrences involving drones need to be reported in accordance with Article 3 of Regulation (EU) No 376/2014, paragraph 2, as amended by Article 136 of the Basic Regulation.

Analysis of data/information related to unauthorised presence of drones in the aerodrome area and analysis of the effectiveness of the measures taken are considered to be of key importance.

EASA has an essential role to play in maintaining a record of occurrences for trend analysis and initiating proactive measures. One of the fundamental elements to support occurrence monitoring will be to define criteria to classify:

— an airprox (aircraft proximity) between an unmanned aircraft (UA) and a manned aircraft, i.e. the distance between a UA and a manned aircraft as well as their relative positions and speed such that the safety of the manned aircraft involved may be compromised; and

— a UA airspace infringement.

Proposed action #5	
Coordinator	**EASA**
Actors	EASA NoA, Eurocontrol, aerodrome operators, airline associations and ANSPs
Timeline	Mid-term (6 to 12 months)
Date of start	Q4 2019
Deliverables	Define criteria to classify: — an airprox between a UA and a manned aircraft; and — a UA airspace infringement.

Other actions of non-regulatory nature on drones

— Coordinated safety promotion to create understanding and awareness of the rules and to support safe UAS operations in the long term (SPT.091);

— Aircraft drone collision research action (RES.015).

EASA is actively engaged in the development of standards for the 'open' and 'specific' categories of UAS and in the development of SP material.

3.1.3.4 New operating concepts and business models

Address current and future safety risks arising from new operating concepts and emerging business models

Some new business models such as those responding to the increased demand for flying in the cities (e.g. 'urban air mobility') or those generated by the increased digitalisation in the aviation industry (virtual/ augmented reality, digital twins, etc.), the possible introduction of more autonomous vehicles and platforms, single-pilot operations and completely autonomous cargo aircraft, will challenge the way authorities regulate and oversee the aviation system.

Until now, the air travel over urban areas has been limited to very special operations, such as police operations or helicopter emergency medical services (HEMS). New aviation partners are seeking new business models to provide more services to citizens, ranging from parcel delivery by air within the cities to flying air taxis. These new business models and operations need to be performed in a safe and secure manner to maintain the confidence that citizens have in the air transport system. EASA has a key role to play in this area.

Key action:

— Develop rules or amend existing ones, where necessary, to address new technologies and operational air transport concepts (RMT.0731 'New air mobility').

3.1.3.5 Electric and hybrid propulsion, vertical take-off and landing (VTOL) aircraft

Innovation in any industry is a key factor influencing its competitiveness, growth and employment potential. With this strategic priority in mind, and looking at the increasing number of new aircraft manufacturers and suppliers working on aircraft using electric propulsion (and increasingly electric systems), it becomes apparent that there are very strong prospects as well as demand, from industry and governments, to have hybrid propulsion and eventually fully electric aircraft. The use of electric and hybrid propulsion systems has the potential of significantly reducing aviation environmental footprint. However, in order to ensure that this objective is met, the full life cycle of the product needs to be taken into account as well as the energy mix used.

To encourage the safe integration of new technological advancements in the wider electrical aviation sector overall, flexibility in the approach on all types of concepts, variations and design types will be enhanced.

To allow for the projects to thrive, a number of complex issues need to be tackled from a regulatory perspective.

In terms of rulemaking for aircraft design requirements, until such time as enough experience will have been gained, special conditions (SCs)/derogations will be applied in a flexible and innovative way, as already allowed by the system and in line with Better Regulation principles. The use of performance-based and non-prescriptive regulations is used for e.g. CS-23, CS-VLA and for the future rules for drones.

At the end of 2018, following receipt of applications for small VTOL aircraft, EASA launched a public consultation on its proposal for a SC that included suitable airworthiness standards to enable the certification of small VTOL aircraft. The number and the nature of the comments received provide an indication that such aircraft may have to be treated as a new product category which would neither fit the CS-23 nor the CS-27 product category. However, the SC is intended to represent the first component of the regulatory framework to enable the safe operation of air taxi and electric VTOL (eVTOL) aircraft in Europe. In anticipation of future air taxi operations in urban areas, a number of noise measurements were performed on small VTOL aircraft in summer 2019, this activity will continue in 2020.

Currently, the type certification of electric and hybrid propulsion systems is conducted by a dedicated set of SCs, together with existing airworthiness codes (CS-E, CS-23, CS-27, etc.), and on a case-by-case basis for each application.

Moreover, and in order to enable standardised type certification of electric and hybrid propulsion units (EHPU), either in the case of having a separate type certificate (TC) for the EHPU, or in the case where the EHPU would be integrated into the aircraft TC, a set of technical specific certification requirements will be reflected in a single SC for EHPU. The draft SC-EHPU is expected to be made available for public consultation at the end of 2019, with an expected timeline for issuing the final SC-EHPU in the beginning of 2020.

Early 2020 at the latest, the first small aircraft type model with fully electric propulsion is planned to be type-certificated.

Likewise, in electric and hybrid aviation, EASA aims to continue building up knowledge on emerging technologies, to establish TACs or IPCs to identify certification challengers on innovative products, and to continue liaising with relevant industry and standardisation working groups. EASA is also engaged through providing technical training to its staff.

In terms of rulemaking actions for other aviation domains, the new RMT.0731 is expected to lead to different streams of activity, one of them being to address the regulatory gaps with regard to electric and hybrid propulsion.

After an analysis of the ongoing RMTs, the scope of RMT.0731 for electric and hybrid propulsion is limited to continuing airworthiness requirements for all types of aircraft. RMT.0731 has strong interfaces with the following RMTs:

— RMT.0230 (Drones), which is now also addressing manned e-VTOL electric propulsion aspects related to the ADR, ATM, FCL, OPS domains;

— RMT.0678 (FCL) and RMT.0573 (OPS), which are addressing a first set of FCL and OPS electric propulsion-related requirements for other aircraft types that are not covered by RMT.0230; and

— The environmental protection requirements regarding emissions and noise with electric and hybrid propulsion will be assessed with the existing RMT.0727 (Alignment of Part 21 with Regulation (EU) 2018/1139 (including simple and proportionate rules for General Aviation)) and RMT.0514 (Implementation of the CAEP/10 amendments: Climate change, emissions and noise).

Potentially, more streams to cover other future projects could be added in RMT.0731, including the development of CSs based on experience gained in certification projects applying SCs such as for VTOL or electric and hybrid propulsion.

Key action:

— Develop rules or amend existing ones, where necessary, to address new technologies and operational air transport concepts (RMT.0731 'New air mobility').

3.1.3.6 Enable the implementation of new operational solutions developed by SESAR

EPAS also caters for the regulatory and implementation needs of the SESAR essential operational changes and other new technological advancements (such as, but not limited to, U-space technological solutions, virtualisation and cloud-based architecture and remote tower operations).

Since the Basic Regulation repealed Regulation (EC) No 552/2204[58], global interoperability, civil-military cooperation and compatibility with other regions' development plans, such as NextGen, form an integral part of EASA's work. Furthermore, EPAS provides a proactive and forward-looking view to support the implementation of the essential operational changes required to achieve the SESAR target operational concept safely.

In addition, EASA will consider additional implementation support actions that facilitate the achievement of operational improvements and new ATM operational concepts. These actions should approach the implementation needs of the enabling infrastructure in a comprehensive manner, thus facilitating the safe, secure and interoperable implementation of cost-effective solutions considered as necessary. Such solutions could include GNSS (incorporating dual frequency multi-constellations), SATCOM, and other satellite-based CNS solutions or others emerging from the telecommunications field. It should avoid requiring specific technological solutions; it should instead specify clear performance and competence requirements as appropriate to the anticipated operations.

Key actions:

— Support the development of data link operations through RMT.0524, expanding the current Commission Regulation (EC) No 29/2009[59] to alternate data link technologies compliant with performance requirements;

— Support the implementation of performance-based navigation in the European ATM network as per Commission Implementing Regulation (EU) 2018/1048[60] (SPT.108);

— Support the implementation of the regulatory needs of the SESAR common projects (RMT.0682). This encompasses regulatory actions at rule level and validation of industry standards.

3.1.3.7 Enable all-weather operations

The European industry should have the capability to take full advantage of the safety and economic benefits generated through new technologies and operational experience. This represents a widely recognised interoperability subject touching on a wide range of areas, including performance-based aerodrome operating minima (PBAOM), related aerodrome equipment to support such operations, and procedures for both CAT and GA.

---

[58] [Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation)](#)

[59] [Commission Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on data link services for the single European sky](#)

[60] [Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down airspace usage requirements and operating procedures concerning performance-based navigation](#)

Aircraft operations have always been influenced by the weather. Whilst modern aircraft design and the availability of weather observations and forecasts contribute to a predominantly very safe flying environment, there remain occasions where severe weather events have been identified as being a contributing factor in the causal chain of accidents and incidents. Such events remain of concern within the aviation community and corresponding SRs have been addressed to EASA by accident investigation authorities.

Since 2015, EASA has increased its focus on weather-related challenges and, as part of that work, has sought to identify whether the meteorological information available to pilots could be enhanced. Accordingly, EASA organised a first workshop dedicated to 'Weather information provided to pilots'. Following the workshop and the acknowledged need to take further action, EASA integrated the 'Weather Information to Pilots' project within the activities of RMT.0379 'AWO'. A project team put together in April 2016 — involving representatives from international organisations, associations and industry — was tasked with an assessment of the situation and this resulted in the 'Weather Information to Pilots Strategy Paper'[61] issued in January 2018. The EASA Strategy Paper focuses on the weather phenomena that introduce risk to aviation, describes the current mitigation measures, the deficiencies and how to overcome them. The scope of the paper is focusing on CAT aeroplanes. In the near future, similar work will be undertaken to address weather information to pilots in GA and rotorcraft operations.

The EASA Strategy Paper proposes nine recommendations to further improve weather information and awareness. The recommendations are detailed on the Weather Information to Pilots web page[62] and on pages 28-29 of the Strategy Paper itself. They are summarised below:

— **Recommendation #1: Education and training:** weather hazards, mitigation, and use of on-board weather radar.

— **Recommendation #2: Improved weather briefing presentation:** promote improvements to the presentation of weather information in-flight briefing.

— **Recommendation #3: Promotion of in-flight weather information updates:** promote the use of the latest information available to ensure up-to-date situational awareness.

— **Recommendation #4: Pan-European high-resolution forecasts:** support the pan-European developments regarding the provision of high-resolution forecasts for aviation hazards (e.g. CAT, icing, surface winds, cumulonimbus (CB), winter weather).

— **Recommendation #5: Use of supplementary 'Tier 2' weather sources for aviation purposes:** develop the necessary provisions to support the use of supplementary 'Tier 2' meteorological information by pilots.

— **Recommendation #6: Development and enhancement of aircraft sensors/solutions:** promote the development of intrinsic aircraft capabilities to facilitate the recognition and, if required, the avoidance of hazardous weather.

— **Recommendation #7: Connectivity to support in-flight updates of meteorological information:** promote deployment of connectivity solutions (uplink and downlink) to support the distribution of meteorological information to pilots.

---

[61] https://www.easa.europa.eu/sites/default/files/dfu/EASA-Weather-Information-to-Pilot-Strategy-Paper.pdf

[62] https://www.easa.europa.eu/easa-and-you/air-operations/weather-information-pilots

— **Recommendation #8: Provision of enhanced meteorological information:** promote provision of high-resolution observed and forecast meteorological information, particularly data with high spatial and temporal resolution such as imagery derived from satellite and ground weather radar sources.

— **Recommendation #9: On-board weather radar, installation of latest generation equipment:** promote the installation of the latest generation of on-board weather radars, with emphasis on including capability for wind shear and turbulence detection.

To support the above, a BIS will be defined to determine the need for additional EPAS actions. These could then be considered for the 2021-2025 EPAS planning cycle.

Key action:

— Review and update the AWO rules in all aviation domains (RMT.0379), supported with relevant safety promotion activities.

3.1.4   Environment

In a changing world, climate change and sustainability are becoming major driving forces for the aviation industry. The Agency has defined a new strategic orientation to support the decarbonisation of the aviation system, based on the following objectives and key actions:

3.1.4.1   Act towards sustainable aviation through robust, efficient and innovative certification

In the area of aircraft and engine technology, the Agency's product certification activities ensure that products are as quiet and clean as possible, thereby reducing negative impacts on the health of citizens. At the same time, the Agency innovates to develop **the most cost-effective environmental certification process in the world**, thereby contributing to the competiveness of the European industry.

Key actions:

— The Agency has a new mandate to collect and **verify aircraft noise and performance information** for noise modelling around airports, as per Regulation (EU) 598/2014[63] Article 7.

— A number of *novel technologies* are rapidly approaching market maturity. In order to respond proactively to these technologies and allow for smooth certification based on robust environmental assessments, a dedicated activity will be launched to assess their environmental characteristics and sustainability. This will include the electric propulsion project as well as the sustainability assessment of alternative fuels. The success of this activity will be ensured by engaging traditional stakeholders as well as aviation environment non-governmental organisations (NGOs).

3.1.4.2   Act towards sustainable aviation through technical leadership for smart and proportionate standards

The Basic Regulation makes direct reference in Article 9 to the relevant Volumes of ICAO Annex 16. The Agency's vision of 'smart rules' in terms of environmental standards is fulfilled through effective involvement upstream in the ICAO-CAEP process.

---

[63]   https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1570907778872&uri=CELEX:32014R0598

Key actions:

— A key priority from the European perspective is the CAEP work on **supersonic** transport to safeguard that **the current high level of aviation environmental protection in Europe is not deteriorated** and a level playing field between subsonic and supersonic jets is ensured. Furthermore, the environmental certification requirements for supersonic transport must on the one hand not undermine the historic environmental improvements that have been achieved by subsonic aircraft, and on the other hand help to avoid potential operating restrictions that affect the wider sector.

— EASA expertise in ICAO standard setting will continue to be made available to the EC for ICAO's **CORSIA**, provided there is a suitable funding mechanism.

— As the Basic Regulation permits Europe to create environmental standards in those areas that are not regulated by ICAO standards, efficient rulemaking will focus on areas where Europe would like to take the lead (e.g. hybrid and electric aircraft).

— Smart standards is also synonymous with '**data-informed' standards**. In this regard, EASA is continuously improving the quality of its impact assessment capabilities by collecting and analysing flight data (Data4Safety) and developing state-of-the-art tools to monitor and forecast aviation's noise and emissions as well as the costs of candidate policies to mitigate those (H2020).

— The Agency will bundle its efforts on digitalisation of its environmental activities under the *EASA ecoPortal*. The ecoPortal aims at achieving efficiency gains inside the Agency, as well as for NAAs (e.g. in issuing noise certificates), manufacturers, operators and aerodromes (e.g. in collection of noise certificates). The ecoPortal project will be modular to achieve benefits in all implementation phases, starting with noise[64].

3.1.4.3 Act towards sustainable aviation through effective transversal actions at European level (Article 87 implementation)

The Basic Regulation contains a broadened mandate for the Agency on environmental protection with an objective to 'prevent significant harmful effects on climate, environment and human health (Article 87(1)). As this is a new requirement from the EASA Basic Regulation, currently there is no process defined. It is proposed to anchor this activity to the EASA quality system and create a related core process.

The EC, EASA, other EU institutions as well as Member States are called to cooperate on environmental matters including on the EU Emissions Trading System (ETS) and on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)[65] (Article 87(2)). This cooperation is implemented through bilateral agreements of the Agency (e.g. the MoU with the European Chemicals Agency (ECHA) on REACH) and pan-European structures, like the ECAC European Aviation Environmental Group (EAEG).

---

[64] Current Module 1: Noise data and certificates; Potential future modules: 2: Emissions data including CO_2; 3: Impact assessment models; and 4: CORSIA

[65] Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the **Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)**, establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

Key actions:

— The Agency assists the EC with the definition and coordination of policies and actions (Article 87(3)). Current actions are, for example, related to CORSIA and the study on non-CO_2 effects of aviation on climate.

— The Agency is newly mandated to perform and publish an environmental review which shall give an objective account of the state of environmental protection relating to civil aviation in the Union. Said review shall also contain recommendations on how to improve level of environmental protection in the area of civil aviation in the Union (Article 87(4)). As the **EAER developed with the European Environment Agency (EEA) and EUROCONTROL and published in January 2019 contains already** the 'objective account' with the best available data, the Agency will now focus on a stand-alone, independent publication with technical recommendations on how to improve the environmental performance of the aviation sector to be published mid-2020.

— Based on the outcome of the 2019 work on **circular economy** indicators and **life cycle assessments** of novel technologies, the Agency will build an effective circular economy policy both for traditional airline activities as well as new urban air mobility concepts.

— Based on its technical expertise and independence, the Agency is ideally placed to provide expertise and strategic steer to **international cooperation and research activities** (Horizon Europe, CleanSky3). As part of this, EASA can act as contract manager or as technical partner to the EC to support the implementation and monitoring of environment-related research projects. Similarly, EASA will support ECHA by providing aviation technical expertise into the REACH process.

3.1.4.4 Act towards sustainable aviation through actions for increased operational efficiency

The Agency will perform further analysis to identify more clearly room for related regulatory or non-regulatory actions, focusing on areas including:

— monitoring ATM environmental performance/ANSP environmental labelling;

— identifying and removing regulatory barriers;

— supporting elements for hybrid and electric operation;

— optimising operational procedures, such as abundant fuel carrying; and

— supporting/endorsing the Airport Carbon Accreditation programme (involving also groundhandling).

3.2   Strategic enablers

3.2.1   Research

The European aviation industry has gone through a successful development in the past decades placing Europe at a leading position in the global competitive market. Significant elements of this success story are the European aviation research and innovation programmes of the EU as well as the Member States' and industry's research activities. Therefore, these initiatives are of high relevance to the setting-up of EPAS actions. They contribute to EASA's objectives for ensuring the highest level of safety, security and environmental protection in Europe.

Recently developed technologies, notably in the areas of complex software, propulsion, new materials, connectivity, digitalisation, data science, autonomous vehicles, space operations, business models are planned for entry into service at an unprecedented pace in the aviation economic system.

Further evolutions may address emerging risks such as security, including cybersecurity, AI applications and systems or aviation impact on climate change.

Moreover, aviation growth is calling for solutions that are resilient to weather hazards, continuous traffic growth and increased complexity of traffic ranging from operation at low altitudes to commercial aircraft operations and operation in remote areas.

The European and national research & innovation programmes, including Clean Sky and SESAR, are developing new aviation concepts and solutions, which will need to be certified or approved prior to entering operation in Europe as well as in third countries. Furthermore, new entrants, in particular in the drone sector, bring new requirements to the European aeronautics arena and necessitate new European regulatory responses.

It is essential for Europe that EASA is in the position to support and assist the streamlining of the deployment of those new solutions. To meet these objectives, notably with regard to the safe integration of new technologies and concepts, and to measures improving environmental protection, EASA must be equipped with new tools, agile methods, test/demonstration standards and modular evolutionary approaches for product certification and operational approval processes. This requires a number of evolutions to the current regulatory framework in order to cope with these current and future expected developments.

Playing a pivotal role between innovation and the development of safety, security or environmental protection standards, EASA is positioned to federate the future aviation research and innovation network comprising Member States, the industry and the aviation research community. It can also support development of new instruments for European aviation research and innovation projects' prioritisation and coordination, in support of the EU Advisory Council for Aviation Research and Innovation in Europe (ACARE) Strategic Research and Innovation Agenda (SRIA)[66].

The EASA Basic Regualtion entails that EASA supports the development of EU aviation/aeronautics research programmes and projects; develops synergies and collaboration between the Agency and publicly funded research; catalyses cooperation between national aviation research programmes and research centres. To this end, discussions between the Association of European Research Establishments in Aeronautics (EREA) and EASA have taken place to possibly launch a common initiative for a 'European Research Agenda'. Furthermore, a federation of universities, collaborating with the Agency to join research efforts is in the

---

[66]   2017 edition of ACARE SRIA: http://www.acare4europe.org/sria

making, with *Ecole Nationale de l'Aviation Civile Toulouse*, *Technische Universität B*raunschweig and *Technische Universiteit Delft* in the lead.

Regularly, EASA experts and external stakeholders suggest or request research activities topics that are needed to tackle the issues identified. These topics are prioritised on a yearly basis and included in the 'Research Agenda[67]', which groups the requests for a given period, even without having immediate funding. A short overview of the prioritisation exercise can be found on the EASA website. The Research Agenda encompasses a series of innovation- and efficiency-related actions besides safety-focused research.

The research projects that become part of EPAS are those that are triggered by SRs addressed to EASA or that are already covered by a funding source or likely to be funded by the start of the reference period of the given EPAS.

Further information on research activities of the Agency can be found on the EASA website: https://www.easa.europa.eu/easa-and-you/safety-management/research.

Having started in 2019, a series of research actions identified in EPAS will be funded through a delegation agreement, established with the EU Horizon 2020 programme and coordinated by EASA. The list of projects is as follows:

RES.006 — Effectiveness of flight time limitation (FTL) rules: The 2nd assessment is about the collection, analysis and processing of historical and in-flight crew fatigue data to support the continuous review of the effectiveness of the provisions concerning flight and duty time limitations and rest requirements as foreseen in Regulation (EU) No 965/2012[68]; this is to cover the envelope of the most frequent short-, medium- and long-haul scheduled air operations and encompass schedules in less favourable times and classified as disruptive.

RES.008 — Integrity improvement of rotorcraft main gear boxes (MGB): Further to the investigation of the EC225 LN-OJF accident, the research aimed at identifying threats to the integrity of critical components of rotor drive systems and at developing methods for evaluating flaw-tolerant critical component designs. Specifically, this includes enhancements to the design of helicopter MGB and its attachments, to preclude separation of the mast and main rotor from the helicopter and to enable autorotation even in the event of major failure of the MGB components.

RES.009 — Helicopter offshore operations — new floatation systems: Assessment of technical solutions for enhancing helicopter floatation at sea in view of heightening survivability following helicopter capsizing — which is the major event conducive to fatalities due to drowning.

RES.013 — Quick recovery of flight recorder data: Further to the MH370 accident and the adoption by ICAO of consequent SARPs[69], assessment of the feasibility for using wireless transmission solutions for timely recovery of flight recorder data — namely flight parameters, audio and video images — in the follow-up to an accident; particular emphasis should be put on tackling prevailing open issues, such as those linked with the possible circumstances of an accident (loss of engine power, unusual aircraft attitude, aircraft complete destruction, accident in an oceanic area), the reliability and cost impact of the proposed solutions, their aptitude for usage in accident investigations as well as associated data privacy considerations.

---

[67] EASA Research Agenda 2019-2021 rev 1

[68] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council.

[69] ICAO Annex 6 Part I, section 6.3.5.

RES.015 — Vulnerability of manned aircraft to drone strikes: Assessment of the potential collision threats posed by drones to manned aircraft and evaluation of their estimated impacts; establishment of a risk model to support regulatory and operational stances to be validated by means of a comprehensive set of simulated impact tests.

RES.016 — Fire risks caused by portable electronic devices on board aircraft: Research aimed at the full characterisation of the fire risks associated with the transport of large portable electronic devices (PEDs) in aircraft; notably, of those stored in the cargo compartment in the checked-in luggage. This encompasses theoretical and experimental work to deepen the knowledge related to the inception and propagation of PED originated fires as well as devising efficient and cost-effective means for their detection and suppression.

RES.024 — Assessment of environmental impacts — engine emissions: Development of extended and more robust standards for purposes of supporting the assessment of engine emissions. The emphasis shall be on robust methods for non-volatile particulate matter (nvPM) mass and number determination including, notably, particle size measurement and sampling techniques, consideration of the effect of both ambient conditions and volatile PM, and sensitivity and uncertainty analyses. This task merges RES.018 and RES.019 of the EPAS 2019-2023 edition, due to the similarity of research activities to be undertaken.

RES.025 — Assessment of environmental impacts — aircraft noise: Development of extended and more robust standards for the purpose of supporting the assessment of aircraft noise footprints. The focus will be twofold: (i) extension of current helicopter noise models towards ensuring the coverage of current types of helicopters within the European fleet[70]; (ii) extension of prevailing modelling approaches in view of the assessment of the noise footprint of new aircraft concepts prior to their certification — centred on supersonic aircraft and VTOL aircraft.

RES.026 — Market-based measures (ETS and CORSIA): Extension and updating of existing capabilities for assessment of market-based measures; notably, to cater for new traffic data and forecasts, handling of novel scenarios and measures, ensuring their fitness-for-purpose and credibility for supporting critical policy-making both at European (EC, Member States) and international (ICAO) level.

---

[70] Work planned to be carried out in cooperation with the US Department of Transport Federal Aviation Administration, implementing EU-US data exchange agreements.

3.2.2 Safety promotion

From the beginning of 2019, EASA has begun the launch of a new Safety Promotion Strategy that will take an increasingly proactive approach to the way EASA communicates with the European aviation community. This will position EASA's Safety Promotion programme as a safety promotion leader in Europe and worldwide having influence and a recognised brand. Understanding that different aviation stakeholders have very different needs in terms of information and communication channels, the strategy takes a domain-based approach. It has been split into operational domains such as aircraft operations, aerodromes and groundhandling, GA, rotorcraft and drones.

When possible, safety promotion will be used as a light and effective alternative to rulemaking and oversight. It will also support a better understanding of EU civil aviation regulations and provide more information on safety intelligence and analysis results. The strategy will provide continual information on a wide range of safety topics at domain level. A wide range of communication tools will be used to spread safety messages and this will see EASA becoming more active on social media and using new and novel ways to inform people about safety. Within EPAS, there is a number of specific SPTs and this is augmented by a number of new actions to promote important safety topics in each of the main operational domains.

This EPAS edition includes 7 new SPTs.

3.2.3 International cooperation

One of the EC's strategic priorities is that the EU becomes a stronger global actor. As an Agency of the EU, EASA cooperates with national, regional and international organisations alike in order to enhance global aviation safety, and supports the free movement of European products and services on a global level. Furthermore, ICAO recognises the value of regional approaches to ensuring or improving aviation safety, and recognises the importance of regional cooperation mechanisms such as Regional Safety Oversight Organisations (RSOOs) in this respect. EASA plays a significant role in supporting ICAO's activities within the EU as well as in pursuing European interests at ICAO. In this perspective, the strategic priorities at an international level are the following:

— **Strive, through international cooperation, that citizens' interests for safety and environmental protection are being met at global level.** This can be achieved through:

  — contribution to the improvement of global safety and environmental protection;

  — support to the resolution of safety deficiencies through technical assistance; and

  — promotion of regional integration wherever effective.

— **Ensure a global level playing field for European industry.** This can be achieved through:

  — promotion of fair and open competition and removal of barriers to market access;

  — enabling efficient oversight between international partners; and

  — promotion of EU aviation standards around the world.

— **Enable the European approach.** This can be achieved through:

  — coordination of common European positions at ICAO;

  — strengthening the coordination with ICAO and the Member States on Universal Safety Oversight Audit Programme (USOAP);

— bringing together different European actors in technical assistance; and

— promoting the recognition of the European system at ICAO level.

3.2.4 Digitalisation

Aviation moves into the digital era at an unprecedented pace. Almost all aviation sectors are affected by these developments. Aircraft manufacturers are moving, mostly for future products, from trend monitoring of key components to using increasingly connected digital systems, such as on-board sensors and digital engine twins. Digitalisation also affects aircraft operations by allowing certain operations to be carried out or controlled remotely. In certain extreme cases, such as drones, digitalisation can take the shape of full automation with minimal remote human intervention. Digitalisation is furthermore transforming the way training is performed and supports the move towards fully data-driven decision-making.

In order to exploit the full digitalisation potential, the aviation sector needs to progress in the 'information management' dimension. Today, the fragmentation of data in terms of both taxonomy and storage does not allow a significant progress for the analysis according to the latest methodologies. These developments are increasingly challenging traditional aviation regulations and calling for an evolution towards more performance-based, technology-neutral requirements, which will enable the novel business models that emerge from the digital transformation, increasing at the same time safety and efficiency.

EASA is engaged in defining its roadmap to digitalisation in order to determine the following:

— changes needed in the regulatory system to accompany and benefit from industry digitalisation;

— actions needed to keep abreast of digitalisation issues, in particular in relation to product certification and operations;

— key EASA digitalisation activities needed, both for external purposes (e.g. e-licence for pilots) or internal purposes (e.g. digitalisation of processes); and

— actions needed to implement EU's digital agenda and e-government action plan.

The roadmap will have due regard to digitalisation-induced cybersecurity issues and related EPAS actions.

Aviation industry disruptive technology changes

Internal EASA process automation

European Union digital agenda
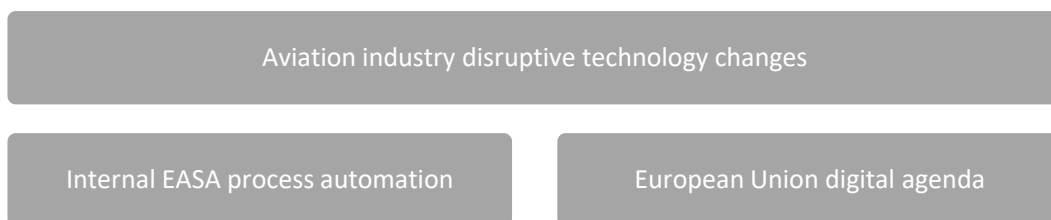
Figure 12: Overview of the digital transformation strategy drivers

The high-level EASA digitalisation roadmap is defined to address 4 main challenges as represented below:
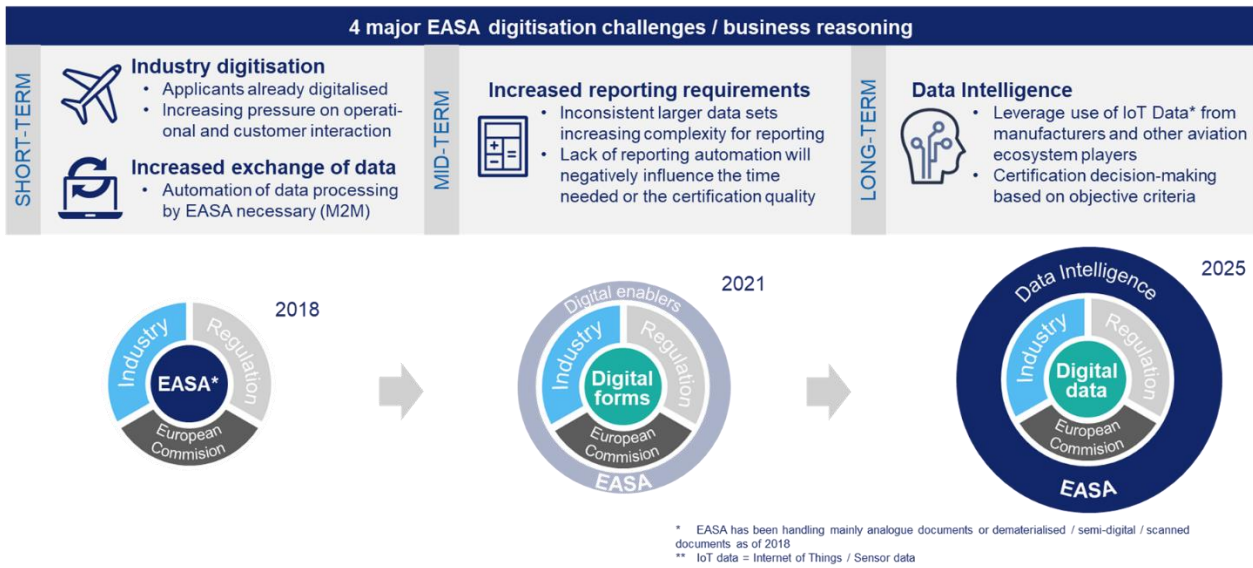
Figure 13: EASA high-level digitalisation roadmap

The purpose is to allow EASA and the aviation system to integrate by 2023, allowing streamlined processing of data and advanced analytics capabilities. This can be achieved only through the realisation of the intermediate milestone set for 2021 where EASA should reach the full digitisation and develop the digital enablers necessary to move towards data intelligence. By 2021, EASA's processes will be digitalised in a single, transparent, cost-efficient system with user-friendly access for both internal and external stakeholders and predictable workflows. Once this milestone is completed, EASA will exploit digitalisation by adoption of internet of things (IoT) and AI technologies (where appropriate), to further enhance the quality of the service and support stakeholders. The roadmap can only add value if executed in association and alignment with the aviation sectors, with specific attention to the convergence of a robust industry-wide information management framework. In 2018 EASA started the digital licences for EU aviation pilots (dLAP) PoC project, following the vision of providing a contemporary 'state-of-the-art' IT system, being applied in EASA´s Member States' CAs, to provide a comprehensive and regulated IT platform for issuing, revalidating, renewing, suspending or revoking digital pilot licences.

The dLAP project intends to provide easy-to-use services, especially for aviation pilots, at a first stage, by carrying their (currently only paper-based licences) digitised on their mobile devices. The IT platform will therefore provide a digital signature workflow for electronic Identification (eID) to verify securely the identities of the pilots using the system and to enable the CAs, the authorised examiners and aero-medical examiners to validate and update the pilot licence. The dLAP platform will also provide a web portal with multiple interfaces to be viewed in a standard web browser to provide easy-to-use services to the pilots, aero-medical examiners and flight examiners. The dLAP PoC ran until July 2019 and the next stages of development and implementation will be phased in until 2021.

3.2.5   Technical training

According to ICAO Annex 19, qualified technical personnel is a critical element (CE-4) of the State safety oversight system. Annex 19 stipulates that States shall establish minimum qualification requirements for the technical personnel performing safety-related functions and provide for appropriate initial and recurrent training to maintain and enhance their competence at the desired level.

Consequently, as in ICAO's GASP, EPAS considers technical training as a strategic key enabler for an effective State oversight system.

Aviation is a very dynamic sector with rapidly innovating technologies and business models. At the same time, it is confronted with evolving new risk scenarios in terms of both safety and security. These rapid changes are a challenge for the staff of aviation authorities, as well as for aviation organisations, to keep abreast of new developments and to update their knowledge and competencies to fulfil their responsibilities.

Furthermore, the Basic Regulation provides a framework for pooling and sharing of technical resources between the Member States and EASA. The implementation of this new approach needs to be based on harmonised training and assessment standards for aviation personnel.

EASA will therefore continue to focus on the following key areas:

— Maintenance and further development of the competence of EASA staff based on training programmes specifying initial and recurrent training subjects.

— Further identification of common training and assessment needs to facilitate access to acceptable training for aviation inspectors within the EASA system, together with the Common Training Initiative Group (CTIG).

— Cooperation with aviation authorities and aviation organisations.

— Support to universities and similar educational institutions through lectures.

— Support of the international cooperation strategy through dedicated training services.

— Continuous improvement of the European Central Question Bank (ECQB), used for knowledge examinations of commercial pilots; taking into account EPAS priorities, where relevant for the training of pilot competencies.

Through the CTIG and the CA training focal points, EASA makes available its catalogue of technical training courses to all Member States. The range of training courses on offer is regularly adjusted, to take into account the needs of EASA staff as well as external stakeholders, in particular CA staff.

3.2.6   Oversight and standardisation

The Standardisation process monitors how States apply the requirements of the Basic Regulation and of the delegated and implementing acts adopted on the basis thereof. Moreover, monitoring of application of Regulation (EU) No 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation has been added to the scope of the Basic Regulation, upon request of the EC. In particular, the Agency assesses the States' capability to discharge their safety oversight obligations.

What we want to achieve

Through the application of the EU aviation safety regulations and the deployment of EPAS, EASA supports the establishment and the maintenance of robust oversight systems across Europe, where each CA is able to properly discharge its oversight responsibilities.

To that end, it is essential that States, through their CAs, are capable of managing the safety risks identified at State level. This presumes that those risks are identified through a process to collect and analyse data and mitigated in an effective way, implying the measurement and monitoring of safety performance leading to continual improvement.

In addition, exchange of information and cooperation with other CAs, implementation of management systems in all organisations, as well as the availability of adequate personnel in CAs, are essential enablers.

Currently identified weaknesses

The 2018 SAR identified the following areas of concern:

—   The quality of the certification and oversight performed by the authorities remains in some cases unsatisfactory. The severity of the issue varies from domain to domain, but it is consistently observed.

—   Although progress has been noted in the functioning of the authorities' management systems, the oversight of management systems in industry is still below the expected standard. This puts into question the ability to implement risk- and performance-based oversight.

—   Differences among States in terms of levels of maturity in the application of the rules are still present, with some States continuing to encounter difficulties in meeting the minimum standard. This could undermine the integrity of the European aviation system and needs to be properly addressed. Some implementation support initiatives generated some improvement, but not in all cases.

—   As also noted during the SYS inspections[71], the use of available data and intelligence, to drive a more effective and better targeted oversight is still sporadic and not widely spread as it should, at times leaving data analysis detached from the oversight performed. Further analysis of Standardisation inspection results shows that some CAs still show a reactive attitude.

A number of actions are presented in **Section 5.6** to drive improvements in these areas of concerns.

It should also be noted that, in line with the priorities of the Basic Regulation, EASA started to roll out an implementation support programme that will entail activities mainly aimed at strengthening the safety oversight capability of the Member States, together with targeted support activities addressing SSP and SPAS implementation, thus enabling a robust and harmonised EU aviation safety system.

---

[71]   Standardisation inspections that focus on the implementation of Regulation (EU) No 376/2014 on occurrence reporting and on the verification of the CA management system.

These targeted implementation support actions addressed to domains and/or States, do not qualify for inclusion as EPAS actions.

EASA will also continue to support CAs in the application of very large-scale demonstration (VLD) activities in support of essential operational changes that are intended to improve the European ATM system.

3.3 New Basic Regulation

3.3.1 General

The Basic Regulation prepares the grounds for the future challenges ahead while maintaining aviation as a safe, secure and environmentally friendly form of transport for EU citizens. In this context, Chapter II 'Aviation safety management' creates a solid legal foundation for EPAS and transposes ICAO Annex 19 SARPs for State safety management.

The Basic Regulation conforms with the EC's three key strategic priorities regarding aviation, namely: maintaining high EU safety and security standards, hence strengthening the EU's role as a global actor; tapping into growth markets while promoting job creation; and tackling limits to growth in the air and on the ground.

The main Basic Regulation objectives and related provisions are included below:

Main objective	Basic Regulation provisions
Making better use of the EASA system's limited resources with the following initiatives:	— A pool of European aviation inspectors — New framework for reallocation of responsibilities — Oversight support mechanism — Additional privileges for qualified entities — Repository of information (including aero-medical) and Big Data — Updated framework for better working at international level
Having a flexible and performance-based system, by introducing the following principles:	— Risk- and performance-based elements reinforced — Additional flexibility for GA (e.g. use of declarations) — Safety plan for Europe and national safety plans — Opt-in for Annex I aircraft manufacturers — Opt-in for 'State aircraft' — Opt-out for light sport aircraft
Integrating unmanned aircraft, by applying these conditions:	— 150 kg threshold removed from Annex I (all unmanned aircraft within thescope) — Operation-centric framework — Use of market harmonisation legislation — Registration requirements — Protection and efficient use of radio-spectrum — Amendments to the accident investigation and occurrence reporting regulations
Closing previous gaps and inconsistencies, such as:	— Interdependencies with other domains, such as security, socio-economic factors, environmental and ATM legislation — Essential requirements and cooperation framework for cybersecurity — Proportionate safety requirements for groundhandling (GH) — EU environmental protection requirements to the extent not covered by ICAO Annex 16

Allow for a better governance in EASA, with:	— Alignment with the 'common approach' on EU decentralised agencies
	— New forms of EASA revenue (grants)
	— Making best use of EASA resources, by:
	  — furthering the use of EASA expertise by the EC (security, environment, research, SES implementation)
	  — allowing for demand-driven resources for certification (more flexibility in adjusting fee-financed staff according to workload)

3.3.2 Basic Regulation roadmap

On 10 April 2018, the EASA MB requested EASA to present a roadmap outlining the priorities for the implementation of the BR. The roadmap received the MB's support during the June 2018 MB meeting.

It identified the areas of the Basic Regulation where work is to be initiated or will start in the range 2019-2021. It constitutes an important input also for this EPAS edition.

The roadmap identifies not only rulemaking activities, but also certification- and Standardisation-specific projects, involving policies' or procedures' drafting, initiatives with roadmaps, support to Member States, etc.

When it comes to rulemaking and policy setting, the following activities identified in the Basic Regulation were already included in the previous EPAS edition and will continue to be delivered:

— Development of a regulatory framework for drones and urban air mobility

— Work on cybersecurity

— ADR/apron management services (AMS) (see Opinion No 02/2014)

— ATM/ANS (Article 44) Opinion covering interoperability issues:

  — RMT.0679 — SPI: Report to be published (no Opinion)

  — RMT.0524 — DLS: Opinion due in 2022

In order to better encapsulate and reflect in EPAS the new areas introduced by the Basic Regulation, the strategic priority 'Safe integration of new technologies and concepts' was introduced with EPAS 2019-2023 (see **Section 3.1.3**).

Under RMT.0727, EASA will publish an Opinion at the end of 2020 proposing to implement the airworthiness aspects of the Basic Regulation. This Opinion will include items such as simpler and more proportionate rules for sports and recreational aircraft, the extended use of declarations and others discussed in the context of the GA Roadmap phase 2. In addition, the Opinion will also address other items introduced or amended by the new Basic Regulation, such as non-installed equipment, permit to fly, restricted certificate of airworthiness, etc.

In the areas of groundhandling and on new aspects of environmental protection (not covered by ICAO Annex 16), the following activities will be undertaken:

— On **groundhandling** (Articles 33 & 37), during 2018, EASA engaged in a fact-finding phase, via safety assessment and dialogue with Member States and stakeholders. In March 2019, a dedicated groundhandling conference organised by EASA concluded this fact-finding phase and presented the groundhandling roadmap, defining the scope and objectives. A new RMT was added in EPAS 2019-2023 to address requirements for the provision of groundhandling-related services (RMT.0728). A new SPT was also added to address any non-regulatory groundhandling matters (SPT.102).

— On **environmental protection,** EASA has redefined its strategy including the implementation of Article 87, where EASA will engage in developing a measurement methodology for novel technologies (supersonics, electric propulsion/urban mobility) as well as in updating the EAER. See **Section 3.1.4.**

Moreover, the Basic Regulation **in Chapter II**, 'Aviation safety management' Article 7 requires States to establish and maintain an SSP in accordance with international SARPs (ICAO Annex 19) and with the European Aviation Safety Programme (EASP). Basic Regulation Article 8 requires States to complement their SSP with

a SPAS. Such a plan shall include the risks and actions identified in EPAS that are relevant for the Member States concerned. A new EPAS action was created with EPAS 2019-2023 to account for this new requirement (see MST.028). A dedicated repository for Member States' SSP documents and SPAS was made available to facilitate the dissemination of such documents[72]. In addition, a States Safety Exchange Forum was created to encourage the sharing of guidance material and good practice[73]. EASA expects Member States to have a SPAS available by the end of 2020. EASA Standardisation activities will be extended to these new requirements as of 2021; this is expected to provide Member States some time to get prepared.

The development of new technologies, new business models and more generally speaking economic/social/societal changes, may have an impact on aviation safety. It is important for the Agency to have a clear vision on those changes that can potentially affect safety. Stakeholders and **EU Aviation Social Partners** should help to build this vision.

Article 74 of the Basic Regulation requires EASA to develop a **repository** which aims at facilitating the exchange of information between the CAs, EASA and the EC. Considering the huge quantity and complexity of information as well as the obligation to comply with data protection requirements, the MB decided to set up a dedicated Task Force which falls under MAB. The Task Force will focus on specifications per domains, the global architecture and the governance of the future platform. In 2019, the domains to be addressed will be mainly drones, exemptions and aero-medical data. The technical solution shall rely on the EASA 'Certification and Organisation Approval information hub programme' (CORAL) outputs. CORAL was initiated as an emergent programme with the purpose of harmonising projects through system integration and end-to-end digitalisation. The implementation of additional domains (e.g. licences, opt-outs, opt-ins) will be done step-by-step and in line with the CORAL milestones, with the ultimate goal to have all domains covered by 2025.

An important milestone will be to include drones, with data available in 2020.

Article 89 of the Basic Regulation requires EASA to consult relevant stakeholders when addressing interdependencies between civil aviation and related socio-economic factors. EASA is therefore enhancing the cooperation with EU aviation social partners in aviation in order to reinforce its capacity in assessing potential social impacts of the EU aviation regulations and to address socio-economic risks to aviation safety. Refer to **Section 3.1.1.5**.

Paragraph 2 of **Basic Regulation Article 140** stipulates that 'Not later than 12 September 2023 the implementing rules adopted on the basis of Regulations (EC) No 216/2008 and (EC) No 552/2004 shall be adapted to this Regulation'. Except for RMT.0727 on initial airworthiness, EASA has not identified the need to change any IRs for the sole purpose of complying with the Basic Regulation deadline. Changes to rules will instead be driven by concrete safety, proportionality or level playing field improvements. In addition, the limited capacity of the EASA Committee will need to be taken into account when setting priorities.

---

[72] https://imf.easa.europa.eu/case/eab/mabtebs/SSPDocuments/Forms/AllItems.aspx
[73] https://imf.easa.europa.eu/collab/SSEF/SitePages/Home.aspx

4. Performance

4.1 Key indicators in terms of EPAS actions

This section presents an overview on the number of actions detailed in Volume II, illustrating the distribution by EPAS action type, as well as by domain affected by these actions. It also provides key indicators related to the average duration of rulemaking projects and rulemaking output.

This EPAS edition reflects the near-term priorities agreed in 2018 for the period 2019-2021. It encompasses **180 actions**. The majority of actions are rulemaking tasks (59.5 %), followed by safety promotion tasks (15.0 %). Half of these actions are strategic, meaning they are linked to the areas highlighted in **Chapter 3**.

31 EPAS actions **are expected to be completed in the course of 2019.** With most of those being rulemaking tasks, the backlog continues to be resorbed. Finally, this EPAS proposes 23 **new actions**, including the new rulemaking task addressing new air mobility, 6 new research projects, 5 new evaluation tasks to assess existing regulations/safety initiatives, 4 new actions for MS and 7 new safety promotion tasks. An overview of all new actions is included in **Appendix C: New actions, deleted actions and de-prioritised actions overview**

Most of the EPAS actions are in the domains 'Systemic safety & competence of personnel' and 'Design and production'.
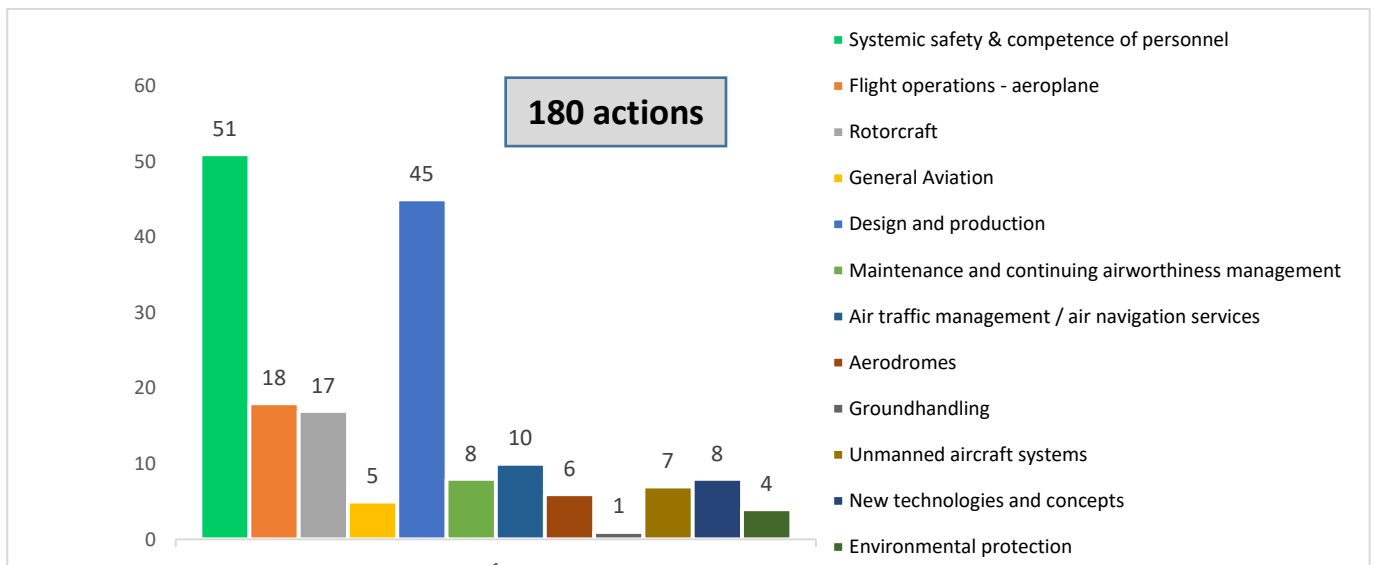
Figure 14: Distribution of EPAS actions by domain

Most of the actions in EPAS are rulemaking projects.
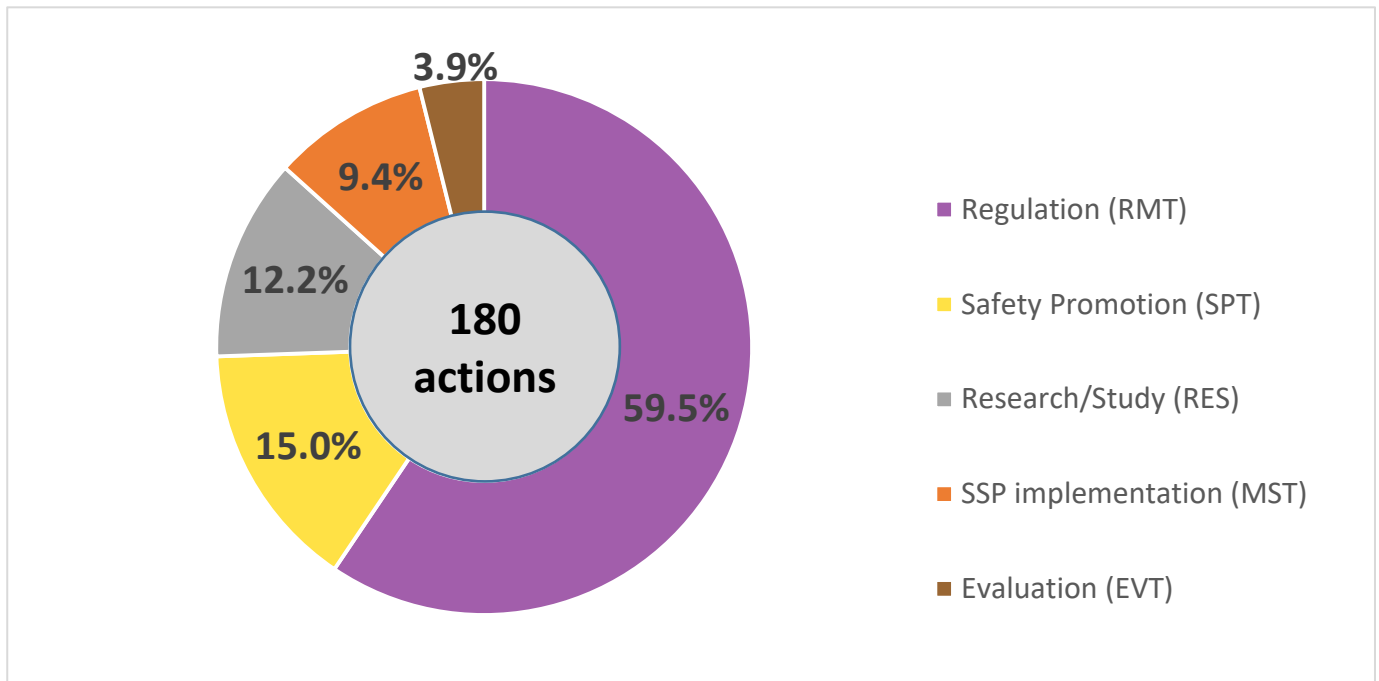
Figure 15: Distribution of EPAS actions per action type

Average duration of rulemaking tasks and adoption process

The table below shows the average duration of RMTs for Opinions and Decisions published by EASA in 2019 (meaning from ToR publication to Opinion/Decision publication), as well as the average duration of the adoption process for Opinions adopted in 2019 (meaning from Opinion publication to the vote in the EASA Committee).

Average duration — Decisions published by EASA in 2019	*Average duration — Opinions published by EASA in 2019*	*Average duration — Opinions adopted by the EC in 2019*
3,2 years	3,2 years	1,9 years

Rulemaking output

The rulemaking activity shows an overall decrease between 2015 and 2018. In 2019, the rulemaking activity is back at 2017 levels. The volume of hard law deliverables planned for the next 5 years continues to be adjusted to the actual capacity of the regulatory system.

The graphs on the next pages show not only the total rulemaking output of EASA (Figure 16), but also separately the rulemaking activity leading either to Opinions (hard law and associated soft law, Figure 17) or to stand-alone Decisions[74] (soft law, Figure 18), as the latter have little impact on the Member States' resources.

---

[74] Decisions that are not linked to any Opinion, meaning where the scope of the corresponding rulemaking task is limited to creating new or amended soft law (typically AMCs and GM).

These graphs do not reflect Decisions (AMC and GM) that are waiting for the adoption of the related Opinions.

Rulemaking activity — EASA
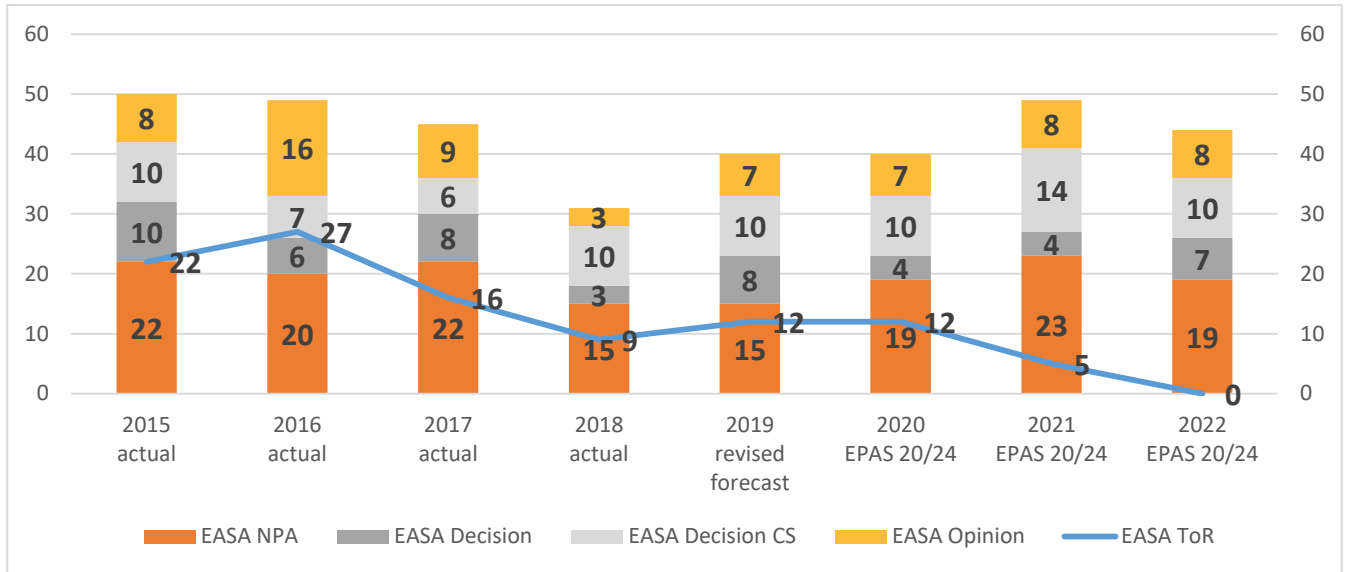
Figure 16: Rulemaking activity EASA 2015–2022 – total rulemaking output[75]

EASA plans to publish eight Opinions per year as of 2020. The number of CSs increased in 2019. In addition to other regulatory measures, CS need to be frequently updated in order to keep up with safety needs and new technologies.

Rulemaking activity leading to Opinions (hard law and associated soft law)
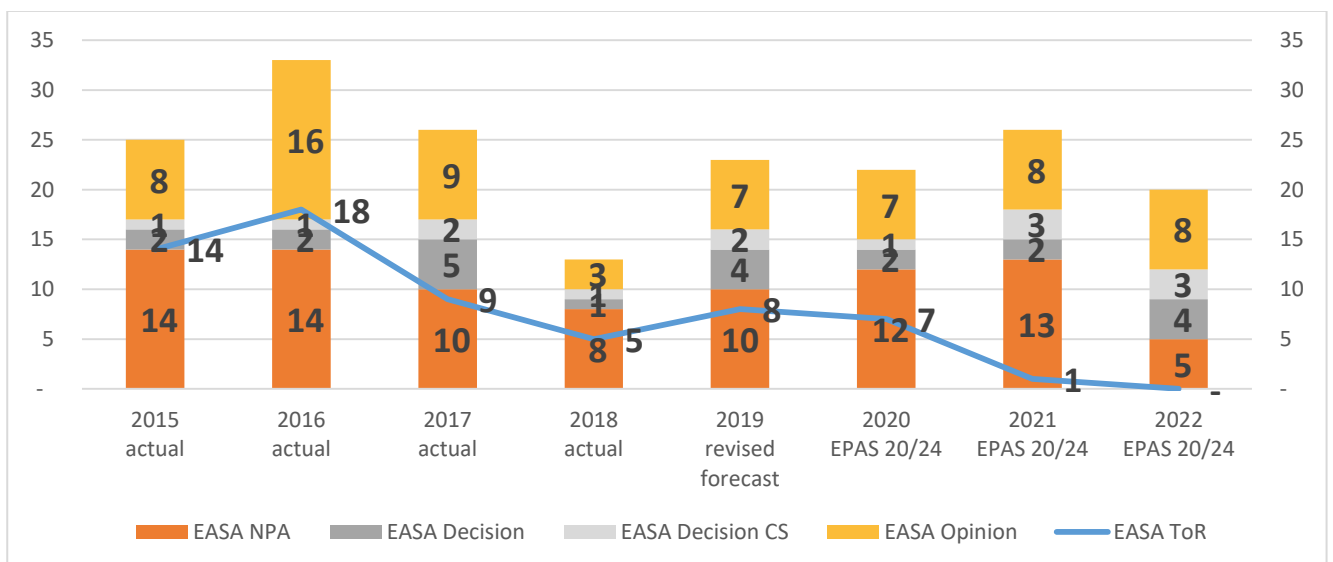
Figure 17: Rulemaking activity EASA 2015–2022 — Opinions and associated soft law

---

[75] The actions mentioned in Appendix C as de-prioritised are not included in this graph.

The above graph shows the rulemaking output related to Opinions and asscoiated soft law, meaning any RMT that contains at least one Opinion and related soft law. Generally, the development of an Opinion and the related soft law is done in parallel, as part of the same rulemaking project.

Rulemaking activity related to soft law
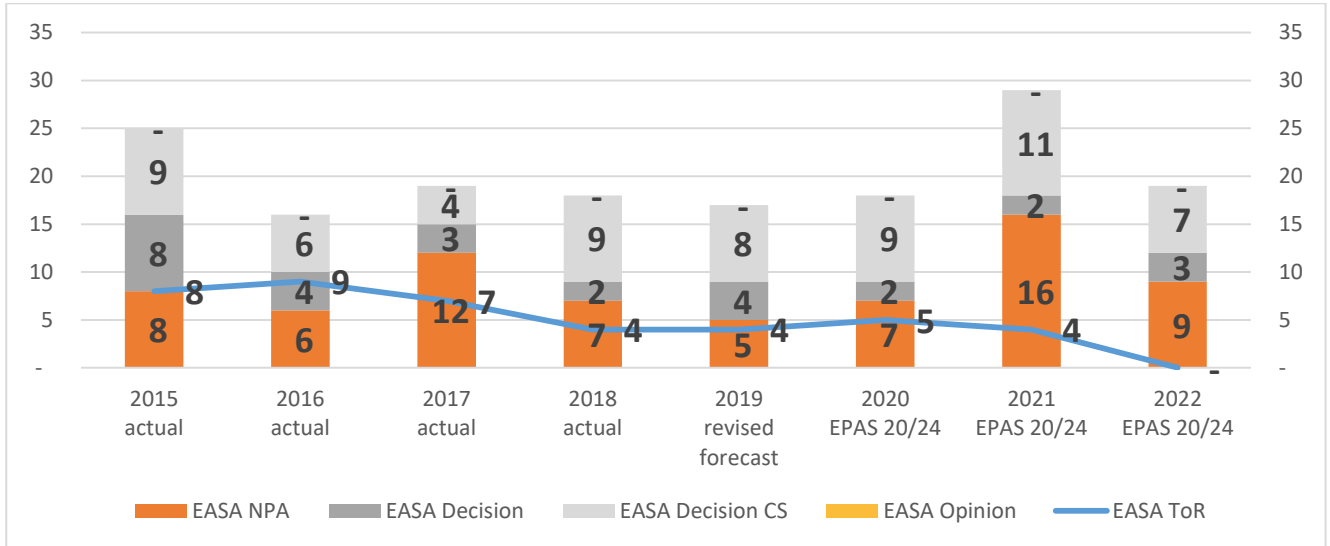
Figure 18: Rulemaking activity EASA 2015–2022 related to soft law

The above chart shows the outputs related to soft law, meaning those resulting from rulemaking tasks that only lead to 'stand-alone' Decisions. These tasks do not require the involvement of the EC, nor the EASA Committee, and have less impact on Member States' resources.

Split between hard/soft law and soft law (compared to the 2019-2023 EPAS edition)
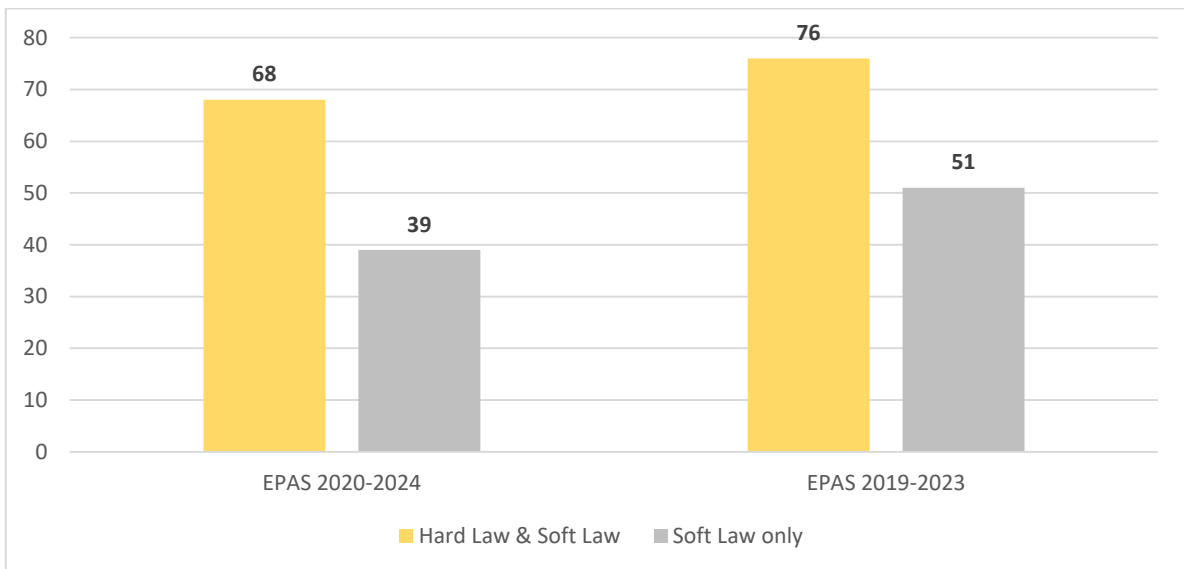
Figure 19: Split between hard/soft law and soft law

Following the delivery of a number of opinions and decisions (as detailed in Appendix A) and the addition of only one new RMT, the overall number of RMT actions has decreased from EPAS 2019-2023 to EPAS 2020-2024.

4.2   Safety performance

This section presents an outline for EPAS safety performance metrics reflecting the EPAS strategic priorities in the area of safety and the high-level safety objective set out in the Basic Regulation to 'establish and maintain a high uniform level of civil aviation safety in the Union'. EPAS safety performance goals, indicators and targets also align with the 2020-2022 GASP goals and targets as relevant in the EASA system.

EPAS proposes an 'aspirational goal' overarching the different EPAS indicators, as an alternative to the GASP aspirational goal of 'zero fatalities in commercial operations by 2030 and beyond', as follows:

'achieve constant safety improvement with a growing aviation industry'

This goal is deemed 'aspirational' as it represents an ambition of achieving an ever safer aviation system. It is intended to address all operational domains.

EPAS SPIs shall serve to monitor the impact of EPAS actions on the overall level of safety performance. New safety issues are identified and monitored via the European SRM process.

In accordance with Article 6 of the Basic Regualtion, EPAS shall specify the level of safety performance in the Union, which the Member States, the EC and EASA shall jointly aim to achieve. The level of safety performance shall be determined on the basis of the EPAS SPIs and where relevant, associated safety performance targets, as well as considering the safety-related indicators and targets defined in the SES ATM Performance Scheme.

Principles for establishing EPAS SPIs and targets

SPIs and targets shall monitor both safety **outcomes** (such as accidents, incidents and injuries) and the enablers, in terms of **systems and processes**[76] required to maintain effective safety management at authority and organisation levels.

Setting safety performance targets as part of EPAS is considered more relevant for process-based indicators, to drive positive system 'behaviours'. For safety-outcome-related metrics, which are derived from occurrence data, it is proposed to not consider setting safety performance targets, but to define 'baseline performance' and monitor the system against this baseline performance. Proposed 'baseline' indicators are included in Table 3.

Outcome-based indicators shall consider as main inputs:

—   number of fatal accidents;

—   number of fatalities; and

—   number of non-fatal accidents and serious incidents.

This is aligned with the high-level ICAO safety metrics, thereby facilitating comparison of European performance with that of other regions or with global averages. The number of fatal accidents and fatalities provide the highest level of safety outcome monitoring, while the non-fatal accidents and serious incidents combined provide monitoring of higher-risk events. These can subsequently be reviewed to identify key risk areas that inform EASA's safety priorities. Looking to the future, when the European Risk Classification Scheme (ERCS) has been implemented across the Member States, an additional indicator that monitors high-risk occurrences may be considered. This could be in addition to or instead of monitoring non-fatal accidents

---

[76]   The efficiency of systems and processes established and implemented by EASA will continue to be monitored through the EASA SPD related indicators.

and serious incidents. The SRPs published in the ASR include incident data sourced from the European Central Repository for accident and incident reports in aviation (ECR) under Regulation (EU) No 376/2014. As the implementation of Regulation (EU) No 376/2014 improves, EASA expects to be able to integrate more incident data into the monitoring framework.

Monitoring systems and processes

It is proposed that related SPIs be defined and monitored in three areas:

1. Member States' oversight capabilities

    This is related to 2020-2022 GASP Goal 2 and EPAS strategic enabler 'Oversight & standardisation'.

    Monitoring will be based on the EASA Standardisation rating, as an alternative to the ICAO USOAP Effective Implementation (EI) indicator. The Standardisation rating is used for the prioritisation of Standardisation inspections. It aims at emulating the expert's confidence in the CA's ability to discharge its safety oversight capabilities. The Standardisation rating considers elements related to size, nature and complexity of the State authorities and functions, the number and type of open Standardisation findings, as well as the State's reactivity in relation to findings closure, once the final report has been sent.

2. Member States' progress with SSP implementation

    This is related to GASP Goal 3 and the EPAS strategic priority 'Systemic safety'.

    Related indicators will mainly be based on data available through ICAO iSTARS. Feedback provided by Member States will also be considered. EASA will in addition collect relevant documentation from States (SSP and SPAS). In the future, this monitoring area will consider results from the EASA Standardisation of the implementation of Basic Regulation Articles 6 and 7.

    The objective is aligned with the 2020-2022 GASP requiring States to achieve an effective SSP, as appropriate to their aviation system complexity, by 2025.

3. Effective implementation of SMS in aviation organisations

    This partially addresses 2020-2022 GASP Goal 5 and addresses the EPAS strategic priority 'Systemic safety' and the requirements in the Basic Regulation.

    Monitoring the implementation of SMS in industry should focus on compliance with relevant requirements and effectiveness of SMS key processes. To develop a common set of indicators and targets on effective implementation of SMS, an agreed methodology for assessing SMS, as well as a method to score and aggregate related assessment results would first need to be developed and implemented. Such an assessment and scoring methodology is currently only available in the ATM/ANS domain, as part of the SES ATM Performance Scheme. It should also be considered that SMS requirements are not yet applicable in the initial and continuing airworthiness domains. Moreover, while the EASA Management System assessment tool is promoted through EPAS action MST.026, EASA has not yet received sufficient feedback on the use of the tool.

    For the above reasons, no detailed EPAS indicators and targets are proposed on SMS effectiveness (for domains other than ATM/ANS, since here this indicator is monitored in the context of the European ANS Performance Review). However, it is proposed to monitor the following:

(a)   the extent to which the EASA Management System assessment tool (or similar) is being used by Member States, and

(b)   the status of compliance with EASA management system (SMS) requirements.

Point (a) will be monitored on the basis of feedback received through EASA Standardisation. For point (b), EASA's monitoring will be based on oversight data provided by CAs covering the following:

Requirements:

Regulation	965/2012	1178/2011	139/2014	2015/340	2017/373
Part *Subject*	**Part-ORO**	**Part-ORA**	**Part ADR.OR**	**Part ATCO.OR**	**Part-ATM/ANS.OR**
Changes to the organisation	ORO.GEN.130	ORA.GEN.130	ADR.OR.B.040	ATCO.OR.B.015	ATM/ANS.OR.B.010
Management system	ORO.GEN.200	ORA.GEN.200	ADR.OR.D.005	ATCO.OR.C.001	ATM/ANS.OR.B.005
Contracted activities	ORO.GEN.205	ORA.GEN.205	ADR.OR.D.010	ATCO.OR.C.005	ATM/ANS.OR.B.015
Personnel requirements	ORO.GEN.210	ORA.GEN.210	ADR.OR.D.015	ATCO.OR.C.010	ATM/ANS.OR.B.020
Record-keeping	ORO.GEN.220	ORA.GEN.220	ADR.OR.D.035	ATCO.OR.C.020	ATM/ANS.OR.B.030

This list will be reviewed to include relevant requirements in the initial and continuing airworthiness domains, when a management system (SMS) will be required in these domains (RMT.0251).

Data points:

—   number of organisations with open non-compliance findings in any of the above requirements:

    —   both for level 1 and level 2 findings; and

    —   for each organisation category;

—   average time (in days — positive or negative values) from effective closure of the finding to agreed implementation target:

    —   level 2 findings only;

    —   for each of the above requirements; and

    —   for each organisation category;

—   number of organisations for which an extended oversight planning cycle is applied for each organisation category;

—   number of organisations for which a reduced oversight planning cycle is applied within each organisation category; and

—   top three non-compliance findings raised per frequency of occurrence in the area of EASA management system requirements for each organisation category.

No data/information on individual organisations will be requested. EASA will convert numbers into rates based on the data that Member States provide regularly through the Standardisation Information System. EASA will also report on those indicators for organisations under its oversight in the domains where the requirements listed above are already applicable.

The collection of data will start in 2020.

Once sufficient data is available on the status of compliance with management system (SMS) requirements and experience is gained with collecting and consolidating such data, EASA, in close cooperation with the ABs, will propose more advanced indicators to measure SMS effectiveness in industry.

Results of monitoring safety performance in the above three areas will be presented and discussed at regular AB meetings.

Alignment with the SES ATM Performance Scheme

Significant effort has been invested by the Agency, Member States and industry to ensure that the Safety Key Performance Area of the SES Performance Scheme aligns with the principles and technical direction of EASA's performance monitoring framework. The performance indicators for Reference Period 3 of the Performance Scheme were designed by an Agency-led working group in 2016 and then associated AMC and GM were published in 2018. These indicators measure the effectiveness of safety management at organisation level and then monitor safety outcomes via untargeted tier 2 performance indicators, using the European Central Repository as the data source.

Outcome-based indicators

Monitoring safety outcomes addresses 2020-2022 GASP Goal 1 and EPAS strategic priority 'Operational safety'.

Indicators related to key risk areas are identified through the Europan SRM process and described in the EASA SRPs. EASA, in cooperation with the European NoAs, developed a safety performance framework that identifies different tiers of SPIs.

— **Tier 1** transversally monitors all the domains and the overview of the performance in each domain. Tier 1 considers the number of fatal accidents and fatalities in the previous year compared with the average of the preceding decade. In addition to this, for CAT aeroplanes, detailed statistical indicators have been developed to identify the accident and serious incident rates over a four-year period. These will be updated periodically to monitor performance against the baseline (see Table 3).

— **Tier 2** covers the priority key risk areas at domain level. Tier 2 provides the number (and where available, the rate) of fatal accidents and the ERCS risk level for each domain in the ASR, divided by key risk areas.

These 'operational' safety indicators will continue to be monitored through the European SRM process. Likewise, reporting on those will continue to be done through the EASA ASR.

The following tables provide an overview of the figures associated with the current Tier 1 indicators.

Table 1: Tier 1 indicators — cross-domain comparison of EASA Member States aircraft fatal accidents and fatalities, 2008-2018

Aircraft domain	Fatal accidents 2018	Fatal accidents 2008-2017 Mean	Fatalities 2018	Fatalities 2008-2017 Mean	Fatalities 2008-2017 Median
Aeroplanes					
CAT — airlines	0	0.8	0	66.1	4.0
NCC	1	0.4	1	0.9	0.0
Specialised Operations	6	6.8	7	13.8	13.0
Non-commercial operations	49	47.1	95	86.0	82.0
Helicopters					
Offshore CAT	0	0.4	0	3.6	0.0
Onshore CAT	2	1.6	8	5.2	6.0
Specialised operations	2	3.8	2	7.1	6.5
Non-commercial operations	6	5.5	15	11.8	10.5
Balloons					
	0	1.3	0	2.2	1.0
Sailplanes					
	16	24.9	17	28.6	29.0

Table 2: Tier 1 indicators — cross-domain comparison of EASA Member States infrastructure fatal accidents and fatalities, 2008-2018

Infrastructure	Fatal accidents 2018	Fatal accidents 2008-2017 — Mean	Fatalities 2018	Fatalities 2008-2017 — Mean	Fatalities 2008-2017 — Median
ADR & GH	0	0.7	0	1.7	0.5
ATM & ANS	2	0.7	12	2.4	0.5

In Tables 1 and 2, both the mean (average) and the median number of fatalities are shown for the period 2008-2017. This is because for some aircraft domains, the median number provides a better representation of the number of fatalities per year. This is typically related to the number of passengers on board aircraft involved in fatal accidents. Sailplanes usually only have one person on board and the number of fatal accidents and both the mean and median number of fatalities are very similar. By contrast, CAT airline fatal accidents may involve one or several hundred fatalities; therefore, the annual number of fatalities varies and the mean and median figures are quite different.

In Table 3 accident rates were calculated as part of an NoA survey and analysis work. These calculations are based on the accidents reported to the Agency under Regulation (EU) No 996/2010[77]. The flight hours and

---

[77] Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and repealing Directive 94/56/EC.

movements were determined based on the NoA survey and extensive, detailed review of the data to ensure accuracy and completeness.

It is important to note that these 'baseline' performance measures may be used by States to monitor sector-based performance; they should, however, not be adopted as safety performance targets for individual regulated entities. To ensure continuous improvement in safety, regulated entities must establish their own SPIs and associated targets, in a manner acceptable to their CA.

Table 3: Tier 1 Indicators for CAT aeroplanes, baseline figures 2011-2014 & 2015-2017

EASA-Member States accident rate		
Time period	**Per 10 000 movements**	**Per 10 000 flight hours**
4-year period [2011-2014]	**0.044**	**0.023**
2011	0.044	0.024
2012	0.048	0.026
2013	0.034	0.018
2014	0.051	0.026
3-year period [2015-2017]	**0.028**	**not available**
2015	0.031	not available
2016	0.023	not available
2017	0.030	not available

EASA-Member States fatal accident rate		
Time period	**Per 10 000 movements**	**Per 10 000 flight hours**
4-year period [2011-2014]	**0.001**	**0.0004**
2011	0.001	0.001
2012	0	0
2013	0	0
2014	0.002	0.001
3-year period [2015-2017]	**0.001**	**not available**
2015	0.002	not available
2016	0.001	not available
2017	0	not available

Accident rate by size of AOC holder (Number of movements)		
AOC holder flying activity over the analysed period	**Accident rate per 10 000 movements**	
	period [2011-2014]	**period [2015-2017]**
Band A: Less than 7 100 movements	0.17	not available
Band B: 7 100 - 35 099 movements	0.18	not available
Band C: 35 100 - 101 999 movements	0.06	0.04
Band D: 102 000 - 199 999 movements	0.04	0.03
Band E: More than 199 999 movements	0.03	0.03

4.3 Environmental performance

The efficiency of actions included in EPAS in relation to environmental protection will continue to be monitored as part of the EAER[78].

The report is led by EASA with support from the EC, the EEA and Eurocontrol. EAER provides a valuable source of objective and accurate information on the environmental performance of the aviation sector, and sets the scene for Europe's ambition to make the sector more sustainable. It includes performance indicators that provide an overview of the sector's environmental performance over time. This includes technology/design, sustainable aviation fuels, air traffic management/operations, airports, market-based measures and the latest scientific understanding on environmental impacts from aviation.

EASA published the 2nd edition of the report in January 2019 and, in line with EASA's expanded environmental protection remit, is responsible to update the EAER every 3 years.

---

[78]   https://www.easa.europa.eu/eaer/downloads

Volume II

5. Systemic safety & competence of personnel

This area addresses system-wide problems that affect aviation as a whole. In most scenarios, these problems are related to human factors, human performance limitations, competence of personnel, socio-economic factors or to deficiencies in organisational processes and procedures, whether at authority or industry level.

This area also includes the impact of security on safety.

5.1 Safety management

Issue/rationale

Safety management is a strategic priority. Despite the fact that last years have clearly brought continued improvements in safety across every operational domain, recent accidents underline the complex nature of aviation safety and the significance of addressing human factor aspects. Authorities and aviation organisations should anticipate more and more new threats and associated challenges by developing SRM principles. These principles will be strengthened through SMS implementation supported by ICAO Annex 19 and Regulation (EU) No 376/2014 (reporting reinforcement).

What we want to achieve

Regulatory framework requiring safety management is in place across all domains of aviation, with proportionate requirements in the area of GA.

Regulatory framework for information security management is in place.

Improve the level of safety through effective implementation of safety management within authorities and organisations.

How we monitor improvement

Organisations and authorities are able to demonstrate compliance and effective implementation. For ATM/ANS, this will be monitored as part of the ATM Performance Scheme. For the other domains (air operations, aircrew and aerodromes), it is proposed to start with collecting data on the status of compliance with organisation and authority requirements as relevant to safety management (see Section **4.2**).

How we want to achieve it: actions

RMT.0251	**Embodiment of safety management system requirements into Commission Regulations (EU) Nos 1321/2014 and 748/2012**
Safety	With reference to ICAO Annex 19, the objective is to set up a framework for safety management in the initial and continuing airworthiness domains. This RMT is processed in two phases: 1. Changes to Part-M linked to OPS (CAMOs) - Opinion No 06/2016 issued in May 2016 2. Changes to Part-145 and Part 21
Status	Ongoing
Reference(s)	n/a
Dependencies	RMT.0681

Affected stakeholders	CAMOs, AMOs (Part-145), POA holders, DOA holders, ETSOA holders and CAs			
Owner	EASA FS.2	Air Operations Department		
Priority	Yes	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES				
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1	MDM.055 19/07/2011	2013-19 10/10/2013	06/2016 11/05/2016	2019/1383 of 08/07/2019[79]	2020 Q1
2		NPA 2019-05 17/04/2019	2020 Q3	2021 Q3	2021 Q3

CHANGES SINCE LAST EDITION
n/a

---

[79] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2019.228.01.0001.01.ENG&toc=OJ%3AL%3A2019%3A228%3ATOC

RMT.0681	Alignment of implementing rules and AMC & GM with Regulation (EU) No 376/2014

Safety

Alignment of IRs and AMC & GM with Regulation (EU) No 376/2014.

Note: NPA 2016-19 will not be followed by a stand-alone Opinion; instead, regulatory changes will be implemented as part of existing RMTs. CRD 2016-19[80] was published on 24/05/2019. It provides an overview of those existing RMTs through which the changes will be made.

1. Part 21 to RMT.0251 Phase II;
2. Part M to RMT.0251 Phase II;
3. Part 145 to RMT.0251 Phase II;
4. Part-ARA/Part-ORA (Aircrew) to RMT.0599;
5. Part-ARO/Part-ORO (Air Operations) to RMT.0599;
6. Part-ADR-AR/Part-ADR-OR to RMT.0591;
7. Part-ATM/ANS.AR/Part-ATM/ANS.OR to RMT.0719 (Part-MET);
8. Part ATCO-AR/Part ATCO-OR to RMT.0668; and
9. AMC 20-8 to RMT.0643.

Status	Ongoing
Reference(s)	n/a
Dependencies	n/a

Affected stakeholders	Air operators, pilots, MOs, ATOs, manufacturers[81], CAMOs, ADR operators, ATM/ANS providers and ATCO TOs
Owner	EASA SM.1 Safety Intelligence & Performance Department
Priority No	**RM Procedure** Standard	**Harmonisation** No

PLANNING MILESTONES					
SubT	ToR	NPA	Opinion	Commission IR	Decision
	RMT.0681 30/09/2015	2016-19 19/12/2016	n/a	n/a	n/a

CHANGES SINCE LAST EDITION
Further information added on how the regulatory changes proposed will be processed.

---

80 https://www.easa.europa.eu/sites/default/files/dfu/CRD%20to%20NPA%202016-19.pdf

81 The term 'manufacturer' includes, depending on the case: production approval holder (POAH) and production organisation manufacturing without POA.

RMT.0706	**Update of authority and organisation requirements**
Safety	Address relevant elements of ICAO Annex 19 considering the latest revision status of the document and ensure appropriate horizontal harmonisation of the requirements across different domains taking on board lessons learned.

Status	De-prioritised
Reference(s)	n/a
Dependencies	

Affected stakeholders	CAs, NSAs, air operators, pilots, MOs, ATOs, POA holders, CAMOs, ADR operators, ATM/ANS providers, and ATCO TOs
Owner	EASA FS Flight Standards Directorate

Priority	No	**RM Procedure**	tbd	**Harmonisation**	No

PLANNING MILESTONES				
SubT **ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
tbd	tbd	tbd	tbd	tbd

CHANGES SINCE LAST EDITION
n/a

SPT.057	**SMS international cooperation**
Safety **HF**	Promote the common understanding of safety management and human factors principles and requirements in different countries, share lessons learned and encourage progress and harmonisation, through active participation in the Safety Management International Collaboration Group (SMICG)[82] and dissemination of safety promotion material to support effective SMS implementation, including but not limited to SMICG deliverables[83].

Latest SMICG deliverables include:
— Improved SMS evaluation tool,
— Industry Safety Culture evaluation tool and guidance,
— Organisational Culture self-assessment tool for regulators,
— Position paper on SMS/QMS relationship. |

Status	Ongoing
Reference(s)	GASP SEI-5 (Industry) Improvement of industry compliance with applicable SMS requirements
Dependencies	MST.001, MST.002, MST.028

Affected stakeholders	ALL
Owner	EASA FS.2 Air Operations Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Guidance/training material/best practice	Continuous

CHANGES SINCE LAST EDITION
Addition of references to latest SMICG deliverables and references to relevant GASP SEIs.

---

[82] https://www.skybrary.aero/index.php/Safety_Management_International_Collaboration_Group_(SM_ICG)
[83] https://www.skybrary.aero/index.php/Safety_Management_International_Collaboration_Group_(SM_ICG)

MST.001	**Member States to give priority to the work on SSPs**
Safety	In the implementation and maintenance of the SSP, Member States shall in particular: — ensure effective implementation of the authority requirements and address deficiencies in oversight capabilities, as a prerequisite for effective SSP implementation, — ensure effective coordination between State authorities having a role in safety management, — ensure that inspectors have the right competencies to support the evolution towards risk- and performance-based oversight, — ensure that policies and procedures are in place for risk- and performance-based oversight, including a description of how an SMS is accepted and regularly monitored, — consider civil-military coordination aspects where relevant for State safety management activities, with a view to identifying where civil-military coordination and cooperation will need to be enhanced to meet SSP objectives, — establish policies and procedures for safety data collection, analysis, exchange and protection, in accordance with Regulation (EU) No 376/2014, — establish a process to determine SPIs at State level addressing outcomes and processes, — ensure that an approved SSP document is made available and shared with other Member States and EASA, — ensure that the SSP is regularly reviewed and that the SSP effectiveness is regularly assessed.

Status	Ongoing
Reference(s)	ICAO Annex 19 and GASP 2020-2024 Goal 3 'Implement effective State Safety Programmes' GASP SEI-13 — Start of SSP implementation at the national level GASP SEI-14 — Strategic allocation of resources to start SSP implementation GASP SEI-15 — Strategic collaboration with key aviation stakeholders to start SSP implementation GASP SEI-16 — Strategic collaboration with key aviation stakeholders to complete SSP implementation
Dependencies	MST.028

Affected stakeholders	ALL
Owner	Member States

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
SSP document made available	2019
SSP effectively implemented	2025

CHANGES SINCE LAST EDITION
A point on civil-military coordination is added. References to relevant GASP SEIs are added.

MST.002	Promotion of SMS

Safety HF	Encourage implementation of safety promotion material developed by the European Safety Promotion Network, the SMICG and other relevant sources of information on the subject of safety management.
	Latest SMICG deliverables include:
	— Improved SMS evaluation tool, — Industry Safety Culture evaluation tool and guidance, — Organisational Culture self-assessment tool for regulators, — Position paper on SMS/QMS relationship.
Status	Ongoing
	GASP SEI-5 (Industry) Improvement of industry compliance with applicable SMS requirements
Reference(s)	n/a
Dependencies	MST.001, SPT.057

Affected stakeholders	ALL
Owner	Member States

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Guidance/training material/best practices	Continuous

CHANGES SINCE LAST EDITION
A list of recent SMICG deliverables is now included. References to relevant GASP SEIs are added.

MST.026	SMS assessment

Safety	Without prejudice to any obligations stemming from the SES ATM Performance Scheme, Member States should make use of the EASA management system assessment tool to support risk- and performance-based oversight. Member States should provide feedback to EASA on how the tool is used, for the purpose of standardisation and continual improvement of the assessment tool. Member States should regularly inform EASA about the status of compliance with SMS requirements and SMS performance of their industry.
Status	Ongoing
Reference(s)	EASA Management System assessment tool [84] GASP SEI-5 (Industry) Improvement of industry compliance with applicable SMS requirements
Dependencies	MST.001, MST.032

Affected stakeholders	Air Operations, Aircrew, Medical, Aerodromes
Owner	Member States

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Feedback on the use of the tool	Continuous with annual reporting
Feedback on the status of SMS compliance (cf. § 4.2) and performance	

CHANGES SINCE LAST EDITION
References to relevant GASP SEIs are added.

---

[84] https://www.easa.europa.eu/document-library/general-publications/management-system-assessment-tool

MST.028	Member States to establish and maintain a State Plan for Aviation Safety

Safety

Member States shall ensure that a SPAS is maintained and regularly reviewed. Member States shall identify in SPAS the main safety risks affecting their national civil aviation safety system and shall set out the necessary actions to mitigate those risks. In doing so, Member States shall consider the pan-European safety risk areas identified in EPAS for the various aviation domains as part of their SRM process and, when necessary, identify suitable mitigation actions within their SPAS. In addition to the actions, SPAS shall also consider how to measure their effectiveness. Member States shall justify why action is not taken for a certain risk area identified in EPAS.

The pan-European safety risk areas in the current EPAS edition are as follows:
— For CAT by aeroplane: aircraft upset in flight, runway safety[85], airborne conflict, ground safety, terrain collision, and aircraft environment
— For rotorcraft operations: helicopter upset in flight and terrain and obstacle conflict
— For GA: staying in control, coping with weather, preventing mid-air collisions and managing the flight

SPAS shall:
— describe how the plan is developed and endorsed, including collaboration with different entities within the State, with industry and other stakeholders (unless this is described in the SSP document),
— include safety objectives, goals, indicators and targets (unless these are included in the SSP document),
— reflect the EPAS actions as applicable to the State,
— identify the main safety risks at national level in addition to the ones identified in EPAS, and
— ensure that their SPAS is made available to relevant stakeholders, shared with other Member States and EASA.

Status Ongoing

Reference(s) ICAO Annex 19 and GASP 2020-2024 Goal 3 'Implement effective State Safety Programmes'
GASP SEI-11 (States) — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
GASP SEI-17 (States) — Establishment of safety risk management at the national level (step 1)
GASP SEI-18 (States) — Establishment of safety risk management at the national level (step 2)
GASP SEI-19(States) — Acquisition of resources to increase the proactive use of risk modelling capabilities
GASP SEI-20 (States) — Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities
GASP SEI-21 (States) — Advancement of safety risk management at the national level
SEIs (States) — Mitigate contributing factors to the risks of CFIT, LOC-I, MAC, RE, and RI

Dependencies MST.001

Affected stakeholders	ALL
Owner	Member States

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
SPAS established	2020

CHANGES SINCE LAST EDITION
Addition of a reminder that SPAS should be made available to relevant stakeholders, shared with other Member States. References to relevant GASP SEIs are added.

[85] Runway excursions: refer also to SAF11 (Prevention of RWY Excursions) in the ATM MP's (Level 3 Ed 2018).

5.2 Human factors and human performance

Issue/rationale

Human factors and the impact on human performance, as well as medical fitness are strategic priorities. As new technologies and/or operating concepts emerge on the market and the complexity of the system continues increasing, it is of key importance to properly assess human factors and human performance, in terms of both limitations and its contribution to delivering safety, as part of the safety management implementation.

The safety actions identified currently — related to aviation personnel — are aimed at updating fatigue risk management (FRM) requirements and contributing to mitigating safety issues in all domains such as personal readiness, flight crew perception or crew resource management (CRM) and communication, which play a role in improving safety across all aviation domains.

What we want to achieve

Ensure continuous improvement in safety management activities as related to human factors and human performance.

Harmonise MED and FTL requirements where this ensures fair competition or facilitates the free movement of goods, persons and services.

How we monitor improvement

Feedback from the ABs and the HF CAG.

How we want to achieve it: actions

5.2.1 Flight time limitations

RMT.0486	**Alignment with the ICAO Standards and Recommended Practices as regards the provisions for air traffic controller fatigue management**			
Safety	Align with ICAO SARPs on the subject provisions.			
Status	This task is de-prioritised in accordance with the criteria described in Chapter 3.			
Reference(s)	n/a			
Dependencies				
Affected stakeholders	ANSPs and ATCOs			
Owner	EASA FS.4	ATM/ANS & Aerodromes Department		
Priority	No	**RM Procedure**	Standard	**Harmonisation**	No
PLANNING MILESTONES				
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	tbd	tbd	tbd	tbd	tbd
CHANGES SINCE LAST EDITION				
n/a				

RMT.0492	**Development of FTL rules for CAT operations of emergency medical services by aeroplanes**
Level playing field	Harmonised and state-of-the-art rules for EMS. This RMT will continue only in the field of EMS with aeroplanes (AEMS). Development of FTL for HEMS will be addressed in RMT.0494.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	CAT aeroplane operators conducting EMS operations, flight crew		
Owner	EASA FS.2	Air Operations Department	
Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	RMT.0492 18/04/2012	2017-17 30/10/2017	2021 Q1	2022 Q3	2022 Q3

CHANGES SINCE LAST EDITION
n/a

RMT.0493	**Update and harmonisation of FTL rules for CAT by aeroplane for air taxi operations and single-pilot operations taking into account operational experience and recent scientific evidence**
Level playing field	Develop harmonised and state-of-the-art-rules for air taxi and single-pilot operations.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	CAT aeroplane operators, flight crew		
Owner	EASA FS.2	Air Operations Department	
Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	RMT.0493 21/08/2012	2017-17 30/10/2017	2021 Q1	2022 Q3	2022 Q3

CHANGES SINCE LAST EDITION
n/a

RMT.0494	FTL rules for helicopter operations

Efficiency/ proportionality	Establish harmonised and state-of-the-art rules for helicopter operations (CAT, SPO, NCC).
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	CAT, SPO, NCC helicopter operators, flight crew			
Owner	EASA FS.2	Air Operations Department		
Priority	Yes	**RM Procedure**	Standard	**Harmonisation** No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
	2020 Q3	2022 Q1	2023 Q1	2024 Q1	2024 Q1

CHANGES SINCE LAST EDITION
n/a

RMT.0495	FTL rules for aeroplane commercial operations other than CAT

Level playing field	Establish harmonised and state-of-the-art rules for aeroplane commercial operations other than CAT.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Commercial SPO operators with aeroplanes, flight crew			
Owner	EASA FS.2	Air Operations Department		
Priority	Yes	**RM Procedure**	Standard	**Harmonisation** No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
	2021 Q3	2022 Q4	2023 Q3	2024 Q2	2024 Q2

CHANGES SINCE LAST EDITION
n/a

RES.006	**Effectiveness of FTL rules**
Safety HF	Collection, analysis and processing of historical and in-flight crew fatigue data for purposes of supporting the continuous review of the effectiveness of the provisions concerning flight and duty time limitations and rest requirements as foreseen in Regulation (EU) No 965/2012; and in particular for the 2nd phase of the assessment: - duties of more than 13 hours at the most favourable time of the day; - duties of more than 11 hours for crew members in an unknown state of acclimatisation; - duties including a high level of sectors (more than 6); and - on-call duties such as standby or reserve followed by flight duties. The first phase of the assessment for this RES action is completed (report[86] published 28/02/2019). The second phase started with the publication of a call for tender[87] on 04/10/2019
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	CAT operators and aircrew	
Owner	EASA SM.0.1 and FS.2	Strategy & Safety Management Director's Office and Air Operations Department

PLANNING MILESTONES		
Starting date	**Interim Report**	**Final Report**
1st assessment: 2016	n/a	2019
2nd assessment: 2020		2023

CHANGES SINCE LAST EDITION
Start of the 2nd assessment.

---

[86]   Effectiveness of Flight Time Limitation (FTL) Report

[87]   Call for tender – Effectiveness of Flight Time Limitations – EASA.2019.HVP.11

5.2.2 Medical

RMT.0287	Regular update of Part-MED (Annex IV), Subparts ARA.AeMC and ARA.MED of Part-ARA (Annex VI), and Subpart ORA.AeMC of Part-ORA (Annex VII) of Commission Regulation (EU) No 1178/2011, as well as of the related AMC and GM
Efficiency/pro portionality	The specific objectives of RMT.0287 are to solve the consistency issues, close the loopholes in the rules, as identified through the implementation experience, as well as keep the requirements up to date with the new developments in the field of medicine in order to ensure that they are fit for purpose and can be implemented in practice.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Pilots, aero-medical centres (AeMCs), aeromedical examiners (AMEs), and NAAs			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority	n/a	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
	RMT.0287 22/10/2012	2017-22 21/12/2017	2021 Q1	2022 Q1	2022 Q1

CHANGES SINCE LAST EDITION
Addition of the task description.

RMT.0424	Regular update of Part-MED (Annex IV) of Commission Regulation (EU) No 1178/2011
Efficiency/ proportionality	A 'standing task' allowing the Agency to table non-controversial issues identified by industry and Member States which should be corrected or clarified in Part-MED.
Status	This task is de-prioritised in accordance with the criteria described in Chapter 3.
Reference(s)	n/a
Dependencies	

Affected stakeholders	Pilots, aero-medical centres (AeMCs), aeromedical examiners (AMEs), and NAAs			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority	n/a	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
	RMT.0424 09/10/2017	tbd	tbd	tbd	tbd

CHANGES SINCE LAST EDITION
n/a

RMT.0589	**Rescue and firefighting services at aerodromes**

Safety	The objective of this RMT 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 ADRs serving all-cargo or mail flights is proportionate to this type of traffic and their particular requirements. Finally, it will as well ensure a clearer implementation of the remission factor in general.
	The RMT will lead to changes at AMC & GM level only. It has been split in two subtasks:
	Subtask 1: Remission factor, cargo flights, etc. The first subtask is completed. Decision 2016/009/R published on 23/5/2016.
	Subtask 2: RFFS personnel physical and medical fitness standards.

Status	This RMT is planned to be delivered in 2019.
Reference(s)	n/a
Dependencies	

Affected stakeholders	CAs, ADR operators			
Owner	EASA FS.4	ATM/ANS & Aerodromes Department		
Priority	No	**RM Procedure**	Standard	**Harmonisation** No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1	RMT.0589 10/04/2014	2015-09 09/07/2015	n/a	n/a	2016/009/R 23/05/2016
2		2018-15 18/12/2018	n/a	n/a	2019 Q4

CHANGES SINCE LAST EDITION
n/a

RMT.0707	**Medical regulation — combine Part-MED (Annex IV) of Commission Regulation (EU) No 1178/2011 and Part ATCO MED (Annex IX) of Commission Regulation (EU) 2015/340**
Level playing field	The main benefits are that the medical assessor (MA) within the authorities, and the aero-medical examiner (AME) and aero-medical centres (AeMCs) only need to use one common regulatory document, encouraging harmonisation and removing duplication between Part-MED and Part ATCO.MED. Consequently, the regulation should be easier to keep up to date. Moreover, currently AMEs and AeMCs require duplicate certifications on both Part-MED and Part ATCO.MED.
Status	This task is de-prioritised in accordance with the criteria described in Chapter 3.
Reference(s)	
Dependencies	n/a

Affected stakeholders	AMEs, AeMCs, pilots and ATCOs		
Owner	EASA FS.3	Aircrew & Medical Department	
Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES				
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	tbd	tbd	tbd	tbd	tbd

CHANGES SINCE LAST EDITION
n/a

EVT.0011	**Evaluation on effectiveness of the provisions concerning support programmes, the psychological assessment of flight crew and the systematic and random testing of psychoactive substances**
Efficiency/proportionality	Having regard the Commission Regulation (EU) 2018/1042, amending Regulation (EU) No 965/2012, an evaluation of the effectiveness of the provisions concerning support programmes, the psychological assessment of flight crew and the systematic and random testing of psychoactive substances is envisaged to ensure the medical fitness of flight and cabin crew members. The report will be published in compliance with the regulatory deadline by 14 August 2022.
Status	New
Reference(s)	n/a
Dependencies	

Affected stakeholders	Air operators, pilots, CA	
Owner	EASA FS.2.	Air Operations Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Evaluation report	2022

CHANGES SINCE LAST EDITION
n/a

5.3   Competence of personnel

Issue/rationale

Competence of personnel is a strategic priority. As new technologies and/or operating concepts 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 opportunities presented by new technologies to enhance safety.

The safety actions identified currently — related to aviation personnel — are aimed at introducing competency-based training for all licences and ratings. These actions play a role in improving safety across all aviation domains.

Rotorcraft:

EASA's Rotorcraft Safety Roadmap aims at significantly reducing the number of rotorcraft accidents and incidents and focuses on traditional/conventional rotorcraft including General Aviation (GA) rotorcraft. It focuses on safety and transversal issues that are affected by the different domains including training, operations, initial and continuing airworthiness, environment and innovation.

This chapter contains the actions in the area of training, existing and new training devices, simulators and new technologies available for training in line with EASA's Rotorcraft Safety Roadmap Training Safety work-stream.

What we want to achieve

Ensure continuous improvement of all aviation personnel competence.

How we monitor improvement

Measurable improvement in aviation personnel competence at all levels (flight crew, cabin crew, maintenance staff and ATCOs).

How we want to achieve it: actions

5.3.1 General

SPT.107	**Promotion of the full range of careers and opportunities in the European aviation industry**
Safety	Help to address potential shortages of aviation professionals for the future European aviation system by promoting the full range of careers and opportunities that are available.
	This covers the full range of aviation activities both on the ground and in the air.
	Specific focus is needed to address already identified shortages in areas such as aero-medical examiners, instructors, flight examiners, maintenance and ground personnel.
	This task also supports some of the European aspects of the ICAO Next Generation of Aviation Professionals (NGAP) programme[88].
Status	New
Reference(s)	ICAO NGAP
Dependencies	

Affected stakeholders	All	
Owner	EASA SM.1	Safety Intelligence & Performance Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Promotional web material and social media	Continuous

CHANGES SINCE LAST EDITION
n/a

---

88   https://www.icao.int/safety/ngap/Pages/NGAP-Programme.aspx

5.3.2 Language proficiency (pilots and ATCOs)

Issue/rationale

The decision to address language proficiency requirements (LPRs) for pilots and air traffic controllers was first made by the 32nd Session of the ICAO Assembly in September 1998 as a direct response to several fatal accidents, including one that cost the lives of 349 persons, as well as to previous fatal accidents in which the lack of proficiency in English was identified as a contributing factor. The intent was to improve the level of language proficiency in aviation worldwide, and reduce the communication breakdowns caused by a lack of language skills.

LPRs have now moved beyond implementation (Assembly Resolution A38-8 refers), entering a phase of post implementation.

Despite the successful establishment of national LPR systems, there remains insufficient awareness, particularly in the selection of suitable and appropriate testing tools that meet ICAO LPRs, which may result in safety risks.

Therefore, EASA supports the continuation of the LPR activities as an important aviation safety element and joins efforts with ICAO, working together in order to streamline and harmonise the LPR activities and optimise support to Member States and the industry.

Building on the successful joint endeavours, ICAO and EASA in close coordination conduct a joint ICAO/EASA activity on LPR implementation.

Moreover, the following points have been brought to the attention of EASA (some came from the industry directly:

— Whilst all pilots holding a CPL/an IR and an ATPL have an English LP endorsement on their licence of at least the LP level 4, experience has shown that many of the pilots seeking a job at airlines cannot pass a straightforward telephone interview and are therefore not successful in getting their first job as an airline pilot.

— GA pilot organisations claim that the language proficiency tests are too demanding and not adapted to the GA environment. Furthermore, GA organisations claim that the real advantage of the language proficiency examinations is for the language proficiency testing industry.

— Raw safety data shows only a very low number of incidents related to a lack of language proficiency, whilst a significant number of incidents are related to a lack of situational awareness because the radio communications were only in the local language.

— Pilot organisations claim that the CAs in different Member States have implemented different procedures to test language proficiency with the effect that in some countries it is easier or in other countries more difficult to obtain a language proficiency endorsement. (Some airlines have a Level 6 as a pre-entry requirement thus pushing pilots to search for an easy solution).

— The language proficiency testing industry claims that the provisions for language proficiency in Regulation (EU) 1178/2011 are not consistent with the latest amendments of ICAO Annex 1.

What we want to achieve

To increase safety by reducing the risk of ineffective communication or even miscommunication when pilots and/or controllers need to face an unexpected situation and to use plain language.

To react to the above:

— EASA intends to promote the use of the English language during pilot training for IR, CPL and ATPL.

— EASA is evaluating the content of the provided tests and is ready to reconsider the necessity of language proficiency tests for pilots holding an light aircraft pilot licence (LAPL) or a private pilot licence (PPL) with a radio telephony (RT) licence that includes the English language.

— EASA has initiated an analysis of the raw data to ensure that not only those incidents that are directly related to language proficiency are included, but also those that show the lack of language proficiency in the chain of events.

— Through standardisation of CAs and with the feedback on performance of the technical advisory bodies, EASA has started to have a closer look at the tests that are provided in the different Member States. After a thorough analysis, EASA plans to promote selected best practices with the view to harmonising testing methods.

EASA has verified the existing requirements and considers these as sufficient; however ,EASA plans to encourage Member States through safety promotion measures to make use of ICAO Doc 9835.

How we want to achieve it: actions

SPT.105	**Language proficiency requirements — raise awareness on language proficiency requirements implementation, together with ICAO, the industry and the Member States**
Safety	Subtask 1: Raise awareness on LPR implementation (LPRI), establish good practices and facilitate proportionate LPRI, based on the operational needs, together with ICAO, the industry and the Member States. All relevant stakeholders and Member States to work together on the maintenance, monitoring and revision of LPRI; to promote the common understanding of LPRI as a safety issue, linked to human factors principles; share lessons learned; encourage progress and harmonisation and develop good practice document to cope with operational, safety and standardisation needs. Subtask 2: Use of the English language during pilot training for IR, CPL and ATPL. CAs recommending ATOs about pilot training for CPL, ATPL and IR mainly conducted in English language and/or English language training delivered in parallel with CPL, ATPL and IR training courses
Status	New
Reference(s)	ICAO Annex 1, Annex 6, Annex 10, Annex 11
Dependencies	MST.033

Affected stakeholders	Member States, ANSPs, ATCOs, training organisations, pilot licence holders and students	
Owner	EASA FS.3 and CAs	Aircrew & Medical Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
SubT 1	continuous
SubT 2 Guidance/good practice document	2020 Q4
CHANGES SINCE LAST EDITION	
n/a	

MST.033	**Language proficiency requirements — share best practices, to identify areas for improvement for the uniform and harmonised language proficiency requirements implementation**
Safety	Member States should provide feedback to EASA on how the LPRI is implemented, including the uptake by ATOs to deliver training in English, for the purpose of harmonisation and uniform implementation.
Status	New
Reference(s)	n/a
Dependencies	SPT.105

Affected stakeholders	Member States, ANSPs, ATCOs, training organisations, pilot licence holders and students
Owner	Member States

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Feedback on the implementation status	Continuous

CHANGES SINCE LAST EDITION
n/a

In addition to the above, the following RMTs are also relevant to language proficiency:

RMT.0194	Modernisation and simplification of the European pilot licensing and training system and improvement of the supply of competent flight instructors

RMT.0678	Simpler, lighter and better flight crew licensing requirements for general aviation

The full description for these RMTs is included in **Section 5.3.3 Flight crew**

5.3.3 Flight crew

RMT.0188	**Update of flight crew licensing implementing rules**
Safety	A complete first review of Part-FCL addressing a number of issues to be clarified or amended as identified by industry and Member States. 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. See Opinion No 05/2017.
Status	This RMT is expected to be completed in 2019.
Reference(s)	n/a
Dependencies	

Affected stakeholders	Flight examiners, instructors, pilots, ATOs and DTOs			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority	No	RM Procedure	Standard	Harmonisation	No

PLANNING MILESTONES					
SubT	ToR	NPA	Opinion	Commission IR	Decision
1	FCL.002 21/07/2011	2014-29 17/12/2014	05/2017 29/0/2017	2019 Q4	2019 Q4

CHANGES SINCE LAST EDITION
n/a

RMT.0194	**Modernisation and simplification of the European pilot licensing and training system and improvement of the supply of competent flight instructors**
	The task objectives are to:

Safety	1. improve the supply of competent flight instructors and extend the principles of threat and error management (TEM) in the training of the flight instructors and to all licenses and ratings; and
	
	2. modernise and simplify the pilot licensing and training system by:
	    a. considering the recommendations from the ex post evaluation under EVT.6 and BIS;
	    b. introducing/transposing the latest ICAO Annex 1 and associated ICAO documents on the competency-based training and assessment (CBTA) concept for the appropriate licences and ratings; and

Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Pilots, flight instructors, flight examiners, ATOs, DTOs, air operators			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority	No	RM Procedure	Standard	Harmonisation	No

PLANNING MILESTONES					
SubT	ToR	NPA	Opinion	Commission IR	Decision
1	2019 Q4	2021 Q1	2021 Q4	2022 Q4	2022 Q4
2	2019 Q4	2023 Q2	2024 Q2	2025 Q2	2025 Q2

CHANGES SINCE LAST EDITION
Adjustment of the task title. This task now incorporates the content of RMT.0596.

RMT.0196	Update of flight simulation training device requirements

Safety An ICAO alignment 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 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 FAA should be considered.

Subtask 1:
The main objective of Work Package 1 (WP 1) is to increase the fidelity of the provisions to support the approach-to-stall training, as well as of the new upset prevention and recovery training (UPRT) requirements as proposed by Opinion No 06/2017 (RMT.0581). The related Commission Implementing Regulation (EU) 2018/1974 was published on 14 December 2018.

Subtask 2A:
The main objective of Work Package 2A (WP2) is to introduce flexibility in the use of the best possible training tools including new technologies. This is done identifying the device requirements 'FSTD capability signature' (FCS) based on analysing regulatory training task objectives, thus creating a clear link between FCL, OPS and CS-FSTD.

Subtask 2B:
The main objective of Work Package 2B (WP2B) is to review the technical requirements for FSTDs to reflect their actual capability and technology advancement.

Subtask 3:
The main objective of Work Package3 (WP3) is to address any relevant and appropriate emerging issues relevant to CS-FSTD, including the feasibility for developing CS-FSTD requirements for power-lift/tilt rotor aircraft.

Status Ongoing

Reference(s) n/a

Dependencies

Affected stakeholders	Air operators, ATOs, DTOs, pilots, instructors, and flight examiners		
Owner	EASA FS.3	Aircrew & Medical Department	
Priority Yes	**RM Procedure** Standard	**Harmonisation** Yes	

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
1	RMT.0196 15/07/2016	2017-13 25/07/2017	n/a	n/a	2018/006/R 03/05/2018
2A		2020 Q1	2020 Q2	2020 Q4	2020 Q4
2B		2020 Q1	n/a	n/a	2021 Q1
3		2021 Q2	n/a	n/a	2022 Q2

CHANGES SINCE LAST EDITION
Adjustment of the task title. Split of subtask 2 into 2A and 2B.

RMT.0412	Regular update of the authority and organisation requirements pertaining to Part-FCL

Efficiency/ proportionality	Review of the IRs in Part-ARA and Part-ORA (Annex VI and Annex VII) of Commission Regulation (No) 1178/2011, and resolution of any inconsistencies identified after the adoption of the Part-ARA and Part-ORA IRs. This is necessary to ensure that the EASA regulatory system reflects the state of the art, and specifically the best practices developed in the Member States.
Status	This task is de-prioritised in accordance with the criteria described in Chapter 3.
Reference(s)	n/a
Dependencies	RMT.0706

Affected stakeholders	TOs and NAAs	
Owner	EASA FS.3	Aircrew & Medical Department

Priority	n/a	RM Procedure	Standard	Harmonisation	No

PLANNING MILESTONES					
SubT	ToR	NPA	Opinion	Commission IR	Decision
	RMT.0412 30/10/2012	tbd	tbd	tbd	tbd

CHANGES SINCE LAST EDITION
Addition of the task description.

RMT.0509	Regular update of CS-FCD

Efficiency/pro portionality	The objective of this RMT is to regularly address miscellaneous issues of non-controversial nature, which are required to ensure that the CS are fit for purpose, cost-effective, can be implemented in practice, and are in line with the latest ICAO SARPs. In particular, a regular update is used to transpose special conditions, certification memoranda and other material supporting the application and interpretation of existing CS as established by EASA during previous certification projects, and to address non-complex and non-controversial issues raised by stakeholders.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Design organisations of aircraft and other design organisations dealing with changes or supplemental type certificates to these aircraft	
Owner	EASA CT.5	Certification Strategy & Programming Department

Priority	n/a	RM Procedure	Standard	Harmonisation	No

PLANNING MILESTONES					
SubT	ToR	NPA	Opinion	Commission IR	Decision
	16/10/2019	2020 Q1	n/a	n/a	2020 Q3

CHANGES SINCE LAST EDITION
Addition of the task description.

RMT.0581	Loss of control prevention and recovery training

Safety

Review of the provisions for initial and recurrent training in order to address 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 into multiple deliverables. See the related ToR on the EASA website.
Note: Recurrent and conversion training provisions related to UPRT were already published in May 2015. They have been applicable as of May 2016.

Workstream No 1 constitutes amendments to AMC & GM to Regulation (EU) No 965/2012 (UPRT for air operators).

Workstream No 2 constitutes amendments to Regulation (EU) No 1178/2011 and related AMC & GM (UPRT in Part-FCL). Additionally, it contains updates to AMC & GM to Regulation (EU) No 965/2012, in order to align the already existing UPRT framework as introduced with workstream No 1 with the new Part-FCL UPRT framework.

Workstream No 3 constitutes amendments to AMC & GM to Regulation (EU) No 965/2012 as regards the applicability of CS-FSTD(A) Issue 2 for UPRT during air operator training. After the conduct of a survey with the Member States in October 2019 as well as a discussion held at the EASA committee meeting on 24 October 2019, this workstream is completed in accordance with Article 15 of the EASA MB Decision 18-2015 (direct publication).

Status This RMT is expected to be completed in 2019.

Reference(s) Refer also to RMT.0582 (ToR issued 20/08/2013)

Dependencies

Affected stakeholders	Pilots, instructors, flight examiners, ATOs and Air Operators

Owner		EASA FS.3		Aircrew & Medical Department	
Priority	Yes	**RM Procedure**	See SubT	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
1 (ST)	RMT.0581 and RMT.0582 20/08/2013	2015-13 01/09/2015	n/a	n/a	2015/012/R 04/05/2015
2 (ST)	n/a	n/a	06/2017 29/06/2017	2018/1974 of 14/12/2018[89]	2019/005/R 27/02/2019
3(DP)	2019 Q4	2019 Q4	n/a	n/a	2019 Q4

CHANGES SINCE LAST EDITION
Update of the task description and introduction of workstream (SubT) 3.

---

[89] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R1974

RMT.0587	**Regular update of regulations regarding pilot training, testing and checking and the related oversight**
Efficiency/proportionality	A 'standing task' allowing the Agency to table non-controversial issues identified by industry and Member States which should be corrected or clarified in Part-FCL.
Status	The current cycle is completed (SubT1) Further cycles are de-prioritised in accordance with the criteria described in Chapter 3. (SubT2)
Reference(s)	n/a
Dependencies	

Affected stakeholders	Pilots, instructors, examiners and ATOs			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES				
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1	RMT.0587 11/05/2016	30/11/2016	03/2017 11/05/2017	2018/1065 of 27/07/2018[90]	2018/011/R 06/11/2018
2	tbd	tbd	tbd	tbd	tbd

CHANGES SINCE LAST EDITION
n/a

---

[90] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R1065

RMT.0595	**Technical review and regular update of learning objectives and syllabi for commercial licences (IR)**
Safety	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). NPA 2016-03(A)(B)(C)(D)(E)(F), stemming from for RMT.0595, has a three-step approach: Subtask 1: The entire package of all the subjects (except 090 communication) – Decision 2018/001/R[1] of 8 February 2018 Subtask 2: Editorial amendment of this package and Examination procedures - Decision 2018/011/R[2] of 6 November 2018 Subtask 3: Editorial amendment of this package and subject 090 communication – Decision 2019/017/R of 27 August 2019. The objective of this Decision is to address a safety and regulatory coordination issue related to flight crew licensing, and it has been developed in response to the EPAS safety actions. This Decision contains the introduction of new Subject 090 'Communications', which replaces Subjects 091 'VFR Communications' and 092 'IFR Communications', as amended by Commission Implementing Regulation (EU) 2018/1974 of 14 December 2018 amending Commission Regulation (EU) No 1178/2011. This Decision also contains the amended examination procedures in the relevant AMC to ARA.FCL.300(b) 'Examination procedures' regarding this new Subject 090 'Communications'. This Decision also issues some editorial corrections in the AMC to Appendix 6 and in the Learning Objectives (LOs) (i.e. AMC1 FCL.310, FCL.515(b) and FCL.615(b) 'Theoretical knowledge examination') of Decision 2018/001/R of 8 February 2018 and Decision 2018/011/R of 6 November 2018.

Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders		CAs, ATOs, student pilots and ECQB			
Owner		EASA FS.3	Aircrew & Medical Department		
Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1	RMT.0595 11/03/2015	2016-03 09/06/2016	n/a	n/a	2018/001/R 08/02/2018
2			n/a	n/a	2019/017/R 28/08/2019
3			n/a	n/a	2022 Q1

CHANGES SINCE LAST EDITION
Details on the 3-step approach are provided.

RMT.0599	Update of Subpart FC of Part-ORO (evidence-based training)

Safety

A complete review of the provisions contained in ORO.FC (Annex III of Commission Regulation (EU) No 965/2012).

Subtask 1:
It will include the introduction of evidence-based training (EBT) and competency-based training and assessment (CBTA) in the field of recurrent training and other training-related implementation issues, such as helicopter requirements.

Subtask 2:
It will include the extension of EBT to other parts of the operator's training (e.g. conversion course, type rating) allowing a single philosophy of training to the operator.

Subtask 3:
It will extend EBT to other aircrafts types (e.g. helicopters, business jets) allowing a single philosophy of training across the industry. In addition, it will tackle other implementation issues on the training-related rules brought to the attention of EASA.

Status	Ongoing
Reference(s)	n/a
Dependencies	RMT.0681 and RMT.0196

Affected stakeholders	Pilots, flight instructors, flight examiners, ATOs and air operators		
Owner	EASA FS.3	Aircrew & Medical Department	
Priority	Yes	**RM Procedure** Standard	**Harmonisation** No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
1a	RMT.0599 05/02/2016	2018-07 27/07/2018	2019 Q4	2021 Q2	2021 Q2
1b		2019-08 14/06/2019	2020 Q2	2022 Q2	2022 Q2
2		2021 Q3	2022 Q3	2023 Q3	2023 Q3
3		2024 Q3	2025 Q3	2026 Q3	2026 Q3

CHANGES SINCE LAST EDITION
n/a

RMT.0654	**Revision of the balloon licensing requirements**
Efficiency/ proportionality	Address topics identified by the industry balloon experts on the aircrew and on the medical side. A focused consultation was performed and no NPA was published.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Balloon operators, pilots, flight instructors and flight examiners, CAs and DTOs			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority Yes	**RM Procedure**	Article 16	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
	RMT.0654 16/09/2016	n/a	01/2019 (A) & (B) 19/02/2019	2020 Q2	2020 Q2

CHANGES SINCE LAST EDITION
n/a

RMT.0677	**Easier access of general aviation (GA) pilots to instrument flight rules (IFR) flying**
Efficiency/ proportionality	Review the existing requirements for the instrument ratings and most probably the development of a new instrument rating specifically catering for the needs of the PPL holders.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Pilots, instructors, flight examiners and ATOs, ANSPs			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority Yes	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	Commission IR	**Decision**
	RMT.0677 18/12/2015	2016-14 09/11/2016	01/2019 (A) & (B) 19/02/2019	2020 Q1	2020 Q1

CHANGES SINCE LAST EDITION
n/a

RMT.0678	Simpler, lighter and better flight crew licensing requirements for general aviation
Efficiency/ proportionality	Review the different requirements which have been identified by the GA roadmap to cause problems for GA.

Examples:
— Modular LAPL;
— Review of different LAPL and PPL requirements (crediting, revalidation, seaplane rating for LAPL);
— Review of class & type ratings requirements (new propulsion systems, amphibious aircraft);
— Review of language proficiency requirements for GA pilots;
— Provisions on touring motor glider (TMG) (definition, additional crediting);
— Mountain rating for helicopters;
— Review of the flight test rating requirements in the context of GA;
— Development of a 'light aircraft flight instructor (LAFI)' for LAPL training only; and
— Examiner's vested interests in the context of GA.

This task has been divided in 3 subtasks:

Subtask 1:
Modular LAPL.

Subtask 2:
New technologies training and certification requirements (electric and hybrid propulsion)

Subtask 3:
Miscellaneous topics as listed above.

Status	Ongoing
Reference(s)	n/a
Dependencies	RMT.0731 and RMT.0230 (for new eVTOLs)

Affected stakeholders	Pilots, flight examiners and CAs, ATOs, DTOs			
Owner	EASA FS.3	Aircrew & Medical Department		
Priority	Yes	**RM Procedure**	AP/ST[91]	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1 (AP)	RMT.0678 01/09/2016	09/06/2017	08-2017 23/10/2017	2019/430 of 18/03/2019[92]	n/a
2 (ST)		2020 Q2	2021 Q1	2021 Q4	2021 Q4
3 (ST)		2022 Q3	2023 Q3	2024 Q2	2024 Q2

CHANGES SINCE LAST EDITION
The task is divided into 3 subtasks.

[91] * Modular LAPL was processed through the procedure in accordance with Article 16 of the Rulemaking Procedure (accelerated procedure). For all other items, the standard rulemaking procedure will be applied.

[92] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0430

RMT.0701	**Revision of the sailplane licensing requirements**
Efficiency/proportionality	Address topics identified by the industry sailplane experts on the aircrew side. *In lieu of an NPA public consultation, an AB consultation was performed in June 2018.
Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Sailplane operators, pilots, flight instructors, flight examiners, ATOs and DTOs		
Owner	EASA FS.3	Aircrew & Medical Department	
Priority	Yes	**RM Procedure**	AP	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	RMT.0701 15/12/2016	26/06/2018*	2019-01 19/02/2019	2020 Q2	2020 Q2

CHANGES SINCE LAST EDITION
n/a

SPT.012	**Promotion of the new European provisions on pilot training**
Safety HF	The objective is to complement the new regulatory package on UPRT and EBT with relevant safety promotion material.
Status	Ongoing
Reference(s)	GASP SEI (States) - Mitigate contributing factors to LOC-I accidents and incidents
Dependencies	RMT.0599

Affected stakeholders	Pilots, instructors, flight examiners, ATOs, and air operators, Member States	
Owner	EASA FS.3	Aircrew & Medical Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Safety promotion material	2020

CHANGES SINCE LAST EDITION
n/a

SPT.110	Standardisation of flight examiners

Safety	Improve harmonisation across the EASA Member States by providing support and guidance defining clear criteria and competences for examiners, depending on the different qualifications needed for different licences, and based on the needs from authorities and the industry. This is intended to strengthen the standardisation of examiners at EU level, fostering and facilitating the harmonisation of requirements, procedures and forms adopted at national level.
Status	New
Reference(s)	Evaluation report on implementation of the Aircrew Regulation (Regulation (EU) No 1178/2011), Part FCL, Subpart K rules Examiners and evaluation on applicable rules for initial and recurrent pilot training, testing and checking.
Dependencies	SPT.111

Affected stakeholders	CAs, Flight Examiners	
Owner	EASA SM.1	Safety Intelligence & Performance Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Promotional Web Material, Manuals, Guides, Standardised Forms and Checklists.	2021

CHANGES SINCE LAST EDITION
n/a

SPT.111	Flight examiner manual

| Safety | Enhance the application and harmonisation, among the examiners certified in the EASA Member States, of standards and best practices to ensure that any applicant is qualified by a comparable level of knowledge, competence and skill.

Through a reliable and objective testing and checking guidance, foster the achievement of optimal outcomes in the interest of effectiveness, efficiency, fairness and transparency.

Foster a common training programme for the standardisation of examiners among all EASA Member States' CAs.

This SPT will entail :
- developing the EASA flight examiner manual (FEM) that provides guidelines to flight examiners on the conduct of examinations with a view to improving the standardisation and fairness of examiners at EU level.
- providing recommendations to competent authorities on the usefulness of using common standardised forms and, in addition, common notification procedure(s) for examiners with a Part-FCL examiner certificate conducting a test, check or assessment of competence of a Part-FCL licence holder whose licence was issued by a CA other than their own. |

Status	New
Reference(s)	Evaluation report on implementation of EC Aircrew Regulation 1178/2011, Part FCL, Subpart K rules Examiners and evaluation on applicable rules for initial and recurrent pilot training, testing and checking.
Dependencies	SPT.110

Affected stakeholders	CAs, Flight Examiners	
Owner	EASA SM.1	Safety Intelligence & Performance Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
EASA flight examiner manual	June 2020

CHANGES SINCE LAST EDITION
n/a

EVT.0006	Evaluation on provisions for flight crew licences laid down in Commission Regulation (EU) No 1178/2011
Efficiency/ proportionality	The regulation will be reassessed with regard to pilot training, testing and periodic checking for performance-based regulation.
Status	Ongoing
Reference(s)	n/a
Dependencies	RMT.0587

Affected stakeholders	Organisations and CAs	
Owner	EASA FS.3	Aircrew & Medical Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Evaluation Report	2020 Q1

CHANGES SINCE LAST EDITION
n/a

In addition to the above, the following RMTs are relevant to competence of personnel (flight crew):

RMT.0190	Requirements for relief pilots

The full description for this action is included in **Section 6.1.3**

RMT.0688	Regular update of CS-SIMD

The full description for this action is included in **Chapter 9**.

In addition to the above, the following SPT is relevant to competence of personnel (GA):

SPT.083	Flight instruction

The full description for this action is included in **Section 8.1.1**.

5.3.4   Cabin crew

RMT.0508	Regular update of CS-CCD

The full description for this action is included in **Chapter 9**.

5.3.5 Maintenance staff

Part-147:

At present, Part-147 excludes the use of distance learning for the purpose of basic knowledge and aircraft type training as the training locations are part of the approval. Part-66 allows the use of 'synthetic training devices', but does not define them. According to Appendix III to Part-66, 'Multimedia Based Training (MBT) methods may be used to satisfy the theoretical training element either in the classroom or in a virtual controlled environment (…)'; however, Appendix III to Part-66 does not define these methods, and no guidance exists on how to evaluate, validate and/or approve courses based on MBT methods.

What we want to achieve

Ensure continuous improvement of all aviation personnel competence.

Part-147: The introduction of the new methods and technologies will lead to a level playing field, raise the efficiency, quality and safety of maintenance training. Additionally, this way, the training provided amongst the approved maintenance training organisations will be at a similar level. Moreover, it may result in an increased number of young people choosing to engage in maintenance career, which may help to tackle the expected shortage of maintenance staff in the near future.

RMT.0106	**Certification specifications and guidance material for maintenance certifying staff type rating training**			
Safety	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 rating training courses.			
Status	This RMT is planned to be delivered in 2019.			
Reference(s)	n/a			
Dependencies				
Affected stakeholders	DAHs, maintenance personnel, approved maintenance training organisations (Part-147), and CAs			
Owner	EASA FS.1	Maintenance & Production Department		
Priority No	**RM Procedure** Standard	**Harmonisation** No		
PLANNING MILESTONES				
SubT	ToR	NPA	Opinion	Commission IR	Decision
	RMT.0106 28/07/2014	2018-11 18/09/2018	n/a	n/a	2019 Q4
CHANGES SINCE LAST EDITION				
n/a				

RMT.0255	**Review of Part-66**

Efficiency/ proportionality	The specific objective of this task is to address some shortcomings identified on the maintenance licensing system linked to effectiveness and efficiency of the current requirements, namely: — Type rating endorsement for the 'legacy aircraft'; — On-the-job-training (OJT); — Deficit of practical skills for maintenance personnel; and — Obsolescence of the Basic Knowledge syllabus. This task will also address new training/teaching technologies for maintenance staff as relevant to Part-66, to set up the framework for: — e-learning and distance learning; — simulation devices or STDs; — specialised training such as HF, FTS, continuation training; and — blended teaching methods.

Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Aircraft maintenance licence (AML) holders, approved maintenance training organisations (AMTOs), approved maintenance organisations (AMOs) and CAs.
Owner	EASA FS.1 Maintenance & Production Department

Priority	Yes	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	14/07/2014 Iss 1 14/08/2019 Iss 2	2020 Q4	2021 Q4	2022 Q3	2022 Q3

CHANGES SINCE LAST EDITION
The task description is updated. This RMT now also addresses the topics previously included within RMT.0281 as relevant to Part-66.

RMT.0541	Regular update of aircraft type ratings for Part-66 aircraft maintenance licences
Efficiency/ proportionality	Recurring regular update of references used for issuing type ratings in a harmonised way.
Status	Ongoing. The current regular update is planned to be delivered in 2019. The next cycle has not yet been programmed.
Reference(s)	n/a
Dependencies	

Affected stakeholders	Aircraft maintenance licence (AML) holders, approved maintenance training organisations (AMTOs), approved maintenance organisations (AMOs) and CAs
Owner	EASA FS.1 Maintenance & Production Department

Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	66.024 12/05/2009	2018-13 05/12/2018	n/a	n/a	2019 Q4

CHANGES SINCE LAST EDITION
Addition of the task description.

RMT.0544	**Review Part-147**
Safety	Complete review of Part-147 (not performed since its first issue in 2003) and resolution of the areas of special interest identified in EVT.002: − Optimisation of the structure of the basic knowledge syllabus and its impact on the training courses and examinations − Language proficiency for students in training courses − Mechanisms to eliminate or reduce the examination cheating and fraud/conflict of interest within Part-147 organisations; in particular, a final assessment performed by the NAA This task will also address new training/teaching technologies for maintenance staff as relevant to Part-147, to set up the framework for: — e-learning and distance learning; — simulation devices or STDs; — specialised training such as HF, FTS, continuation training; and — blended teaching methods.
Status	Ongoing
Reference(s)	EVT.002 report
Dependencies	

Affected stakeholders	Approved maintenance training organisations (AMTOs), AML applicants and holders, and CAs
Owner	EASA FS.1 Maintenance & Production Department

Priority	n/a	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	14/08/2019	2020 Q4	2021 Q4	2022 Q3	2022 Q3

CHANGES SINCE LAST EDITION
This RMT now also addresses the topics previously included within RMT.0281 as relevant to Part-147.

SPT.106	**Prevention, detection and mitigation of fraud cases in Part-147 organisations**
Safety	EVT.002, the report on the EU maintenance licensing and training system, denounced cases of fraud or cheating during the examinations. The action includes discussions with the CAs/industry on how to prevent, detect, mitigate and eliminate fraud cases.
Status	New
Reference(s)	EVT.002 - Evaluation report related to the EASA maintenance licensing system and maintenance training organisations (02/03/2018)
Dependencies	MST.035

Affected stakeholders	CAs, AMTOs
Owner	EASA FS.1 Maintenance & Production Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
	Continuous

CHANGES SINCE LAST EDITION
n/a

MST.035	Oversight capabilities/focus area: fraud cases in Part-147
Safety	Member States should focus on the risk of fraud in examinations, including by adding specific items in audit checklists and collecting data on the actual cases of fraud. They may exchange and share information as part of collaborative oversight.
Status	New
Reference(s)	EVT.002 - Evaluation report related to the EASA maintenance licensing system and maintenance training organisations (02/03/2018)
Dependencies	SPT.106
Affected stakeholders	CAs, AMTOs
Owner	Member States

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Feedback on the implementation status	Continuous

CHANGES SINCE LAST EDITION
n/a

5.3.6 Personnel involved in ATM/ANS

RMT.0668	Regular update of air traffic controller licensing rules (IRs/AMC & GM)

Efficiency/ proportionality	Subtask 1: Addresses the updates of the ATCO initial training content mainly introducing the changed regulatory references.
	Subtask 2 will introduce a controlled mechanism of crediting of training, experience or other qualifications of military ATCOs for the purpose of obtaining ATCO licenses under Reg EU 2015/340.
	Subtask 3: Contains a review of the rule with the purpose of clarification. The task will amongst other topics consider the relevant recommendations stemming from the Report of the Wise Persons Group on the future of the Single European Sky and the proposal for the future architecture of the European airspace.
	*Instead of an NPA public consultation, the procedure in Article 15 or that in Article 16 of MB Decision No 18-2015 will be applied.
Status	Ongoing
Reference(s)	This RMT may be affected by the recommendations stemming from the WPGR and the AAS.
Dependencies	RMT.0681

Affected stakeholders	ATM/ANS service providers; CAs, ATCO TOs; aero-medical examiners; aero-medical centres; ATCOs
Owner	EASA FS.4 ATM/ANS & Aerodromes Department
Priority No	**RM Procedure** see SubT **Harmonisation** No

PLANNING MILESTONES					
SubT	**ToR**	**NPA***	**Opinion**	**Commission IR**	**Decision**
1 (AP)	RMT.0668 10/08/2017	02/09/2019	n/a	n/a	2019 Q4
2 (AP)		2019 Q4*	2020 Q1	2021 Q1	2021 Q1
3 (ST)		2021 Q3	2022 Q1	2023 Q1	2023 Q1

CHANGES SINCE LAST EDITION
Addition of the task description and new subtasks.

5.4   Aircraft tracking, rescue operations and accident investigation

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 improving the location of an aircraft in distress, 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.

What we want to achieve

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

How we monitor improvement

Number of investigated accidents or serious incidents in which flight data was not available.

How we want to achieve it: actions

RMT.0249	**Installation and maintenance of recorders — certification aspects**

Safety	The general objective of this RMT 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 RMT is aimed at modernising and enhancing the specifications for flight recorder installation on board large aeroplanes and large rotorcraft.
	— Phase 1 addressed flight data recorder (FDR)/cockpit voice recorder (CVR) power supply, means to automatically stop the recording after an accident, combination recorders, etc.
	— In Phase 2 of this RMT, EASA will prepare a second NPA (planned for 2019Q4), which will lead to a decision amending CS-25 and CS-29. Topics addressed in phase 2 will include data link recording, serviceability of flight recorders, quality of recording of CVR, and performance specifications for flight recorders.
	Both phases will affect CS-25 and CS-29, but phase 1 also included an opinion with a proposal to amend Part-CAT.

Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Operators (of aircraft required to be equipped with flight recorders), POA holders and DOA holders
Owner	EASA CT.5	Certification Strategy & Programming Department

Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1	RMT.0249 (MDM.051) 18/09/2014	2018-03 27/03/2018	2019-02 22/02/2019	2021 Q1	2021 Q1
2		2019 Q4	n/a	n/a	2020 Q3

CHANGES SINCE LAST EDITION
n/a

RMT.0271	**In-flight recording for light aircraft**

Safety	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.

Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Operators (of aircraft not yet required to have flight recorders)
Owner	EASA FS.2	Air Operations Department

Priority	No	**RM Procedure**	Standard	**Harmonisation**	No

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	25/07/2014	2017-03 03/04/2017	2019-02 22/02/2019	2020 Q3	2020 Q3

CHANGES SINCE LAST EDITION
n/a

RMT.0400	**Amendment of requirements for flight recorders and underwater locating devices**

Safety	All IRs were adopted with Commission Regulation (EU) 2015/2338; however, the AMC & GM for CAT.GEN.MPA.210 (Location of an aircraft in distress) in the rules for air operations have not yet been issued. In addition, it has been identified that amendments to certification specifications may be necessary to facilitate the implementation of CAT.GEN.MPA.210.

Subtask 1:

ED Decision 2015/021/R: this Decision modified some of the AMC and GM related to FDR and CVR serviceability (refer to CAT.GEN.MPA.195(b)). It also updated the performance specifications for two of the FDR parameters (refer to CAT.IDE.A.190), and it clarified the scope of the performance specifications applicable to the CVR (refer to CAT.IDE.A.185 and CAT.IDE.H.185)

Subtask 2:

ED Decision 2015/030/R: this Decision completed the AMC and GM related to the serviceability of the CVR (refer to ORO.MLR.100 and CAT.GEN.MPA.195(b)), the preservation of the CVR recording after an accident or a serious incident (refer to CAT.GEN.MPA.195(a)), and the performance and installation of the long-range underwater locating device (see CAT.IDE.A.285(f)). It also clarified the applicability of the data link recording requirements (refer to CAT.IDE.A.195 and CAT.IDE.H.195)

Subtask 3:

ED Decision 2016/012/R: this Decision updated the AMC and GM related to the protection of the CVR in normal operation (see CAT.GEN.MPA.195(f)). It also introduced operational requirements for FDRs installed on aeroplanes and helicopters first issued with an individual CofA on or after 1 January 2023 (see CAT.IDE.A.190 and CAT.IDE.H.190). Finally, this Decision clarified the time intervals between two inspections of the FDR and CVR recordings (refer to CAT.GEN.MPA.195(b))

Subtask 4:

ED Decision 2017/023/R: this Decision provided AMC and GM for the implementing rule on aircraft tracking (CAT.GEN.MPA.205)

Subtask 5:

This Decision will provide the Certification Specifications, AMC and GM for the implementing rule on location of an aircraft in distress (CAT.GEN.MPA.210). The scope of this Decision encompasses air operations, initial airworthiness and air traffic management.

Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	Aircraft operators and POA holders		
Owner	EASA FS.2 and	Air Operations Department and	
	EASA CT.4	Environment & Propulsion Systems Department	
Priority	No	**RM Procedure** Standard	**Harmonisation** No

PLANNING MILESTONES				
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
1	OPS.090 26/09/2012	2013-26 20/12/2013	01/2014 06/05/2014	2015/2338 of 11/12/2015[93]	2015/021/R 12/10/2015
2		n/a	n/a	n/a	2015/030/R 17/12/2015
3		n/a	n/a	n/a	2016/012/R 12/09/2016
4		n/a	n/a	n/a	2017/023/R 14/12/2017
5		2019 Q4	n/a	n/a	2020 Q2

CHANGES SINCE LAST EDITION	
n/a	

---

93 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015R2338

RES.013	**Quick recovery of flight recorder data**
Safety	Further to the MH370 accident and the adoption by ICAO of consequent SARPs, assessment of the feasibility for using wireless transmission solutions for timely recovery of flight recorder data – namely, flight parameters, audio and video images – in the follow-up to an accident; particular emphasis should be put on tackling prevailing open issues, such as those linked with the possible circumstances of an accident — loss of engine power, unusual aircraft attitude, aircraft complete destruction, accident in an oceanic area, the reliability and cost impact of the proposed solutions, their aptitude for usage in accident investigations as well as associated data privacy considerations.

Status	Ongoing
Reference(s)	n/a
Dependencies	n/a

Affected stakeholders	AOC holders (CAT), Aircraft OEM	
Owner	EASA SM.0.1	Strategy & Safety Management Director's Office

PLANNING MILESTONES		
Starting date	**Interim Report**	**Final Report**
2020 Q1		2021 Q4

CHANGES SINCE LAST EDITION
Enhancement of the task description; project planning.

5.5 Impact of security on safety

Issue/rationale

The safety actions in this area are aimed at mitigating the security-related safety risks.

The safety actions in this area also include the mitigation of the risks posed by flying over zones where an armed conflict exists.

Managing the impact of security on safety is a strategic priority.

What we want to achieve

Increase safety by managing the impact of security on safety and mitigating related safety risks.

How we monitor improvement

Continuous assessment and mitigation of security threats

How we want to achieve it: actions

RMT.0648	Aircraft cybersecurity
Safety	The specific objective of this task is to mitigate the safety effects stemming from cybersecurity risks due to acts of unlawful interference with the aircraft on-board electronic networks and systems. To achieve this objective, EASA will consider the introduction of new cybersecurity provisions taking into account the existing special condition and the recommendations of the FAA ASISP ARAC group. The RMT considers CS-25, CS-29, CS-27, CS-23, CS-E, CS-ETSO and CS-P.
Status	This RMT is planned to be delivered in 2019.
Reference(s)	n/a
Dependencies	

Affected stakeholders	Applicants for TC/STC for large aeroplanes or large rotorcraft		
Owner	EASA CT.5	Certification Strategy & Programming Department	
Priority	Yes	**RM Procedure**	Standard	**Harmonisation**	Yes

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	RMT.0648 17/05/2016	NPA 2019-01 22/02/2019	n/a	n/a	2019 Q4

CHANGES SINCE LAST EDITION
n/a

RMT.0720	Management of information security risks
Safety	The specific objective of this task is to efficiently contribute to the protection of the aviation system from cybersecurity (information security from now on) attacks and their consequences. To achieve this objective, it is proposed to introduce provisions for the management of information security risks by organisations in all the aviation domains (design, production, continuing airworthiness management, maintenance, operations, aircrew, ATM/ANS, aerodromes). These provisions would include high-level, performance-based requirements, and would be supported by AMC & GM and industry standards. This RMT is harmonised with the FAA and the TCCA.

Status	Ongoing
Reference(s)	This RMT may be affected by the recommendations stemming from the WPGR and the AAS.
Dependencies	

Affected stakeholders	DOA holders and POA holders, AOC holders (CAT), maintenance organisations, CAMOs, training organisations, ATM/ANS providers, aerodromes and Member States
Owner	EASA FS.4	ATM/ANS & Aerodromes Department
Priority	Yes	**RM Procedure**	Standard	**Harmonisation**	Yes

PLANNING MILESTONES					
SubT	**ToR**	**NPA**	**Opinion**	**Commission IR**	**Decision**
	RMT.0720 16/01/2019	NPA 2019-07 27/05/2019	2020 Q2	2021 Q4	2021 Q4

CHANGES SINCE LAST EDITION
Adjustment of the task title.

SPT.078	Dissemination of information on conflict zones
Safety	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.

Status	Ongoing
Reference(s)	n/a
Dependencies	

Affected stakeholders	ALL	
Owner	EASA SM.1	Safety Intelligence & Performance Department

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
Information to Member States	Continuous

CHANGES SINCE LAST EDITION
n/a

RES.012	**Cybersecurity: common aeronautical vulnerabilities database**

Safety	Develop a vulnerabilities database in order to collect, maintain and disseminate information about discovered vulnerabilities targeting major transport information systems. The project would include the identification of the type of information that this database would contain, how this database could be populated and how we can take advantage of the database in order to obtain an accurate landscape of cybersecurity risks. It should also include a 'prototype phase' with some initial population.
Status	New. Not started
Reference(s)	n/a
Dependencies	

Affected stakeholders	ALL	
Owner	EASA SM.0.1	Strategy & Safety Management Director's Office

PLANNING MILESTONES		
Starting date	**Interim Report**	**Final Report**
2021 Q1 (tentative)		2024 Q1

CHANGES SINCE LAST EDITION
Project planning

5.6 Oversight and standardisation

The safety actions in this area are aimed at addressing issues emerging from standardisation activities, with focus on the safety oversight responsibilities of the Member States. The conclusions of the EASA 2018 SAR are also taken into account.

Issue/rationale

Authority requirements, introduced in the rules developed under the first and second extension of the EASA scope, define what Member States are expected to implement when performing oversight of the organisations under their responsibility. In particular, they introduced the concept of risk-based oversight with the objective of addressing safety issues with a consideration to efficiency.

The safety actions in this area are aimed at addressing issues emerging from standardisation activities, with focus on the safety oversight responsibilities of the Member States. The conclusions of the EASA 2018 SAR are also taken into account.

The elements presented in **Section 3.2.6** are considered enablers of a robust safety oversight system, as expected to be in place according to the requirements in force:

1.   ability and determination to conduct effective oversight[94];

2.   ability to identify risks through a process to collect and analyse data;

3.   ability to mitigate the identified risks in an effective way, implying measurement of performance and leading to continuous improvement;

4.   willingness and possibility to exchange information and cooperate with other CAs;

5.   ability to ensure the availability of adequate personnel, where 'adequate' includes the notion of sufficient training and proper qualification; and

6.   focus on the implementation of effective management systems in industry, wherever required by the regulations in force.

What we want to achieve

A robust oversight system across Europe, where each CA is able to properly discharge its oversight responsibilities, with particular focus on management of safety risks, exchange of information and cooperation with other CAs. To that end, implementation of management systems in all organisations, as well as ensuring the availability of adequate personnel in CAs are essential enablers.

How we monitor improvement

The elements above are constantly monitored during the Standardisation activities conducted by the Agency. In addition, a number of indicators have been developed to measure the progress over time of point 6. above.

Section 4.2 proposes to monitor Member States' oversight capabilities and the status of compliance with management system (SMS) requirements in aviation organisations respectively.

How we want to achieve it: actions

---

[94] 'Oversight' means the verification, by or on behalf of the CA, on a continuous basis that the requirements of this Regulation and of the delegated and implementing acts adopted on the basis thereof, on the basis of which a certificate has been issued or in respect of which a declaration has been made, continue to be complied with (Basic Regulation, Article 3).

MST.032	Oversight capabilities/focus areas

Safety

    (a) Availability of adequate personnel in CAs
Member States to ensure that adequate personnel is available to discharge their safety oversight responsibilities;

    (b) Cooperative oversight in all sectors
Member States to ensure that the applicable authority requirements are adhered to in all sectors. The objective is to ensure that each organisation's activities are duly assessed, known to the relevant authorities and that those activities are adequately overseen, either with or without an agreed transfer of oversight tasks.
NB: EASA will continue to support CAs in the practical implementation of cooperative oversight, e.g. benefitting from the outcome of the trial projects conducted between the UK, NO, FR, CZ, as well as with exchanges of best practices and guidance.

    (c) Organisations management system in all sectors
Member States to foster the ability of CAs to assess and oversee the organisations' management system in all sectors. This will focus in particular on safety culture, the governance structure of the organisation, the interaction between the risk identification/assessment process and the organisation's monitoring process, the use of inspection findings and safety information such as occurrences, incidents, and accidents. This should lead CAs to adaptation and improvement of their oversight system.

Status	New
Reference(s)	ICAO Annex 19 and GASP 2020-2022 Goal 2 'Strengthen States' safety oversight capabilities'
	GASP SEI-4 & GASP SEI-10 — Strategic allocation of resources to enable effective safety oversight
	GASP SEI-5 — Qualified technical personnel to support effective safety oversight
	GASP SEI-6 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
Dependencies	
Affected stakeholders	ALL
Owner	Member States

EXPECTED OUTPUT	
Deliverable(s)	**Timeline**
SPAS established	2020

CHANGES SINCE LAST EDITION
This new MST action supersedes FOT actions 003, 007 and 008 from EPAS 2019-2023.

In addition to the above, the following action is also relevant to oversight:

RMT.0588	Aircraft continuing airworthiness monitoring — review of key risk elements

The full description for this action is included in **Chapter 10**.