

# **Finnish Aviation Safety Programme 2018**



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## Foreword

Commercial air transport is a global, growing and constantly evolving form of transport that has attained a high level of safety through systematic long-term efforts. Because of growing volumes and changes in the operating environment and the industry, the air transport system must have the capability to identify and manage complex systems' safety risks and in particular to anticipate the impact of changes. We need advanced methods to ensure and further improve the level of safety attained. Safety must be addressed across the board, taking into account not only safety itself but also economy, traffic flow and environmental factors.

Global safety objectives and implementation outlines are given in the Global Aviation Safety Plan (GASP) of the International Civil Aviation Organisation (ICAO). At the European level, the objectives of GASP are incorporated into the European Aviation Safety Programme<sup>1</sup> and Plan<sup>2</sup>. In Finland, the national links in the chain of global aviation safety management are the Finnish Aviation Safety Programme and Plan drawn up by the Finnish Transport Safety Agency, Trafi. Trafi plays an active role in safety efforts at the European and global levels. It is our duty to ensure that the contents of the programmes and plans are translated into safety management practices in Finnish aviation.

The Finnish Aviation Safety Programme (FASP) is the national-level description of our aviation safety management system. It incorporates aviation safety policy and a top-level description of the legislative background, processes and measures. The Finnish Plan for Aviation Safety (Annex 1 to FASP) describes the identified key risks in Finnish aviation along with Finland's strategic safety objectives and measures taken to attain them. Safety Performance Indicators and Targets (Annex 2 to FASP), describes the national-level indicators used to monitor the safety situation and to define an acceptable level of safety with regard to selected indicators.

The role of the civil aviation authority is increasingly evolving into that of a collaborator and sparring partner. Safety information is becoming more important. The foundation of safety consists of a good safety culture, effective communications between operators and authorities, and information-based measures undertaken to manage identified safety risks. Our common goal is to ensure safe air travel and to uphold passenger confidence in the air transport system.

Mia Nykopp, Director General

Pekka Henttu, Director General of Civil Aviation

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<sup>1</sup> EASP, European Aviation Safety Programme

<sup>2</sup> EPAS, European Plan for Aviation Safety

## Finnish Aviation Safety Programme, document version history

<b>Date of issue:</b>	<b>Date of entry into force:</b>	<b>Valid:</b>
10 Jan 2018	10 Jan 2018	Until further notice
<b>Underlying international standards, recommendations and other documents:</b>		
Aviation Act 864/2014		
Convention on International Civil Aviation, Annex 19 (Safety Management)		
Global Aviation Safety Plan GASP 2017 – 2019 (ICAO Doc 10004)		
The European Aviation Safety Programme (EASP)		
European Plan for Aviation Safety (EPAS)		
COM(2011) 144 WHITE PAPER – Roadmap to a Single European Transport Area		
COM(2015) 598 final, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, An Aviation Strategy for Europe		
<b>Register number:</b>	TRAFI/442129/07.00.05.00/2017	
<b>Revision details:</b>		
<b>Date</b>	<b>Version</b>	<b>Change</b>
08 Apr 2012	1.0	First publication
10 Apr 2013	2.0	Update of section numbering, of text content in sections 2.2.1, 2.2.9, 2.2.11, 2.3.2, 3.1.4, 3.1.5, 3.2.2, 3.4, 5.1.3 and Annexes, and addition of section 5.1.5
30 Jan 2014	3.0	Update: logo, text in sections 3.1.5 and 3.1.6, Trafic process names in section 4.1
11 Feb 2015	4.0	Underlying international standard updated to Annex 19; references to the new Aviation Act updated; text referring to the Occurrence Regulation added to section 2.2.7; text concerning SMS requirements in section 3.1 updated and text concerning ground handling services added to section 3.1.8.; Blacklist Directive deleted; paragraph concerning ramp inspections and related definitions deleted
13 Mar 2017	5.0	Extensive update: layout and content numbering changed; update to Annex 19 2 <sup>nd</sup> edition, changes in legislation and changes in the European aviation system taken into account; and description of Trafic practices updated to conform to current situation.
10 Jan 2018	6.0	Annual update

## Abbreviations

AloS	Acceptable level of Safety
AloSP	Acceptable level of Safety Performance
AMC	Acceptable Means of Compliance
DOC 9859	ICAO Safety Management Manual
EASA	European Aviation Safety Agency
EASP	European Aviation Safety Programme
EPAS	European Plan for Aviation Safety
ECCAIRS	European Coordination Center for Accident and Incident Reporting Systems
Eurocontrol	European Organisation for Safety of Air Navigation
FASP	Finnish Aviation Safety Programme
FPAS	Finnish Plan for Aviation Safety
FDM	Flight Data Monitoring
GASP	Global Aviation Safety Plan
ICAO	International Civil Aviation Organization
Part TCO/ EASA	Third Country Operator Certificate EASA Part TCO authorisation
RPAS	Remotely Piloted Aircraft System
RPASP	ICAO's Remotely Piloted Aircraft Systems Panel
RSOO	Regional Safety Oversight Organization
SMS	Safety Management System
SSP	State Safety Programme
USOAP	Universal Safety Oversight Audit Programme



## 1 Finnish aviation safety policy, objectives and resources

As Finland's civil aviation authority, Trafi has set safety as the principal objective in aviation. Trafi strives to maintain a high level of aviation safety and to maintain a balance between safety, economy, traffic flow and environmental friendliness. Trafi considers it particularly important that citizens retain a high level of confidence in the air transport system. Trafi supports and facilitates the trial and introduction of new technologies and operating models, with a view to their safe integration into the aviation system and third parties.

The safety standards and procedures observed in Finnish aviation comply with ICAO standards and EU requirements. Trafi is committed to defining an Acceptable Level of Safety<sup>3</sup> and an Acceptable Level of Safety Performance<sup>4</sup> for Finnish aviation, taking into account local circumstances and identified key risks in the risk profile of Finnish aviation.

The cornerstones of Finnish aviation safety are continuous development of safety management and of a good safety culture, performance and risk based operations management and operator responsibility for the safety of their own operations. Trafi oversees and promotes all of the above.

Trafi is committed to maintaining and developing the national safety programme and to ensuring that resources and expertise commensurate with the duties of the aviation authorities are available. Continuous training and international cooperation support this.

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<sup>3</sup> Acceptable level of Safety (AoS)

<sup>4</sup> Acceptable level of safety performance as defined in the ICAO GASP: (Acceptable level of safety performance (ALoSP). The minimum level of safety performance of civil aviation in a State, as defined in its State safety programme, or of a service provider, as defined in its safety management system, expressed in terms of safety performance targets and safety performance indicators.)

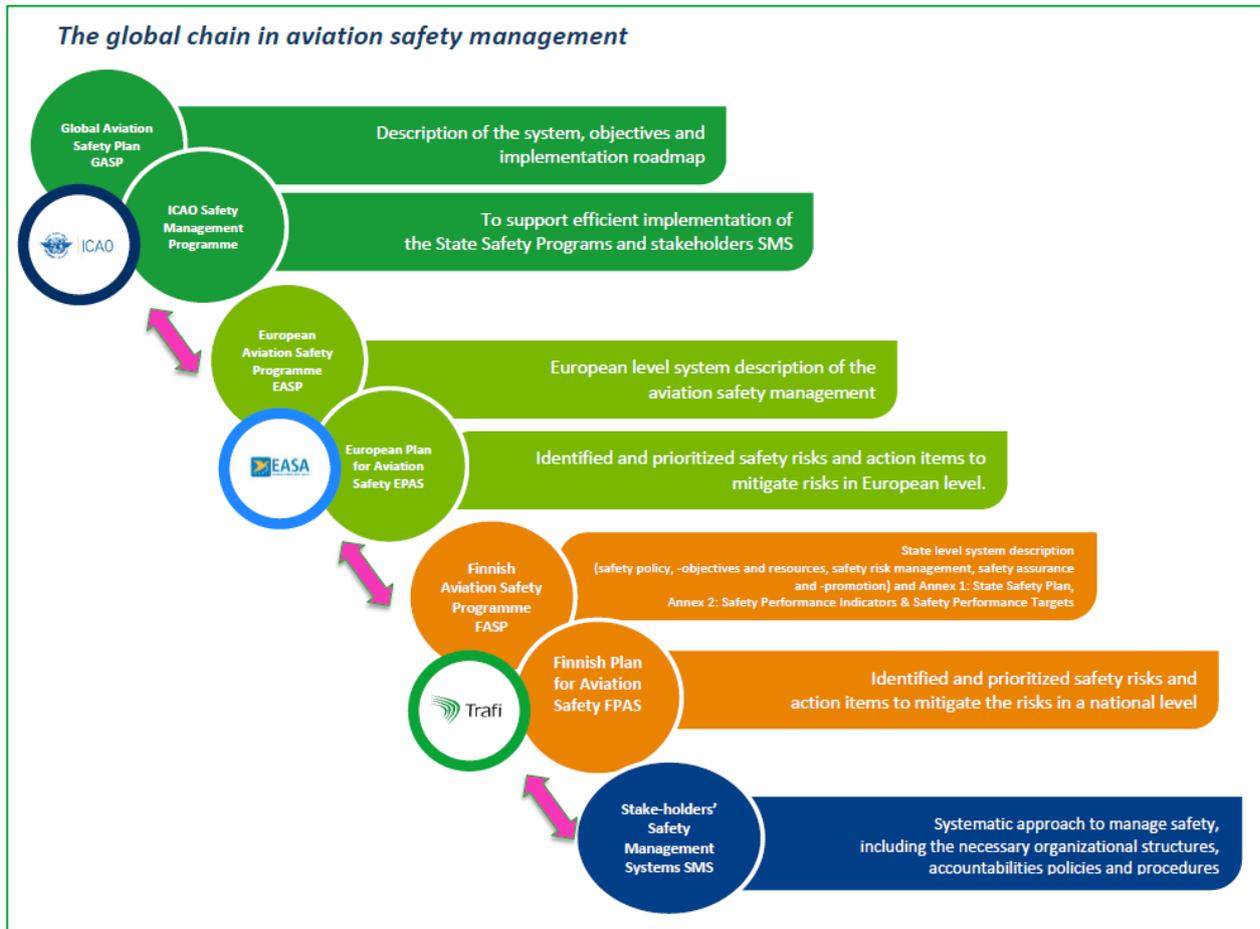


Figure 1. The global chain in aviation safety management

## 1.1 Background to the Finnish Aviation Safety Programme and international obligations

### 1.1.1 Obligations of the International Civil Aviation Organization (ICAO)

The International Civil Aviation Organization (ICAO) is a specialised agency of the United Nations. Its duties are defined in the Convention on International Civil Aviation (the Chicago Convention) signed on 5 December 1944. The purpose of ICAO is to develop policies, principles, standards and recommendations to be complied with in international aviation. The agency’s specific duties include promoting aviation safety internationally. ICAO currently has 192 member states.

In Annex 19 (Safety Management) to the Convention, ICAO imposes general safety management responsibilities and obligations on member states, having to do with the development and introduction of State Safety Programmes (SSP) and aviation organisations’ Safety Management Systems (SMS).

The Global Aviation Safety Plan (GASP) was created to facilitate global and coordinated improvement of aviation safety. The GASP is updated every three years and adopted by the ICAO Assembly. The purpose of the GASP is to underline the importance of safety as the main priority in civil aviation and to bring together globally determined key safety objectives and areas of safety performance and to support the achievement of the objectives in all areas (Annex A to GASP, Global aviation safety

roadmap). The GASP outlines regional and national safety efforts and the structures of safety management.

ICAO has launched a Safety Management<sup>5</sup> programme running through 2022 to support regions and governments in the efficient deployment of SSPs and SMSs.

Responsibility for safety management is widely distributed among ICAO, regional organisations (such as the European Aviation Safety Agency, EASA), national governments and aviation organisations.

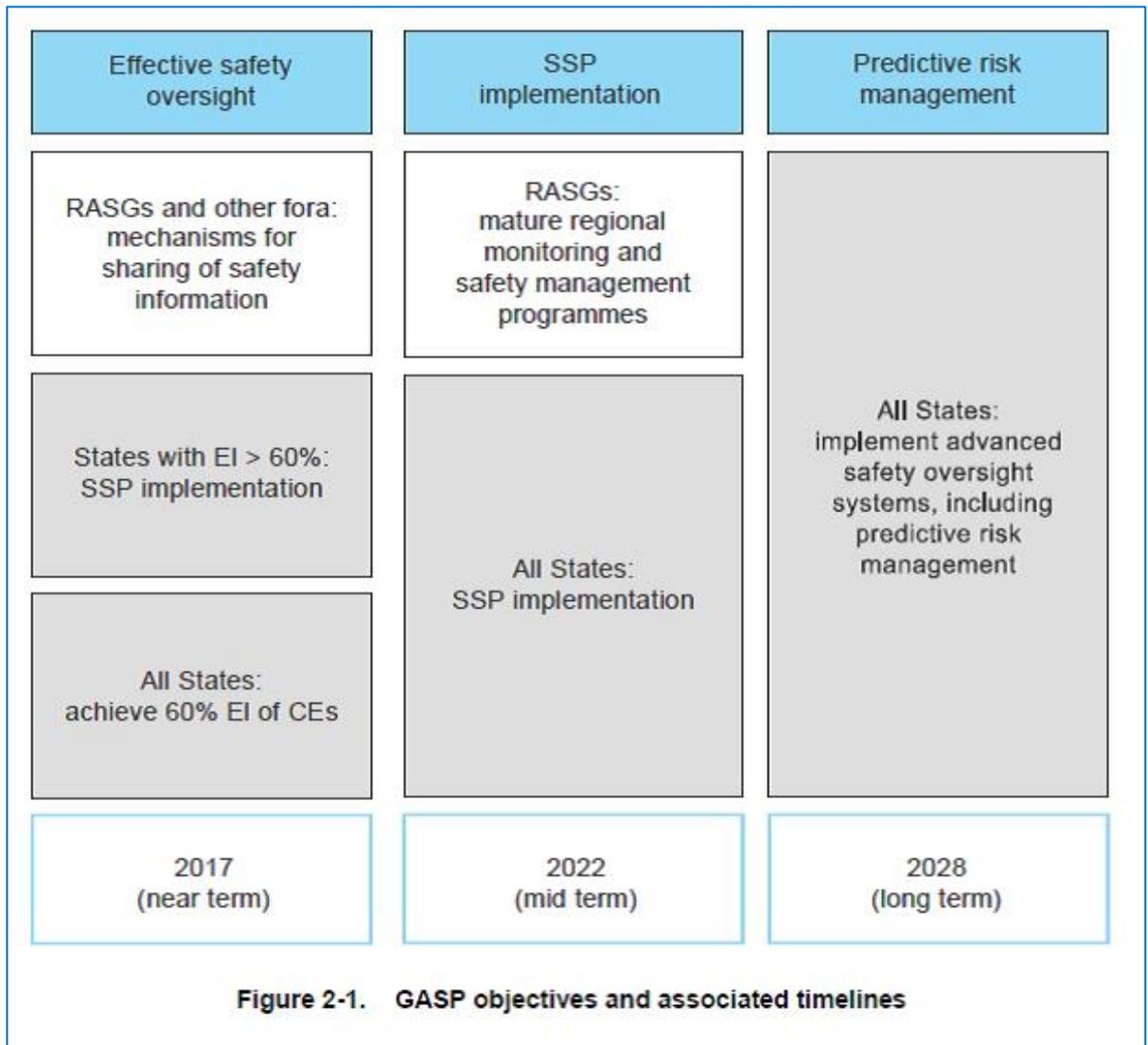


Figure 2. Global safety objectives set in the GASP and their implementation timetable

### 1.1.2 The European aviation system and Finland's role

The European Aviation Safety Programme (EASP) describes aviation safety management at the European level. It provides an overview of the applicable legislation, measures and processes.

<sup>5</sup> <http://www.icao.int/safety/SafetyManagement/Pages/default.aspx>

The European Plan for Aviation Safety (EPAS) has been published since 2011, being updated annually for a four-year period. This document describes the identified key risks in aviation at the European level and strategic safety objectives and measures for attaining them, while acknowledging the global objectives set forth in the GASP. EPAS 2018 - 2022, which will be published in January 2018, adopts a comprehensive approach to the European aviation system and, in addition to safety, contains objectives and prioritised measures for maintaining and improving the environmental performance, efficiency / proportionality and competitiveness as well as a level playing field in European aviation.

The amended EASA Regulation (to be published in 2018) will make EASP and EPAS as well as State Safety Programmes and Plans mandatory. Similar requirements were earlier imposed on governments in ICAO Annex 19.

The EPAS is produced as part of the Safety Risk Management process (SRM) at EASA. EASA coordinates the development of the European aviation risk portfolio within its SRM process. Trafi exerts influence on the contents of the EPAS in EASA's SRM process by being involved in the expert and decision-making forums. Through the forums of this process that progresses following an annual cycle, Member States and aviation stakeholders can participate in and influence European aviation risk management. Results are published in the Annual Safety Review and as prioritised measures compiled in the EPAS. EPAS is a risk- and information-based and anticipatory European "risk management portfolio" to which EASA Member States are committed.

Finland incorporates the measures required in the EPAS of Member States into the Finnish Plan for Aviation Safety. Aviation operators must process, document and implement the measures for applicable parts. Trafi oversees the processing and implementation of these measures and reports to EASA on the progress of measures assigned to the Member States.

### **1.1.3 Finnish Aviation Safety Programme**

The Finnish Aviation Safety Programme (FASP) is a system-level description of Finland's aviation safety management. Finland has described the mandatory nature of the FASP and its Annexes in section 4 of the Aviation Act (864/2014) as follows:

*"The Finnish Transport Safety Agency prepares and adopts the Finnish Aviation Safety Programme, taking into consideration the standards referred to in the Chicago Convention and the European Aviation Safety Programme.*

*Aviation operators shall take the Finnish Aviation Safety Programme and its objectives into account in their operations and monitor the achievement of the objectives."*

As required in Annex 19, the core of the FASP consists of the eight critical elements of safety that ICAO requires States to manage effectively. These are as follows:

1. Primary aviation legislation, CE-1
2. Specific operating regulations, CE-2
3. State system and functions, CE-3
4. Qualified technical personnel, CE-4
5. Technical guidance, tools and provision of safety-critical information, CE-5
6. Licensing, certification, authorization and approval obligations, CE-6

7. Surveillance obligations, CE-7
8. Resolution of safety issues, CE-8

These critical elements of safety are incorporated in the four components of the SSP framework, which are:

1. State safety policy, objectives and resources
2. State safety risk management
3. State safety assurance
4. State safety promotion

The Finnish Plan for Aviation Safety (FASP Annex 1) describes the identified key risks in Finnish aviation along with Finland's strategic safety objectives and measures taken to attain them. FASP Annex 2, Safety Performance Indicators and Targets, describes the national-level indicators used to monitor the safety situation and to define an acceptable level of safety with regard to selected indicators.

#### **1.1.4 Background to FASP development**

The first FASP was created between 2009 and 2012, following the four-step technique outlined by ICAO:

1. GAP analysis to establish how national legislation should be improved in order to introduce a SSP
2. Training programme for personnel of the authority responsible for oversight of SMS
3. Development of regulations concerning SMS for aviation organisations and development of guidance materials for the introduction of SMS
4. Reforming the government enforcement policy to bring it into line with the SMS philosophy.

The FASP fulfils the requirements of Annex 19 and was specifically prepared with a view to both Annex 19 and the recommendations of ICAO DOC 9859<sup>6</sup> governing its enforcement.

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<sup>6</sup> Safety Management Manual (SMM)

## 1.2 Legislative framework (ICAO CE-1, CE-2)

### 1.2.1 ICAO requirements

Finland is committed to compliance with the Convention on International Civil Aviation, which is of key importance in terms of global aviation safety. Aviation standards and recommended practices adopted by ICAO are published as annexes to the Convention. Standards and recommended practices are implemented in Finland either through EU legislation, in the Finnish Aviation Act and/or through national regulations.

### 1.2.2 EU legislation

Finland complies with EU aviation legislation. The key EU regulation addressing aviation safety is the EASA Regulation, by virtue of which the European Commission issues more detailed European Union regulations.

EU aviation legislation is available in the online database of EU legislation, EUR-Lex ([www.eur-lex.europa.eu](http://www.eur-lex.europa.eu)). The EASA Regulation and Implementing Regulations issued based on it can also be found on the website of the European Aviation Safety Agency (EASA) ([www.easa.europa.eu](http://www.easa.europa.eu)); some of them are also posted on the Trafif website ([www.trafi.fi](http://www.trafi.fi)).

There are also non-mandatory guidelines issued to complement EU Regulations and Finnish aviation legislation, such as Acceptable Means of Compliance (AMC) and Guidance Material. The competent authorities for issuing such guidelines are, principally, EASA vis-à-vis EU legislation and Trafif vis-à-vis national legislation. The material is available on EASA and Trafif websites, respectively.

Reporting of civil aviation occurrences is addressed in Regulation (EU) No 376/2014 of the European Parliament and of the Council on the reporting, analysis and follow-up of occurrences in civil aviation, also known as the Occurrence Regulation. Trafif is the competent national authority as referred to in that Regulation. More detailed instructions on how to report accidents, incidents and occurrences are given in Advisory Circular GEN T1-4. The obligation to report occurrences and the handling of occurrence data are described in section 2.5 ‘*Safety data: collecting, analysing and exchange*’.

Another Regulation significant for aviation safety is Regulation (EC) No 2111/2005 of the European Parliament and of the Council on the establishment of a Community list of air carriers subject to an operating ban within the Community and on informing air transport passengers of the identity of the operating air carrier, and repealing Article 9 of Directive 2004/36/EC. Before Trafif issues a permit or operating authorisation for air transport between Finland and third countries, it ensures that the applicant has EASA’s Part TCO authorisation and that the applicant is not on the Community list of air carriers subject to an operating ban. Observations made in ramp inspections in Finland as in other EU Member States are relevant when the Community list is updated. Ramp inspections are described in section 3.1.8.

### 1.2.3 National legislation

The principal national legislative instrument in Finland is the Aviation Act (864/2014), which specifies how aviation operations are overseen, what permits and approvals are required in Finland, what the key requirements for issuing permits and approvals are, and what the administrative consequences are of operating in non-

compliance with these requirements. The Aviation Act assigns Trafli the authority to issue more detailed provisions in various matters. The Aviation Act also requires an SMS for organisations providing ground handling services. The Parliament is debating a government proposal on amending the Act on Transport Services (HE 145/2017 vp). Under this proposal, the provisions on air operator certification and pilots' competence would, as from 1 July 2018, be incorporated in the Act on Transport Services, which would contain the corresponding provisions on all modes of transport in the future.

The Aviation Act and national regulations issued by virtue of it are available in Finland's online legislation databank, Finlex ([www.finlex.fi](http://www.finlex.fi)), and on the website of the Finnish Transport Safety Agency ([www.trafi.fi](http://www.trafi.fi)). Issues relating to aviation safety are also provided for in national legislation concerning the transportation of dangerous goods, for instance.

#### **1.2.4 Emerging segments in aviation**

Unmanned aviation as an emerging segment in aviation is undergoing strong growth. Trafli has issued national regulation OPS M1-32 on remotely piloted and model aircraft. At EU level, legislation concerning drones<sup>7</sup> is only just being prepared, and therefore these operations remain governed by national legislation for the time being. Depending on the drone category, the goal is to have the EU legislation completed in 2018–2020.

In drafting the national regulation OPS M1-32, an effort has been made to use a performance and risk based approach, also emphasising the operators' own safety management work.

Regarding remotely piloted aircraft systems (RPAS), the RPAS panel of ICAO is currently preparing amendments to the Annexes of the Chicago Convention to appropriately address unmanned aviation. Anticipating future needs is a particularly challenging component in this work. Technological advancements in this segment are unusually rapid, and we must avoid a situation where standards are already technically outdated even as they are being written. ICAO focuses on transborder RPAS operations.

Digitalisation/automation creates new potential for developing the aviation system, keeping the practices and the operating environment in continuous evolvement. As a result, cyber threats have emerged as new risks. Cybersecurity means ensuring security and safety in the digital operating environment as a whole. Cybersecurity plays a key role in enabling the benefits created by digitalisation.

Cybersecurity in aviation is being developed in broad-based cooperation at many different levels: globally as well as at the European, national and operator level. Finland is actively involved in cybersecurity work at all levels. At EU level, the Directive on Network and Information Security (NIS) will affect the regulation on generally critical infrastructure, including aviation. EU Member States must transpose these regulations in their national legislation by 9 May 2018. Aviation cybersecurity regulation with a more extensive approach in terms of the European aviation system<sup>8</sup> is being drafted, with the goal of completing it in 2020.

<sup>7</sup> EPAS Rulemaking action: RMT.0230, Introduction of a regulatory framework for the operation of drones

<sup>8</sup> EPAS Rulemaking – action: RMT.0720: objective: develop a cybersecurity regulatory framework covering the different domains (design, production, maintenance, operations, aircrew, ATM/ANS, aerodromes)

Key principles of the cybersecurity work are risk and performance based activities at all levels, as well as applying the existing and proven practices of aviation safety work as far as possible. In order to be able to respond to the challenges of a continuously changing operating environment, cybersecurity work in Europe and Finland must emphasise an integral and balanced whole consisting of evolving regulation, recommendations, best practices and industry standards.

ICAO has also initiated efforts aiming to address aviation cybersecurity at the global level. This is vital, as consistent and coordinated global measures are essential from the perspective of the entire worldwide aviation system.

Both the EPAS and the FPAS also contain measures relevant to the aforementioned new areas.

### 1.3 State system and functions (ICAO CE-3)

As part of the global chain of aviation safety, Finland will set national target levels for an acceptable level of safety and an acceptable level of safety performance. Similarly, operators must have in place the safety management functions and practices required to attain the target levels.

For the purposes of the present document, ‘stakeholders’ is used as a blanket term to cover both aviation organisations and individual aviation professionals and recreational aviators. ‘Organisations’ refers to any and all organisations that offer aviation-related services, including but not limited to training organisations, air operators, maintenance organisations, organisations responsible for the design and manufacturing of aircraft, air traffic service providers, aerodrome operators, and organisations providing ground handling services and aeronautical weather services.

#### 1.3.1 *Sharing of responsibility*

Each party is assigned detailed safety management requirements that make up the overall system. ICAO divides safety management into two distinct functional components. It is the responsibility of the State to establish a State Safety Programme and, pursuant to this, to issue aviation safety policy and legislation, to establish mechanisms for oversight, risk management and safety promotion, and to determine the competent authority to manage these duties.

It is the duty of organisations to establish and introduce a Safety Management System (SMS) or an administration/management system to ensure the safety of operations. Requirements for organisations’ SMSs are given in section 2.2.

Each organisation is responsible for the safety of its own operations. The organisations must, within the scope of their SMS, address any hazards / threats identified by them as well as the risks relevant to the organisations identified in the Finnish Plan for Aviation Safety, assess the risks associated with these hazards/ threats and, if necessary, take action to eliminate risks or to mitigate them to an acceptable level.

#### 1.3.2 *Legislative and executive authority*

Legislative authority in aviation safety issues rests principally with the European Union. The European Parliament, Council and Commission are competent authorities for adopting Regulations concerning aviation safety that are binding upon Member States. EASA is an aviation authority responsible for specific duties such as aircraft type certification and approvals of foreign operators. Aircraft and devices listed in Annex II to the EASA Regulation (Annex I to the amended EASA Regulation) fall within national regulatory competence (airworthiness, licensing, flight operations, etc.).

The Aviation Act designates the Finnish Transport Safety Agency (Trafli) as the national aviation authority that also performs the duties assigned to the national authority in EASA legislation. Trafli grants licences and permits, oversees operators and issues aviation regulations complementing the Aviation Act.

Finland is represented in ICAO by the Director General of Civil Aviation, appointed by the Director General of Trafli. It is the responsibility of the Director General of Civil Aviation to ensure that Finland’s policy regarding current ICAO issues is formulated at the appropriate level. Finland’s delegation to the ICAO Assembly is led by the Minister of Transport and Communications.

The Ministry of Transport and Communications is responsible for the preparation of national Acts and Decrees.

The competent aviation safety investigation authority in Finland is the Safety Investigation Authority (SIA), subordinate to the Ministry of Justice (see section 2.4).

### **1.3.3 FASP: Responsibilities and updates**

The Director General of Trafi is responsible for the Finnish Aviation Safety Programme. The Director General of Civil Aviation is in charge of aviation safety management and the overall oversight and coordination of the entire aviation sector. The Director General of Civil Aviation is assisted by the aviation secretariat, including a designated FASP coordinator. The coordinator is assisted by the FASP coordination team in translating the FASP into practice, in improving its various elements and in updating it.

Any need for updating the FASP and its appendices is reviewed at least once a year.

Amendments made to the FASP must be approved by the Director General of Trafi, on submission from the Director General of Civil Aviation.

Amendments to FASP Annex 1 (Finnish Plan for Aviation Safety) must be approved by the risk panel chaired by the Director General of Civil Aviation.

Amendments to FASP Annex 2 (Safety Performance Indicators and Targets) must be approved by the Director General of Civil Aviation.

The FASP coordinator is responsible for coordinating updates to the FASP and to its Annex 1 (Finnish Plan for Aviation Safety), and for communications concerning updates to the FASP and its Appendices.

The Traffic Analysis Unit is responsible for monitoring data collected for the existing indicators under Annex 2 (Safety Performance Indicators and Targets). Also, the risk management coordinator works with Trafi's oversight function to monitor the attainment of safety targets.

The FASP coordination team performs an annual review of any needs for updating Annex 2, plans the updates and considers the ways of involving stakeholders in the planning.

The update intervals for the FASP are described in the Finnish aviation safety management operating model, or FASP process, and linked to the updating of the European Plan for Aviation Safety (EPAS).

The FASP process is described in more detail in sections 2.6 (*Hazard / threat identification, safety risk assessment and management*).

## **1.4 Personnel qualifications and training (ICAO CE-4)**

Trafi has defined two levels of qualification and training requirements for its personnel. When recruiting a new inspector, particular attention is paid to the candidate's aviation background, competence and suitability for the position. Inspectors in various sectors of aviation also have position-specific training paths required for qualification. Basic qualification requirements state the areas where all aviation inspectors must be competent, including basic knowledge of management systems and of regulation in their sector of aviation. Beyond this, special competences are required in narrower fields of specialisation.

Personnel competence is continuously maintained through refresher courses and supplementary training. There are also workplace learning schemes, where a senior colleague provides on-the-job training for new inspectors.

## **1.5 Technical guidance, tools and sharing of safety critical information (ICAO CE-5)**

### **1.5.1 *Technical guidance and tools***

Trafi provides its personnel with up-to-date tools, materials and guidelines as required for the acceptable and effective performance of their duties.

Trafi ensures that Finnish aviation operators have timely access to current requirements and to the underlying legislation and guidelines necessary to comply with them. This is effected by maintaining updated information on Trafi's website and by providing information on any changes to the requirements both in advance and when the amendments are implemented. Trafi distributes information not only through its website but also through other channels, directly to operators and at stakeholder events. External communications and training are described in more detail in section 4.2 (External training and sharing of safety information).

### **1.5.2 *Sharing of safety critical information***

The organisations themselves have a duty and an obligation to keep up with all safety critical information. In addition, Trafi distributes safety critical information, such as Safety Information Bulletins (SIB) published by EASA, to operators for immediate action as per the relevant work instructions. For this purpose, Trafi maintains a 24h flight operations desk (OPS desk). The person on duty at the desk evaluates any SIBs immediately as they arrive to consider their relevance for Finnish aviation and their urgency, and if necessary, forwards the bulletins to aviation organisations' contact persons immediately. Even in less urgent cases, SIBs are generally communicated to operators on the following day.

The distribution of other safety information is described in more detail in section 4.2 (External training and sharing of safety information).

## 1.6 Enforcement policy (CE-8)

When Trafí is notified of or becomes aware of non-compliant operations through oversight actions, it may intervene with administrative sanctions. Administrative sanctions available for Trafí to impose are provided for in Chapter 14 of the Aviation Act. The types of sanction available are an admonition; a warning; a ban on operations; modification, limitation or revocation of a certificate; a conditional fine; a conditional order of execution; and a conditional order of suspension. In addition to imposing administrative sanctions, Trafí may report to the police any action that is contrary to law or regulations. For example, causing a traffic hazard and driving while intoxicated are offences punishable under the Criminal Code.

Under the Aviation Act, the Safety Investigation Act and Regulation (EU) No 376/2014 of the European Parliament and of the Council (the Occurrence Regulation), each individual person and aviation organisation is obliged to report any accidents, serious incidents and occurrences observed and occurring in their own operations. Trafí will take action as necessary to ensure safety, based on information reported to it. Immediate action may involve contacting the operator and temporarily limiting its rights of operations. Any immediate action and actions taken at a later date will be subject to case-by-case review.

In keeping with the principles of safety management, organisations have the responsibility to address any occurrences they observe in their operations and to take corrective action regardless of whether the occurrences cause Trafí to take action. Organisations must analyse individual occurrences and broader phenomena within their own SMS, in accordance with the requirements of the Occurrence Regulation, and to submit analysis results on identified safety risks to Trafí.

The handling of occurrence reports and other safety information is subject to the 'just culture' principle as described in section 2.5.

## **2 Safety risk management**

### **2.1 Licensing, certification, authorisation and approvals obligations (ICAO CE-6)**

#### ***2.1.1 Licences, ratings, qualifications and approvals***

Trafic issues licences to aviators. The purpose of the licensing system is to ensure that aviators fulfil the requirements applicable to the operations. Licence holders are responsible for maintaining the prerequisites for safe operations.

Trafic also issues ratings and authorisations for pilot licences concerning operations where these are specifically required. Each individual operator is responsible for ensuring that he/she has the qualifications required for the operations.

Pilot licences comprise airline transport pilot licences, commercial pilot licences, private pilot licences and sport aviation licences. Licences are also issued to air traffic controllers, flight information service officers and aircraft mechanics. In addition to licences, Trafic issues cabin crew attestations and crew cards. Trafic also maintains a register of approved security screeners. Such approvals are typically granted collectively to groups of people who have satisfactorily completed the relevant training.

Licensing requirements are principally based on EU Regulations. In Finland, Trafic issues licences to persons who fulfil the required criteria. Through the licence administration processes, Trafic also ensures that the staff employed by organisations and individual aviators are in compliance with the qualification requirements (for more information, see section 3.1).

Trafic is also responsible for the selection, training and oversight of flight examiners responsible for assessing the competence of licence holders.

#### ***2.1.2 Medical certificates***

In addition to the licensing requirements, a medical certificate is required for certain duties. Medical certificates are issued by aviation medical centres or aviation medical examiners authorised and supervised by Trafic.

#### ***2.1.3 Organisation approvals***

Principally, aviation organisations are subject to an approval. The organisation has the duty to ensure that the requirements are met. Trafic evaluates whether an organisation's operations are in compliance with applicable requirements and issues an approval when the requirements are met. With regard to organisations subject to notification procedures, Trafic evaluates the correctness of the information submitted.

#### ***2.1.4 Unmanned aviation***

So far, there is no national licensing procedure for unmanned aviation. Under Aviation Regulation OPS M1-32, anyone using an unmanned aircraft for other than recreational or sport purposes must submit a notification to Trafic in accordance with the requirements given in the Regulation. The notification can be made online on Trafic's website.

## 2.2 Requirements for organisations' SMS

A Safety Management System (SMS) is a systematic framework for identifying hazards / threats in an organisation's operations and for managing safety risks. The organisations must establish a safety policy, administrative structures and responsibilities, safety management procedures including risk management, and procedures for continuous monitoring of safety levels and for improving the SMS functions.

SMSs must be compliant with the relevant requirements and compatible with the organisation's operating environment. Trafic evaluates the functioning and performance of operators' SMSs as part of its approval and certification management process, which is described in more detail in chapter 3.

Requirements concerning organisations' SMSs applicable in Finland are contained in the ICAO standards (Annex 19) and in EU Regulations. These requirements apply to flight training organisations, air operators, maintenance organisations, aircraft design and production organisations, air traffic service providers and airport operators. Requirements for the SMSs of ground handling organisations are given in the Aviation Act.

### 2.2.1 *Flight training organisations and air operators*

The requirement for a safety management system for flight training organisations and air operators is implemented in Finland through EU Regulations 965/2012, 1178/2011, 290/2012 and 245/2014.

### 2.2.2 *Continuing airworthiness management organisations*

The requirement for a safety management system for continuing airworthiness management organisations will be implemented in the forthcoming amendment to EU Regulation 1321/2014. RMT.0251 (SMS for CAMOs: Phase I), Opinion published on 12 May 2016.

### 2.2.3 *Other technical organisations*

For other technical organisations (POA, DOA, 145 and 147), the requirement for implementing a safety management system has been delayed but is under preparation as amendments to EU Regulations 1321/2014 and 748/2012, in accordance with EASA rulemaking task RMT.0251(SMS Phase II) .

### 2.2.4 *Air traffic service providers*

For air traffic service providers, the requirement for a safety management system is implemented in EU Regulation 2096/2005. Currently, EU Regulation 1035/2011 is applicable, and as from 2 January 2020, the requirement of having a safety management system applicable to air traffic management and air navigation services will be based on EU Regulation 2017/373.

### 2.2.5 *Airport operators*

For airport operators, the requirement for a safety management system was implemented nationally in Aviation Regulation AGA M3-3 as early as in 2002.

EU Regulation 139/2014 *laying down requirements and administrative procedures related to aerodromes* published in 2014 is the currently valid legislative basis ap-

plicable to airports. It contains detailed requirements concerning airport operators' safety management systems.

The national approval certificates for Finnish airports were replaced by certificates that are valid until further notice and compliant with Regulation EU 139/2014 in late 2017. The repeal of Aviation Regulation AGA M3 is pending.

#### **2.2.6 Organisations providing ground handling services**

Ground handling services refer to the services provided at airports for their users listed in the Annex to Directive 96/67/EC on access to the ground handling market at Community airports. ICAO does not require organisations providing ground handling services to have a safety management system. European-level regulation is included in the amended EASA Regulation. Organisations providing ground handling services are required to have a safety management system under section 93 of the Aviation Act (864/2014). Companies providing ground handling services must provide information on their SMSs to the aerodrome operator and to Trafi.

#### **2.2.7 Unmanned aircraft**

Unmanned aircraft with a mass of under 150 kg are operated under national legislation. There are no SMS requirements as such, but Aviation Regulation OPS M1-32 does clearly require RPAS operators to ensure the safety of their operations through their own risk management procedures. There is no certificate or other formal approval procedure for these operators in Finland, but operators are required to submit a notification to Trafi before the operations are started, as specified in Aviation Regulation OPS M1-32.

## **2.3 Requirements for Trafi's management systems**

Requirements for national aviation safety management are set not only by ICAO but also the amended EASA Regulation in EU legislation. For ICAO requirements and those set in the amended EASA Regulation, see sections 1.1, Background to the Finnish Aviation Safety Programme and international obligations, and 1.2, Legislative framework.

The EASA Regulation and Commission Regulations issued by virtue of it contain requirements for authorities.

Annex II to the Commission's implementing regulation (EU) No 965/2012 on air operations, section ARO.GEN, contains requirements for the competent authority's management system (ARO.GEN.200), changes thereto (ARO.GEN.210), record-keeping (ARO.GEN.220) and the implementation of a system for immediate reaction to a safety problem (ARO.GEN.135).

The Finnish Aviation Safety Programme and Trafi's operations system form part of the management system and compliance monitoring system as required.

Oversight of Trafi's management systems is described in section 3.15.

## 2.4 Safety investigation

### 2.4.1 *Role and responsibilities of the Safety Investigation Authority*

The competent authority in Finland for investigating accidents and serious incidents in aviation is the Safety Investigation Authority (SIA), subordinate to the Ministry of Justice. The Safety Investigation Authority is an independent government agency, separate from the administrative and oversight organisations of all forms of transport and rescue services.

The Safety Investigation Authority is governed by the Safety Investigation Act (525/2011). Aviation accidents and incidents are investigated as specified in Regulation (EU) No 996/2010 of the European Parliament and of the Council and in the Convention on International Civil Aviation (Finnish Treaty Series 11/49), particularly Annex 13 - Aircraft Accident and Incident Investigation. Investigation requirements are also specified in Chapter 11 of the Aviation Act (Aviation accidents, search and rescue services, incidents and occurrences).

When making a decision on initiating a safety investigation, the Safety Investigation Authority must take into consideration the severity of the event and how likely it is to recur. An event or incident with minor consequences may be subject to an investigation if it is considered that such an investigation may yield significant information for improving overall safety and for preventing accidents.

The end product of a safety investigation is an investigation report, concluding as necessary with safety recommendations for the competent authorities and other parties. Safety recommendations are a summary of the investigators' views as to how similar accidents could be avoided in the future. The Safety Investigation Authority monitors the implementation of these recommendations. The purpose of a safety investigation is solely to improve safety; its purpose is not to apportion blame or responsibility nor to adjudicate liability for compensation.

### 2.4.2 *Role and responsibilities of Trafic*

Trafic may conduct studies and analyses of accidents, serious incidents and occurrences independently of the Safety Investigation Authority and take oversight actions intended to ensure that the continuation of aviation operations will not compromise safety.

Trafic works in close collaboration with the Safety Investigation Authority and provides assistance as necessary in compliance with the Safety Investigation Act. The Safety Investigation Authority informs Trafic in the course of an investigation of any emerging matters that may require immediate action.

Trafic issues a statement on the final draft of the investigation report, particularly addressing the safety recommendations issued to Trafic. When an investigation is completed, the Safety Investigation Authority sends the investigation report to Trafic for information or for action. Trafic processes and documents any safety recommendations addressed to it and responds to the Safety Investigation Authority within 90 days, informing the authority of its decisions.

Trafic seeks to leverage the results of both national and international safety investigations in its risk management efforts and also encourages aviation organisations to use this information in their safety management work.

## **2.5 Safety information: compiling, analysing, exchanging and confidentiality**

### **2.5.1 Safety information**

Trafí extensively compiles safety information from numerous sources. Air Safety Reports constitute one of the most important sources. Other sources of safety information include: audit and inspection findings; analyses by organisations as required in the Occurrence Regulation; safety analyses completed by organisations based on flight data monitoring (FDM) data (N.B. rather than handing the FDM data to the aviation authorities, only selected analyses produced by the organisation are addressed at the national FDM forum), analyses made by operators based on their FDM data; other information obtained from performance assessments of organisations' SMSs; accident investigation reports; observations on check flights; interviews; information published in the media; data obtained through financial monitoring; ramp inspection results; data gained from Trafí's own analyses; research results; and information from other national and international sources.

### **2.5.2 Air Safety Reports and occurrence information**

Under the Occurrence Regulation (376/2014), persons engaged in aviation operations or employed by a party engaged in aviation operations and persons engaged in duties with an impact on aviation safety must report to Trafí any incidents, interruptions, defects, errors or other exceptional circumstances (occurrences) that have to do with the operation, maintenance, repair or manufacture of aircraft, the operations of an aerodrome, ground handling services or air navigation services, and any occurrences which endanger or which, if not corrected or addressed, would endanger an aircraft, its occupants or any other person.

The reporting obligation also applies to aircraft referred to in Annex II to the EASA Regulation (Annex I to the amended EASA Regulation). Employees of aviation organisations and their contracted personnel should primarily report under the organisation's own safety management system. Private pilots submit their reports directly to Trafí.

Persons subject to the reporting obligation and Trafí itself must immediately notify the Safety Investigation Authority of any accidents and serious incidents.

Any private individual who becomes aware of a matter or circumstance with aviation safety relevance may submit a voluntary report even if they are not subject to mandatory reporting. A voluntary report can be submitted anonymously.

Trafí is the competent national authority as referred to in the Regulation. More detailed instructions on how to report accidents, incidents and occurrences are given in Advisory Circular GEN T1-4.

Reports to Trafí shall be submitted using an online form on Trafí's website. If responsibility for submitting reports to Trafí has been assigned to an aviation organisation, a person submitting a report in that organisation does not need to file the report in person. The organisation must have a procedure in place that ensures that reports are duly submitted.

For accidents and serious incidents, the Safety Investigation Authority evaluates the event and decides whether to initiate an investigation. Trafí also informs the Safety

Investigation Authority of any events that do not constitute an accident or serious incident, but that Trafi estimates might warrant an investigation.

### **2.5.3 Confidentiality of occurrence information and Just Culture**

Trafi is responsible for the confidentiality and appropriate handling of occurrence information as defined in the Occurrence Regulation, and enters the reports received in the European occurrence database (ECCAIRS) without personal identity details. Finland exchanges information with other countries using the ECCAIRS database according to the Just Culture principles.

The “Just Culture” principles are followed in the handling of data received through Air Safety Reports; the authorities will not take legal action because of an unplanned or unintentional offence that comes to their attention because of compliance with occurrence reporting procedures, except in the event of gross negligence or an action punishable under the Criminal Code.

Just Culture principles guarantee an atmosphere of trust with and between authorities and operators, encouraging individuals to report safety information and assuring them that the information will be appropriately handled and taken into account in safety management.

Operators are not allowed to discriminate against any employee who reports an incident that has come to his or her knowledge.

Employees and contracted personnel may notify the appeals body in the Transport Law Unit at Trafi of any alleged breaches of Just Culture principles as established in the Occurrence Regulation. Notifications concerning such alleged breaches must not result in sanctions to those employees or contracted personnel.

Good reporting culture and a Just Culture environment are essential elements in the safety culture of aviation organisations and a prerequisite for the good performance of their SMSs.

Confidentiality of occurrence information is provided for in the Occurrence Regulation (376/2014), in Chapter 11 of the Aviation Act (864/2014) and in section 24 of the Act on the Openness of Government Activities. Trafi may also decide not to disclose details of occurrence information if disclosure would compromise the availability of information in the future.



Figure 3. Keys to a good safety culture, based on 'The Components of Safety Culture' by James Reason

#### 2.5.4 Using safety information

Trafi evaluates the risk in every individual occurrence reported to it and also analyses broader occurrence scenarios and phenomena. All safety information gathered is used to perform analyses for identifying significant safety trends, factors contributing to the events reported, the functioning of protective measures and safety barriers, and current and forthcoming changes in operations or in the operating environment. Analyses are also used for monitoring safety indicators.

One important application for safety information is the focusing of Trafi's own operations and deciding on necessary actions. This is done in the FASP process (see section 2.6, *Hazard / threat identification, safety risk assessment and management*) and in a performance and risk based operations management (see section 3.2).

## 2.6 Hazard / threat identification, safety risk assessment and management (ICAO CE-8)

### 2.6.1 *Operating model for safety management in Finnish aviation: the FASP process*

The operating model for safety management in Finnish aviation, known as the FASP process, was created to ensure that safety is taken into account in decision-making across the board. It also makes sure that safety management in Finnish aviation complies with international requirements, that the Finnish aviation safety policy and objectives are implemented in everyday operations and policies, that we are able to leverage information to identify key risks in Finnish aviation and to take the necessary action to manage those risks, and that our safety management is systematic, proactive and capable of responding rapidly when necessary. The whole procedure must be functional, effective and well documented.

The key tools in risk level assessment in Finnish aviation are the risk picture generated by the FASP process, and the operator profile produced through performance and risk based operations management model to be used for the performance assessment of the SMSs and other management systems of aviation organisations (see section 3.2, *Risk-based focusing of oversight*). The results are entered into the Finnish Aviation Safety Plan, oversight plans and practical regulatory activities and communicated to the operators in the aviation segment in question to be taken into consideration in the operator's own safety management.

The European Plan for Aviation Safety (EPAS) describes the key risks identified in aviation at the European level, as well as strategic safety objectives and action items for attaining them, while acknowledging the global objectives set forth in the GASP.

Finland incorporates the action items required of Member States in the EPAS into the Finnish Plan for Aviation Safety (FPAS, Annex 1), and contributes to the content of the EPAS in the expert meetings and decision-making forums under the SRM process of EASA. International obligations are discussed in more detail in section 1.1.2, *The European aviation system and Finland's role*.

National policy programmes concerning the transport system and the measures and objectives defined in them are taken into account as applicable in risk management in Finnish aviation.

### 2.6.2 *Gradual introduction of the FASP process*

The gradual introduction of the FASP process is underway. The first comprehensive national risk and risk management picture for Finnish aviation covering all areas will be completed during 2018.

The development and introduction of the FASP process was prepared in a two-year research project entitled *Risk-Based Safety Management Process – From Data to Action*,<sup>9</sup> which involved developing risk assessment procedures and decision-making processes for the needs of transport system authorities.

<sup>9</sup> Finnish Transport Safety Agency reports 11-2015: Jari Nisula / Riskiperusteinen vaikuttaminen – Tiedosta toimenpiteisiin, published in Trafli's report series

### **2.6.3 Elements of the FASP process**

Hazard / threat identification and safety risk assessment for aviation in Finland are performed at risk workshops forming part of the FASP process, and then used to form the risk picture for each domain. The risk panel establishes the risk picture, determines the Acceptable level of Safety (AloS) and Acceptable level of Safety Performance (AloSP) for aviation in Finland, and determines the priority actions, i.e. the Finnish aviation safety risk management picture.

### **2.6.4 Risk workshops as part of the FASP process**

Risk workshops are expert forums in the FASP process. Their key task is to process safety information into the risk picture in each domain and to plan measures in support of the line organisation on the basis of the policies and decisions of the risk panel.

Risk workshops also have an important purpose in ensuring full and efficient leveraging of Trafif's expertise and improving it through exchange of information, support and mutual learning. The risk workshops use a risk picture tool developed at Trafif. In addition to the identification and documentation of key risks and measures, the risk picture tool contains much information on hazards/ threats, on scenario trigger factors and on barriers that can either prevent or mitigate accidents and serious incidents. This information is used not only to update the risk picture but also in Trafif's everyday work and in updating safety indicators and targets.

The risk workshops are convened and facilitated by the risk management coordinator in the Traffic Analysis Unit, who also maintains the risk picture tool. The risk workshop groups consist of Trafif experts. There are 14 workshop domains, one for each sector of aviation, appointed on the basis of the EASA risk panel principle. Operator representatives may also be invited to participate in the risk workshops, or it is ensured in some other way that the stakeholders can contribute their views and know-how to the formulation and updates of the risk pictures. The safety data produced by operators is an essential information source for the risk workshops (see figure illustrating the FASP process on page 31).

These domains are:

- aerodromes and ground aids (AGA)
- remotely piloted aircraft systems (RPAS)
- commercial air transport fixed-wing operations (OPS CAT FW)
- ground handling (GH)
- air navigation services (ANS/ATM)
- commercial air transport rotary wing operations and aerial work (OPS CAT RW + AW FW/RW)
- approved training organisations (ATO)
- general and recreational aviation (OPS GA)
- commercial air transport airworthiness (AIR CAT)
- general and recreational aviation airworthiness (AIR GA)
- commercial air transport operations with hot air balloons (OPS CAT Balloon)
- security (SEC)

- aviation medicine (MED)
- cybersecurity (KYBER).

The main tasks of the risk workshops are:

- Identifying key hazards / threats in the relevant sector of aviation (phenomena, trends, changes and concerns related to safety or with a potential safety impact) and defining scenarios for identified hazards / threats
- Risk assessments
- Proposals on the need for further action and on further actions
- After decisions of the risk panel, the actions are defined in more detail in support of Trafi's work
- Monitoring and evaluating the implementation and effectiveness of actions
- Maintaining the Finnish aviation risk picture annually and also when necessary: evaluating needs for update, reassessing phenomena as the situation changes, and identifying new hazards / threats as necessary and bringing them forward for assessment and adding to the risk picture.

#### ***2.6.5 The risk panel as part of the FASP process***

The risk panel is a forum forming part of the FASP process. Its main task is strategic decision-making for the management of safety risks in Finnish aviation.

The Risk Panel meets regularly according to a pre-determined annual schedule. The meeting times are linked to key policy, decision-making, communications, reporting and influencing needs in the aviation sector.

The risk panel is chaired by the Director General of Civil Aviation, and its members are the aviation secretariat, superior officials in the aviation sector and designated experts. The risk panel is convened by the FASP coordinator of the aviation secretariat.

The key duties of the risk panel are:

- Confirming the Finnish aviation risk picture established by experts at risk workshops
- Defining the Acceptable level of Safety (AoS) and the Acceptable level of Safety Performance (AoS<sub>P</sub>)
- Prioritisation (strategic safety priorities)
- Deciding on which actions should be further planned and implemented by the line organisation and at what level (safety promotion, focused oversight, regulation):
  - actions assigned to Trafi; the responsible party reports to the risk panel on progress
  - actions assigned to client organisations: the responsible party communicates with the organisation, supervises implementation and reports to the risk panel on progress
- Monitoring the implementation and effectiveness of actions
- **Establishing the Finnish aviation risk management picture in the Finnish Aviation Safety Plan**

- Monitoring that safety management for aviation in Finland fulfils the applicable criteria.

The results of the Finnish aviation risk management process are taken into account in Trafi's operations system and annual planning cycle (see figure on page 31), including:

- Finnish Plan for Aviation Safety FPAS
- Focus areas of Finland's influencing in international aviation
- Organisations' performance assessment
- Selection of priorities for the oversight plan and planning of oversight
- Selection of priorities for safety promotion and planning
- Prioritisation and content of aviation events organised by Trafi.

### **2.6.6 Informing the operators about the risk management picture**

The risk management picture in Finnish aviation consists of the risk pictures of aviation domains, the acceptable risk level, and measures taken to maintain the risks at an acceptable level. The operators are informed of the risk management picture in:

- Finnish Plan for Aviation Safety FPAS (annually)
- Interim results that require action following risk panels
- Priorities of oversight
- National safety indicators and targets (FASP Annex 2, SPI/SPT)
- Organisations' performance assessments; an organisation's performance in proportion to the assessed risks of the activities in question (FASP 3.2 *Performance and risk based operations management*)
- Safety discussions (FASP, Chapter 3. *Safety assurance*)
- Safety promotion measures (FASP 4.2)
- Measures in which immediate action is required of the operators

### **2.6.7 Stakeholder responsibility**

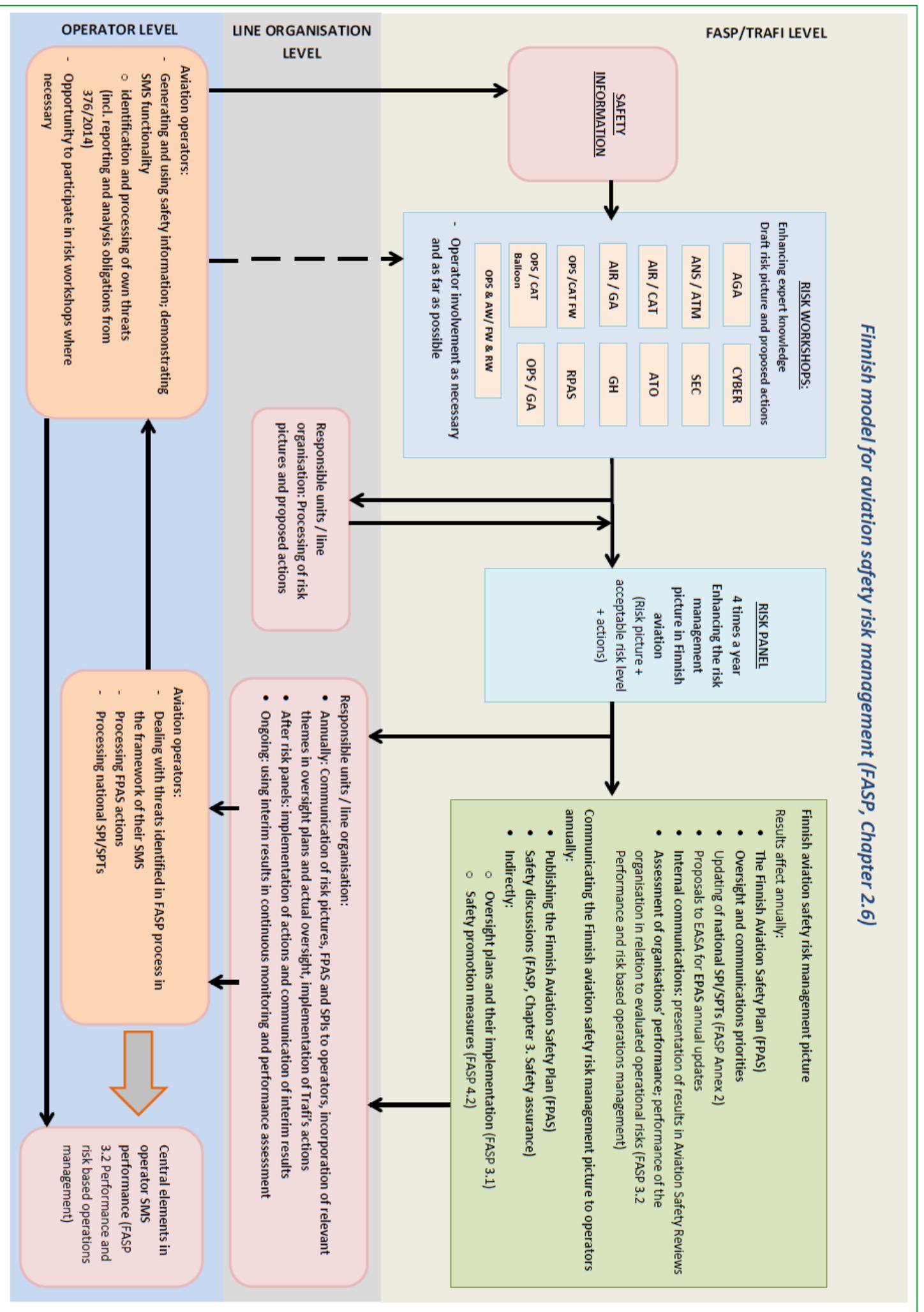
Stakeholders are responsible for the safety of their operations. Each aviation organisation must, within the scope of its SMS, identify hazards / threats and assess risks in its own operations and take any necessary actions to eliminate risks or to reduce them to an acceptable level.

Organisations must also process the Finnish Plan for Aviation Safety and risks identified at national level as regards their operations and, where necessary, take action to eliminate such risks or to reduce them to an acceptable level.

Organisations also have the responsibility to demonstrate to the supervisory authority the performance of their SMS (or other management system), on the basis of which Trafi targets its action. Acceptable levels of safety and safety performance (AoS and AloSP) are described in chapters 3.2 and 3.3.

The safety risk management model in Finnish aviation is illustrated in Figure 4 on page 31.

## Finnish model for aviation safety risk management (FASP, Chapter 2.6)





### **3 Safety assurance**

#### **3.1 Safety oversight (ICAO CE-7)**

##### **3.1.1 Principles of oversight**

Responsibility for overseeing aviation stakeholders is defined both at the EU and national level, as described in chapter 1. Chapter 2 describes stakeholders' responsibilities for managing the safety of their operations. Oversight principles are described in the publication *Trafin valvonnan periaatteet ja toimintamallit [Trafi's oversight principles and operating models]*. The focus in oversight is on evaluating the functioning and performance of organisations' own management systems (compliance monitoring and safety management).

The means of oversight employed include audits, inspections and surveys, such as requests for information, enquiries and analyses. Oversight also includes meetings between the supervisory authority and stakeholders, known as safety discussions, intended to ensure that both parties are aware of issues that are significant for compliance monitoring and safety management.

Oversight is executed according to plan, the results are documented and reported, and the implementation of any corrective actions required as a result of findings is monitored.

An oversight plan or programme is prepared on an annual basis and maintained continuously. It includes requirements on oversight, results of the FASP process (see section 2.6, *Hazard / threat identification, safety risk assessment and safety risk*

*management*), focus areas and priorities determined through performance and risk based operations management model (for further information, see section 3.2), the Finnish Plan for Aviation Safety, resourcing, and cost-efficiency. The oversight plan specifies the areas, organisations or units to be inspected in more detail. The annual oversight plan or programme forms part of a longer-term framework programme.

Trafic engages in oversight cooperation with other Finnish authorities, with aviation authorities in other countries and with international authorities, particularly EASA, as well as international organisations. Procedures for cooperation in oversight are agreed upon separately, and existing agreements are publicised. Cooperation includes notifying authorities in other countries of observations made concerning their client organisations.

One factor that determines the focus of Trafic's oversight actions in aviation is the following order of priority:

- 1) non-participating bystanders
- 2) paying passengers in commercial air transport
- 3) participating bystanders (e.g. audience at an air show, ground staff at an airport)
- 4) aircrew / aerial work staff
- 5) passengers on flights other than commercial air transport ('participants')
- 6) private pilots on non-commercial flights.

### **3.1.2 Approval and certification management**

Trafic has described the approval and certification management processes for overseeing aviation safety. These processes incorporate the international and national requirements for each domain of aviation.

At the beginning of the approval and certification management process, Trafic verifies whether the aviation organisations' facilities, systems, procedures and any changes thereto comply with the relevant national and international requirements and with the organisation's own requirements. It is evaluated in the approval and certification management process whether the organisation, in accordance with safety management requirements, has assessed the risks related to the facility, system, procedure or change being submitted for approval and mitigated those risks so as to attain the safety objectives.

Based on the evaluation, Trafic will either approve or reject the application, request further information, impose additional conditions or perform an inspection visit to the applicant organisation.

As part of the licence administration processes, Trafic ensures that the organisation's personnel and individual aviators are in compliance with any qualification requirements applicable to them.

### **3.1.3 Inspections and audits**

Inspections and audits form part of ongoing approval and certification management. They are used to ensure that an organisation's operations and SMS continuously comply with the relevant national and international requirements and with the organisation's own requirements. Organisations are audited according to the oversight plan.

Audits are performed by trained auditors. After the audit, the organisation is sent an audit report detailing the findings and requesting the organisation to take any necessary corrective actions. Trafi evaluates whether the proposed corrective actions are sufficient and either approves them or requests further clarification.

Operations are also monitored through spot inspections, SAFA/SACA/SANA inspections, check flights and training events.

#### **3.1.4 Ramp inspections**

SAFA/SACA/SANA inspections of aircraft are performed according to the requirements specified by EASA. These inspections are carried out by at least two qualified and authorised inspectors.

SAFA inspections of aircraft from outside the EU are based on ICAO standards. SACA inspections of EU-based operators and SANA inspections of domestic operators are based on EU requirements.

Inspections are performed according to a standardised checklist. Inspections focus on the technical condition of the aircraft, crew qualifications, documentation, devices, equipment, safety equipment and cargo on board.

#### **3.1.5 Quality control of Trafi's own operations**

Trafi's operations system contains process descriptions and instructions to be followed in approval and certification management and oversight.

Internal audits made under the operations system are for evaluating how the actual operations meet the requirements and follow the descriptions specified in the operations system. Internal audits are performed according to the auditing process and an annual plan.

Trafi is also subject to external audits. These are performed by ICAO (USOAP programme), the European Commission and EASA, each according to its own role and operating model. In addition, Finland regularly reports to EASA and ICAO about the content and implementation of the national safety programme. Finland also reports to EASA on an annual basis on the progress of EPAS measures implemented in the national safety plan.

### 3.2 Performance and risk based operations management (ICAO CE-7, CE-8)

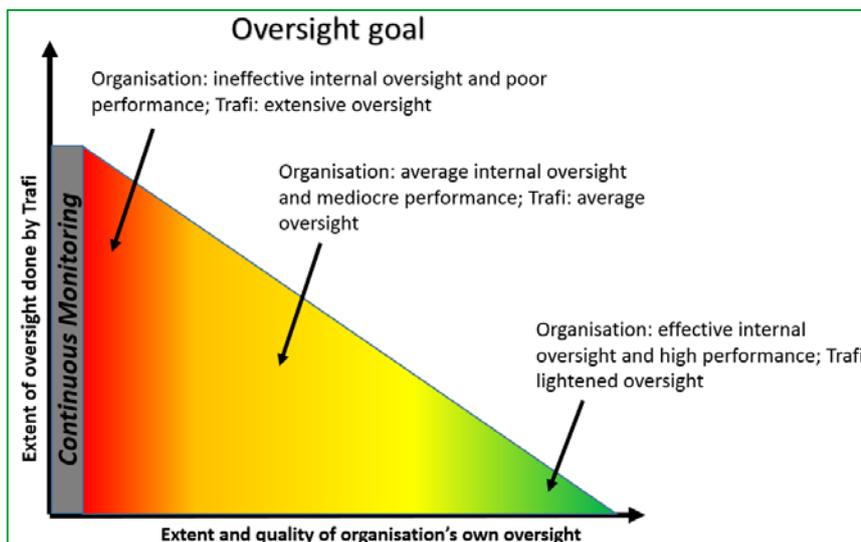
#### 3.2.1 Principles in the operations management

In performance and risk based operations management, Trafi evaluates the performance of client organisations' management systems and prioritises its own approval and certification management operations – including oversight – according to the findings.

'Performance' is understood as an organisation's overall capability to manage its operations in continuous compliance with requirements and at a satisfactory level of safety. This is evaluated according to pre-determined criteria. If an organisation's performance is found to be at a high level, Trafi will subject the operations to lighter oversight actions and seek to support further development of organisation's safety management through other means. If, on the other hand, performance is found to be weak, Trafi will prioritise the organisation in its oversight plan. Evaluation results influence the frequency of oversight actions aimed at the organisation and the selection of means for oversight. Trafi determines the following points on the basis of performance assessment results:

- *which* areas in the client organisation's operations oversight actions will primarily be aimed at,
- *what* authority actions the organisation will be subjected to,
- *what is the scope and content* of the actions the organisation will be subjected to,
- *when* the oversight actions will be implemented,
- *how often* recurrent actions will be performed vis-à-vis the organisation,
- *what resources* the actions will require.

Each organisation is fully responsible for the safety of its own operations. The frequency and scope of Trafi's oversight depends on the operator's performance. The relationship between Trafi's oversight and the operator's self-monitoring is illustrated in the figure below.



*Figure 5: Trafi's oversight in relation to the effectiveness of an organisation's self-monitoring and operating performance.*

### **3.2.2 Planning of oversight and approval and certification management**

Operations are planned based on information available to Trafi. This includes the safety information described in section 2.5 and particularly the results of performance assessment. Information relevant for operations planning is constantly accumulated in client work, including the results of earlier oversight actions, licensing and approval, information about the relevant domain in the risk picture established under the FASP process, the Finnish Plan for Aviation Safety, and other details. The nature and scope of client organisation's operations are also taken into account in planning.

Oversight intervals are determined on the basis of risks, performance level and requirements.

The performance and risk based approach in oversight planning and implementation is reflected in Trafi's approval and certification management processes and work instructions.

When needed for support in an inspection or audit of an organisation or part thereof, the Traffic Analysis Unit will produce an analysis to identify particular risk areas and problems in the object of the inspection or audit, based on safety information compiled.

### **3.3 Acceptable levels of safety and safety performance (AloS and AloSP)**

Trafif monitors the level of safety and safety performance in Finnish aviation as a whole and for each stakeholder separately. Trafif determines the Acceptable level of Safety (AloS) and Acceptable level of Safety Performance (AloSP) for Finnish aviation in the risk panel, as part of the FASP process. To monitor these, Trafif specifies Safety Performance Indicators (SPI) and Safety Performance Targets (SPT). The SPTs set a minimum level that stakeholders must attain in providing services. Attainment of the required level of safety is monitored through the indicators linked to each target.

An acceptable level of safety is the foundation for national safety efforts and for the development of organisations' SMSs. International safety objectives are taken into account when determining the level of safety. The success and effectiveness of aviation organisations' safety management is observed by monitoring the level of safety performance.

General safety trends and organisations' safety management performance are monitored with regard to the acceptable levels of safety specified for organisations in the various domains of aviation. If an acceptable level is not attained, Trafif will intervene.

#### **3.3.1 Safety Performance Indicators and Targets**

Safety Performance Indicators (SPI) are a tool for analysing safety information coming from a large number of sources. SPI monitoring and analysis supports safety efforts by stakeholders and authorities and the focusing of measures. SPIs also yield data on the effectiveness of actions taken. SPIs are also one of the data sources for the formulation of the risk picture in risk workshops in the FASP process.

As regards air navigation service providers (designated air traffic and meteorological service providers), at the EU level Commission Regulation (EU) No 390/2013 lays down a performance scheme for air navigation services and network functions. This Regulation defines performance indicators concerning safety, the environment, capacity and cost-efficiency. Under safety, key performance indicators are set for effective safety management and its objectives, for using the severity classification scheme in the risk analysis tool, and for Just Culture.

Finland's SPIs were developed on the basis of European and international indicators. The purpose was to establish indicators alongside the EASA indicators that would be as comprehensive as possible and reflect Finland's national circumstances.

Annex 2 to the FASP lists Finland's SPTs in different domains, the SPIs used to monitor attainment of those targets and a description of the principles for determining the level of safety.

#### **3.3.2 Organisations' responsibilities**

Every organisation must address the SPTs described in the Annex 2 to the FASP and adopt them insofar as they are relevant to the organisation's operations. Every organisation must aim to attain the specified targets in their practical work. In addition to the SPTs and SPIs defined in Annex 2 to the FASP, organisations should set up

indicators and targets of their own in order to monitor and improve their level of safety.

Organisations must use the SPTs to evaluate what action they need to take to attain the targets, to define the required safety measures and to implement them.

### 3.3.3 SPI development

The functioning of the SPTs and SPIs is evaluated annually as part of the assessment of the need to update the Finnish Aviation Safety Programme. An update of the current national SPIs and SPTs has been initiated and will be completed in 2018. This update will take into account the feedback received on the valid Annex 2 to the FASP and stakeholder views, the need for upgrading system-level and performance indicators, and the needs emerging in the risk picture and the EPAS vis-à-vis safety level and safety performance indicators and targets.

### 3.3.4 Operators' acceptable level of safety performance

For the purposes of performance and risk based operations management, customised safety performance levels and areas have been defined for each domain of aviation. The extent and nature of Trafi's oversight depends on the individual organisation's assessed performance level. Performance levels are determined taking into account the average performance in those operations as well as the nature, scope and special characteristics of the organisation's own operations. Because the acceptable level of performance varies from one sector of aviation to another, no overall estimation can be made for Finnish aviation as a whole. Figure 6 shows the acceptable level of performance in one sector of aviation in Finland.

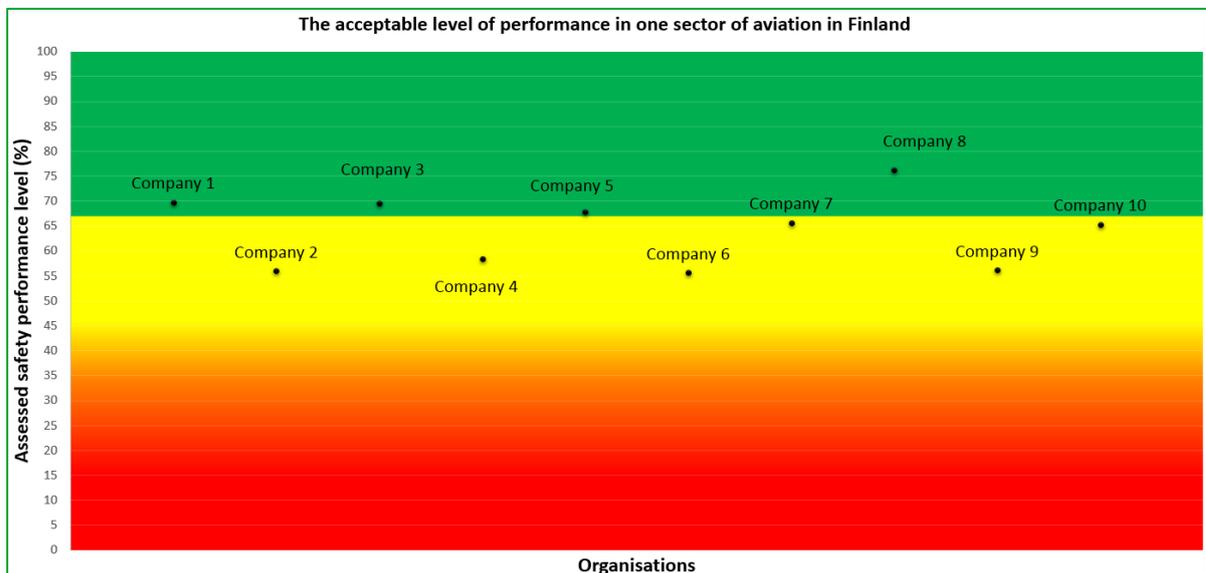


Figure 6. Example of the acceptable level of performance in one sector of aviation in Finland.

Trafi also aims to set performance targets for individual organisations and to assist organisations in attaining them. This is particularly the case with organisations whose operations currently do not satisfy the acceptable level of performance in the domain. In addition to more extensive and more frequent oversight actions, Trafi offers one-on-one safety discussions, further instructions, training and any other support that the organisation may need to improve its operations.

## 4 Safety promotion

### 4.1 Internal training and sharing of safety information

#### 4.1.1 *Personnel training*

Trafı maintains and improves the professional competence of its personnel to ensure that they have the necessary experience, training and up-to-date knowledge that they need to perform their duties. Employees are also provided briefings on current matters, such as changes in regulations and instructions, objectives, contribution to cooperation in international aviation, research results and new phenomena. Trafı also encourages employees to participate in external training that is relevant for their work.

Trafı's personnel have access to job rotation both within and outside the agency. Trafı also encourages cooperation with other transport authorities and international aviation organisations. The purpose of job rotation and cooperation is to promote the improvement of operating practices and to boost personnel competence.

Trafı's operations system involves maintaining documented records of all personnel training. Staff development discussions are held every year to review employees' strengths and improvement needs with regard to general and job-specific competence requirements. Following the discussions, competence development plans are drawn up for employees. This information is also taken into account when planning the training schedules for Trafı as a whole.

In addition to training, Trafı's personnel participate in external national and international events which augment their expertise, personally or in the context of Trafı, or which provide opportunities for influencing.

#### 4.1.2 *Sharing safety information*

At Trafı's internal safety status reviews, the status of Safety Performance Indicators and any other current safety-related issues are presented to experts and management representatives.

The safety status reviews also feature a presentation of the results of the FASP process, including the risk picture by domain, the decisions of the risk panel and any further actions, i.e. the risk management picture (section 2.6).

The risk workshops and risk panel under the FASP process, as well as the working groups where organisation profiles are specified, are also important forums for processing and sharing safety information.

Safety information received by Trafı on a daily basis concerning accidents, serious incidents and other events that may require immediate action is shared within Trafı using the immediate reaction process.

In addition to the safety information published on Trafı's website, the following are published in the intranet and in electronic workspaces: aviation safety status review materials, the risk picture and risk management picture generated in the FASP process, information on the status of SPIs, results of safety analyses, and other essential safety information produced by Trafı's units. However, confidential information is only handled on a need-to-know basis.

Trafı's representatives attend national and international events that support the safety work of Trafı or of stakeholders in the domain.

## 4.2 External training and sharing of safety information

### 4.2.1 *Advisory services and communications*

In its official capacity, Trafif offers advisory services and information to aviation stakeholders in topical issues under the responsibility of the aviation authority. Advice is provided in the form of briefings and advisory meetings, at personal meetings or through communications. Information on topical issues is also provided on Trafif's website and in the regular aviation newsletter. Anyone who is interested can subscribe to the newsletter on Trafif's website and have it sent directly to their e-mail address.

### 4.2.2 *Seminars and events*

Trafif and its various units organise safety seminars and stakeholder events at least once a year. These include for example the SMS seminar, the national FDM forum, regulatory briefings for stakeholders, a refresher seminar in aviation medicine, an FSTD event, a refresher course for flight examiners, the Trafif aviation event, the airworthiness seminar and the helicopter safety day. Events on topical issues are also held when needed. Trafif also actively participates in aviation safety events organised by stakeholders.

Trafif aims to organise targeted briefings and training sessions on a variety of topics selected on the basis of trend analyses and performance evaluations, for instance. What this means in practice is that if Trafif notes that all or most aviation organisations in a particular group are showing declining performance in a particular area, campaigns and events for exchanging experiences will be held in that area to support organisations in bringing their operations back up to standard.

### 4.2.3 *Website*

Information is published on Trafif's website ([www.trafif.fi](http://www.trafif.fi)) on [safety management principles in Finnish aviation](#) and its various areas, such as [performance and risk based operations management](#), national and international legislation and amendments thereto, and their impact on the operations of organisations and private individuals in the aviation sector.

### 4.2.4 *Trafif publications*

Trafif publishes a quarterly aviation safety review, discussing the previous quarter's major safety themes and trends and trends in the safety situation based on SPI levels 1 and 2 (<https://www.liikenne fakta.fi/turvallisuus/ilmailu>).

Trafif also publishes Safety Bulletins, which may be subscribed to in e-mail form through Trafif's website, and newsletters for different target groups. Trafif also publishes analyses, statistical reviews and other safety-related material such as posters and videos.

Key risks of the Finnish aviation risk management picture generated in the FASP process is published as part of the Finnish Plan for Aviation Safety (FPAS) in connection with the measures aimed to reduce the risk in question.

### 4.2.5 *Other channels and forms of cooperation*

Trafif makes wide use of various channels in its safety communications: social media, safety blogs, participating in aviation chatrooms in an official capacity, and vid-

eo streaming of events. An operating model for safety work in Finnish general and recreational aviation was developed in the national project on the safety of general and recreational aviation, where Trafi, AOPA Finland, the Finnish Aeronautical Association, Finavia, ANS Finland and the Finnish Meteorological Institute committed to promote safety together. This operating model involves jointly organising the annual Lentoon! [Take off!] safety seminar for general and recreational aviation. The project also included the development of an online aviation chart application for sport aviators for test use.

Trafi also published the [Droneinfo](#) website, which can be accessed by computers and mobile devices, in 2017. The website will be developed further based on users' experiences.

## **5 Appendices**

### **5.1 Finnish Plan for Aviation Safety**

The Finnish Plan for Aviation Safety will be published as a separate document available at Trafi's [Finnish aviation safety management web site](#) (and at [Trafi's English FASP web site](#)).

### **5.2 Finnish aviation Safety Performance Indicators and Targets**

Finland's Safety Performance Indicators and Targets will be published as a separate document available at Trafi's [Finnish aviation safety management web site](#) (and at [Trafi's English FASP web site](#)).