International Civil Aviation Organization

EIGHTH MEETING OF THE ASIA PACIFIC REGIONAL AVIATION SAFETY TEAM (APRAST/8)

(Bangkok, Thailand, 28 March – 1 April 2016)

Agenda Item 5: Presentation – State / Industry / ICAO

SHARING OF TOPICS DISCUSSED AT THE 17TH COSCAP-SEA STEERING COMMITTEE MEETING

(Presented by COSCAP-SEA)

SUMMARY

This Information Paper (IP) is presented to share with the Meeting some of the topics discussed at the recent 17th COSCAP-SEA Steering Committee Meeting which is of interest to APRAST members and industry partners.

1. INTRODUCTION

1.1 The 17th COSCAP-SEA Steering Committee Meeting was held in Bangkok, Thailand from 1 – 2 March 2016. A total of 44 participants from 10 States/Administrations and 8 organisations participated.

2. DISCUSSION

2.1 There were 10 Discussion Papers (DPs) were presented at the Meeting.

2.2 Topics related to SSP, USOAP CMA and GASP were discussed and would be of interest to the APRAST Members and Industry Partners as well.

2.3 As not all APRAST Members and Industry Partners are involved in COSCAP-SEA activity, this paper is presented to share the content of the DPs related SSP, USOAP CMA and GASP with APRAST members and industry partners.

2.4 The DPs to the 17th COSCAP-SEA Steering Committee Meeting can be found in the Appendices to this paper as follows:

a. **Appendix A** – Achieving SSP Implementation

b. **Appendix B** – Progress Report on the Implementation of the ICAO Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA)

c. **Appendix C** – Review of the Global Aviation Safety Plan(GASP)

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) Review and note the information in the DPs presented at the 17th COSCAP-SEA Steering Committee Meeting; and

b) Support the action requested described in the respective DP.

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SCM17/DP8

COSCAP South East Asia Cooperative Development of Operational Safety & Continuing Airworthiness Programme

17th COSCAP-SEA Steering Committee Meeting
DP8: Update on ICAO State Safety Programme Implementation and The review of Global Aviation Safety Plan (GASP)

Discussion Paper

ACHIEVING SSP IMPLEMENTATION

(Presented by the ICAO Secretariat)

SUMMARY

This working paper discusses the need to facilitate the timely implementation of State Safety Programmes (SSPs) built on the foundation of effective safety oversight systems. SSP requirements are contained in Annex 19 – *Safety Management* and comprise objectives in the Global Aviation Safety Plan (GASP) to lower the risk of accidents using appropriate proactive mitigation strategies. In addition, the paper discusses ICAO's approach for monitoring and validating suggested SSP implementation strategies as well as related tools for use by States in this context.

Action: The meeting is invited to encourage States to take appropriate measures, based on their Universal Safety Oversight Audit Programme (USOAP) effective implementation (EI) score, to progress the implementation of SSP by:

a) performing an SSP gap analysis;
b) developing an SSP implementation plan;
c) prioritizing and actively progressing the resolution of their USOAP deficiencies; and
d) after achieving an EI score of 60 per cent, performing a more detailed SSP self-assessment.

1. INTRODUCTION

1.1 The emerging issues discussed at the HLSC 2015 further emphasizes the importance of using a proactive approach in identifying hazards and managing safety risks. Safety risks may vary from one State or region to another requiring the development of tailored mitigation strategies, while others are globally applicable to all. Each State needs to understand their particular aviation environment and hazards that may be encountered in order to effectively manage aviation safety risks.

1.2 The Standards and Recommended Practices (SARPs) in Annex 19 – *Safety Management* require that States manage aviation safety risks. Given the increasing complexity of the global air transportation system and the inter-related aviation activities required to assure the safe operation of aircraft, Annex 19 requires continued compliance with State safety oversight requirements as well as the evolution of a proactive strategy to improve safety performance. This proactive safety strategy is based on the implementation of an SSP that systematically addresses safety risks. To provide a solid foundation for the SSP, States should first establish a mature safety oversight system, as required by Annex 19, paragraph 3.2 and outlined in the Global Aviation Safety Plan (GASP), corresponding in average to a Universal Safety Oversight Audit Programme (USOAP) level of effective implementation (EI) score above 60 percent.

1.3 States need to perform an SSP gap analysis and develop a plan to implement an SSP. This will allow them to identify hazards inherent to their aviation environment and subsequently assess and mitigate the associated risks, including risks arising from any changes being introduced.

2. MONITORING SSP IMPLEMENTATION PROGRESS

2.1 SSP gap analysis

2.1.1 As per Chapter 4 of ICAO's Doc 9859, *Safety Management Manual (SMM)*, before developing an SSP implementation plan, a gap analysis of existing State systems and programmes against the ICAO SSP framework and supporting guidance material is needed to assess the existence and maturity of the respective SSP elements.

2.1.2 To assist States in conducting an SSP gap analysis, ICAO has developed an online application, which can be found on SPACE/iSTARS 2.0. All action and implementation-related information entered in the SSP gap analysis tool is treated confidentially and is not disclosed by ICAO. ICAO will periodically collect high-level statistics and produce graphs showing the aggregated information to estimate the level of SSP implementation regionally and globally.

2.1.3 The information provided through gap analyses completed by States using the SPACE/iSTARS 2.0 application will allow ICAO to determine the amount of work required to achieve the implementation of SSP and facilitate the development of effective strategies to assist States at the regional and global levels. Even States with an EI score below 60 per cent should complete the gap analysis. As there are some overlaps between the safety oversight system and the SSP, the gap analysis will highlight these to allow the State to make progress toward both goals more effectively.

2.1.4 Users that are already members of the SPACE/iSTARS 2.0 group can access the SSP gap analysis online application through the SPACE catalogue. Other authorized users can request access to the SPACE group and the SSP gap analysis online application through the ICAO secure portal (http://portal.icao.int/) or the ICAO public website (http://www.icao.int/safety/iStars).

2.2 Detailed SSP self-assessment

2.2.1 After performing an SSP gap analysis, States can use the USOAP continuous monitoring approach (CMA) protocol questions (PQs) to conduct a more detailed self-assessment in preparation for an appropriate USOAP CMA activity. This self-assessment will enable States to evaluate their level of implementation of the ICAO safety management provisions and to submit supporting evidence using the CMA online framework.

2.2.2 ICAO has developed a comprehensive set of safety management PQs based on the provisions of Annex 19. They have been available to States as of the last quarter of 2014 on the USOAP CMA Online Framework, along with the 2014 amendment of the other PQs. While the 2014 amendment of the other PQs applied for USOAP monitoring activities as of 1 January 2015, ICAO will not begin monitoring the new safety management PQs until 1 January 2018. Electronic Bulletin, EB 2015/56, dated 4 December 2015, refers (Appendix A).

2.2.3 States with an EI score of over 60 per cent will have until the end of 2017 to complete their self-assessments and to submit related evidence through the CMA Online Framework. Starting on 1 January 2018, ICAO will determine the status of the new safety management PQs through appropriate USOAP CMA activities.

3. SSP IMPLEMENTATION

3.1 States with an EI score below 60 per cent

3.1.1 As a prerequisite to SSP implementation, States should establish a mature safety oversight system by first identifying and addressing any deficiencies. The USOAP CMA identifies the deficiencies of the State's safety oversight system and provides States with an analysis of these deficiencies to assist them in developing corrective action plans (CAP). These actions should be prioritized in accordance with the areas of greater risk given the types and levels of aviation activity in the State.

3.1.2 Once a State is actively making progress to address the prioritized actions in its USOAP CAP, an SSP gap analysis, using ICAO's SSP gap analysis tool, should be conducted.

3.1.3 Once a State achieves a rate of effective implementation of its safety oversight system of 60 per cent, it should then proceed with the steps outlined for States with an EI above 60 per cent.

3.2 States with an EI score above 60 per cent

3.2.1 States having achieved a mature safety oversight system should perform an SSP gap analysis using the tool on SPACE/iSTARS 2.0, if they have not done so already. A more detailed self-assessment can then be conducted using the comprehensive USOAP CMA PQs on safety management.

3.2.2 The results of the SSP gap analysis and PQ self-assessment should then be used to plan the remaining tasks required to implement an SSP. The progressive or phased implementation of an SSP effectively manages the associated workload and expectations within a realistic timeframe. The actual sequencing or prioritization of tasks will vary among States. A four-phased approach for the implementation of SSP is provided in the SMM. Another approach would be to develop an action plan similar to that requested after a USOAP activity. In effect, the tasks identified as not completed from the SSP gap analysis can be divided into short (0-3 months), medium (3-18 months) and long-term (18-36 months) actions.

3.2.3 Actions which are required for the expeditious mitigation of safety risks should be taken as a matter of priority. Actions which inherently take some time to complete (i.e. amendments to regulations or legislation) should also be initiated as soon as possible in order to have them completed in due time.

3.2.4 Task dependencies should be considered where appropriate. The timeframes indicated for the phases in the SMM or actions outlined above are an approximation only. The actual implementation period will depend on the scope and complexity of the State's aviation system, the actual gaps identified from the gap analysis and the organizational structure in place. Throughout this process, the State safety assurance function ensures continued implementation of the State safety oversight system.

4. SUPPORT FOR SSP IMPLEMENTATION

4.1 The first amendment to ICAO Annex 19, *Safety Management*, will be submitted to the ICAO Council for adoption in March 2016 with a proposed effective date of July 2016 and an applicability of November 2018. The amendment includes:

a) an integration of the SSP and State safety oversight provisions;
b) enhancements to SMS provisions;

c) extension of SMS applicability to include organizations responsible for the type design and/or manufacture of engines and propellers; and
c) provisions for the protection of safety data, safety information and related sources.

4.2 The ICAO Safety Management website, http://www.icao.int/SafetyManagement, has valuable information, tools and links to resources that support the implementation of Annex 19 and will be updated regularly with new developments. In addition, the third edition of the *Safety Management Manual (SMM)* (Doc 9859), published in May 2013, also includes guidance material for SSP implementation. ICAO is currently working on the 4th edition of the SMM which is expected to be published July 2017 and will included enhanced guidance material to support existing and amended provisions of Annex 19. The examples currently found in the SMM 3rd edition will be transferred to the website which will be expanded to include multiple examples to support the scalability of SSP and SMS as well as the different environments found in the various service providers and international general aviation required to implement SMS. This approach is also expected to allow ICAO the flexibility to update these materials as experience is gained in implementing safety management.

4.3 The ICAO safety management training material is being updated to reflect the latest safety management developments and will use a blended training approach consisting of four computer-based training (CBT) modules and on-site workshops. Electronic Bulletin EB 2015/55, dated 19 November 2015 refers (Appendix B). In addition, ICAO offers an Analysis Workshop to support the development of the skills needed by States and industry to capture and store safety data as well as for manipulating and integrating data to facilitate hazard identification and risk mitigation. Information on the Analysis Workshop can be found on SPACE/iSTARS 2.0.

4.4 The Regional Aviation Safety Groups (RASGs) have been invited to identify activities in support of the implementation of safety management and to report on the effective and continuing implementation of SMS and SSP provisions.

5. CONCLUSIONS

5.1 The GASP has established clear objectives with reference to the implementation of State Safety Programmes (SSPs) and a strategy to achieve them taking into consideration the level of maturity of a State's safety oversight system. The individual gap analyses performed by States will serve to provide valuable information to ICAO. Using the gap analysis, States can develop implementation plans to allow them to make progress towards the GASP objectives.

5.2 The information collected from the completed gap analyses will be shared with the aviation community on an aggregate level, respecting each State's confidentiality, to support the GASP update process. A summary of the gap analysis reports should be presented to the next Assembly to support any proposed adjustments to the GASP as well as the need for additional implementation assistance or guidance.

— END —

International Civil Aviation Organization

ELECTRONIC BULLETIN

For information only

EB 2015/56 4 December 2015

ROLL OUT OF THE STATE SAFETY PROGRAMME UNDER THE ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME CONTINUOUS MONITORING APPROACH — UPDATE

1. Reference is made to the Electronic Bulletin 2014/61 dated 22 October 2014, in which information was provided regarding revised Protocol Questions (PQs) in support of ICAO's plan to start auditing the effective implementation of a State Safety Programme (SSP) as part of the ICAO Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA). The new PQs related to SSP are available on the USOAP CMA Online Framework (OLF) at http://www.icao.int/usoap.

2. The initial plan was for the audit of these new SSP-related PQs to commence in January 2016 in States with an effective implementation (EI) of the eight critical elements (CEs) of over 60 per cent. States with an EI of over 60 per cent were requested to perform an SSP self-assessment using the new PQs available on the OLF by the end of 2015. However, few States have actually completed this task.

3. During the 2nd High-level Safety Conference 2015 (HLSC 2015) held earlier this year, States expressed the need for comprehensive guidance material to support the implementation and assessment of SSP. Considering that an updated version of the ICAO *Safety Management Manual (SMM)* (Doc 9859) is not expected to be published in all ICAO working languages before July 2017 (as per State letter AN 8/3-15/46 refers) and the timelines established in the *2014-2016 Global Aviation Safety Plan* (Doc 10004), the audit of the new SSP-related PQs will be postponed to January 2018.

4. All States are requested to use the SSP gap analysis tool found on iSTARS 2.0/SPACE at https://portal.icao.int/space/Pages/welcome.aspx to allow ICAO to continue monitoring SSP implementation. States with an EI of over 60 per cent are requested to use this additional time to complete the self-assessments of the new SSP-related PQs, as well as the Annex 19 — *Safety Management* compliance checklist.

5. States interested in receiving in 2016 an assessment by ICAO of their SSP implementation on a voluntary basis, using the new SSP-related PQs, may ask for a cost-recovery mission by submitting a request to the Safety and Air Navigation Oversight Audit (OAS) Section at usoap@icao.int.

6. ICAO will conduct a thorough review of the new SSP-related PQs, with a view to improving, as needed, the questions and their related guidance. This review will be completed by mid-2017, after which the amended SSP-related PQs will be posted on the USOAP CMA OLF and States will be informed accordingly.

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International Civil Aviation Organization

ELECTRONIC BULLETIN

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EB 2015/55 19 November 2015

LAUNCH OF THE NEW ICAO SAFETY MANAGEMENT TRAINING PROGRAMME

1. ICAO is launching its new Safety Management Training Programme (SMTP) with effect from 20 November 2015. The training, delivered in an online format, will provide necessary knowledge and skills to Member States' regulatory personnel and aviation service providers' staff involved in the planning, development, and implementation of State Safety Programme (SSP) and Safety Management Systems (SMS).

2. Upon successful completion of the SMTP, participants will develop competencies required to apply the fundamental concepts and principles of aviation safety management, contribute to SMS implementation plans based on the frameworks set out in Annex 19 – *Safety Management*, and other ICAO Standards and Recommended Practices (SARPs) and guidance material, as well as participate in the resolution of safety-related issues by using the required skills and knowledge associated with key SSP and SMS processes.

3. States and aviation service providers may develop additional courses to complement the ICAO SMTP using their own regulations, procedures and safety tools. ICAO encourage States and aviation service providers using similar regulations, procedures and safety tools to work together to reduce the cost of the development and enhance the effectiveness of training developed. ICAO is willing to assist States and aviation service providers for the development of competency-based training courses.

4. For more information and registration, please visit the ICAO Global Aviation Training website at www.icao.int/training.

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COSCAP South East Asia Cooperative Development of Operational Safety & Continuing Airworthiness Programme

17th COSCAP-SEA Steering Committee Meeting
DP9: Update on ICAO USOAP CMA

Discussion Paper

PROGRESS REPORT ON THE IMPLEMENTATION OF THE ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME CONTINUOUS MONITORING APPROACH (USOAP CMA)

(Presented by the ICAO Secretariat)

EXECUTIVE SUMMARY	
This paper provides a progress report on the implementation and activities of the Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA) during 2015. The purpose of this discussion paper is to address the current and forthcoming activities of the USOAP and COSCAP-SEA support to Members. COSCAP-SEA will continue to provide regular updates to Members on developments concerning the ICAO USOAP CMA. The level of implementation on Corrective Action Plans (CAPs) and Self-assessments of COSCAP-SEA Member States is depicted in Appendix D.	
References:	Doc 9735 — *Universal Safety Oversight Audit Programme Continuous Monitoring Manual* (Fourth Edition) EB 2015/34 EB 2015/56 EB 2014/61 SL AN 8/3-15/46 SL AN 19/34-15/35

1. INTRODUCTION

1.1 This paper provides a progress report on the implementation and activities of the USOAP CMA, highlighting the achieved milestones, conducted activities, and improvements made in 2015, as well as planned activities and developments for 2016.

2. USOAP MILESTONES IN 2015

2.1 The USOAP CMA online framework (OLF) continues to be the main platform for ICAO to monitor, evaluate, report States' safety oversight-related information including documentation, track CMA activities and manage USOAP CMA data in 'real time' (http://www.icao.int/usoap). During 2015, persisting technical issues were resolved, the system was migrated to a cloud-based platform and its speed was enhanced. In addition, detailed guidance materials and tutorials were developed and made available to users. States continue to use the OLF to

update their information and to prepare for upcoming USOAP CMA activities. The latest version of USOAP CMA protocol questions (PQs) is now available on the OLF in English, French, Spanish and Russian. The OLF is also closely integrated with ICAO's iSTARS/SPACE (http://portal.icao.int – group name SPACE) and iSTARS/SPACE applications use live data from the OLF, allowing States to conduct more accurate and timely analyses. iSTARS/SPACE is available to all Member States.

2.2 The new USOAP audit which includes PQs related to State Safety Programme (SSP) and provisions of Annex 19 — *Safety Management* (launched in 2014) was planned to start in January 2016 (EB 2014/61 refers) in States with effective implementation (EI) above 60 per cent. Those States had one year until the end of 2015 to conduct self-assessment on the new SSP-related PQs, while all States had to also perform an SSP gap analysis using the online tool provided by ICAO on iSTARS/SPACE. However, in practice, very few States have performed a self-assessment on the new SSP-related PQs and recorded results in the OLF.

2.3 In 2015, ICAO started to perform confidential assessments of States' SSP implementation on a cost-recovery basis, using the new SSP-related PQs. These assessments provided ICAO with a better understanding of the challenges faced by States for effective implementation of SSP, as well as with inputs for the revision and improvement of SSP-related PQs.

2.4 Considering the lack of readiness of most States for effective implementation of SSP and the fact that an updated version of the *Safety Management Manual* (SMM) (Doc 9859) will be published in all ICAO working languages in the second quarter of 2017 (SL AN 8/3-15/46 refers), it was decided to postpone the audit of the new SSP-related PQs to January 2018 (EB 2015/56 refers).

2.5 The increasing efforts of States in resolving their safety deficiencies and improving their EI rates has created more demand for ICAO to validate the progress reported by States. One of the ways for ICAO to respond to this demand in a timely manner is by conducting more off-site validation activities. While these activities are limited to the eligible PQs (PQs that do not require on-site verifications, i.e. mainly those related to the establishment of legislation, regulations, policies and procedures), they are cost effective and can generate results in a shorter time than other USOAP CMA activities, i.e. audits and ICAO Coordinated Validation Missions (ICVMs).

2.6 Performing an increased number of off-site validation activities requires more resources for the conduct of USOAP CMA activities. As a solution, and following ICAO Council discussions, ICAO invited States to support USOAP CMA by nominating technical experts. To encourage States, ICAO agreed to waive the fee for USOAP CMA computer-based training (CBT) for nominated experts that meet defined criteria (SL AN 19/34-15/35 refers). States responded well to ICAO's invitation and, as a result, ICAO's pool of experts to conduct USOAP CMA activities is expanding. Furthermore, the Secretariat is finalizing the development of its designee system as a pragmatic solution to the demand for off-site validation activities, as highlighted by the Air Navigation Commission (ANC) and the ICAO Council. ICAO will use qualified designees in off-site validation activities only.

2.7 During 2015, ICAO promoted a new initiative to support continuous monitoring in general and off-site validation activities in particular through more active participation of ICAO technical officers from both ICAO Headquarters (HQ) and Regional Offices (ROs), as well as technical experts from international organizations and Cooperative Development of Operational Safety and Continuing Airworthiness Programmes (COSCAPs) that support USOAP CMA. During their visit to a State, these experts collect evidence on implementation of corrective action plans (CAPs) and resolution of USOAP audit findings by the State. However, unlike ICVMs, the experts do not have to fully assess the collected evidence. They submit the collected evidence to ICAO HQ for off-site assessment and validation. As more States request ICAO to validate their progress in a timely manner, this initiative allows ICAO to improve its response time to States' efforts in implementing their CAPs and helps States show the improvements in their EI.

2.8 The USOAP CMA quality management system (QMS) successfully went through its annual surveillance audit in September 2015 to ensure its ongoing compliance with the ISO 9001:2008 standard for quality management systems. The QMS scope includes: the collection, processing and sharing of safety oversight information; the conduct of continuous monitoring activities; and the provision of safety training and seminars for the enhancement of global aviation safety. USOAP CMA procedures, processes and other documentation managed through the QMS were updated, streamlined and standardized, as applicable. Through the USOAP CMA QMS, ICAO collects data from States regarding their satisfaction with USOAP CMA activities. States that provided feedback on CMA activities conducted in 2015 indicate an overall satisfaction rate of 89 per cent.

3. USOAP CMA ACTIVITIES IN 2015

3.1 Appendix A outlines USOAP CMA activities conducted during 2015 including USOAP CMA audits, ICVMs, off-site validations, mandatory information requests (MIRs) and training. The USOAP CMA Activity Plan, which is issued as an Electronic Bulletin and posted on ICAO-NET twice a year, lists the conducted activities.

3.2 The graphs in Appendix B outline some of the improvements in States' EI resulting from the conduct of USOAP CMA activities. Further detailed analyses will also be presented in the *Report on USOAP CMA Results* that will be published at the end of March 2016. Appendix C outlines the contents of the report.

3.3 The graphs in Appendix D present the progress in CAP implementation and self-assessments. The graph in figure D-2 shows the level of progress made by COSCAP-SEA member States in completing the protocol question (PQ) self-assessment on the CMA Online Framework. Currently, Brunei Darussalam and Lao PDR have not started the self-assessment; and other States, with the exception of Hong Kong and Macao SARs China and Thailand, have started their self-assessments but made negligible progress.

3.4 As of 31 December 2015, a total of fifty-five Significant Safety Concerns (SSCs) had been identified in thirty-four States under the USOAP since 2006. Of these, nine SSCs were resolved by immediate action (within fifteen days) and thirty-one SSCs were resolved through corrective actions taken by the concerned States. As of 31 December 2015, there were fifteen unresolved SSCs, involving thirteen States.

3.5 The regional safety briefing presented in Appendix E provides a summary of the USOAP status and priority areas for safety improvement for COSCAP-SEA member States.

3.6 Specific concerns in the COSCAP-SEA member States regarding USOAP CMA are Thailand with a SSC in OPS since January 2015 and the five other States (Cambodia, Indonesia, Philippines, Timor-Leste, and Viet Nam) which have an EI below 60%.

4. USOAP CMA ACTIVITIES AND IMPROVEMENTS PLANNED FOR 2016

4.1 ICAO will continue to monitor States' activities through the CMA online framework, prioritizing activities based on risk factors and indicators. The ongoing collection of data from the online framework allows ICAO to determine the appropriate monitoring and assistance activities for each State and to assign resources where required. The criteria used for the selection and planning of USOAP CMA activities are outlined in the *Universal Safety Oversight Audit Programme Continuous Monitoring Manual* (Doc 9735), Sections 3.6 and 4.7.

4.2 In line with the approved budget and available resources, USOAP CMA activities planned for 2016 include ten USOAP CMA audits, fifteen ICVMs, fifteen off-site validations and two regional seminar/workshops. Cost-recovery activities will be conducted as requested by States. The CMA Activity Plan also lists planned activities. USOAP CMA activities can be conducted as full-scope (covering all eight audit areas) or as limited-scope (covering only some of the audit areas).

4.3 During 2016 and while ICAO and States with EI above 60 per cent prepare for the audit of SSP-related PQs, ICAO will conduct more cost-recovery assessments of SSP implementation in volunteer States. These assessments may be in conjunction with ICVMs (see 2.3 above). The results of these assessments will be used to improve SSP-related PQs and their related guidance and to develop a more detailed methodology for auditing the effective implementation of SSP. In the meantime, States with EI above 60 per cent are expected to conduct self-assessment on SSP-related PQs and complete the Annex 19 compliance checklists.

4.4 ICAO will continue to develop and implement a plan to prepare and train USOAP CMA auditors to address SSP-related PQs.

4.5 In 2016, ICAO will provide refresher and standardization training to team leaders of USOAP CMA activities. This will ensure that USOAP CMA team leaders are fully informed about the latest updates and improvements in the USOAP CMA methodology, processes and workflows and that they lead and conduct USOAP CMA activities in a consistent, uniform and standardized manner. This training will be organized in two sessions: one in the first half of 2016 for team leaders from ICAO HQ and one in the second half of 2016 for team leaders from ICAO ROs.

4.6 To address the ongoing need of States for timely and actionable advice on resolving USOAP findings, ICAO is developing and will be launching a ‘Solution Centre’ on iSTARS/SPACE. This application will allow users to view USOAP findings for any State on a graphically-rich dashboard and to drill down to PQ findings and a variety of possible solutions to address each finding. These solutions may include links to official ICAO guidance documents, training courses, partnership programmes and best practices. In addition to USOAP metrics such as the list of PQs, EI by audit area, EI by critical element (CE) and SSCs, other metrics only available on the OLF will also be shown on iSTARS/SPACE. These will include information from the State Aviation Activity Questionnaire (SAAQ) and reports on the Electronic Filing of Differences (EFOD). The consolidation of metrics will decrease the overlap among various databases and tools and will make more transparent the actual aviation safety environment, personnel, and resources within each Member State.

5. ACTION BY THE MEETING

5.1 The meeting is invited to :

a) take note of the contents of this paper

b) urge States to prioritise and take action as needed in the implementation of USOAP CMA, with particular attention to:
- the resolution of Significant Safety Concerns;
- the amendment, as needed, and implementation of Corrective Action Plans (CAPs); and
- the completion of the self-assessments, including the uploading of the relevant evidence on the USOAP CMA Online Framework.

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APPENDIX A

The table below provides more detail on USOAP CMA activities and developments during 2015.

Activity		Planned/Conducted	Comments
1.	**On-site USOAP CMA Activities**		
1.1	***USOAP CMA Audits*** Determining States' capabilities for safety oversight by assessing the effective implementation of all safety-relevant ICAO SARPs, associated procedures, guidance material and best safety practices.	As planned for 2015, ten audits were conducted in: Armenia, Azerbaijan, Ethiopia, Guatemala, India, Norway, Panama, Russian Federation, San Marino and Thailand.	Audit results are available on the USOAP CMA online framework at: http://www.icao.int/usoap
1.2	***ICAO Coordinated Validation Missions (ICVMs)*** Assessing the status of corrective actions taken by the State to address previously identified findings and determining whether the State has satisfactorily resolved deficiencies, including any SSCs.	Fifteen ICVMs were scheduled for 2015. By the end of the year, eighteen ICVMs were conducted across all ICAO regions (except MID) in: Austria, Bahamas, Belarus, Botswana, Brazil*, Chad*, Congo*, Ecuador, El Salvador, Equatorial Guinea, Lao People's Democratic Republic, Latvia*, Mali, Mauritius, Niger*, Swaziland, Switzerland and Tajikistan. * ICAO also conducted off-site validation activities for these States (see 2.1 below).	The overall EI for these eighteen States increased from 53.31 per cent to 68.18 per cent. States consider ICVMs a form of ICAO assistance that provides guidance and advice on implementation of their corrective actions. ICVM results are available on the USOAP CMA online framework at: http://www.icao.int/usoap

Activity		Planned/Conducted	Comments
2. Off-site USOAP CMA Activities			
2.1	***Off-site Validation Activities*** Assessing and validating corrective action plans (CAPs) implemented by a State to address certain eligible findings without conducting an on-site activity, i.e. an audit or ICVM.	The goal was to conduct fifteen off-site validation activities for 2015. By the end of the year, 20 off-site validations were conducted in: Benin (two activities), Brazil*, Cameroon, Chad*, China, Congo*, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Kyrgyzstan, Latvia*, Lithuania, Madagascar, Niger* and Togo. * ICAO also conducted ICVMs in these States in 2015 (see 1.2 above).	The evidence for some of the off-site validation activities were collected during visits of ICAO or the European Aviation Safety Agency (EASA) to States.
2.2	***Mandatory Information Requests (MIRs)*** Requesting information or documentation needed for USOAP CMA assessment and validation.	In 2015, three MIRs were issued, with a total of sixteen MIRs to date. Of these, five MIRs remain open.	
3. Training			
3.1	***Training of Auditor and Subject Matter Expert Nominees*** Prepare aviation experts from States or recognized international/regional organizations as nominees as a prerequisite to be nominated and further trained as auditors and subject matter experts to conduct USOAP CMA audits and ICVMs.	Sixty-two nominees for training of auditors and subject matter experts took the USOAP CMA CBT in 2015. As of December 2015 and since the launch of the CBT in 2011, 326 participants from sixty-seven States and twelve international/regional organizations have taken the CBT as a prerequisite for USOAP auditor and/or ICVM subject matter expert training. The USOAP CMA roster now includes a total of ninety-eight USOAP auditors and/or ICVM experts.	States and recognized organizations are called upon to nominate experts for secondment to ICAO on a long- or short-term basis in support of the USOAP CMA as auditors and subject matter experts. During 2015, France, Malaysia, Republic of Korea and Singapore continued to provide long-term secondments to support the USOAP CMA.

Activity		Planned/Conducted	Comments
3.2	***Familiarization Training for State Employees*** Provide training for National Continuous Monitoring Coordinators (NCMCs) and familiarize States' safety oversight employees with USOAP CMA methodology and activities.	As of December 2015 and since the launch of the CBT in 2011, 489 participants from ninety States and twelve international/regional organizations have taken the CBT for NCMC and familiarization training.	NCMC and familiarization training allows States to enhance the knowledge and competency of their aviation safety personnel regarding USOAP CMA, particularly to prepare for an upcoming USOAP CMA activity.
3.3	***Seminars/ Workshops*** Assist States in their participation in USOAP CMA and, particularly, preparation for an upcoming USOAP CMA activity.	Ten seminars/workshops were conducted with 298 participants from seventy-six States and nine international/regional organizations. Two seminars/workshops were budgeted and conducted by ICAO. One was hosted by the ICAO WACAF Regional Office in Dakar, Senegal for States in the WACAF region and another was hosted by the Russian Federation in Moscow for the Commonwealth of Independent States (CIS). Eight seminars/workshops were conducted on a cost-recovery basis in: Australia, Austria, Fiji, Finland (hosted for EASA States), Kazakhstan, Kuwait, New Zealand [hosted for the Pacific Aviation Safety Office (PASO) States] and Singapore (including a few neighbouring States).	Since the transition period and launch of USOAP CMA, seminars/workshops have been conducted in all ICAO regions. Currently, ICAO budgets for and conducts two seminars/workshops per year among regions on a rotating basis.

APPENDIX B

The graphs below outline some of the improvements in States' results that have been achieved through USOAP CMA activities as of 31 December 2015.

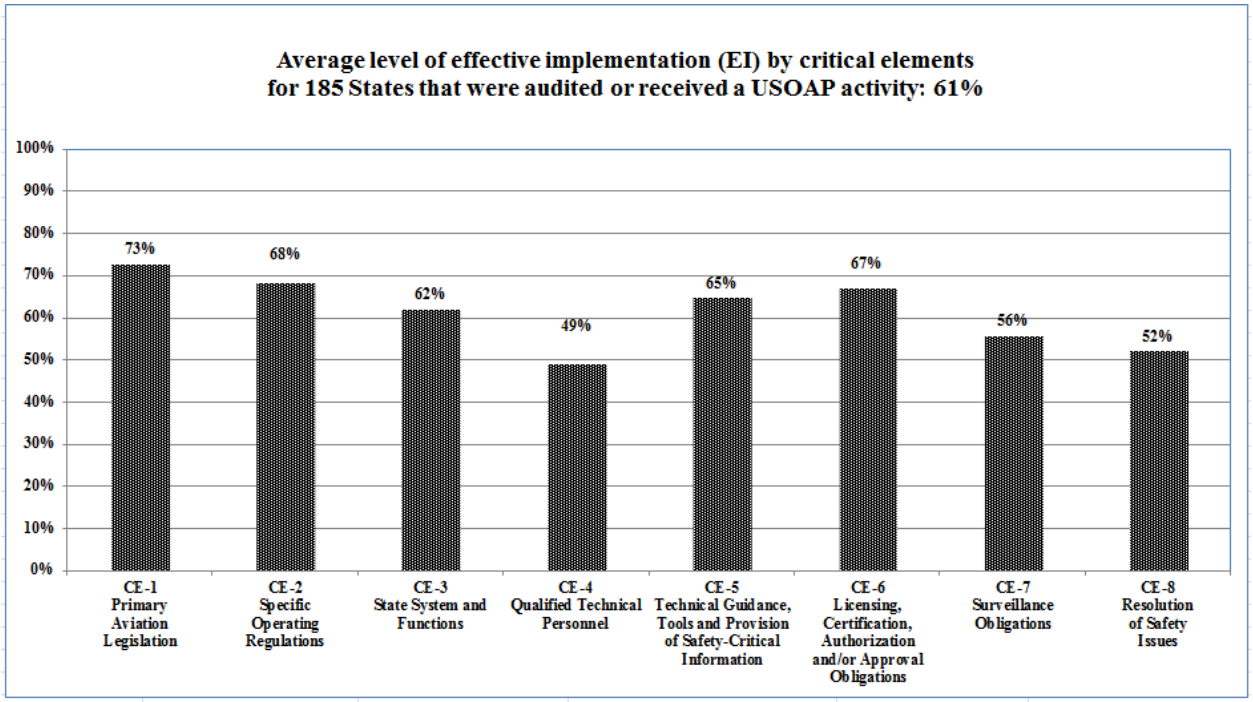

Figure B-1. Average global level of effective implementation (EI)

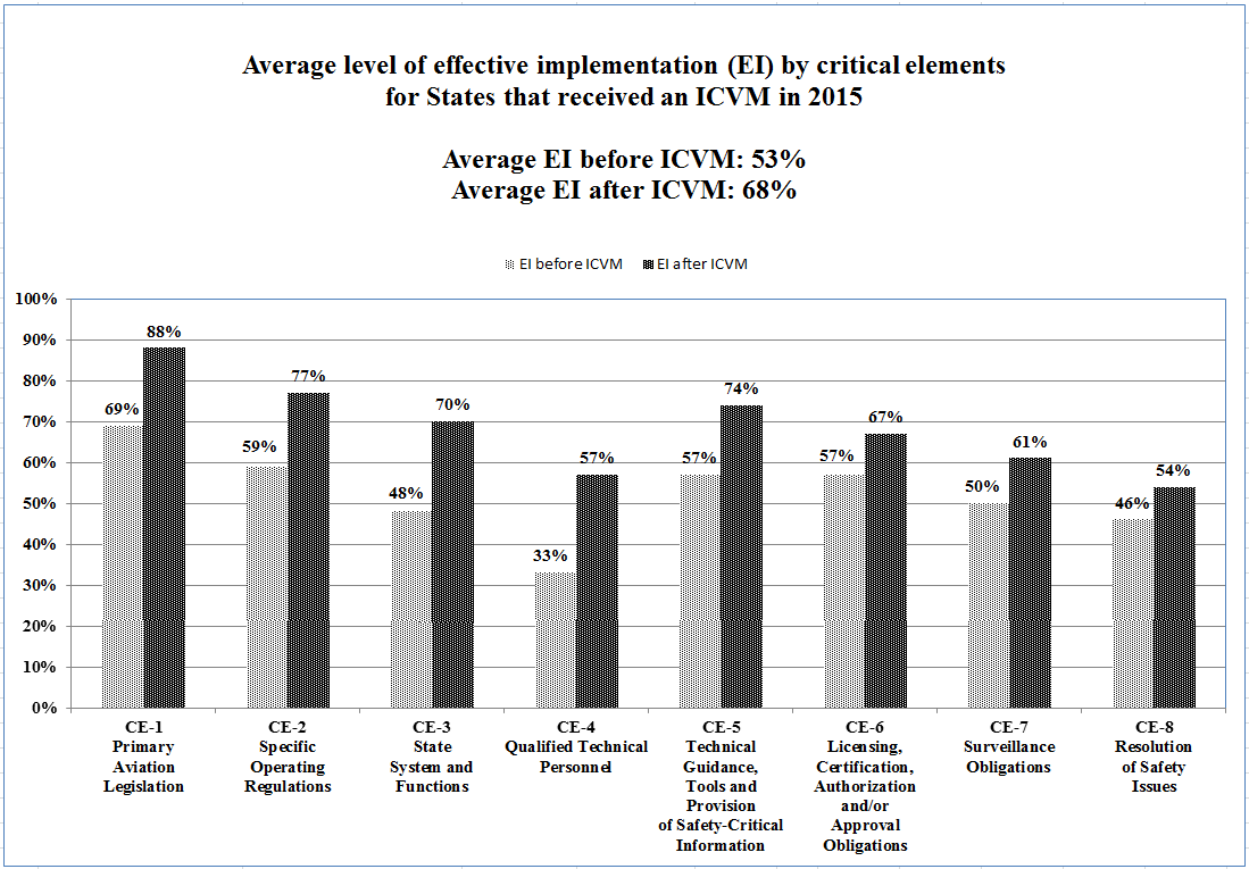

Figure B-2. Average level of effective implementation (EI) for ICVMs in 2015

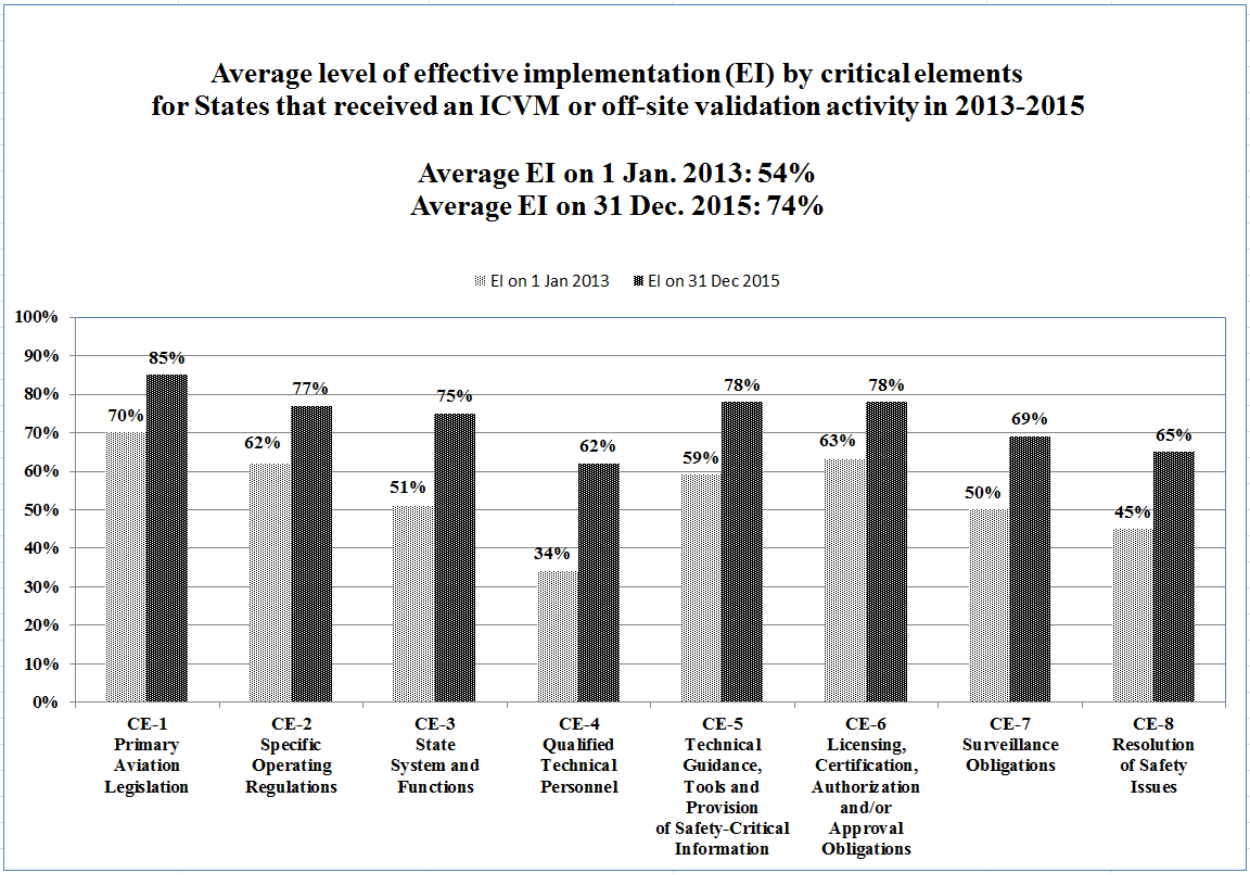

Figure B-3. Improvement in effective implementation (EI) for States that received an ICVM or off-site validation activity from 1 January 2013 (launch of CMA) to 31 December 2015

APPENDIX C

The following is the outline of the contents of the *Report on USOAP CMA Results* that will be published at the end of March 2016.

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Chapter 1. Introduction
- 1.1 Summary
- 1.2 Background

Chapter 2. The ICAO USOAP CMA
- 2.1 Critical elements
- 2.2 Audit areas
- 2.3 USOAP CMA protocol questions
- 2.4 Effective implementation
- 2.5 Compliance checklists/EFOD

Chapter 3. USOAP CMA results
- 3.1 Geographic distribution of activities
- 3.2 Global results—States below 60% effective implementation
- 3.3 Global results by critical element
- 3.4 Global results by audit area
- 3.5 Regional results by critical element
- 3.6 Regional results by audit area
- 3.7 Comparison of global results by critical element
- 3.8 Comparison of global results by audit area

Chapter 4. Top issues in audit areas

Chapter 5. Compliance checklists
- 5.1 Progress of States in completion of compliance checklists
- 5.2 Level of compliance to SARPs reported by States
- 5.3 Compliance checklist results for selected Annexes

APPENDIX D

Progress in CAP Implementation and Self-assessments

The graph in figure D-1 below outlines the level of implementation of Corrective Action Plans (CAPs) across ICAO regional office accreditation areas, as reported by States on the CMA Online Framework.

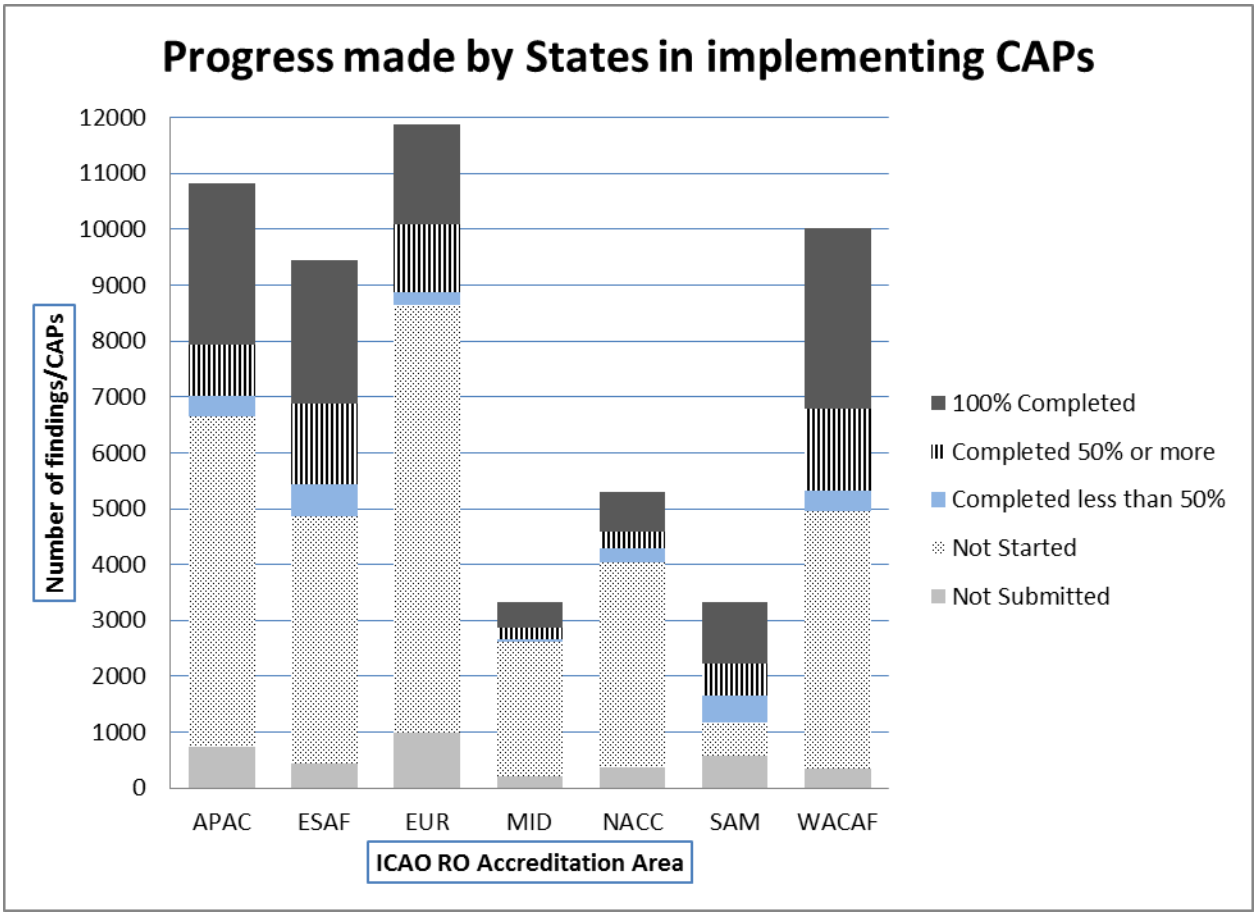


Figure D-1. Progress made by States in implementing corrective action plans (CAPs) by ICAO RO accreditation areas (as reported by States on the CMA Online Framework)

The graph in figure D-2 shows the level of progress made by COSCAP-SEA States in completing the protocol question (PQ) self-assessment on the CMA Online Framework. Currently, Brunei Darussalam and Lao PDR have not started the self-assessment; and other States, with the exception of Hong Kong and Macao SARs China and Thailand, have started their self-assessments but made negligible progress.

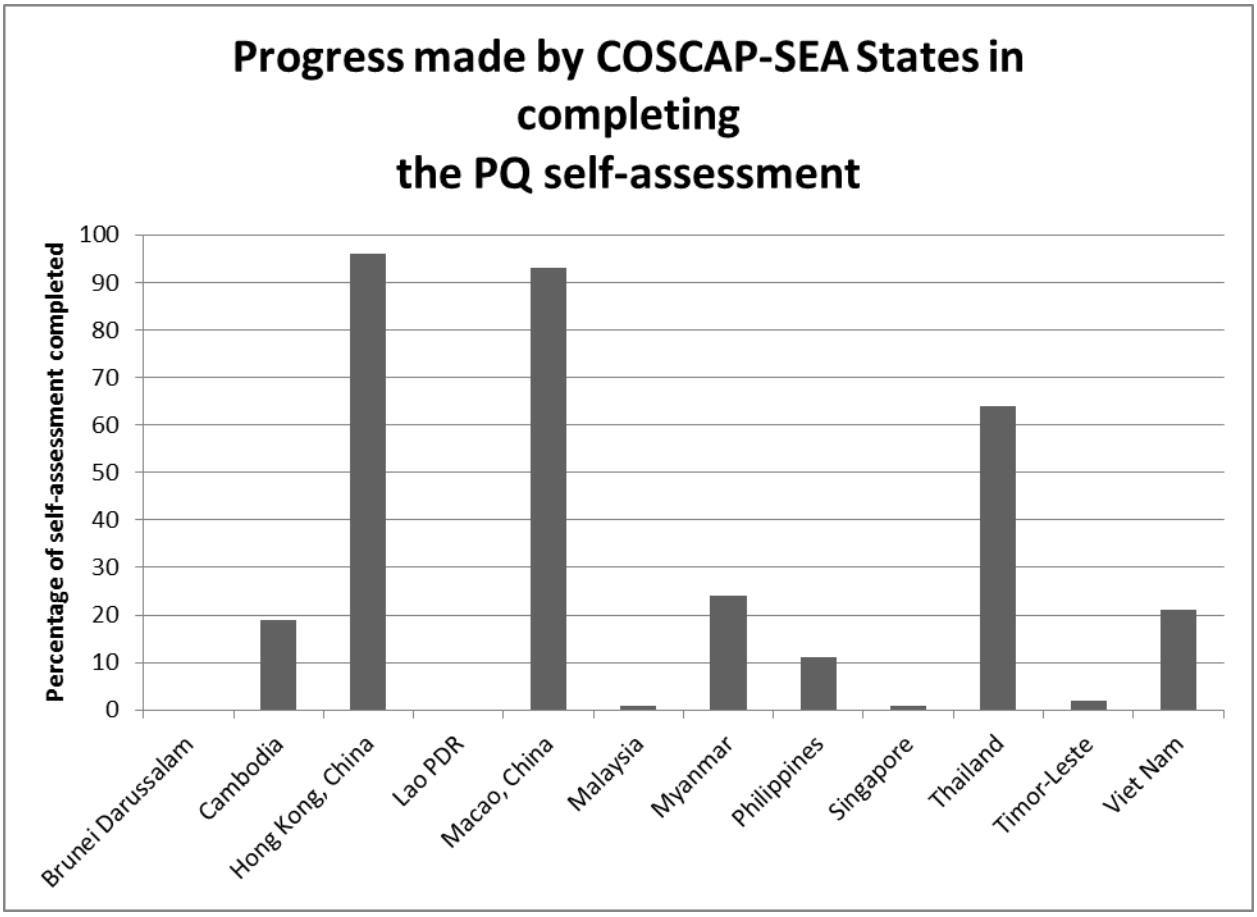


Figure D-2. Progress made by COSCAP-SEA States in completing the PQ self-assessment (as reported by States on the CMA Online Framework)

— END —

Regional Safety Briefing

COSCAP-SEA

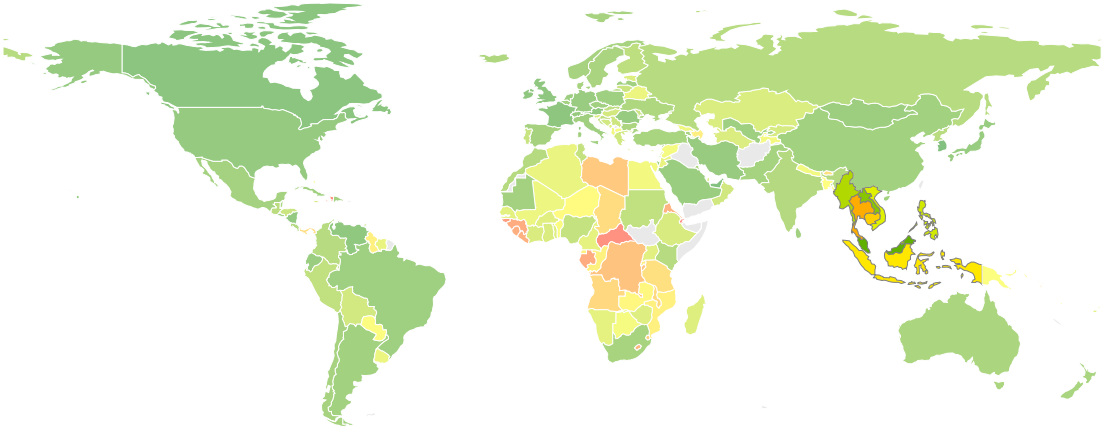
Automatically Generated by ICAO/ANB 2016-02-29

Dashboard

Indicator	Value
State Safety Oversight - Group Average *Average USOAP Overall EI(%)*	**60.54%**
State Safety Oversight - State Levels *Percentage of States with USOAP Overall EI above 60%*	**45.45%**
Significant Safety Concerns (SSCs) *Number of SSCs*	**1**
Accident Rate *Number of accidents per mil. departures over preceding 5 years*	**4.02**
IOSA - Airlines *Number of IOSA certified airlines in the region*	**18**
IOSA - State Levels *Percentage of States with IOSA certified airlines*	**81.82%**
EU Safety List *Number of States with restrictions*	**1**
FAA IASA *Number of States rated as Category 2*	**2**
PBN Implementation - Runways *Percentage of instrument runways with PBN approaches*	**44.17%**
PBN Implementation - State Levels *Percentage of States having PBN approaches on all instrument runways*	**36.36%**

Universal Safety Oversight Audit Programme (USOAP)

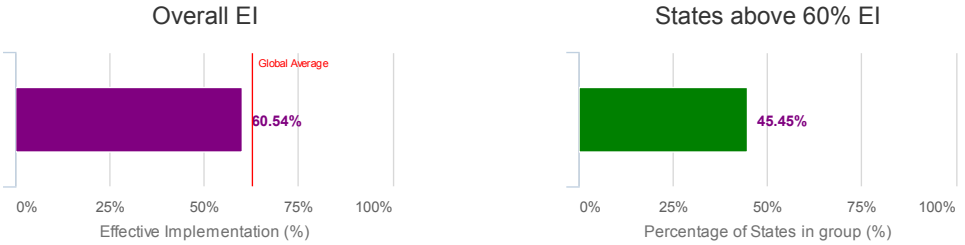
Global USOAP Results

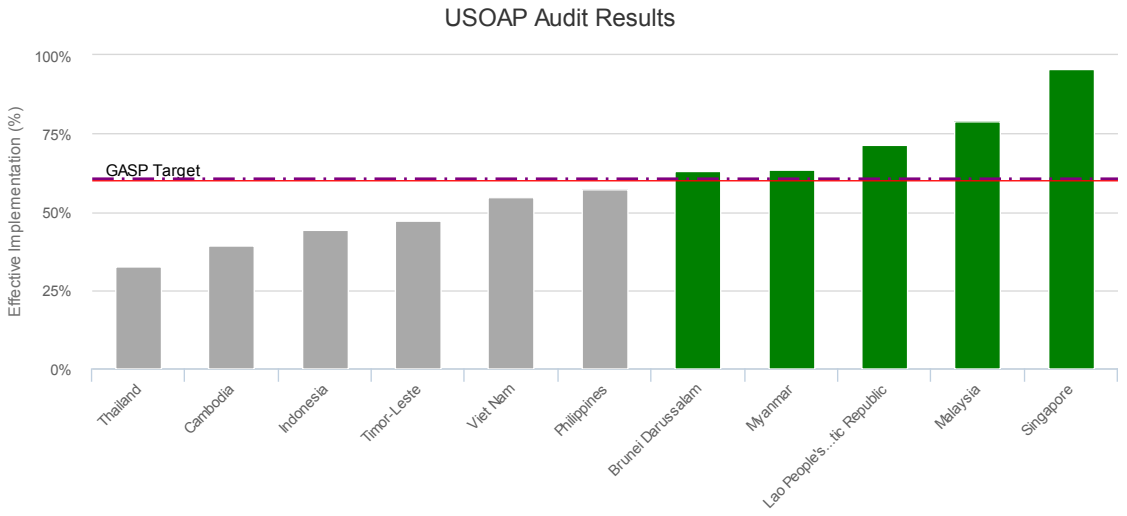


COSCAP-SEA contains 11 States. All States in that region have received a USOAP CMA audit.

The current average USOAP score for States in COSCAP-SEA is 60.54% which is below the world average of 62.94%.

45.45% of the States in COSCAP-SEA have achieved the target of 60% EI, as suggested by the Global Aviation Safety Plan (GASP)

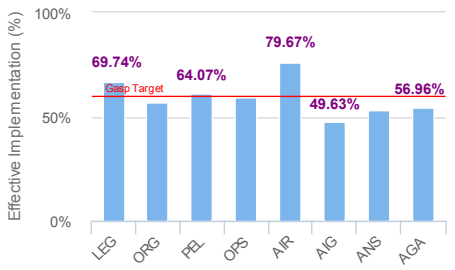




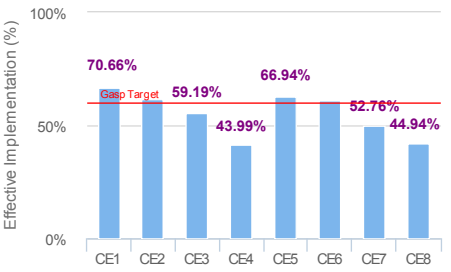
USOAP Results by Area and Critical Element

4 areas and 4 critical elements are above the target of 60% EI.

EI by Area



EI by Critical Element



Significant Safety Concerns (SSCs)

SSCs indicate that a State is not providing sufficient safety oversight to ensure the effective implementation of applicable ICAO Standards. SSCs may be issued in the area of operations, air navigation services, aerodromes, airworthiness or licensing.

COSCAP-SEA has 1 State with 1 SSC.

State	SSCs	SSC Areas				
		Airworthiness	Operations	Licensing	Aerodromes	Air Navigation
Thailand	1		✖			

Safety Partner Programs

The Federal Aviation Administration (FAA) rates States through their International Aviation Safety Audit (IASA) programme. This categorization does not allow air carriers from Thailand to operate to the United States of America.

In COSCAP-SEA, 2 States are rated Category 2: Indonesia, Thailand

The European Commission can decide to ban certain airlines from operating in European airspace, if they are found to be unsafe and/or they are not sufficiently overseen by their authorities.

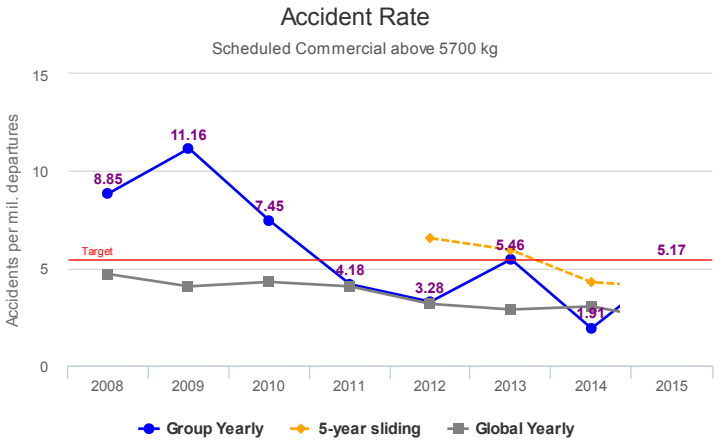
In COSCAP-SEA, 1 State has operational restrictions with regard to European airspace: Indonesia

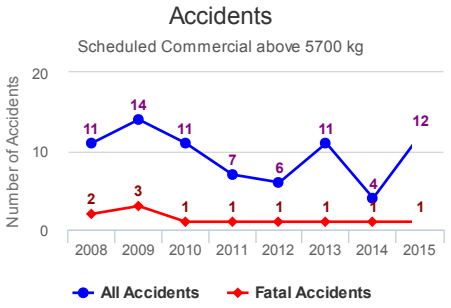
Accident Statistics

COSCAP-SEA had 1 fatal accident on scheduled commercial flights with aircraft over 5.7t in 2014. In total, those accidents caused 54 fatalities.

COSCAP-SEA has an accident rate of **5.17** accidents per million departures in 2014 trending down.

To be in line with the global average and taking into account the traffic volume of COSCAP-SEA, the average accident rate for COSCAP-SEA should be between 2.18 and 5.46. The current average accident rate for COSCAP-SEA is **4.02** which is in line with the global average.



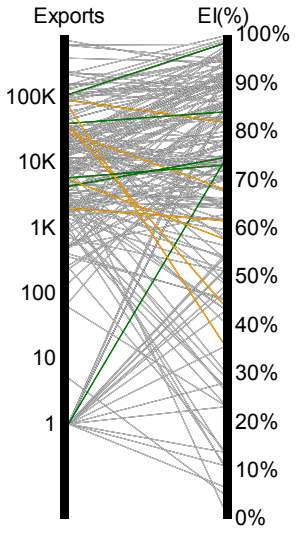


Regional Priorities

The States are prioritized by considering the level of implementation (EI) as well as the related activity at risk in the areas of operations, air navigation and support functions. The profile of each State is benchmarked against all other ICAO Member States. Priority is given to the least performing areas in ascending order.

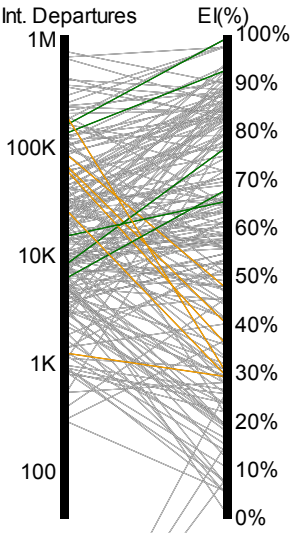
Operations

PEL/OPS/AIR



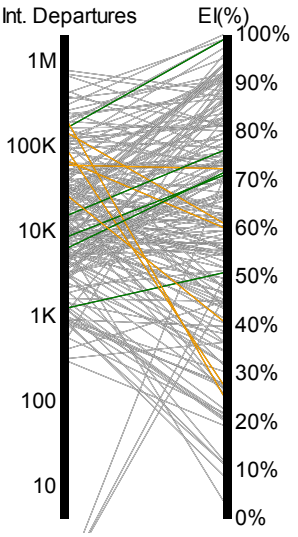
Air Navigation

AGA/ANS



Support Functions

LEG/ORG/AIG



Top-5 States in each Priority area

Thailand *Safety margin: -48.86%*	**Thailand** *Safety margin: -51.31%*	**Thailand** *Safety margin: -56.15%*
Indonesia *Safety margin: -37.02%*	**Philippines** *Safety margin: -34.89%*	**Indonesia** *Safety margin: -47.93%*
Cambodia *Safety margin: -12.26%*	**Cambodia** *Safety margin: -33.17%*	**Cambodia** *Safety margin: -25.71%*
Viet Nam *Safety margin: -11.63%*	**Viet Nam** *Safety margin: -31.64%*	**Malaysia** *Safety margin: -18.44%*
Malaysia *Safety margin: -4.39%*	**Indonesia** *Safety margin: -26.76%*	**Viet Nam** *Safety margin: -13.65%*

International Civil Aviation Organization

ELECTRONIC BULLETIN

For information only

EB 2016/6 19 February 2016

IMPLEMENTATION OF THE ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME — ACTIVITY PLAN

1. The ICAO Universal Safety Oversight Audit Programme (USOAP) Activity Plan has been prepared in line with Assembly Resolution A37-5 directing the evolution of USOAP to a continuous monitoring approach (CMA). The Activity Plan encompasses continuous monitoring approach (CMA) audits, ICAO Coordinated Validation Missions (ICVMs), and seminars/workshops. State audits and ICVMs are selected based on consideration of various factors, including previous results, the level of activities in the State, and progress made by States in resolving identified deficiencies.

2. A State may be scheduled for an ICVM once an analysis of information submitted by the State on the USOAP CMA online framework (OLF) indicates that sufficient progress has been achieved. ICAO will also plan and conduct ICVMs for States that have a Significant Safety Concern (SSC), once sufficient information is received indicating that the SSC has been resolved.

3. In addition, ICAO performs each year a number of off-site activities addressing eligible protocol questions (mostly related to critical elements 1 to 5) when it has determined that sufficient progress has been made in the areas concerned. These off-site activities are not included in the Activity Plan.

4. States interested in receiving an ICVM in 2016 but which are not included in the Activity Plan may ask for a cost-recovery mission by submitting a request to the Director of the Air Navigation Bureau.

5. The USOAP CMA was fully launched at the beginning of 2013 following a two-year transition period. Since 2011, a total of twenty-nine audits, eighty-eight ICVMs and thirty-six Off-site Validation activities have been conducted. Twelve audits and fifteen ICVMs are scheduled for 2016, with additional activities to be conducted as permitted by the resources in ICAO. In particular, a minimum of fifteen Off-site Validation activities will be performed in 2016.

6. USOAP CMA seminars/workshops have also been conducted since 2013, providing ICAO Regional Offices and Member States with valuable information regarding the implementation of the USOAP CMA and the use of the CMA tools, including the USOAP CMA OLF. In 2015, ten such workshops have been conducted (including eight on a cost-recovery basis) and two regional workshops are being planned for 2016.

7. This Activity Plan and biannual updates will be posted on the USOAP CMA OLF http://www.icao.int/usoap.

Enclosure:

Status of USOAP CMA activities in 2015 and activity plan for 2016

Issued under the authority of the Secretary General

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ATTACHMENT to EB 2016/6

ICAO USOAP CMA Activity – status for 2015

State	Type of Activity	Dates	Status
Asia and Pacific (APAC) Region			
Cambodia	Audit	~~30 Nov - 9 Dec 2015~~	postponed to 2016
China	Off-site Validation Activity	Nov 2015	completed
India	Audit	30 Nov - 14 Dec 2015	completed
Lao People's Democratic Republic	ICVM	21 - 27 Apr 2015	completed
Thailand	Audit	19 - 30 Jan 2015	completed
Eastern and Southern African (ESAF) Region			
Botswana	ICVM	9 - 16 Dec 2015	completed
Comoros	ICVM	~~2 - 8 Dec 2015~~	postponed
Ethiopia	Audit	11 - 20 May 2015	completed
Madagascar	Off-site Validation Activity	Dec 2015	completed
Mauritius	ICVM	22 - 29 Jul 2015	completed
Swaziland	ICVM	8 - 14 Apr 2015	completed
European and North Atlantic (EUR/NAT) Region			
Armenia	Audit	15 - 25 Jun 2015	completed
Austria	ICVM	15 - 21 Jul 2015	completed
Azerbaijan	Audit	24 Aug - 2 Sep 2015	completed
Belarus	ICVM	15 - 21 Sep 2015	completed
Finland	Off-site Validation Activity	Jun 2015	completed
France	Off-site Validation Activity		in progress
Germany	Off-site Validation Activity		in progress
Hungary	Off-site Validation Activity		in progress
Ireland	Off-site Validation Activity	Jan 2015	completed
Israel	Off-site Validation Activity	Jul 2015	completed
Italy	Off-site Validation Activity	Sep 2015	completed
Kyrgyzstan	Off-site Validation Activity	Jul 2015	completed
Latvia	Off-site Validation Activity	Sep 2015	completed
	ICVM	3 - 10 Nov 2015	completed
Lithuania	Off-site Validation Activity	May 2015	completed
Morocco	Audit	~~7 - 16 Sep 2015~~	postponed to 2016
Norway	Audit	16 - 20 Nov 2015	completed
Russian Federation	Audit	19 - 30 Oct 2015	completed
San Marino	Audit	29 Jun - 6 Jul 2015	completed
Switzerland	ICVM	19 - 23 Oct 2015	completed
Tajikistan	ICVM	26 - 31 Jan 2015	completed
Middle East (MID) Region			
Iran (Islamic Republic of)	ICVM	~~4 - 10 May 2015~~	postponed
United Arab Emirates	Off-site Validation Activity	Jan 2015	completed

State	Type of Activity	Dates	Status
North American, Central American and Caribbean (NACC) Region			
Bahamas	ICVM	9 - 15 Dec 2015	completed
El Salvador	ICVM	30 Sep - 6 Oct 2015	completed
Guatemala	Audit	16 - 26 Nov 2015	completed
South American (SAM) Region			
Brazil	Off-site Validation Activity	Feb 2015	completed
	ICVM	9 - 13 Nov 2015	completed
Ecuador	ICVM	23 - 30 Sep 2015	completed
Panama	Audit	24 Aug - 3 Sep 2015	completed
Western and Central African (WACAF) Region			
Benin	Off-site Validation Activity	Apr 2015	completed
	Off-site Validation Activity	Sep 2015	completed
Cameroon	Off-site Validation Activity	Oct 2015	completed
Chad	ICVM	25 - 31 Mar 2015	completed
	Off-site Validation Activity	Apr 2015	completed
Congo	Off-site Validation Activity	May 2015	completed
	ICVM	5 - 12 May 2015	completed
Equatorial Guinea	ICVM	1 - 8 Sep 2015	completed
Mali	ICVM	16 - 22 Dec 2015	completed
Niger	Off-site Validation Activity	Feb 2015	completed
	ICVM	8 - 14 Dec 2015	completed
Nigeria	Audit	~~16 - 25 Nov 2015~~	postponed to 2016
Togo	Off-site Validation Activity	Sep 2015	completed

USOAP CMA seminars/workshops – status for 2015

Location	Region	Dates	Status
Vienna, Austria (cost-recovery)	EUR/NAT	26 - 29 Jan 2015	completed
Helsinki, Finland (cost-recovery)	EUR/NAT	3 - 5 Mar 2015	completed
Canberra, Australia (cost-recovery)	APAC	13 - 15 May 2015	completed
Nadi, Fiji (cost-recovery)	APAC	18 - 22 May 2015	completed
Moscow, Russian Federation	EUR/NAT	16 - 18 Jun 2015	completed
Dakar, Senegal	WACAF	1 - 3 Jul 2015	completed
Singapore, Singapore (cost-recovery)	APAC	22 - 24 Jul 2015	completed
Kuwait City, Kuwait (cost-recovery)	MID	11 - 13 Oct 2015	completed
Astana, Kazakhstan (cost-recovery)	EUR/NAT	2 - 4 Nov 2015	completed
Auckland, New Zealand (cost-recovery)	APAC	7 - 10 Dec 2015	completed

ICAO USOAP CMA Activity – status for 2016

State	Type of Activity	Dates	Status
Asia and Pacific (APAC) Region			
Malaysia	Audit	2 - 12 May 2016	
Viet Nam	ICVM	15 - 21 Jun 2016	
Timor-Leste	ICVM	19 - 25 Oct 2016	
Cambodia	Audit	5 - 15 Dec 2016	
New Zealand	Audit	5 - 16 Dec 2016	
Eastern and Southern African (ESAF) Region			
Namibia	Off-site Validation Activity	Jan 2016	completed
Zambia	ICVM	2 - 8 Mar 2016	
United Republic of Tanzania	ICVM	20 - 26 Jul 2016	
South Africa	Audit	~~7 - 17 Nov 2016~~	postponed to 2017
European and North Atlantic (EUR/NAT) Region			
Kyrgyzstan	Audit	25 Jan - 5 Feb 2016	completed
Monaco	ICVM	~~16 - 22 Mar 2016~~	postponed to 2017
Ukraine	Audit	4 - 12 Apr 2016	
Tunisia	Audit	~~18 - 28 Apr 2016~~	postponed to 2017
Morocco	Audit	23 May - 2 Jun 2016	
The former Yugoslav Republic of Macedonia	ICVM	24 - 30 Aug 2016	
Tajikistan	Audit	17 - 27 Oct 2016	
Cyprus	ICVM	2 - 8 Nov 2016	
Israel	Audit	8 - 17 Nov 2016	
Sweden	ICVM	16 - 23 Nov 2016	
Middle East (MID) Region			
Jordan	ICVM	~~9 - 15 Feb 2016~~	postponed
Kuwait	Audit	20 - 31 Mar 2016	
Egypt	ICVM	8 -14 Nov 2016	
North American, Central American and Caribbean (NACC) Region			
Jamaica	ICVM	8 - 14 Jun 2016	
Honduras	Audit	31 Oct - 10 Nov 2016	
South American (SAM) Region			
Uruguay	ICVM	26 Jan - 2 Feb 2016	completed
Guyana	ICVM	~~11 - 17 May 2016~~	postponed
Paraguay	ICVM	29 Jun - 5 Jul 2016	
Bolivia (Plurinational State of)	ICVM	31 Aug - 6 Sep 2016	
Western and Central African (WACAF) Region			
Nigeria	Audit	14 - 25 Mar 2016	
Guinea-Bissau	ICVM	~~6 - 12 Apr 2016~~	postponed
Togo	ICVM	18 - 24 May 2016	
Liberia	ICVM	26 Oct - 1 Nov 2016	
Senegal	Audit	21 Nov - 1 Dec 2016	
Guinea	ICVM	23 - 29 Nov 2016	

USOAP CMA seminars/workshops – status for 2016

Location	Region	Dates
Bangkok, Thailand	APAC	2 - 4 Feb 2016
Nairobi, Kenya	ESAF	29 - 31 Mar 2016

— END —

COSCAP South East Asia Cooperative Development of Operational Safety & Continuing Airworthiness Programme

17th COSCAP-SEA Steering Committee Meeting
DP10: The review of Global Aviation Safety Plan (GASP)

Discussion Paper

REVIEW OF THE GLOBAL AVIATION SAFETY PLAN (GASP)

(Presented by the ICAO Secretariat)

SUMMARY

The Global Aviation Safety Plan (GASP, Doc 10004), while providing the strategic direction for the technical work programme of ICAO in the field of safety, serves as planning and implementation guidance for the Regional Aviation Safety Groups (RASGs), States and industry.

In line with the established GASP update process, the GASP is reviewed by ICAO every three years. The proposed 2017-2019 edition of the GASP reflects changes made pursuant to the recommendations of the 38th Session of the Assembly (A38), as well as those of the Second High-level Safety Conference 2015 (HLSC 2015). It also contains updates made to improve the document while maintaining its stability for ongoing implementation.

This paper presents for information the latest version of the draft proposed 2017-2019 Edition revised Global Aviation Safety Plan (GASP). The proposed 2017-2019 edition of the GASP is envisaged to be approved by the Council during its 208th Session in May/June 2016 and presented for endorsement at A39 (27 September – 7 October 2016).

Action by the Meeting is in paragraph 4.

REFERENCES

Doc 10022, Assembly Resolutions in Force (as of 4 October 2013) - Assembly Resolution A38-2	Global Aviation Safety Roadmap (GASR)
Doc 10004, Global Aviation Safety Plan	HLSC/15-IP/1
	State letter AN 6/37-15/76

1. INTRODUCTION

1.1 ICAO strives to achieve the goal of a safe and orderly development of civil aviation through cooperation among Member States and other stakeholders. In order to realize this goal, the Organization has established Strategic Objectives, including objectives for safety and for capacity and efficiency.

1.2 In Resolution A38-2, the Assembly recognized the importance of global frameworks to support the Strategic Objectives of ICAO, as well the importance of effective implementation of regional and national plans and initiatives based on the global frameworks. The Assembly also recognized that further progress in improving the global safety, capacity and efficiency of civil aviation is best achieved through a cooperative, collaborative and coordinated approach in partnership with all stakeholders under the leadership of ICAO.

1.3 In addition, the Assembly resolved that global plans shall provide the frameworks in which regional, sub-regional and national implementation plans will be developed and implemented, thus ensuring harmonization and coordination of efforts aimed at improving international civil aviation safety, capacity and efficiency. Finally, the Assembly resolved that ICAO shall implement and keep current the Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan (GANP) to support the relevant Strategic Objectives of the Organization and called upon States and invited other stakeholders to cooperate in the development and implementation of regional, sub-regional and national plans based on the frameworks of the GASP and the GANP.

1.4 The Air Navigation Commission on 6 October 2015, reviewed the proposed 2017-2019 edition of the Global Aviation Safety Plan (GASP, Doc 10004) and authorized its transmission to Member States and appropriate international organizations for comments. A copy of the proposed new edition of Doc 10004 is available in the Attachment to State Letter Ref.: AN 6/37-15/76 dated 23 November 2015 (Appendix).

2. DISCUSSION

2.1 Safety fundamentally contributes to the sustainable growth of a sound and economically viable international civil aviation system. In Resolution A38-2: ICAO Global planning for safety and air navigation, the Assembly recognized the importance of global frameworks to support the Safety Strategic Objectives of ICAO. In addition, the Assembly resolved that the Global Aviation Safety Plan (GASP), along with the Global Air Navigation Plan (GANP), shall provide the frameworks in which regional, sub-regional and national implementation plans will be developed and implemented, thus ensuring harmonization and coordination of efforts aimed at improving international civil aviation safety, capacity and efficiency. To accomplish this, the GASP has been restructured and revised, and will be supported by the global aviation safety roadmap, which serves as an action plan to assist the aviation community in achieving the objectives presented in the GASP, through a structured, common frame of reference for all relevant stakeholders.

2.2 Consistent with Assembly Resolution A38-2, ICAO keeps current the GASP and the GANP to support the relevant Strategic Objectives of the Organization. The Assembly urged ICAO to complete the development of a global aviation safety roadmap in support of the GASP. The Second High-level Safety Conference 2015 (HLSC 2015) agreed on the need for ICAO, while updating the 2014-2016 edition of the GASP, to develop a global aviation safety roadmap in support of the GASP, in collaboration with States, regional aviation safety groups (RASGs), aviation safety partners and industry.

2.3 The 2017-2019 Edition of the GASP maintains the framework, objectives and safety performance enablers of the 2014-2016 Edition. Since the GASP is at an early stage of implementation, stakeholders are still becoming familiar with the previous edition of the Plan and working towards its implementation. The intent behind maintaining stability in the GASP framework, and its main components is to allow stakeholders to seamlessly continue with implementation. The timelines associated with the near- and mid-term objectives (2017 and 2022, respectively) are maintained. The timeline associated with the long-term objective shifted from 2027 to 2028 to align with the dates of the sessions of the Assembly. The content of the GASP has been enhanced to

facilitate implementation. The revision also aims at strengthening the link between the GASP and the GANP.

2.4 Most of the changes are editorial in nature and aim to improve the logical flow of the document (for example, to explain high-level concepts first and then examine specifics). They also present the layout of the document in accordance with the standard guidelines for official, numbered ICAO publications (with numbered paragraphs and sections), making the document user-friendly.

2.5 A significant change in the 2017-2019 Edition of the GASP is the development of a new global aviation safety roadmap, incorporated in an appendix. The roadmap's goal is to ensure that safety initiatives deliver the intended benefits associated with the GASP objectives through enhanced coordination, thus reducing inconsistencies and duplication of efforts. It was developed through a collaborative effort with subject matter experts from States, industry, as well as regional and international organizations.

2.6 A new appendix was also incorporated to provide guidance regarding safety indicators and level of activity indicators. These indicators were presented at the HLSC 2015 as part of a Secretariat Information Paper. This addition aims at providing a first step towards the development and implementation of harmonized global indicators, which can be adapted at the regional, sub-regional and national levels, and supports the achievement of the GASP objectives related to State Safety Programmes.

3. CONCLUSION

3.1 The GASP offers a long-term vision that will assist ICAO, RASGs, States and industry in developing a harmonized safety strategy. The inclusion of the global aviation safety roadmap, in the GASP, provides a structured, common frame of reference for all relevant stakeholders to ensure that safety initiatives deliver the intended benefits associated with the GASP objectives.

3.2 The GASP is reviewed and updated prior to each session of the Assembly. ICAO reviews the GASP every three years through an established and transparent process (see Appendix C of the 2017-2019 Edition of the GASP). The Air Navigation Commission (ANC) will review the GASP as part of its work programme and consult States on proposed amendments. The ANC will then report to the Council and provide inputs. After approval by the Council, amendments to the GASP will presented to the Assembly for endorsement by Member States.

4. ACTION BY THE MEETING

4.1 The Meeting is invited to:

a) encourage States to endorse the 2017-2019 Edition of the Global Aviation Safety Plan (GASP, Doc 10004) during the Assembly, as the strategic direction for global safety; and

b) request States, RASGs and industry to establish priorities and targets consistent with the GASP objectives as well as the operational safety needs of each region.

— END —

International Civil Aviation Organization | Organisation de l'aviation civile internationale | Organización de Aviación Civil Internacional | Международная организация гражданской авиации | منظمة الطيران المدني الدولي | 国际民用航空组织

Tel.: +1 514-954-8219 ext. 6116

Ref.: AN 6/37-15/76

23 November 2015

Subject: Proposed 2017-2019 edition of the *Global Aviation Safety Plan* (GASP, Doc 10004)

Action required: Comments to reach Montréal by 23 February 2016

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission, at the fifth meeting of its 200th Session held on 6 October 2015, reviewed the proposed 2017-2019 edition of the *Global Aviation Safety Plan* (GASP, Doc 10004) and authorized its transmission to Member States and appropriate international organizations for comments. A copy of the proposed new edition of Doc 10004 is available in Attachment A.

2. In line with the established GASP update process, the GASP is reviewed by ICAO every three years. The proposed 2017-2019 edition of the GASP reflects changes made pursuant to the recommendations of the 38th Session of the Assembly (A38), as well as those of the Second High-level Safety Conference 2015 (HLSC 2015). It also contains updates made to improve the document while maintaining its stability for ongoing implementation.

3. A significant change in the 2017-2019 edition of the GASP is the development of a new global aviation safety roadmap which is currently underway. Appendix A of the enclosed version of the GASP contains a high-level explanation of the roadmap and a sample template of a safety initiative. In 2015, ICAO established the Global Aviation Safety Plan Roadmap Group (GASPRG) to assist the Organization in updating the GASP, particularly in relation to the development of the roadmap supporting the implementation of the GASP, as recommended by the HLSC 2015. The GASPRG is composed of subject matter experts from States, industry, as well as regional and international organizations. The GASPRG is currently developing the roadmap and will finalize its work in March 2016. The roadmap will then be included in the 2017-2019 GASP and distributed via a working paper for the 39th Session of the Assembly (A39).

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4. I invite you to comment on the proposed 2017-2019 edition of the GASP. To help focus your attention on issues of particular interest, you are invited to complete the questionnaire in Attachment B. In examining the proposed 2017-2019 GASP, you should not feel obliged to comment on editorial aspects as such matters will be addressed by the Air Navigation Commission during its final review of the draft document.

5. May I request that any comments you wish to make on the proposed 2017-2019 edition of the GASP be dispatched to reach me not later than **23 February 2016**. Comments received after the due date may not be considered by the Air Navigation Commission and the Council. In this connection, should you anticipate a delay in the receipt of your reply, please let me know in advance of the due date. For your information, the proposed 2017-2019 edition of the GASP is envisaged to be approved by the Council during its 208th Session and presented for endorsement at A39 (27 September – 7 October 2016).

6. The subsequent work of the Air Navigation Commission and the Council would be greatly facilitated by specific statements on the acceptability or otherwise of the proposed 2017-2019 GASP. Please note that, for the review of your comments by the Air Navigation Commission and the Council, replies are normally classified as "agreement with or without comments", "disagreement with or without comments" or "no indication of position". If in your reply the expressions "no objections" or "no comments" are used, they will be taken to mean "agreement without comment" and "no indication of position", respectively. In order to facilitate proper classification of your response, a form has been included in Attachment C which may be completed and returned together with your comments, if any, on the document in Attachment A.

7. In addition, you are welcome to make suggestions for the future 2020-2022 edition of the GASP. Comments from States and international organizations will provide valuable input for the evolution of this document.

Accept, Sir/Madam, the assurances of my highest consideration.

Fang Liu
Secretary General

Enclosures:

A — Proposed 2017-2019 edition of the *Global Aviation Safety Plan* (GASP, Doc 10004)
B — Questionnaire relating to the proposed 2017-2019 edition of the Global Aviation Safety Plan
C — Response form

ATTACHMENT A to State letter AN 6/37-15/76

PROPOSED 2017-2019 EDITION OF THE *GLOBAL AVIATION SAFETY PLAN*
(GASP, DOC 10004)

ICAO

Doc 10004

Global Aviation Safety Plan

2017-2019 Edition

DRAFT

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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FOREWORD

This document sets forth a strategy, referred to as the Global Aviation Safety Plan or “GASP”, which supports the prioritization and continuous improvement of aviation safety. The GASP follows an approach and philosophy similar to that of the *Global Air Navigation Plan* (Doc 9750), also referred to as the GANP. Both documents promote coordination and collaboration among international, regional and national initiatives aimed at delivering a harmonized, safe and efficient international civil aviation system.

ICAO introduced the first version of the GASP in 1997 by formalizing a series of conclusions and recommendations developed during an informal meeting between the Air Navigation Commission (ANC) of ICAO and industry. The GASP was used to guide and prioritize the technical work programme of the Organization and updated regularly to ensure its continuing relevance.

In May 2005, another meeting with industry identified a need to broaden the GASP to provide a common frame of reference for all stakeholders. Such a plan would allow a more proactive approach to aviation safety and help coordinate and guide safety policies and initiatives worldwide to reduce the accident risk for commercial aviation. It was then decided that industry representatives, from the Industry Safety Strategy Group (ISSG), would work together with ICAO to develop a common approach for aviation safety. The global aviation safety roadmap that was developed by the ISSG provided the foundation upon which the GASP 2007 edition was based. In March 2006, ICAO held the Directors General of Civil Aviation Conference on a global strategy for aviation safety (DGCA/06), which welcomed the development of the global aviation safety roadmap and recommended that ICAO develop an integrated approach to safety initiatives, based on the global aviation safety roadmap, which would provide a global framework for the coordination of safety policies and initiatives.

In 2013, during its 38th Session, the Assembly urged ICAO to complete the development of a global aviation safety roadmap in support of the GASP. The second High-level Safety Conference held in 2015 (HLSC 2015) agreed on the need for ICAO to develop a global aviation safety roadmap in support of the GASP, in collaboration with States, regional aviation safety groups (RASGs), aviation safety partners, and industry.

In 2015, ICAO established the Global Aviation Safety Plan Roadmap Group (GASPRG) to undertake necessary actions to assist the Organization in updating the GASP, particularly in relation to the development of a new global aviation safety roadmap supporting the implementation of the GASP. The GASPRG was composed of subject matter experts from States, industry, as well as regional and international organizations. It included participation by all the organizations previously involved in the ISSG.

The GASP has significantly changed since its introduction in 1997, and has evolved through continuous consultation and review. The 2014-2016 edition was published in 2013 and included GASP objectives for States to achieve through the implementation of an effective safety oversight system, a State safety programme (SSP) and safety capabilities necessary to support future aviation systems. This 2017-2019 edition updates the GASP to include a global aviation safety roadmap developed to support an integrated approach to implementation.

The input of experts from States, international organizations, regional organizations and industry received through the GASPRG, and from individual experts who have provided support and advice, is gratefully acknowledged.

GLOSSARY

DEFINITIONS

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.

Adequate. The state of fulfilling minimal requirements; satisfactory; acceptable; sufficient.

Audit. A USOAP CMA on-site activity during which ICAO assesses the effective implementation of the critical elements (CEs) of a safety oversight system and conducts a systematic and objective review of a State's safety oversight system to verify the status of a State's compliance with the provisions of the Convention or national regulations and its implementation of ICAO Standards and Recommended Practices (SARPs), procedures and aviation safety best practices. Also see definition of *critical elements (CEs)*.

Audit area. One of eight audit areas pertaining to USOAP, i.e. primary aviation legislation and civil aviation regulations (LEG), civil aviation organization (ORG); personnel licensing and training (PEL); aircraft operations (OPS); airworthiness of aircraft (AIR); aircraft accident and incident investigation (AIG); air navigation services (ANS); and aerodromes and ground aids (AGA).

Critical elements (CEs). The critical elements of a safety oversight system encompass the whole spectrum of civil aviation activities. They are the building blocks upon which an effective safety oversight system is based. The level of effective implementation of the CEs is an indication of a State's capability for safety oversight.

Effective implementation (EI). A measure of the State's safety oversight capability, calculated for each critical element, each audit area or as an overall measure. The EI is expressed as a percentage.

Operator. A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Oversight. The active control of the aviation industry and service providers by the competent regulatory authorities to ensure that the State's international obligations and national requirements are met through the establishment of a system based on the critical elements.

Safety. The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

Safety audit. A USOAP CMA audit that a State requests and pays for (on a cost recovery basis). The State determines the scope and date of a safety audit. Also see definition of *audit*.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Safety performance. A State or a service provider's safety achievement as defined by its safety performance targets and safety performance indicators.

Safety performance indicator. A data-based parameter used for monitoring and assessing safety performance.

Safety performance target. The planned or intended objective for safety performance indicator(s) over a given period.

Safety risk. The predicted probability and severity of the consequences or outcomes of a hazard.

Significant safety concern (SSC). Occurs when the State allows the holder of an authorization or approval to exercise the privileges attached to it, although the minimum requirements established by the State and by the Standards set forth in the Annexes to the Convention are not met, resulting in an immediate safety risk to international civil aviation.

State safety programme (SSP). An integrated set of regulations and activities aimed at improving safety.

ABBREVIATIONS

ACI	Airports Council International
ALoSP	Acceptable level of safety performance
ANC	Air Navigation Commission
APV	approaches with vertical guidance
ASBU	aviation system block upgrade
ASIAP	aviation safety implementation assistance partnership
CAA	civil aviation authority
CANSO	Civil Air Navigation Services Organisation
CAPSCA	collaborative arrangement for the prevention and management of public health events in civil aviation
CE	critical element
CFIT	controlled flight into terrain
CMA	continuous monitoring approach
COSCAP	cooperative development of operational safety and continuing airworthiness programme
EASA	European Aviation Safety Agency
EI	effective implementation
EUROCONTROL	European Organisation for the Safety of Air Navigation
FAA	United States Federal Aviation Administration
FSF	Flight Safety Foundation
GADSS	global aeronautical distress and safety system
GANP	global air navigation plan
GASP	global aviation safety plan
GASPRG	Global Aviation Safety Plan Roadmap Group
HLSC	High-level Safety Conference
IAOPA	International Council of Aircraft Owner and Pilot Associations
IATA	International Air Transport Association
IBAC	International Business Aviation Council
ICCAIA	International Coordinating Council of Aerospace Industries Associations
IFALPA	International Federation of Airline Pilots' Associations
IFATCA	International Federation of Air Traffic Controllers' Associations
I-Kit	implementation kit
IOSA	IATA Operational Safety Audit
IS-BAH	International Standard for Business Aircraft Handling
IS-BAO	International Standard for Business Aircraft Operations
ISAGO	IATA Safety Audit for Ground Operations
iSTARS	integrated safety trend analysis and reporting system
LOC-I	loss of control in flight
MTF	multidisciplinary task force
NCLB	No Country Left Behind

OEM	original equipment manufacturer
PBN	performance-based navigation
PIRG	planning and implementation regional group
RAIO	regional accident and incident investigation organization
RASG	regional aviation safety group
RPAS	remotely piloted aircraft systems
RPASP	Remotely Piloted Aircraft Systems Panel
RSOO	regional safety oversight organization
RST	runway safety team
SAFE	safety fund
SARPs	Standards and Recommended Practices
SARS	Severe Acute Respiratory Syndrome
SCAN	safety collaboration assistance network
SMS	safety management systems
SPI	safety performance indicator
SSC	significant safety concern
SSP	State safety programme
UASSG	Unmanned Aircraft Systems Study Group
UAV	unmanned aerial vehicle
UNOOSA	United Nations Office for Outer Space Affairs
UPRT	upset prevention and recovery training
USOAP	universal safety oversight audit programme
WHO	World Health Organization

Chapter 1

INTRODUCTION

1.1 BACKGROUND

1.1.1 The air transport industry plays a major role in the global economy. With air traffic projected to increase significantly in the future, aviation safety planning at the international, regional and national levels is essential to manage growth in a safe, efficient and environmentally responsible manner.

1.1.2 The GASP sets out a continuous improvement strategy which includes objectives for States to meet through the implementation of effective safety oversight systems, State safety programmes (SSPs) and the development of advanced safety oversight systems, including predictive risk management. The GASP also sets out timelines for the global collective achievement of these near-, mid- and long-term objectives. These timelines are aligned with the established update process for the GASP and the Global Air Navigation Plan (GANP), which are revised on a triennial basis. The GASP is a high level, strategic, planning and implementation policy document developed in conjunction with the *Global Air Navigation Plan* (Doc 9750). Both documents promote coordination of international, regional and national initiatives aimed at delivering a harmonized, safe and efficient international civil aviation system.

1.2 PURPOSE

1.2.1 The overall purpose of the GASP is to guide the harmonized development of regional and State safety planning, supported by regional safety activities coordinated by the regional aviation safety groups (RASGs). The GASP seeks to assist States and regions in their respective safety policies, planning and implementation by:

a) establishing the global safety priorities and GASP objectives;

b) providing a planning framework, timelines and guidance material; and

c) presenting implementation strategies and a global aviation safety roadmap to address the procedures and methods to achieve the GASP objectives and set specific priorities at both State and regional levels.

1.2.2 The GASP objectives are outlined in Chapter 2. The framework, which enables States to make safety improvements through the use of the four safety performance enablers: standardization, resources, collaboration and safety information exchange, is described in Chapter 4. The draft global aviation safety roadmap is found in Appendix A and implementation guidance and assistance available to States are explained in Appendix B.

1.2.3 Through the GASP, ICAO continues to prioritize global action in three areas of aviation safety: improving runway safety; reducing controlled flight into terrain accidents; and reducing loss of control in-flight accidents. Initiatives in these areas, which are described in Chapter 3, contribute to the reduction of the global accident rate.

1.3 SCOPE

1.3.1 In accordance with ICAO Standards and Recommended Practices (SARPs), States must develop their safety oversight capabilities and implement SSPs. The GASP provides a strategy to enhance the implementation of the safety initiatives presented in the global aviation safety roadmap, and to assist States to meet their safety responsibilities.

1.3.2 Although the GASP has a global perspective, States' priorities should be coordinated through the RASGs to address specific safety concerns in line with the global safety priorities. In addition, States and regions should prioritize initiatives associated with the safety performance enablers to first establish effective safety oversight and then address safety risks effectively.

1.3.3 The GASP objectives, the safety performance enablers and the global aviation safety roadmap form the fundamental pillars of the GASP. These may evolve in line with emerging safety issues to be reflected in subsequent editions of the GASP. In line with the global safety priorities, ICAO will develop provisions and provide implementation support.

1.4 PROGRESS MONITORING AND REVIEW

1.4.1 ICAO reviews the GASP every three years through an established process which includes consultation with States and industry (see Appendix C). The progress and effectiveness of States and regions in achieving the objectives and priorities set out in their respective aviation safety plans are measured on an on-going basis. Monitoring and reporting progress enables States and regions to modify their activities based on their performance and to address emerging safety issues. To support States and regions in this endeavour, ICAO publishes annual safety reports which provide an indication of the progress being made (see Chapter 2).

1.4.2 An annual reporting process by planning and implementation regional groups (PIRGs) and RASGs enables the aviation community to identify, manage and monitor safety and air navigation objectives at the international, regional and national levels through their respective work programmes. This process enables ICAO to make high-level policy adjustments to the GASP as well as the GANP, with the approval of the ICAO Council and endorsement by the ICAO Assembly.

1.4.3 The ICAO Air Navigation Commission (ANC) reviews the GASP and GANP as part of its work programme, reporting to the Council one year in advance of each Assembly. After approval by the Council, amendments to the GASP and GANP are submitted for endorsement by ICAO Member States at the following Assembly.

Chapter 2

GLOBAL SAFETY STRATEGY

2.1 ICAO STRATEGIC OBJECTIVE ON SAFETY

2.1.1 ICAO has established five comprehensive strategic objectives, which are revised on a triennial basis. ICAO has a strategic objective dedicated to enhancing global civil aviation safety. This strategic objective is focused primarily on the State's regulatory oversight capabilities. The objective is set in the context of growing passenger and cargo movements and the need to address efficiency and environmental changes. In line with the strategic objective on safety, the GASP outlines the key activities for the triennium. More information on the Strategic Objectives can be found on the ICAO website at www.icao.int/about-icao/Pages/Strategic-Objectives.aspx.

2.1.2 As part of an evaluation on the extent to which ICAO is meeting the needs and expectations of Member States, a survey was conducted in 2015. The purpose of the "*Survey on Needs and Expectations of ICAO Member States*" was to identify ways to improve and inform the future orientations of ICAO, especially those of the ICAO Regional Offices. The survey objectives were to collect the views of directors general of civil aviation on their civil aviation needs and expectations from ICAO and to assess the experience of interacting with ICAO, including with respect to technical assistance provision. Among the questions in the survey, States were asked to rank their priorities. One hundred States participated in the survey, and 70 per cent of the respondents ranked safety as their top strategic priority.

2.2 GASP OBJECTIVES

2.2.1 The GASP objectives call for States to put in place robust and sustainable safety oversight systems and to progressively evolve them into more sophisticated means of managing safety. These objectives align with ICAO's requirements for the implementation of State safety programmes (SSPs) by States and safety management systems (SMS) by service providers.

2.2.2 In order for these objectives to be met, regional aviation safety groups (RASGs) and regional safety oversight organizations (RSOOs) should be involved actively in the coordination and, to the extent possible, harmonization of all activities undertaken to address aviation safety issues at a regional level, including the use of the global aviation safety roadmap by individual States or a group of States.

2.2.3 Figure 2-1 provides an overview of the GASP objectives and their associated timelines. These objectives address a series of steps that States must complete based on the notion that States must first establish an effective safety oversight system prior to implementing an SSP. It is expected that all States will continually progress implementation of Standards and Recommended Practices (SARPs) in order to achieve the GASP objectives and priorities set out in the GASP.

2.2.4 At the 2012 Ministerial Meeting in Africa, a target was set for all African States to attain 60 per cent effective implementation (EI) of the critical elements (CEs) of a State safety oversight system by 2017. This target was adopted by the ICAO Council and endorsed by the ICAO General Assembly as a global measure and formed the basis for the near-term objective included in the 2014-2016 edition of the GASP. It corresponds to a minimum level necessary for a State to perform effective safety oversight and move towards SSP implementation.

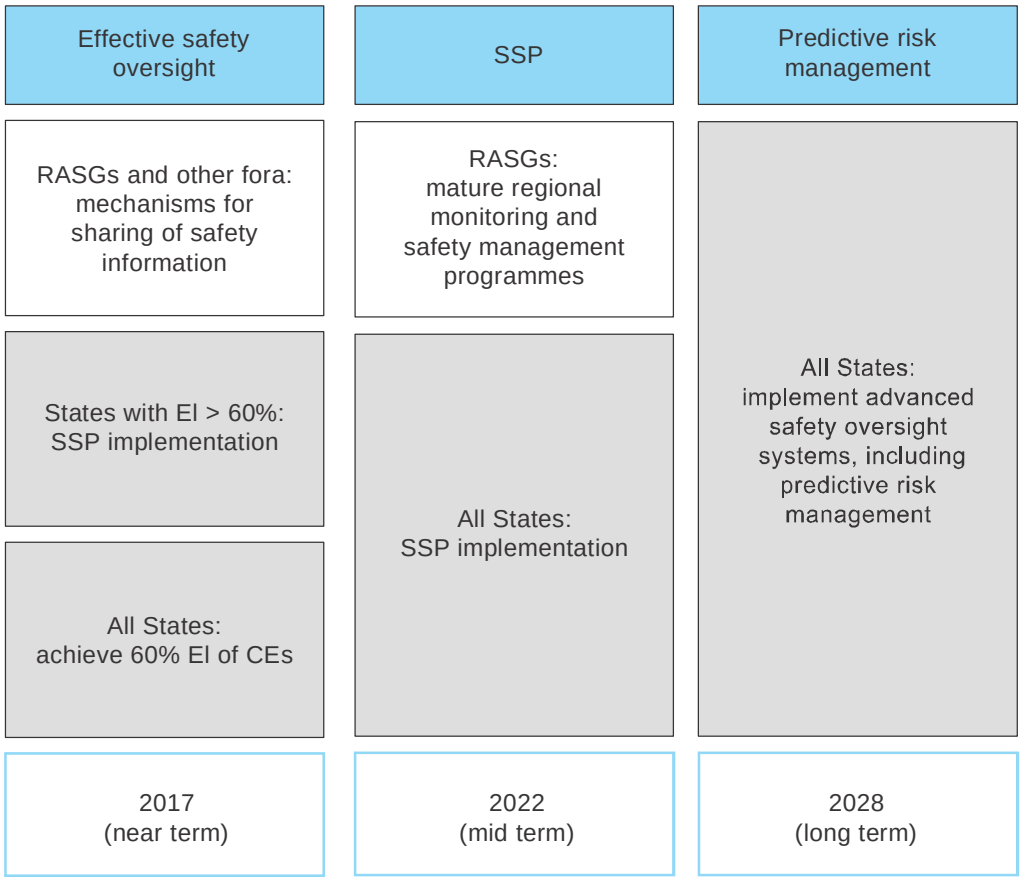

Figure 2-1. GASP objectives and associated timelines

2.2.5 The near-term objectives, to be achieved by 2017, take into account the current level of safety oversight systems implementation at the regional and national levels. Two objectives are intended predominantly for States and the third for all aviation stakeholders. The near-term objectives are as follows:

a) States lacking fundamental safety oversight capabilities are to achieve an EI of at least 60 per cent overall of the eight CEs of a State safety oversight system. States should prioritize the resolution of deficiencies or findings which have the highest impact in terms of safety improvements. The USOAP protocols, used to assess implementation of ICAO provisions, are categorized according to eight CEs (see Figure 4-3). ICAO's analysis indicates that implementation of CE-6, which addresses licensing, certification, authorization and/or approval obligations, is fundamental to the reduction of accident rates. Furthermore, through a root cause analysis, deficiencies in CE-6 can be traced to protocol questions in CE-1 to CE-5, which establish a safety oversight system. Each deficiency in CE-6 should therefore be associated with a specific action plan for a State's improvement efforts. Effective execution of the action plan provides the basis for prioritized compliance.

b) States which have an EI of 60 per cent or greater should implement SSP, which will facilitate addressing risks specific to their aviation systems; and

c) all States and stakeholders are encouraged to put in place mechanisms for the sharing of safety information through their RASGs and other regional or sub-regional fora.

2.2.6 The mid-term objective calls for all States to achieve SSP implementation by 2022. Additionally, RASGs should continue to advance to mature regional monitoring and safety management programmes. As the time and effort required for SSP implementation will vary among States, the near- and mid-term objectives should be coordinated at the regional level through the RASGs.

Note.— The Safety Management Manual *(Doc 9859) contains guidance related to SSP implementation.*

2.2.7 The long-term objective calls for States to build upon safety management practices within the SSP to develop advanced safety oversight systems, including predictive risk management. Safety analysis will be integrated into all aspects of future aviation systems and will be used to model risks prior to the implementation of operational changes.

2.3 THE ROLE OF ICAO IN IMPROVING SAFETY

2.3.1 ICAO strives, in close collaboration with other stakeholders, to further improve aviation's safety performance while maintaining a high level of capacity and efficiency. This is achieved through:

a) the development of global strategies contained in the GASP and the GANP;

b) the development and maintenance of SARPs and Procedures for Air Navigation Services (PANS) applicable to international civil aviation activities and complemented by manuals and circulars which provide guidance material on their implementation;

c) the monitoring of safety trends and indicators. ICAO audits the implementation of the critical elements of a safety oversight system through its universal safety oversight audit programme (USOAP). It has also developed tools to collect, share and analyse operational safety data which allows the identification of existing and emerging risks;

d) the implementation of targeted safety programmes to address safety and infrastructure deficiencies; and

e) an effective response to disruption of the aviation system created by natural disasters, conflicts or other causes.

2.3.2 The timely and accurate reporting of safety information at the international, regional and national levels is critical to verify the achievement of global safety objectives and monitor the implementation of the GASP initiatives. ICAO, the RASGs, and partner organizations publish reports on safety as part of their commitment to monitor the progress of their safety objectives. Combined, these reports provide perspectives that are both global in nature as well as specific to individual areas, such as flight operations. Recognizing that aviation is a complex industry, an analysis of multiple safety indicators is essential to assess safety performance globally. ICAO publishes an annual *Safety Report,* the key components of which include:

a) safety oversight;

b) accident statistics and accident rates; and

c) success stories.

2.3.3 The global accident rate provides an overall indicator of safety performance. The *Safety Report* focuses on trends in those accident categories that have historically accounted for a significant number of occurrences and fatalities. The *Safety Report* is supplemented by the *State of Global Aviation Safety Report,* which is published on a triennial basis, prior to each ICAO Assembly. The *State of Global Aviation Safety Report* includes an updated safety analysis as well as

a comprehensive account of achievements through various activities undertaken by ICAO, States and partner organizations. These reports and additional information can be found on the ICAO website at www.icao.int/safety.

2.3.4 In addition to the *Safety Report*, ICAO has created lists of State safety performance indicators (SPIs). A sample set of SPIs was first shared with the international aviation community during the second High-level Safety Conference held in 2015 (HLSC 2015), through an information paper (IP/01) entitled *Safety data, performance metrics and indicators*. The HLSC 2015 recommended that ICAO improve and harmonize those SPIs, taking into account others that were currently in use. The sample set of SPIs presented at the HLSC 2015 is included in Appendix D. Metrics are provided for each SPI along with the type of information that is collected (reactive, predictive, etc.) and the intended use of the information (e.g. for targeting, monitoring or awareness of the indicator value). The sample set of SPIs can be used by States when establishing baselines to define targets and acceptable levels of safety. ICAO is presently developing global SPIs as a follow-up to the HLSC 2015 recommendation.

2.4 THE ROLE OF STATES IN IMPROVING SAFETY

2.4.1 Addressing significant safety concerns

States having significant safety concerns (SSCs) should address these concerns as a priority and then move on to other areas requiring attention and increasing implementation of ICAO provisions.

2.4.2 Establishment of effective safety oversight

2.4.2.1 States lacking effective safety oversight capabilities should achieve an EI rate of CEs of 60 per cent by 2017. States having an EI of less than 60 per cent should increase implementation in all relevant areas. Partnerships can serve to promote increased compliance with SARPs by States. Through collaborative efforts, the level for compliance can increase, particularly in those regions where States face shortages of human, financial or technical resources. Collaboration may involve the establishment of organizations that provide safety solutions in regions experiencing resource constraints. Effective safety oversight requires investment in human and technical resources to achieve this global safety objective and to ensure that safety initiatives yield the intended benefits. In some cases, States may rely on assistance provided by ICAO and other organizations. In other cases, additional investment or assistance by other States in programmes such as the USOAP continuous monitoring approach (CMA), and other safety assessment initiatives, may be required. As part of effective safety oversight, safety information exchange initiatives may serve to facilitate a process, through agreements, that can enable the sharing and constructive use of sensitive information to improve safety.

2.4.2.2 There are instances when a State may elect to transfer certain oversight functions which are normally the responsibility of the State of Registry in the case of lease, charter or interchange of aircraft. In such cases, the State may consider the transfer of its oversight functions to another State in accordance with Article 83 *bis* of the Convention on International Civil Aviation. The primary purpose of the transfer of certain functions under an Article 83 *bis* agreement is to enhance safety oversight capabilities by delegating responsibility for oversight to the State of the Operator, recognizing that this State may be in a better position to carry out these functions. However, before agreeing to transfer any functions, the State of Registry should determine that the State of the Operator is fully capable of carrying out the functions to be transferred in accordance with the Convention and with SARPs.

2.4.3 Implementation of State safety programmes

2.4.3.1 States should build upon fundamental safety oversight systems to implement SSPs. Included in the SSP is the requirement for implementation of SMS by service providers. Standardization of safety initiatives, in the GASP,

associated with an SSP, requires the implementation of a risk-based approach that achieves an acceptable level of safety performance. In this context, the role of the State evolves to include the establishment and achievement of safety performance targets as well as effective oversight of its service providers' SMS.

2.4.3.2 The transition to an SSP requires increased collaboration across operational domains to identify hazards and manage risks. The analysis of various forms of safety data is needed to develop effective mitigation strategies specific to each State or region. This requires ICAO, States, and international organizations to work closely together on safety risk management. In addition, collaborative efforts between key stakeholders, including service providers and regulatory authorities, are essential to the achievement of safety performance targets established through a State's SSP or service providers' SMS. Through partnerships with such key stakeholders at national and regional levels, safety data should be analysed to support maintenance of performance indicators related to the risks and the major components of the aviation system. Key stakeholders should reach agreements to identify appropriate indicators, determine common classification schemes and establish analysis methodologies that facilitate the sharing of safety information.

2.4.3.3 Implementation of SSPs and SMS may involve regulatory, policy, and organizational changes that require additional resources, personnel retention, or different skill sets, depending on the degree to which each of the SSP and SMS elements have already been implemented. Additional resources may also be needed to support the collection, analysis and management of information required to develop and maintain a risk-based decision-making process. In addition, technical capabilities should be developed to collect and analyse data, identify safety trends and disseminate results to relevant stakeholders. An SSP may require investments in the technical systems that enable analytical processes, as well as knowledgeable and skilled professionals required to support the programme.

2.4.4 Implementation of predictive risk management

In the long term, States should build upon safety management practices within the SSP to develop advanced safety oversight systems, including predictive risk management. Safety analysis will be integrated into all aspects of future aviation systems and are used to predict risks prior to implementation of operational changes. This objective is intended to sustain collaborative decision-making in an environment characterized by increased automation and the integration of advanced capabilities on the ground and in the air, as outlined in the GANP. The establishment of State safety management functions are needed to manage safety in the highly automated air traffic management concepts of the future. The evolution to this dynamic and integrated environment will require the continuous exchange of information on a real-time basis. As a result, coordination of safety management activities between States as well as across all operational domains will be essential for implementation of the aviation system block upgrades (ASBUs) presented in the GANP. The integration of remotely piloted aircraft into non-segregated airspace will be a reality in the aviation system of the future and safety considerations, such as detect and avoid technology, will need to be taken into account. Since human performance plays a key role in the successful implementation of any new concept, this also needs to be taken into account during the consideration of future aviation systems. The safety performance enablers to be included in the long-term objective will focus on maintaining or enhancing safety while new capabilities and procedures are implemented. Training and regulatory approval processes will be required to ensure a safe and efficient transition to the future aviation system.

2.5 THE ROLE OF REGIONS IN IMPROVING SAFETY

2.5.1 Regional aviation safety groups

2.5.1.1 The RASGs support the implementation of the GASP and address global aviation safety matters from a regional perspective. The RASGs are composed of Member States and observers from RSOOs, cooperative development of operational safety and continuing airworthiness programmes (COSCAPs), original equipment manufacturers (OEMs), international organizations, operators and service providers, among others.

2.5.1.2 As an integral part of the GASP, RASGs, together with RSOOs, harmonize all activities undertaken to address regional safety issues. The RASGs build upon the achievements of existing regional and sub-regional safety organizations and facilitate the exchange of best practices, cooperation and collaboration using a top-down approach, which complements the bottom-up approach of planning by industry, States and sub-regions. The RASGs' activities support the GASP objectives whilst ensuring regional safety priorities are addressed. RASGs track regional safety indicators, coordinate regional initiatives, and provide practical assistance to States in their respective regions.

2.5.1.3 RASGs serve as the focal point to coordinate all regional efforts and programmes aimed at mitigating safety risks. They eliminate duplication of effort through the establishment of cooperative regional safety programmes. This coordinated approach significantly reduces both financial and human resource burdens on States while delivering measurable safety improvements.

2.5.1.4 The HLSC 2015 noted that there is not yet active participation in the RASGs by the majority of States. It called for States to increase their participation in these important fora. Participation in the RASGs provides States with the opportunity to share best practices and to take part in collaborative safety improvement activities thereby improving implementation of effective risk mitigation.

2.5.2 Regional safety oversight organizations

The RSOOs play an important role by supporting the establishment and operation of safety oversight systems, analysing safety information at the regional level, and reviewing action plans developed within the region. A number of States face difficulties resolving safety deficiencies due to a lack of resources. ICAO has taken the initiative to address this issue by facilitating the establishment of RSOOs through which groups of States can collaborate and share resources to improve their safety oversight capabilities. There are a growing number of RSOOs, several of which are already well established, while some are expected to become fully operational over the next few years.

Note.— Guidance related to the establishment and management of an RSOO is provided in the Safety Oversight Manual *(Doc 9734, Part B).*

2.5.3 Regional accident and incident investigation organizations

Regional accident and incident investigation organizations (RAIOs) facilitate implementation of accident and incident investigation systems by allowing States to share the necessary financial and human resources, enabling them to fulfil their investigation obligations. Some groups of States have already established RAIOs and other initiatives are underway. The principal objectives of an RAIO are to:

a) provide for the establishment of an adequately funded, professionally trained, and independent regional aircraft accident and incident investigation organization;

b) ensure that all aircraft accidents and incidents are investigated in compliance with the provisions of Annex 13 — *Aircraft Accident and Incident Investigation*;

c) enhance cooperation, while eliminating duplication of effort; and

d) enhance information sharing.

Note.— Guidance related to the establishment and management of an RAIO is provided in the Manual on Regional Accident and Incident Investigation Organization *(Doc 9946).*

2.6 THE ROLE OF INDUSTRY IN IMPROVING SAFETY

2.6.1 Industry should progress in SMS implementation and work in a complementary manner with ICAO, the regions and individual States on safety information exchange, safety monitoring and auditing programmes. To support SMS implementation, international organizations should work with their members to help them develop their safety performance indicators (SPIs). In order to ensure congruence between SSP and SMS indicators, States need to actively engage service providers in the development of SMS SPIs.

Note.— The Safety Management Manual *(Doc 9859) contains guidance related to service providers' safety performance indicators.*

2.7 GLOBAL AVIATION SAFETY ROADMAP

2.7.1 During its 38th Session, the Assembly urged ICAO to complete the development of a global aviation safety roadmap in support of the GASP (A38-2, Appendix A, 6.). The HLSC 2015 agreed that in the next edition of the GASP there would be a need for ICAO to develop a global aviation safety roadmap in collaboration with States, RASGs, aviation safety partners and industry.

2.7.2 In 2015, ICAO established the Global Aviation Safety Plan Roadmap Group (GASPRG) to assist with the updating of the GASP, particularly in relation to development of a global aviation safety roadmap to support the implementation of the GASP. The GASPRG was composed of subject matter experts from States, international organizations, regional organizations and industry.

2.7.3 The GASPRG developed a proposal for a global aviation safety roadmap based on Appendix 2 of the 2014-2016 edition of the GASP: *Best Practices* (including the safety initiatives) and an existing *Global Aviation Safety Roadmap (GASR)* document.

2.7.4 During the global aviation safety roadmap development process, the GASPRG took into account three aviation safety maturity levels of States:

a) States lacking a basic safety oversight system;

b) States lacking or in the process of implementing an SSP (and service providers' SMS); and

c) States that have an SSP effectively implemented.

2.7.5 The resulting global aviation safety roadmap has been developed to provide an action plan to assist the entire aviation community in achieving the objectives presented in the GASP. It provides a structured, common frame of reference for all relevant stakeholders. The aim of the global aviation safety roadmap is to ensure that safety initiatives deliver the intended benefits associated with the objectives in a coordinated manner, thus reducing inconsistencies and duplication of effort. The draft global aviation safety roadmap is presented in Appendix A.

Chapter 3

FOCUS AREAS TO IMPROVE SAFETY

3.1 GLOBAL SAFETY PRIOTITIES

3.1.1 As mentioned in Chapter 2, the universal safety oversight audit programme (USOAP) audits have identified that States' inability to effectively oversee aviation operations remains a global safety concern. This GASP provides a detailed strategy to achieve improvements. In addition to the GASP objectives, ICAO has identified high-risk accident categories. These categories were initially determined based on an analysis of accident data, for scheduled commercial air transport operations, covering the 2006–2011 time period. Feedback from the regional aviation safety groups (RASGs) indicates that these priorities still applied during the development of the 2017-2019 edition of the GASP.

3.1.2 Runway safety events were identified as one of the main high-risk accident categories. Runway safety-related events include, but are not limited to: abnormal runway contact, bird strikes, ground collisions, events related to damage from ground handling operations, runway excursions, runway incursions, loss of control on the ground, collision with obstacle(s), undershoots and overshoots.

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

3.1.4 While much progress has been made, these three high-risk accident categories continue to be global safety priorities. Figure 3-1 presents a statistical analysis of the three categories of high-risk accidents, from 2010 to 2014. For each of the three categories, the figure shows what percentage of the total accidents each category represents. It also depicts how each category contributed to the total number of fatal accidents and fatalities worldwide for the given timeframe. The data analysis indicated the following:

a) the three high-risk accident categories account for 60.57 per cent of all fatalities worldwide;

b) over half of the accidents worldwide involved runway safety events;

c) CFIT and LOC-I accidents accounted for less than 6 per cent of all accidents but accounted for over half of all the fatalities worldwide;

3.1.5 Analysis by ICAO region indicated the following, for the same timeframe:

a) runway safety was the main accident category for all the regions;

b) in Asia and Pacific regions (APAC), the three categories accounted for 87.91 per cent of fatalities;

c) in Eastern and Southern Africa (ESAF), 80.95 per cent of all accidents involved runway safety events, over a third of which were fatal. No CFIT or LOC-I accidents were recorded in the region during the timeframe;

d) in European and North Atlantic (EUR NAT), the three categories accounted for 26.81 per cent of fatalities; runway safety events accounted for 57.62 per cent of all accidents in the region;

e) in Middle East (MID), the three categories accounted for 87.22 per cent of all fatalities;

f) in North American, Central American and Caribbean (NACC), the three categories accounted for 100 per cent of all fatalities;

g) in South America (SAM), runway safety events and LOC-I accidents accounted for 55.42 per cent of all fatalities. No fatal CFIT accidents were recorded in the region during the timeframe; and

h) in Western and Central Africa (WACAF), CFIT and LOC-I accidents accounted for almost half (49.19 per cent) of all fatalities. No fatal runway safety related accidents were recorded in the region during the timeframe; however, runway safety events accounted for 39.13 per cent of all accidents in the region.

3.1.6 The data from 2010-2014 is consistent with the analysis conducted in 2006–2011, citing the three existing categories as high-risk accidents that should be prioritized for action by all relevant stakeholders. Based on the analysis presented in 3.1.5, some regions may focus predominantly on one or other of the three categories, based on risk at the regional level. These safety priorities should be addressed at the international, regional and national levels. Initiatives in these areas contribute to the reduction of the global accident rate.

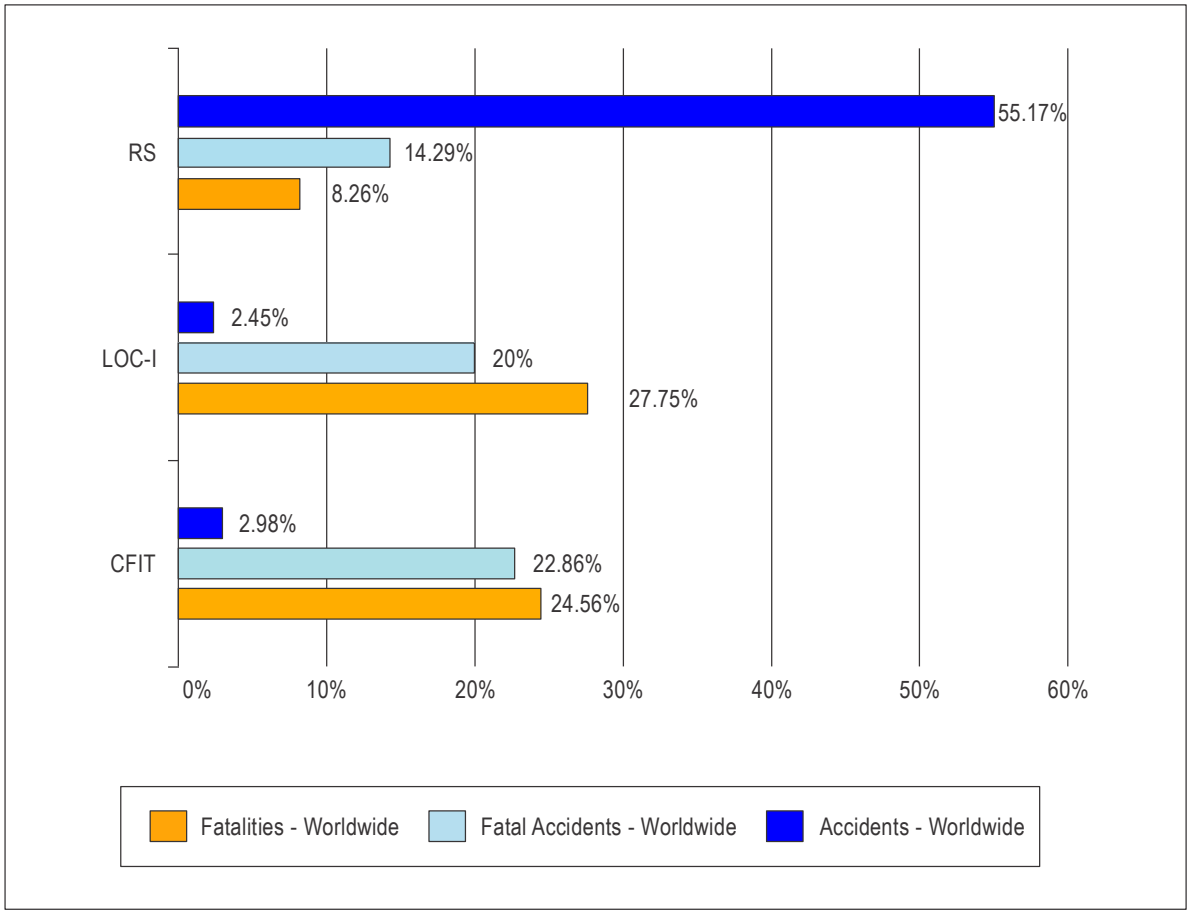

Figure 3-1. High-risk accident categories worldwide (2010–2014)

3.1.7 In their meeting reports, RASG-AFI, RASG-APAC, RASG-MID and RASG-PA (Pan American) cite runway safety events, LOC-I and CFIT as safety priorities in their respective regions. The RASG-PA also includes a fourth

priority, addressing mid-air collisions. RASG-EUR sets outs detailed priority safety targets, which include the reduction of the accident rate in commercial air transport. Further information on the RASGs and their safety priorities and initiatives can be found on the ICAO website at www.icao.int/safety/Implementation/Lists/RASGSPIRGS/AllItems.aspx.

3.1.8 Improving runway safety

3.1.8.1 ICAO is coordinating a global effort to improve runway safety. The ICAO runway safety programme involves substantial collaboration with partner organizations including: Airports Council International (ACI); the Civil Air Navigation Services Organisation (CANSO); the European Aviation Safety Agency (EASA); European Organisation for the Safety of Air Navigation (EUROCONTROL); the United States Federal Aviation Administration (FAA); the Flight Safety Foundation (FSF); the International Air Transport Association (IATA); the International Business Aviation Council (IBAC); the International Coordinating Council of Aerospace Industries Associations (ICCAIA); the International Council of Aircraft Owner and Pilot Associations (IAOPA); the International Federation of Airline Pilots' Associations (IFALPA); and the International Federation of Air Traffic Controllers' Associations (IFATCA).

3.1.8.2 The runway safety programme supports the establishment of multidisciplinary runway safety teams (RSTs) which require collaboration among regulatory authorities, stakeholders in the areas of air traffic management and aerodromes, aircraft operators, and design and manufacturing organizations. The programme incorporates innovative approaches developed by aviation safety experts to continuously reduce risks encountered in the take-off and landing phases as well as during movement on the surface. The ICAO *Runway Safety* Implementation Kit (I-Kit) includes tools such as the ICAO *Runway Safety Team Handbook*.

3.1.8.3 The runway safety programme recommends that:

a) RASGs analyse regional runway safety data and develop related safety enhancement initiatives and detailed implementation plans;

b) airports implement RSTs and safety management systems (SMS), and make use of the *Runway Safety* I-Kit including the *Runway Safety Team Handbook*; and

c) airports may request ICAO runway safety go-team visits, which are voluntary multi-disciplinary assistance visits to airports, performed by ad-hoc groups of experts, aimed at providing assistance to improve runway safety.

3.1.8.4 Regional implementation is being progressed through RASGs and coordinated by the ICAO regional offices with the participation of all partner organizations, and aligned with the GASP and regional priorities and targets. Global guidance and support are provided by ICAO Headquarters in coordination with its partners. Additional information can be found on the ICAO website at www.icao.int/safety/runwaysafety.

3.1.9 Controlled flight into terrain

ICAO has introduced amendments to Standards and Recommended Practices (SARPs), and guidance material, aimed at reducing the risk of CFIT accidents. The RASGs have developed an awareness campaign which includes information that operators can use to develop standard operating procedures and enhance flight crew training programmes in this regard. This includes information on the use of instrument approaches with vertical guidance, the use of the continuous descent final approach technique when flying approach procedures with lateral guidance only, and recurrent training of escape manoeuvres based on ground proximity warning systems with forward-looking terrain avoidance functions. Additional information can be found on the ICAO website at www.icao.int/RASGPA/Pages/asrt.aspx.

3.1.10 Loss of control in flight

3.1.10.1 SARPs, introduced in Annex 1 — *Personnel Licensing,* on upset prevention and recovery training (UPRT) became applicable in November 2014. Extensive guidance to support these provisions is presented in the *Manual on Aeroplane Upset Prevention and Recovery Training* (Doc 10011). States must now focus on implementing these SARPs.

3.1.10.2 Following ICAO's LOC-I Symposium in May 2014, Airbus, Boeing, Bombardier, CAE, EASA, Embraer, IATA and IFALPA agreed to work with ICAO to address LOC-I. Since then, these organizations have jointly developed content for workshops on LOC-I prevention and implementation of UPRT. States should take part in these workshops and initiate or continue activities at the national and regional levels aimed at reducing the risk of LOC-I accidents. Additional information can be found on the ICAO website at www.icao.int/safety/LOCI.

3.2 EMERGING PRIORITIES

3.2.1 In addition to the global safety priorities, ICAO is working with stakeholders to address emerging priorities such as global flight tracking, remotely piloted aircraft systems (RPAS) and space transportation. Some of these may be addressed in the short-term while others further addressed in the longer-term.

3.2.2 Global flight tracking

3.2.2.1 The disappearance of Malaysia Airlines flight MH370 on 8 March 2014, en-route from Kuala Lumpur to Beijing, triggered an extensive search that is on-going. Previously, a two-year search was required to recover the flight data and cockpit voice recorders of Air France flight 477 which was lost in the Atlantic Ocean en-route from Brazil to France. Shortly after the loss of Malaysia Airlines flight MH370, the Multidisciplinary Meeting regarding Global Tracking was convened at ICAO Headquarters with the primary objective of reaching a common agreement on the first, key steps in making global flight tracking a priority. The meeting recommended that a draft concept of operations on aircraft tracking be developed. Subsequently, an ad-hoc working group developed the draft concept of operations on the global aeronautical distress and safety system (GADSS).

3.2.2.2 The GADSS concept of operations describes the actions which may be taken in the short-, medium- and long-term to address the global tracking of flights. The second High-level Safety Conference held in 2015 (HLSC 2015) supported the implementation of the GADSS concept of operations and called for a normal aircraft tracking implementation initiative, to be led by ICAO, which would make use of the existing technology.

Note.— The final version of the 2017-2019 edition of the GASP will reflect the impending ICAO Council decision on normal flight tracking provisions.

3.2.3 Remotely piloted aircraft systems

3.2.3.1 ICAO first became involved with the issue of unmanned aerial vehicles (UAVs) over a decade ago when the Air Navigation Commission (ANC) requested the Secretary General to consult with selected States and international organizations with respect to civil UAV activities, procedures and operating authorizations. In 2007, ICAO established an Unmanned Aircraft Systems Study Group (UASSG), tasked with development of a regulatory framework for the safe integration of unmanned aircraft systems in non-segregated airspace. Following an initial period of research and analysis, the UASSG recommended a narrowing of ICAO's focus from all unmanned aircraft to only remotely piloted aircraft (RPA). In 2014, the UASSG transitioned into the Remotely Piloted Aircraft Systems Panel (RPASP).

3.2.3.2 The RPASP currently coordinates and develops SARPs, procedures and guidance material for RPAS to facilitate a safe, secure, and efficient integration of RPA. The UASSG/RPASP has produced guidance material including the *Manual on Remotely Piloted Aircraft Systems* (Doc 10019) which was published in 2015. Doc 10019 provides information relevant to the introduction of RPAS into non-segregated airspace and at aerodromes, including discussions of airworthiness, operations, licensing, air traffic management, command and control, detect and avoid, safety management and security issues. Its intended worldwide audience is civil aviation authorities, RPAS operators, communications service providers, manufacturers, air navigation service providers, aerodrome operators and other airspace users and stakeholders.

3.2.3.3 Proposed SARPs are under development and will guide States in setting their respective national regulations regarding RPAS. The current focus of ICAO's work is on SARPs related to airworthiness, operations, operator certification, licensing of pilots, air traffic management, detect and avoid, security and environment. Licensing provisions are expected in 2018 and the remainder from 2020 onward.

3.2.4 Space transportation

Recent developments in the space transportation industry, specifically the potential increasing frequency of suborbital launches, have drawn attention to how this industry's activities might be integrated into non-segregated airspace. In anticipation of the growth of space transportation, ICAO and the United Nations Office for Outer Space Affairs (UNOOSA) established a group of experts, the Space Learning Group, to better understand the industry's future needs and to plan for more routine activity in non-segregated airspace. The Space Learning Group compiled relevant regulatory material from Member States on the subject of space transportation which can be obtained from the ICAO website at www.icao.int/aeroSPACE. ICAO and UNOOSA also conduct regular symposia as a means to raise awareness of this emerging issue and gather best practices.

3.3 HUMAN FACTORS AND HUMAN PERFORMANCE

Human factors and human performance affect all the safety topics discussed in this document. It is important to recognize that addressing human factors will bring safety improvements across all safety-related issues. Effective human performance is fundamental to operational safety in aviation and should not be considered in isolation but rather be integrated into all aspects of aviation including equipment and system design, procedures, training and competency. Human performance should also be addressed in future airspace concepts.

3.4 METHODS TO UPDATE PRIORITIES AND OBJECTIVES

The HLSC 2015 noted that ICAO, in collaboration with States, RASGs, aviation safety partners and the industry, should develop methods to identify future safety objectives and priorities. The next edition of the GASP will reflect these, taking into account operational safety data, while keeping in mind the necessary continuity and stability of the GASP. ICAO will work on methods to update the priorities and objectives presented in the GASP, as part of the 2020-2022 edition of the GASP, in order to ensure they target present and emerging safety concerns.

Chapter 4

FRAMEWORK TO MEET THE GASP OBJECTIVES

4.1 GASP FRAMEWORK

4.1.1 The GASP framework presented in Figure 4-1 shows a phased strategy to improve aviation safety. The columns in the framework show the three objectives, all of which have associated timelines (see Figure 2-1). Each row represents a safety performance enabler that creates a common thematic thread in support of the objectives throughout the GASP. Safety performance enablers are described in section 4.2. As a State's safety oversight system matures, it progresses through the framework by addressing the objectives in a prioritized sequence. However, the process may not be completely linear and sequential. Parallel work may be undertaken in relation to more than one objective.

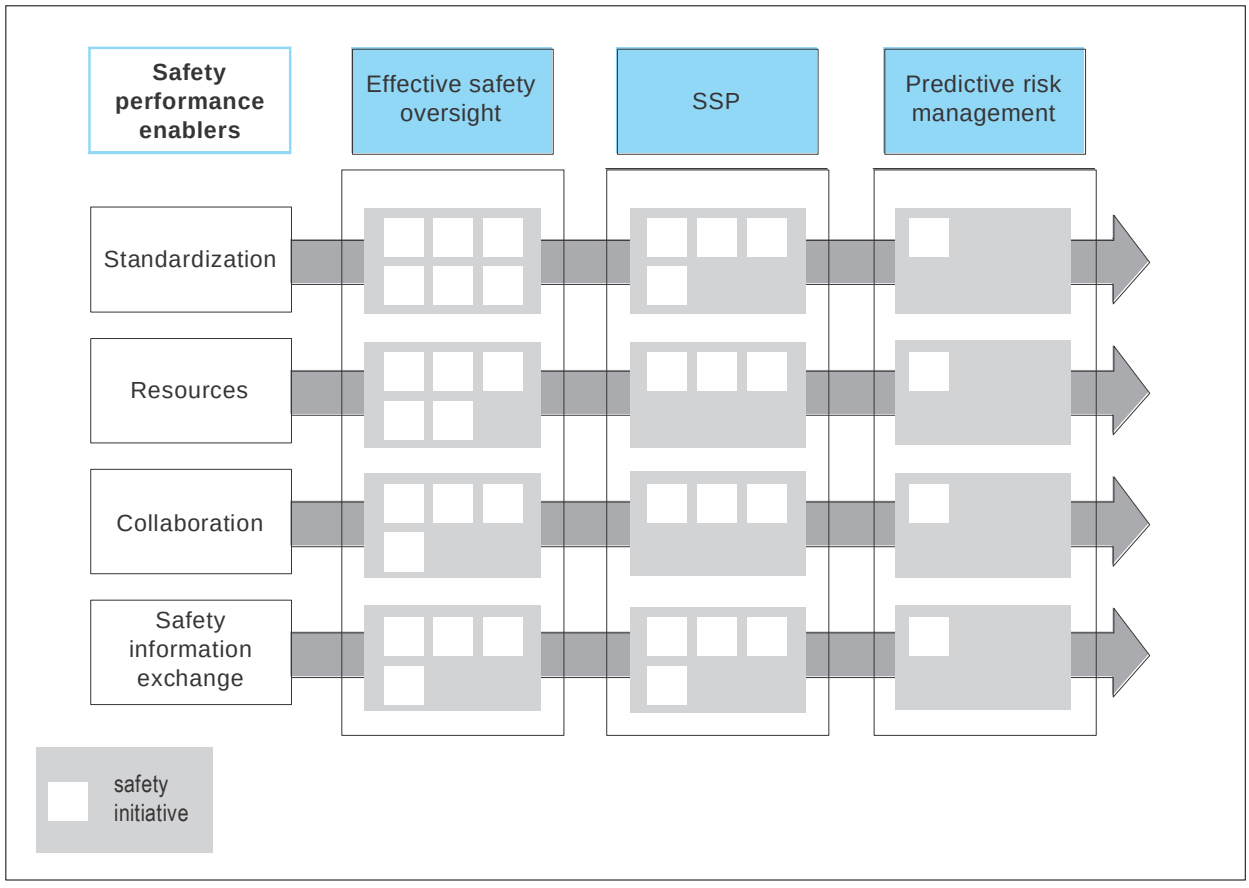

Figure 4-1. GASP framework

4.1.2 There are one or more safety initiatives as presented in the global aviation safety roadmap at the intersection of each safety performance enabler and GASP objective. These initiatives are represented by individual boxes. For example, the consistent implementation of Standards and Recommended Practices (SARPs) would be one of the “standardization” safety initiatives associated with the implementation of effective safety oversight (see Figure 4-2).

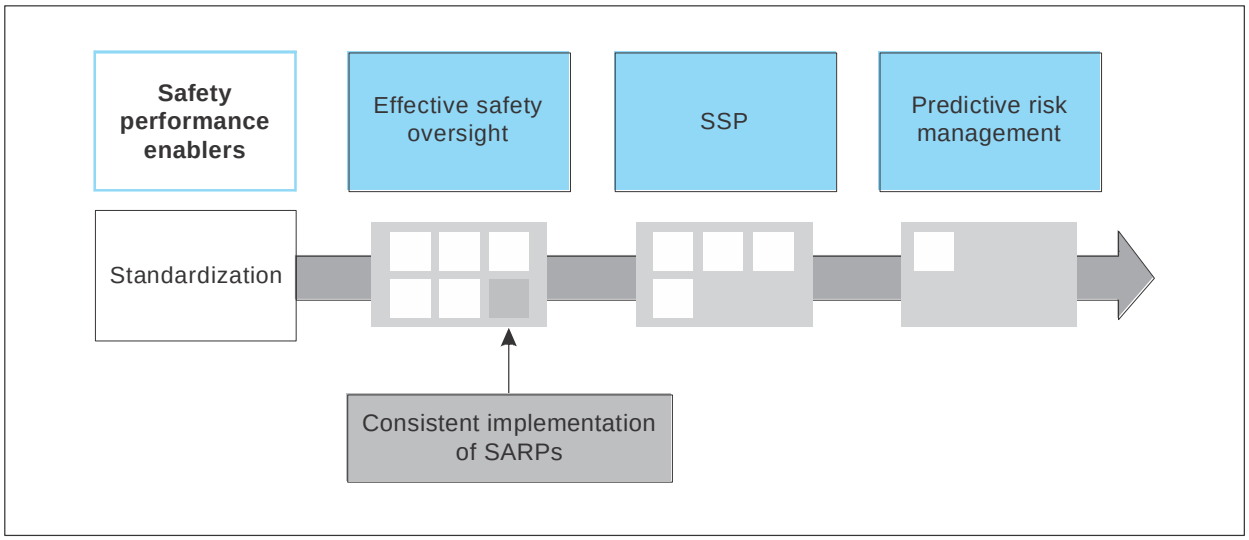

Figure 4-2. Safety initiatives

4.2 SAFETY PERFORMANCE ENABLERS

4.2.1 Safety performance enablers support the achievement of the GASP objectives by providing a common thematic thread throughout the GASP. They were developed to facilitate the planning process and should be viewed as interrelated and interdependent elements of the GASP framework.

4.2.2 The safety performance enablers are common to all the GASP objectives presented in Chapter 2. The global aviation safety roadmap identifies specific safety initiatives for each safety performance enabler and global safety objective combination. To help guide the implementation of these initiatives, guidance material has been developed in support of each safety performance enabler (see Appendix A).

4.2.3 The four safety performance enablers are presented in detail in sections 4.3 to 4.6 of this chapter.

4.3 SAFETY PERFORMANCE ENABLER 1 — STANDARDIZATION

4.3.1 “Standardization” refers to the uniform and consistent implementation of ICAO provisions. The uniform implementation of SARPs is a fundamental tenet of the Convention on International Civil Aviation and forms the foundation of a safe global aviation system. ICAO strives to improve the overall implementation of SARPs through, for example, transparency and disclosure of auditing processes and results. Efforts to attain greater standardization should take into account that States face varying safety issues and have different levels of human, technical and financial resources at their disposal to manage safety. States have an obligation under the Chicago Convention to provide timely notification to ICAO when their national regulations or practices differ from those established by SARPs.

4.3.2 States enhance safety by implementing SARPs through the development, publication and implementation of harmonized regulations at the international, regional and national levels. Similarly, the implementation of industry best practices serves to enhance standardization among service providers.

4.3.3 Monitoring standardization

4.3.3.1 The continuous monitoring of standardization, and the comprehensive analysis and sharing of monitoring results, are essential to verify that GASP objectives are achieved. The universal safety oversight audit programme (USOAP) continuous monitoring approach (CMA) provides updated data on the effective implementation of the eight critical elements (CEs) of a State's safety oversight system. The USOAP CMA monitors whether States develop, maintain and apply national regulations in accordance with SARPs. This includes a State's regulatory and oversight framework, safety processes and systems, as well as technical personnel working together to ensure safe and orderly civil aviation operations and related activities. Through analysis of USOAP data, the CMA provides a tool to monitor the rate of effective implementation (EI) of the CEs of a safety oversight system, which is required for States to meet the GASP objectives.

Note.— Additional guidance on USOAP, CMA and the CEs of a safety oversight system can be found in the Safety Oversight Manual *(Doc 9734), Part A* — The Establishment and Management of a State's Safety Oversight System*, the* Universal Safety Oversight Audit Programme Continuous Monitoring Manual *(Doc 9735), and the* Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335).*

4.3.3.2 Additionally, programmes undertaken by the Airports Council International (ACI), the Civil Air Navigation Services Organisation (CANSO), the International Air Transport Association (IATA) and the International Business Aviation Council (IBAC) provide means to detect systemic deficiencies common to multiple areas of aviation activity and to share best practices. ICAO, States and international organizations should work together to ensure that safety monitoring and auditing activities are, to the extent possible, conducted in a complementary manner. This enables a comprehensive assessment of the aviation system.

4.3.3.3 Current information regarding the global average of EI, as well as a list of all audited States and those with SSCs, can be obtained from the ICAO website at: www.icao.int/safety/pages/usoap-results.aspx.

4.4 SAFETY PERFORMANCE ENABLER 2 — RESOURCES

4.4.1 A common deficiency identified in assessed and audited States is the lack of an adequate safety oversight organization and infrastructure within the civil aviation authority (CAA). In the majority of cases, this has resulted from insufficient resources being provided for the CAA. As a result, such States are unable to fully comply with international and national requirements relating to the safety of civil aviation, including operations and infrastructure. Figure 4-3 illustrates the percentage of EI by CEs, on a worldwide scale, as at 2014.

4.4.2 CE-4, which addresses qualified technical personnel within the State, has the lowest percentage of EI of all the CEs. Audits and other ICAO missions have shown that where an appropriate safety oversight organization has not been established, control and supervision of aircraft operations and associated activities (e.g. aircraft maintenance) are often deficient, creating an opportunity for unsafe practices.

4.4.3 The establishment of minimum knowledge and experience requirements for the technical personnel performing oversight functions, and the provision of appropriate training to maintain and enhance their competence at the desired level are key components of a State's effective safety oversight system.

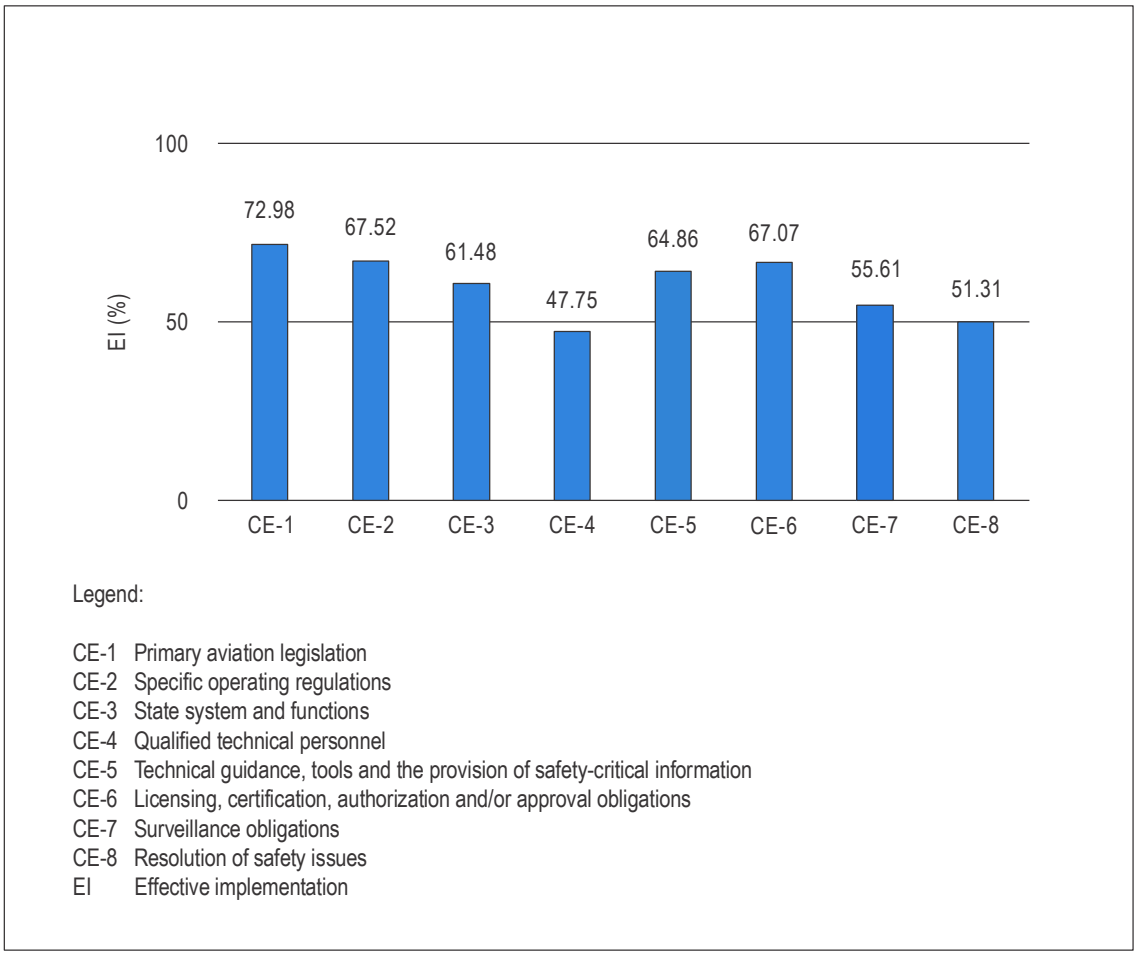

Figure 4-3. EI (%) by CE — worldwide

4.5 SAFETY PERFORMANCE ENABLER 3 — COLLABORATION

4.5.1 Aviation safety requires the participation of all relevant stakeholders. ICAO fosters collaboration among States and other stakeholders to facilitate a coordinated, transparent and proactive approach to safety.

4.5.2 Working with key aviation stakeholders

4.5.2.1 Key aviation stakeholders include, but are not limited to: ICAO, States, international organizations, regional organizations, RASGs, RSOOs, RAIOs, industry representatives, air navigation service providers, operators, aerodromes, manufacturers, and maintenance organizations.

4.5.2.2 The GASP objectives promote expanded and strengthened strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner. This approach promotes consistency and maximizes operational benefits as well as cost-effectiveness resulting from the implementation of safety initiatives.

4.5.2.3 Achieving the GASP objectives is contingent upon continued engagement of the international community to address multidisciplinary issues. Through the global aviation safety roadmap, the GASP outlines the different roles of

States, industry, international and regional organizations. This enables all parties to collaborate to coordinate the implementation of safety policies, safety oversight activities, SSP and SMS.

4.5.2.4 The GASP objectives guide regional and sub-regional priorities, promoting further coordination of all stakeholder efforts. Collaboration at the regional level assists in the development of collective solutions to common safety deficiencies by aligning and coordinating activities conducted by ICAO, States, industry, and international and regional organizations.

4.6 SAFETY PERFORMANCE ENABLER 4 — SAFETY INFORMATION EXCHANGE

4.6.1 The exchange of safety information is a fundamental component of the GASP objectives. The scope of information sharing initiatives is meant to expand progressively as the objectives are met. In order to facilitate the exchange of safety information, key safety performance indicators (SPIs) as well as a methodology for safety performance measurement, including harmonized taxonomies, must be defined. ICAO, States, and industry continue to work together to identify harmonized safety metrics that will enable not only the exchange of information but also safety analysis to identify and mitigate safety risks (see Appendix D).

4.6.2 The protection of safety information is essential to the development, evolution, and progress of safety information sharing and exchange initiatives. In affording protection to safety information, a balance should be established between the need to use such information for the purpose of maintaining or improving aviation safety and the proper administration of justice. SARPs and guidance regarding the protection, sharing and exchange of safety information are contained in Annex 13 — *Aircraft Accident and Incident Investigation*, Annex 19 — *Safety Management*, and in the *Code of Conduct on the Sharing and Use of Safety Information* (see Appendix E).

Appendix A

GLOBAL AVIATION SAFETY ROADMAP

Note.— This appendix will be further developed during the course of finalizing the GASP for endorsement by the 39th Session of the ICAO Assembly to take place in September/October 2016. The text hereunder is included for the purpose of providing an overview of the intent and content of the draft global aviation safety roadmap.

1. PURPOSE OF THE ROADMAP

The global aviation safety roadmap is an action plan developed to assist the aviation community in achieving the objectives presented in the GASP. It provides a structured, common frame of reference for all relevant stakeholders. The roadmap's goal is to ensure that safety initiatives deliver the intended benefits associated with the GASP objectives through enhanced coordination, thus reducing inconsistencies and duplication of efforts.

2. WORKING IN PARTNERSHIP

The roadmap recognizes that all stakeholders of the aviation system need to be involved in the achievement of the GASP objectives (see 4.5.2.1). It provides a common frame of reference for all stakeholders and clearly identifies the roles played by States, regions and industry while emphasizing their complementary nature.

3. REGIONAL SAFETY PLAN DEVELOPMENT

It is expected that States, regions and industry will use the roadmap as the basis to develop their national, regional and industry safety plans, which will help them achieve the objectives set out in the GASP. States, regions and industry should incorporate a process to analyse risks so as to best prioritize their safety initiatives. The objective of the regional safety plan development process is to outline an approach to collaboratively develop an action plan that defines the specific activities that should take place in order to improve safety at the regional or sub-regional level. The same process applies to an individual State or to industry initiatives.

4. STRUCTURE OF THE ROADMAP

The roadmap is structured to address the various stakeholders. There are three streams: States, regions and Industry. For each stream, safety initiatives are grouped according to their overarching safety performance enablers. The roadmap also presents the three milestones, which represent the GASP objectives that should be achieved as a result of implementing the individual initiatives.

5. TEMPLATE FOR THE SAFETY INITIATIVES

The roadmap provides detailed guidance on the implementation of activities that support the GASP objectives by providing a set of safety initiatives for each safety performance enabler found within the GASP framework. Each safety initiative is supported by a set of actions. The roadmap includes specific initiatives for States, regions and industry. The initiatives take into account the State aviation maturity level and the effective implementation of the critical elements (CEs) of a safety oversight system. The safety initiatives described in this appendix are provided to facilitate the planning process and should not be viewed as stand-alone activities but rather, in many cases, as interrelated. Therefore, initiatives are capable of integrating with and supporting each other. All the safety initiatives of the roadmap are presented in a standardized template format (see Table A-1), which covers the following points:

a) *GASP objective*. The relevant objective, as described in the GASP, to which the initiative is associated;

b) *Safety performance enabler.* The relevant safety performance enabler, as described in the GASP, to which the initiative is associated;

c) *Safety initiative.* A description of the specific safety initiative, developed to support the achievement of a GASP objective. Each safety initiative is assigned an alpha-numeric code for ease of reference;

d) *Actions.* A description of specific tasks required for the implementation of a safety initiative. Each action is assigned an alpha-numeric code for ease of reference;

e) *Target.* The entity to which the initiative is addressed. The target is defined based on three overarching categories:

   1) stakeholders (States, regions and industry);

   2) State aviation maturity level, divided into three sub-groupings:

      i) States lacking basic safety oversight system;

      ii) States lacking or in the process of implementing a State safety programme (SSP); and

      iii) States that have SSP effectively implemented; and

   3) effective implementation of the CEs of the State's safety oversight system, expressed in percentage within a certain range; and

f) *Timeframe for completion.* The deadline for completion of an initiative in order to achieve the GASP objective.

Table A-1. Example of completed template for safety initiatives

GASP objective	Effective safety oversight capabilities to achieve an EI rate of 60%.
Safety performance enabler	Resources
Safety initiative	SI 2B. Qualified and competent personnel to support effective safety oversight.
Actions	□ SI 2B /B1. Establish audit processes to evaluate whether human resource plans are adequate to deliver and retain the appropriate number of qualified and competent personnel. The safety oversight entity/investigation authority should be able to attract, recruit and retain sufficiently qualified/experienced technical personnel.
	□ SI 2B /B2. Implement comprehensive training programmes for technical personnel and verify that the type and frequency of training successfully completed (i.e. initial, recurrent, specialized, and OJT) are sufficient for each technical staff to acquire/maintain the required level of knowledge, skills, competence and qualifications corresponding to the assigned duties and responsibilities.
	□ SI 2B /B3. Seek assistance from more experienced States, and other stakeholders, to acquire the necessary knowledge and experience for the required personnel.
	□ SI 2B /B4. Make use of RSOOs, RAIOs or equivalent means, to secure qualified and competent personnel to perform those functions which cannot be performed by the State acting on its own.
Target	Stakeholder(s): □ States
	State aviation maturity level: □ States lacking basic safety oversight system
	EI of CEs (%): □ 0 to 60%
Timeframe for completion	31 December 2017

Appendix B

IMPLEMENTATION GUIDANCE AND ASSISTANCE AVAILABLE TO STATES

1. NO COUNTRY LEFT BEHIND CAMPAIGN

1.1 The ICAO Council determined that ICAO should focus its implementation activities on States with higher accident rates or security threats and review what it could do to better encourage developed States to provide more comprehensive assistance to developing States. The Council also resolved that ICAO should provide more direct assistance to developing States by playing a more active coordination role between developed and developing States, and by helping to generate the political will needed for States to pool resources, participate in regional efforts, earmark voluntary funds and build capacity.

1.2 The NCLB campaign coordinates ICAO's and stakeholder's efforts to assist States in implementing Standards and Recommended Practices (SARPs). The main goal is to ensure that implementation is better harmonized globally so that all States have access to the significant socio-economic benefits of safe and reliable air transport. Under the umbrella of NCLB, "iMPLEMENT" is an initiative that provides States and regions with a prioritized set of implementation-focused recommendations, with the goal of maximizing socio-economic benefits at minimum cost.

1.3 The NCLB campaign also underscores ICAO's endeavours to resolve significant safety concerns (SSCs) brought to light through ICAO's safety oversight audits as well as other safety, security and emissions-related objectives. Further information about the campaign can be found on the ICAO website at www.icao.int/about-icao/NCLB/Pages/default.aspx.

2. IMPLEMENTATION ACTIVITIES

2.1 ICAO has put in place a series of implementation activities which are available to States, including but not limited to the following:

a) the next generation of aviation professionals (NGAP) programme;

b) the integrated safety trend analysis and reporting system (iSTARS);

c) the safety fund (SAFE);

d) coordination and collaboration with aviation safety partners;

e) the collaborative arrangement for the prevention and management of public health events in civil aviation (CAPSCA) programme; and

f) performance-based navigation (PBN) products and services.

2.2 Detailed guidance on each of these programmes can be found in sections 3 to 8.

3. NEXT GENERATION OF AVIATION PROFESSIONALS PROGRAMME

3.1 Over the coming decades, the demand for qualified aviation personnel, such as pilots, aircraft maintenance personnel and air traffic controllers will need to be correlated to aircraft delivery plans. The *Global and Regional 20-year Forecasts* (Doc 9956) compares the number of new personnel to be trained each year with the annual training capacities of the existing training infrastructure with a view to exposing possible shortages or surpluses globally and by region.

3.2 Since 2009, ICAO has been working with key stakeholders, under the next generation of aviation professionals (NGAP) programme, to address the forecasted shortage of aviation professionals. NGAP was launched to ensure that sufficient qualified and competent aviation professionals are available to operate, manage and maintain the future aviation system. This is a critical aspect since a large contingent of the current generation of aviation professionals will soon retire (Doc 9956 refers). Additionally, access to affordable training and education is increasingly problematic and aviation competes with other industries for highly skilled professionals. The lack of standardized competencies in some aviation disciplines, and a lack of awareness by the “next generation” of the types of aviation careers available, further compound the problem.

3.3 ICAO is working to raise awareness on the impending shortages of personnel, forecast both global and regional personnel needs, and assist the global aviation community in attracting, educating, training and retaining the next generation of aviation professionals. In addition, ICAO has developed material for the implementation of competency-based training and assessment approaches specific to aviation professionals. Further information about the NGAP programme can be found on the ICAO website at: www.icao.int/ngap.

4. INTEGRATED SAFETY TREND ANALYSIS AND REPORTING SYSTEM

4.1 The future aviation system will become increasingly automated and far more complex. Safety oversight under these future circumstances will require the use of proactive and predictive risk modelling capabilities. This approach will allow the aviation community to effectively monitor the aviation system in real time and make necessary adjustments to maintain the desired levels of safety.

4.2 ICAO has improved and expanded online access to real-time safety information through the integrated safety trend analysis and reporting system (iSTARS). The current version of iSTARS (iSTARS 2.0, also referred to as SPACE) has evolved from a safety trend analysis and reporting system to include a range of additional aviation data. The goal of this initiative is to support the evolution to proactive safety management. Furthermore, through the iSTARS platform ICAO has made much of its safety data available in a format that allows for automatic query and retrieval of information. States can register for access to iSTARS 2.0 at the ICAO portal at http://portal.icao.int. Information on iSTARS, including how to register, is available on the ICAO website at www.icao.int/safety/istars/pages/intro.aspx.

5. SAFETY FUND

5.1 During the past decade, ICAO’s aviation safety implementation initiatives experienced significant growth. Accordingly, ICAO created the safety fund (SAFE) to allow the collection and use of voluntary contributions from States and other donors.

5.2 Three types of projects can be funded through SAFE:

a) safety-related projects for which States cannot otherwise provide or obtain the necessary financial resources. The principal area of application is to remedy or mitigate safety-related deficiencies identified through the universal safety oversight audit programme (USOAP) as a part of the GASP;

b) projects identified through existing mechanisms used at the global level (e.g. the regional aviation safety groups (RASGs)); and

c) safety-related projects which are currently unfunded.

5.3 In order to mobilize resources for replenishment of SAFE, ICAO developed a strategy to reach out to donor States as well as the private sector for continued contributions to increase assistance to States. Further information about SAFE can be found on the ICAO website at www.icao.int/safety/scan/Pages/Safety-Fund-SAFE.aspx.

6. COORDINATION AND COLLABORATION WITH AVIATION SAFETY PARTNERS

ICAO is leading efforts to foster partnerships with States, international organizations, regional safety organizations, financial institutions and industry, in order to increase the capacity to assist States in managing civil aviation. During the second High-level Safety Conference held in 2015 (HLSC 2015), ICAO established a new arrangement with stakeholders built upon the existing safety collaboration assistance network (SCAN), namely, the aviation safety implementation assistance partnership (ASIAP). The ASIAP serves as a platform for coordinated efforts between partners in terms of information sharing, collaboration on assistance, and supporting a resource mobilization strategy. It is expected that, as a result of close coordination through this mechanism, the assistance capacity towards States strengthens and will contribute to improving aviation safety at the global and regional levels. Further information about SCAN and ASIAP can be found on the ICAO website at www.icao.int/safety/scan.

7. COLLABORATIVE ARRANGEMENT FOR THE PREVENTION AND MANAGEMENT OF PUBLIC HEALTH EVENTS IN CIVIL AVIATION PROGRAMME

7.1 Major public health events can adversely affect safe air travel through transmission of communicable disease to passengers and crews. They may also have a direct effect on the availability of safety-critical personnel in the event of a local outbreak. In addition, the air transport system is the most likely mode by which such disease may be widely disseminated.

7.2 The global collaborative arrangement for the prevention and management of public health events in civil aviation (CAPSCA) programme consists of five regional projects and brings relevant stakeholders together, especially those in the public health and aviation sectors, to synergistically reduce the risk posed by public health emergencies and potential emergencies such as pandemic influenza, the Severe Acute Respiratory Syndrome (SARS) and the Ebola Virus.

7.3 More than half of ICAO's Member States participate in one of the regional projects and are working with ICAO's main partners (Airports Council International (ACI), the International Air Transport Association (IATA) and the World Health Organization (WHO)) to develop and implement harmonized public health preparedness and response plans. These plans include the public health component of the aerodrome emergency plan and associated standard operating procedures. Such work is essential to reduce the future risk to aviation and to the health of human populations since both sectors remain vulnerable to future public health events.

8. PERFORMANCE-BASED NAVIGATION PRODUCTS AND SERVICES

8.1 The HLSC 2015 urged States to implement Assembly Resolution A37-11, which addresses global performance-based navigation (PBN) goals, with emphasis on areas where maximum safety benefits can be gained. The HLSC 2015 called upon States to expedite full implementation of PBN regulatory oversight by making full use of all available resources to improve the effectiveness of their PBN oversight function.

8.2 Many safety benefits can be gained from PBN implementation. For example, the implementation of PBN approaches with vertical guidance (APV) on runways that only have non-precision approaches (no vertical guidance) can help reduce the probability of runway excursions. Additionally, the implementation of PBN approaches with APV on runways that only have non-precision approaches can help reduce the probability of CFIT.

8.3 ICAO has developed various products and services to assist States with PBN implementation. They include assistance in instrument procedure and airspace design training, implementation and planning, PBN business case development and funding coordination. Further information can be found on the ICAO website at www.icao.int/pbn.

Appendix C

GLOBAL AVIATION SAFETY PLAN
GOVERNANCE AND EVOLUTION

1. ROLE OF THE ICAO ASSEMBLY AND THE COUNCIL

The GASP is under the authority of the ICAO Council so as to ensure consistency between the GASP and the ICAO strategic objectives. The Council approves the GASP and its amendments prior to eventual budget-related developments and endorsement by the ICAO Assembly.

2. THE GASP AND SAFETY REGIONAL/NATIONAL PLANNING

Although the GASP presents a global perspective, its content may need to be adjusted to meet regional or national needs. Regional and national safety plans should be developed in alignment with the GASP. As illustrated in Figure C-1, the regional aviation safety groups (RASGs) are integral parts of the planning process. Regional and national safety policies should be adapted based on issues faced by the States concerned.

3. GASP UPDATE PROCESS

3.1 Aviation is an ever-changing and challenging industry. Therefore, the GASP is reviewed and updated prior to each session of the Assembly. ICAO reviews the GASP every three years through an established and transparent process (see Figure C-2). The Air Navigation Commission (ANC) reviews the GASP as part of its work programme and consults States on proposed amendments. The ANC then reports to the Council and provides the following input:

a) review of the global progress made in improving aviation safety performance and in the implementation of State safety programmes/safety management systems, as well as any relevant risk mitigations;

b) recommendations by RASGs;

c) lessons learned by States and industry;

d) possible changes in future aviation needs, regulatory context, and other influencing factors;

e) results of research, development and validation on operational and technological matters which may affect the global aviation safety roadmap; and

f) proposed amendments to the GASP's content.

3.2 After approval by the Council, amendments to the GASP are presented to the following session of Assembly for endorsement by Member States.

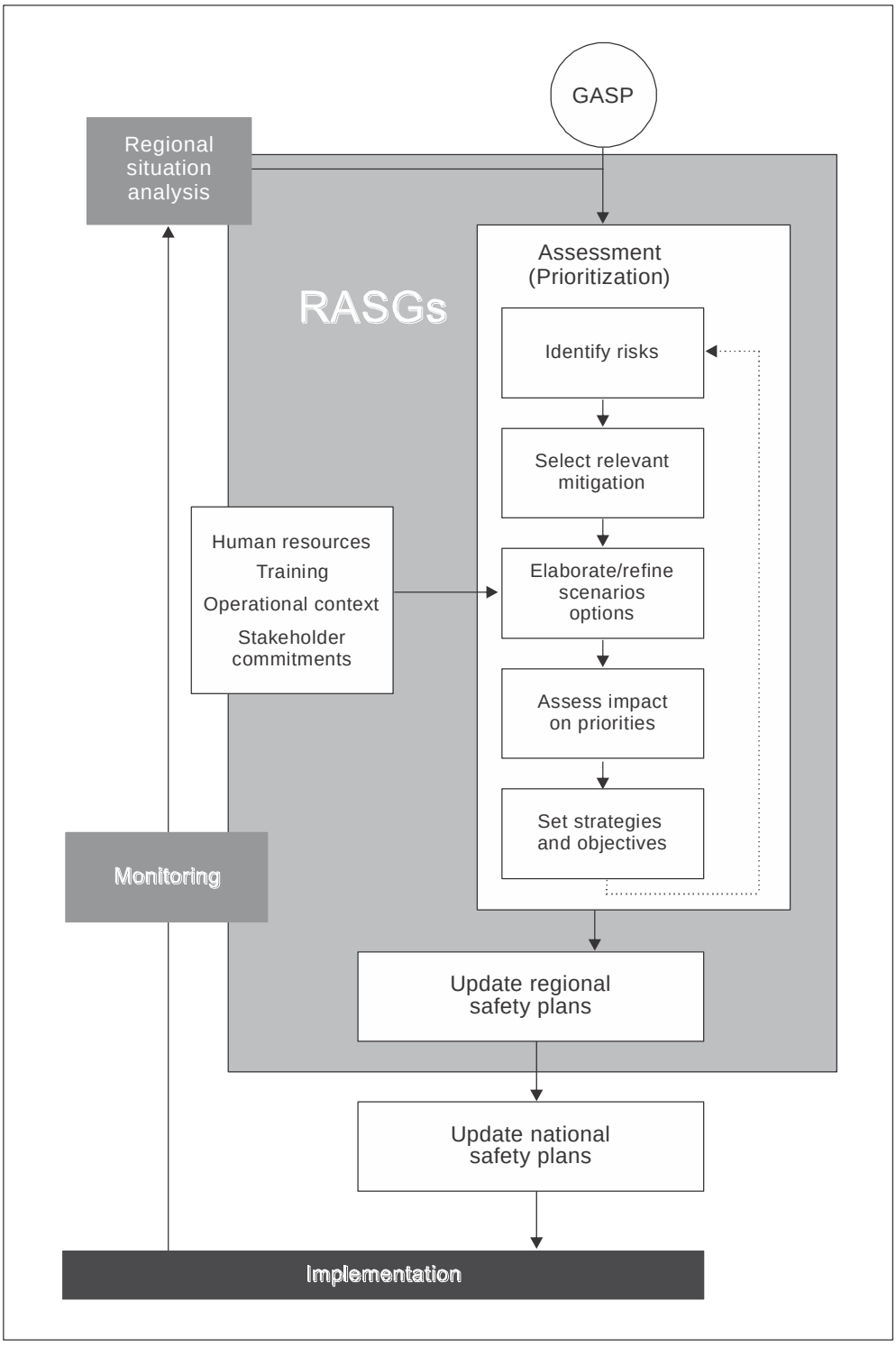

Figure C-1. GASP and safety regional/national planning

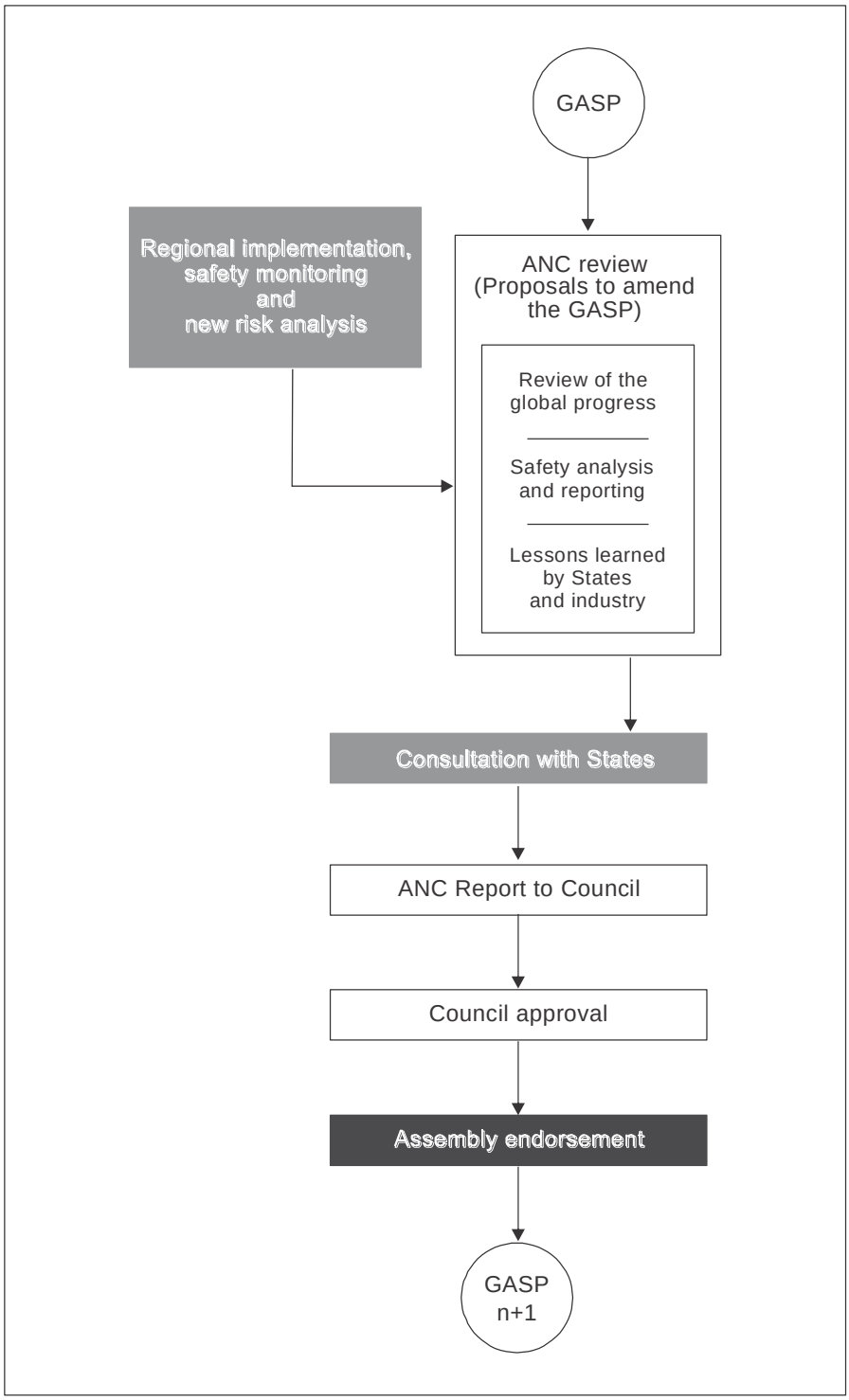

Figure C-2. GASP update process

Appendix D

STATE SAFETY PERFORMANCE INDICATORS

1. PERFORMANCE-BASED APPROACH

1.1 Safety performance is a State's or service provider's safety achievement as defined by its safety performance targets and safety performance indicators (SPIs). An SPI is a data-based parameter used for monitoring and assessing safety performance. A performance-based approach that defines safety performance levels should be adopted to support a global improvement in safety. This approach enables States and regions to review the safety performance of their systems and to take action, if needed, to address discrepancies between existing and desired performance levels.

1.2 The first High-level Safety Conference held in 2010 (HLSC 2010) identified a need for a harmonized methodology for the development of SPIs to enable States to develop and establish an acceptable level of safety related to a State safety programme (SSP). The HLSC 2010 also recommended ICAO work with States and regions to create a common methodology for the development of SPIs. As a follow-up to the HLSC 2010, ICAO worked with States and industry to identify harmonized safety metrics. The goal of such metrics is to enable analysis to identify and mitigate safety risks as well as to facilitate the exchange of information. To provide further support, ICAO developed tools to gather, analyse and share operational safety data at the international level. Harmonized SPIs are needed to facilitate the exchange of safety information at the regional and international levels. At the regional level, the regional aviation safety groups (RASGs) are to monitor regional SPIs, coordinate regional initiatives and provide practical assistance to States in their respective regions. The information gathered via SPIs, when aggregated at regional and international levels, supports ICAO and the regions in setting priorities. Future updates of the GASP will provide an enhanced global framework designed to support the progressive safety performance at the different levels (i.e. national, regional, international).

Note.— The Safety Management Manual *(Doc 9859) contains guidance material related to the development of States' and service providers' SPIs and the acceptable level of safety performance (ALoSP) concept.*

2. PHASED-APPROACH TO IMPLEMENTATION

2.1 ICAO's safety management provisions emphasize the importance of a performance-based approach to managing safety. The ALoSP concept complements the traditional approach to safety oversight, which is primarily focused on prescriptive regulatory compliance, with a performance-based approach that defines actual safety performance levels within an SSP framework. A fully developed ALoSP monitoring and measurement process needs to identify all the safety-critical sectors and the SPIs that define the level of safety in these sectors. ICAO encourages States to start (or progress) the implementation of a performance-based approach to managing safety. The primary focus is to achieve compliance with ICAO Standards and Recommended Practices (SARPs) and to reduce high-consequence events where such issues are evident. The focus should progress to areas where States are concerned with continuous improvement in safety performance.

2.2 As States and regions have different needs and maturity levels in performance monitoring, ICAO proposes a set of SPIs designed to address these different needs and maturity levels. Tables D-1 and D-2 contain examples of SPIs which States and regions may adopt. These SPIs were shared with the international aviation community during the

second High-level Safety Conference held in 2015 (HLSC 2015), through an information paper (IP/01) entitled *Safety data, performance metrics and indicators*. ICAO will further develop and may modify these SPIs, in cooperation with stakeholders, in order to refine their relevance. States are encouraged to further develop their SPIs and share them at the regional and international levels.

Table D-1. Sample set of State safety performance indicators

#	*Indicators and metrics*	*Type*	*Usage*
1.	**Effective implementation of State safety oversight system** *Metrics:* • USOAP EI Scores overall • USOAP EI Scores by technical area • USOAP EI Scores by critical element	Predictive	Target
2.	**Progress in SSP implementation** *Metrics:* • Percentage of completed gap analysis questions • Percentage of implemented gap analysis questions overall • Percentage of implemented gap analysis questions by element	Predictive	Target
3.	**Progress in SMS implementation** *Metrics:* • Percentage of completed gap analysis questions by operator • Percentage of implemented gap analysis questions overall by operator • Percentage of implemented gap analysis questions by element and by operator	Predictive	Target
4.	**Frequency and severity of accidents and incidents** *Metrics:* • Number and distribution of occurrences by severity level (accident, serious incidents, etc.) and the ICAO Accident/Incident Data Reporting System (ADREP) occurrence category • Number and distribution of fatalities by ADREP occurrence category • Occurrence per number of departures (rate) *Note.— Occurrences should be limited to specific categories of aircraft and operations, such as aircraft above 5 700 kg operating scheduled commercial flights.*	Reactive/ proactive	Target

#	*Indicators and metrics*	*Type*	*Usage*
5.	**Certification of aerodromes** *Metrics:* • Number and percentage of certified international aerodromes overall and by airspace	Predictive	Target
6.	**Significant safety concerns** Metrics: • Number and duration of USOAP CMA significant safety concerns by technical area	Predictive	Target
7.	**Presence of notable hazardous conditions** *Metrics:* • Number, duration and distribution of safety-related NOTAMs by the *Procedures for Air Navigation Services — ICAO Abbreviations and Codes* (PANS-ABC, Doc 8400), Q-code categories	Predictive	Monitor
8.	**Fleet modernization** *Metrics:* • Average age of all registered and operated aircraft and their distribution by operator • Percentage of all registered and operated aircraft above 20 years and their distribution by operator	Predictive	Monitor
9.	**Effectiveness of foreign operator safety assessment programmes** *Metrics:* • Compliance scores by foreign and national operator	Predictive	Monitor
10.	**Industry certification** *Metrics:* • Number and percentage of operators holding industry certificates by type (IOSA, IS-BAO, ISAGO, IS-BAH, etc.)	Predictive	Monitor
11.	**Extent of environmental hazards** *Metrics:* • Average terrain elevation around airports • Percentage of METARs indicating low ceiling or visibility by month and location	Predictive	Be aware

Table D-2. Sample set of State level of activity indicators

#	*Indicators and metrics*	*Type*	*Usage*
1.	**Fleet size** *Metrics:* • Number and distribution of aircraft models overall • Number and distribution of aircraft models by operator • Number of aircraft registered and operated and their distribution by operator	Level of activity	Monitor
2.	**Traffic volume** *Metrics:* • Number of monthly and annual departures by operator, airport and route • Number of destinations overall and by airport • Number of departures per destination overall and by airport • Number of flights handled by airspace	Level of activity	Be aware

Appendix E

CODE OF CONDUCT ON THE SHARING AND USE OF SAFETY INFORMATION

1. INTRODUCTION

1.1 The High-level Safety Conference 2010 (HLSC 2010) recognized that mutual trust between States, as well as public confidence in the safety of air transportation, is contingent upon access to adequate information regarding the implementation of international Standards and Recommended Practices (SARPs). Transparency and the sharing of safety information are, therefore, fundamental tenets of a safe air transportation system and one of the objectives of sharing information is to ensure a consistent, fact-based and transparent response to safety concerns at the State and global levels.

1.2 The HLSC 2010 highlighted that the use of safety information for other than safety-related purposes might inhibit the future sharing of such information, with an adverse effect on aviation safety. Consequently, the HLSC 2010 recognized the need to develop principles of confidentiality and transparency to ensure that safety information is used in an appropriate, fair and consistent manner, solely to improve aviation safety and not for inappropriate purposes, including for the purpose of gaining economic advantage.

1.3 The HLSC 2010 recommended that the principles of confidentiality and transparency mentioned above be included in a code of conduct which would guide Member States, regional safety oversight organizations (RSOOs), regional aviation safety groups (RASGs), the aviation industry and other international and regional aviation organizations on the sharing and use of safety information.

1.4 The 37th Session of the Assembly of ICAO expressed unanimous support for the development of a code of conduct on the sharing and use of safety information. The Code of Conduct Multidisciplinary Task Force (MTF) was established in November 2010 to assist the Secretariat in developing the code of conduct.

1.5 In preparing this code of conduct, the Secretariat and the MTF have considered the working papers and discussions on the subject from the HLSC 2010 and the 37th Session of the ICAO Assembly. Specifically, this code of conduct has been largely based on a set of high-level principles included in Resolution A37-1. These principles were designed to facilitate the transparency and exchange of various types of safety-related information while ensuring that such information is used solely to improve safety.

2. NATURE AND SCOPE

2.1 This code of conduct is an ICAO policy that States are encouraged to follow. This code of conduct is without prejudice to matters already covered under international law and/or provisions that have been given binding effect by means of other obligatory legal instruments.

2.2 This code of conduct includes principles and standards applicable to the sharing and use of aviation safety-related information. It is global in scope and is directed toward ICAO Member States, RSOOs, RASGs, the aviation industry and other international and regional aviation organizations.

3. OBJECTIVES

The objectives of this code of conduct are to:

a) establish principles governing the collection, sharing and use of information related to the safety of civil aviation;

b) provide a reference to assist States, RSOOs and RASGs to establish or improve their legal and institutional frameworks governing the use of safety information;

c) provide guidance which may be used where appropriate in the formulation and implementation of international agreements and other legal instruments, both binding and voluntary;

d) facilitate and promote the sharing of aviation safety information by providing reassurance regarding how this information will be used; and

e) provide standards of conduct for all persons and organizations in receipt of information relating to the safety of international civil aviation.

4. PRINCIPLES

The code of conduct is based on the following principles:

a) transparency – the sharing and use of relevant and appropriate safety information with a view to ensuring: 1) the effective discharge of individual and collective responsibilities for the safety of international civil aviation, and 2) public confidence in the safety of air transportation;

b) compliance with the Convention on International Civil Aviation (Chicago Convention) and its Annexes: safety information is used to assist in ensuring that international civil aviation is conducted in full compliance with applicable SARPs and other regulations; and

c) appropriate use: shared safety information shall be used in an appropriate, fair and consistent manner, solely to improve aviation safety.

5. STANDARDS OF CONDUCT

ICAO, its Member States, RSOOs, RASGs, the aviation industry and other international and regional aviation organizations will:

a) collect and exchange relevant and appropriate safety information in a transparent way to ensure that they can effectively discharge their individual and collective responsibilities for the safety of international civil aviation;

b) ensure that shared safety information is used in an appropriate, fair and consistent manner, solely to improve aviation safety and not for inappropriate purposes, including for the purpose of gaining economic advantage;

c) utilize safety information to ensure that operations under their oversight are conducted in full compliance with the Chicago Convention and all applicable ICAO SARPs;

d) use caution in disclosing information, keeping in mind equally the need for transparency, ensuring the effectiveness of the exercise of safety oversight and the possibility that disclosure may inhibit the future provision of such information;

e) provide levels of confidentiality and uphold principles for disclosure equivalent to those provided by the State, RSOO or RASG generating the information; and

f) ensure that the release of any safety information to the public or media is carried out in accordance with this code of conduct and in compliance with the laws and regulations applicable to the release of such information.

6. OTHER PROVISIONS

Any changes to this code of conduct require approval by the Council of ICAO.

— END —

— — — — — — — —

ATTACHMENT B to State letter AN 6/37-15/76

QUESTIONNAIRE RELATING TO THE PROPOSED 2017-2019 EDITION OF THE GLOBAL AVIATION SAFETY PLAN

Name of State/organization: _____

Completed by: _____

Email address: _____

Purpose of the Questionnaire

While ICAO identifies existing and emerging aviation safety risks through its existing programmes, the following questions provide an opportunity for key stakeholders to express operational safety concerns of their organizations and give specific feedback with regard to the proposed 2017-2019 edition of the Global Aviation Safety Plan (GASP) in relation to effective safety oversight and safety management. ICAO will analyse the responses and consider the information provided by respondents as part of the process for revision of the GASP. States are invited to provide information at the national level. Regional organizations are invited to provide information regarding issues at the regional or sub-regional level. International organizations are invited to provide aggregate information. The information submitted will be de-identified; only aggregate information will be used for the purposes of updating the GASP. The responses will not be distributed outside ICAO.

1. OPERATIONAL SAFETY RISKS

1.1 What are the top five operational safety risks identified within your State/organization?

Risk 1:	
Risk 2:	
Risk 3:	
Risk 4	
Risk 5	

1.2. What actions has your State/organization taken to mitigate the operational risks identified above?

Risk 1 – Mitigation:	
Risk 2 – Mitigation:	
Risk 3 – Mitigation:	
Risk 4 – Mitigation:	
Risk 5 – Mitigation:	

1.3. After reviewing the draft 2017-2019 edition of the GASP, does the document assist your State/organization in addressing your operational safety risks? Please specify below:

_____
_____
_____
_____

2 EFFECTIVE SAFETY OVERSIGHT AND SAFETY MANAGEMENT

2.1. After reviewing the draft 2017-2019 edition of the GASP, what are the main challenges/obstacles your State/organization will face when trying to achieve the objectives set out in the GASP? Please specify below:

_____
_____
_____
_____

2.2. Does the proposed draft GASP assist your State/organization in addressing safety oversight and safety management challenges, including an increase in effective implementation of the eight critical elements of a safety oversight system? Please specify below:

_____
_____
_____
_____

2.3. What additional points would you include in the GASP to best support your State/organization's safety strategy? Please specify below:

_____
_____
_____
_____

2.4. Does your State/organization publish a safety plan?

☐ **Yes** ☐ **No**

If **yes**, how is it communicated to relevant stakeholders? Please specify below (if it is available on a public website, please indicate the address):

_____
_____
_____
_____

2.5. Does your State/organization publish an annual safety report (please include the accident investigation authority, if applicable)?

☐ **Yes** ☐ **No**

If **yes**, how is it communicated to relevant stakeholders? Please specify below (if it is available on a public website, please indicate the address):

_____
_____
_____
_____

2.6. Do your State's/organization's aviation service providers publish an annual safety report?

☐ **Yes** ☐ **No**

a) If **yes**, please select all applicable service providers below:

☐ Approved training organizations ☐ Operators of aeroplanes
☐ Approved maintenance organizations ☐ Operators of helicopters
☐ Air traffic services providers ☐ Operators of certified aerodromes
☐ Organizations responsible for the type design or manufacture of aircraft

b) How is it communicated to relevant stakeholders? (If they are available on a public website, please indicate the address.):

_____
_____
_____
_____

— — — — — — — —

ATTACHMENT C to State letter AN 6/37-15/76

RESPONSE FORM TO BE COMPLETED AND RETURNED TO ICAO TOGETHER WITH ANY COMMENTS YOU MAY HAVE ON THE PROPOSED 2017-2019 EDITION OF THE GASP

To: The Secretary General
International Civil Aviation Organization
999 Robert-Bourassa Boulevard
Montréal, Quebec
Canada, H3C 5H7

(State) _____

Please make a checkmark (√) against one option for each amendment. If you choose options "agreement with comments" or "disagreement with comments", **please provide your comments on separate sheets**.

	Agreement without comments	*Agreement with comments**	*Disagreement without comments*	*Disagreement with comments*	*No position*
Proposed 2017-2019 edition of the Global Aviation Safety Plan (GASP) (Attachment A refers)					

*"Agreement with comments" indicates that your State or organization agrees with the intent and overall thrust of the amendment proposal; the comments themselves may include, as necessary, your reservations concerning certain parts of the proposal and/or offer an alternative proposal in this regard.

Signature_____ Date_____

— END —