



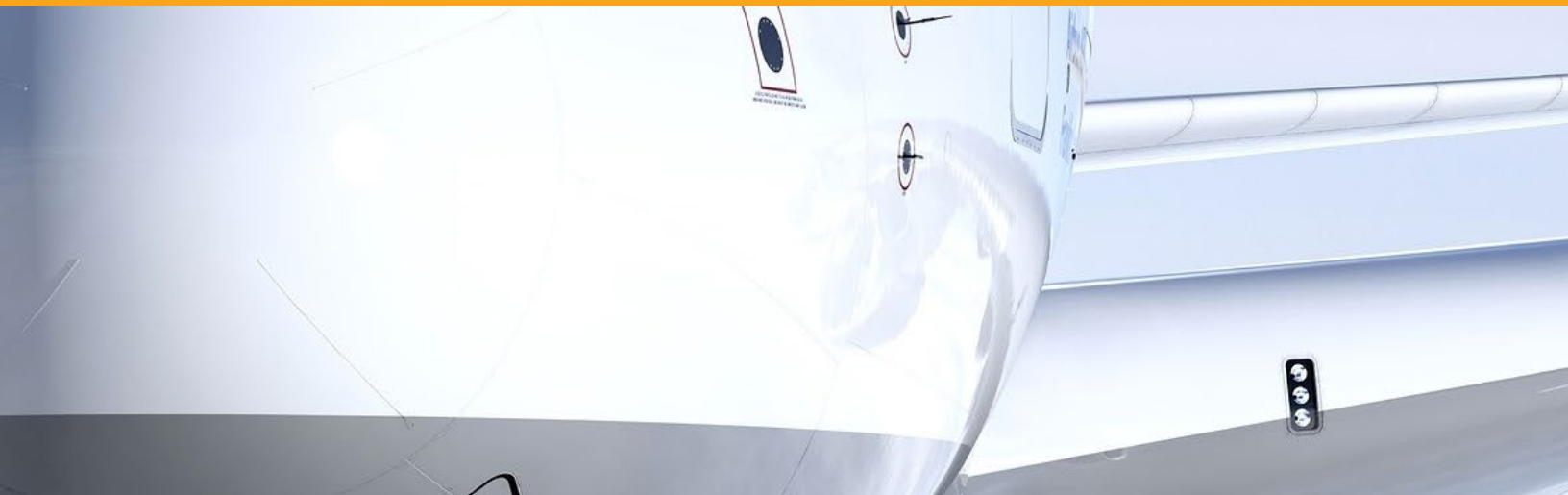
ICAO USOAP
Continuous Monitoring Approach

SAFETY REPORT



Report on the Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA) Results

1 January 2022 to 31 December 2024



ORGANISATION DE L'AVIATION
CIVILE INTERNATIONALE

INTERNATIONAL CIVIL
AVIATION ORGANIZATION



FOREWORD

Twenty-five years since its inception, the Universal Safety Oversight Audit Programme (USOAP) continues to be one of ICAO's flagship programmes. The "Eight Critical Elements (CEs)", that are building blocks of a State's safety oversight system, are common knowledge in the aviation community. This triennium USOAP achieves another milestone marked by 10 years of operations under a Continuous Monitoring Approach (CMA). By adopting the CMA, an information-driven, risk-informed and result-oriented methodology, USOAP evolved to focus on the following functions: monitor States' safety oversight capabilities using the USOAP CMA online framework (OLF); conduct audits; and validate States' progress on addressing identified deficiencies. An analysis on the impact of the programme on aviation safety is included to highlight a quarter of a century since the inception of USOAP.

During this triennium, the programme's operations made a full recovery following drawbacks arising from the COVID-19 global pandemic. Challenges experienced during this time made the programme and its human capital more resilient, while enabling advanced planning for more sustainability in its methodology. With almost 100 activities conducted around the globe, the programme was successful in meeting its mandate of promoting global aviation safety. In the current triennium, the programme's audit activities registered an average effective implementation (EI) of States' as 68.67 per cent. On the lower side appear the audit areas, aircraft accident and incident investigation (AIG) that scored 56.05 per cent and aerodromes and ground aids (AGA) at 66.38 per cent. By the same token, the critical elements (CEs) with the lowest levels of EI are: *Resolution of safety issues* (CE-8) at 57.14 per cent; *Surveillance obligations* (CE-7) at 63.07 per cent; and *Qualified technical personnel* (CE-4) at 63.21 per cent. Even though the programme has taken actions to discourage postponements and cancellations, ten activities were postponed upon States' request for the reporting period.

ICAO progressed the USOAP CMA through the implementation of three main streams of work: i) USOAP sustainability and improvements; ii) the outcome of the Ad hoc USOAP CMA Advisory Group (USOAP-AG); and iii) relevant recommendations resulting from the High-level Conference on COVID-19 (HLCC). By December 2024,

the fifth edition of the *Universal Safety Oversight Audit Programme Continuous Monitoring Manual* (Doc 9735) was released, numerous training activities were conducted, and multiple enhancements implemented. The majority of USOAP-AG recommendations (27 out of 41) were implemented. Similarly, recommendations of the HLCC were also advanced such as the integration of the State Safety Programme Implementation Assessment (SSPIA) into traditional audit activities, and the development of data management procedures for the OLF to facilitate users.

As a result, ICAO published the 2024 edition of the USOAP CMA PQs last year. The new PQs address SSP as a separate audit area while Safety Management System (SMS) PQs were integrated into existing audit structure and topics.

Throughout the 2022-2024 triennium, and in pursuit of the ICAO Transformational Objective, this programme identified resource-efficient and forward-thinking approaches towards its management, aligned with the Long Term ICAO Strategic Plan for 2026-2050 and triennial business plans. In so doing and building upon the Council's decision to include "USOAP evolution and engagement" on the list of Priority Focus Areas, ICAO's organizational structure was aligned while maximizing synergies and collaboration to enable the evolution of monitoring and auditing functions.

This report, which presents information on USOAP CMA activities and results from January 2022 to December 2024, provides statistical data and analysis on the programme's activities, and highlights the challenges that States continue to face in ensuring effective safety oversight systems. ICAO is committed to supporting States in addressing the deficiencies identified by the USOAP CMA, while enhancing the programme's analytic capacity to transform audit activity results into implementation support and standard-making activities.

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CHAPTER 1

Introduction



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1.1 SUMMARY

1.1.1 This report presents the results and analysis of data from the activities conducted by ICAO under the Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) for the triennium, starting from 1 January 2022 to 31 December 2024. The data and safety information provided here also originates from multiple sources provided by Member States and other stakeholders.

1.1.2 To mark the 25 years of USOAP and 10 years - under the CMA, ICAO presents an analysis of safety data - highlighting progress achieved in the eight critical elements (CEs) and eight audit areas of Member States. The reported USOAP CMA results support the goals of the 2023 - 2025 edition of the Global Aviation Safety Plan (GASP), as well as Member States and assistance providers in identifying areas of their safety oversight systems that require improvement.



1.2 BACKGROUND

1.2.1 The 37th Session of the Assembly (28 September to 8 October 2010) adopted Resolution A37-5 regarding the evolution of USOAP to a continuous monitoring approach as a mechanism for ICAO to monitor the safety oversight capabilities of Member States on a continuous basis. The USOAP CMA was officially launched in January 2013, after a two-year transition in 2011–2012.

1.2.2 In 2019, the 40th Session of the Assembly (24 September to 4 October 2019) adopted Resolution 40-13, which reaffirmed the “successful implementation” of the USOAP CMA, and called for its continuing evolution into “a more evidence-based, risk-informed and result-oriented programme”. The 41st Session of the Assembly (27 September to 7 October 2022) endorsed the recommendations of the Ad Hoc USOAP CMA Advisory Group (USOAP-AG) and the relevant recommendations of the High-level Conference on COVID-19 (HLCC) which was held from 12 to 22 October 2021.

1.2.3 Under the USOAP CMA, ICAO conducts various activities such as described below:

- a) **USOAP CMA audit** – this is an activity during which ICAO determines a State’s capability for safety oversight by assessing the State’s effective implementation (EI) of the critical elements (CEs) of a safety oversight system (see Chapter 2, 2.1);
- b) **ICAO Coordinated Validation Mission (ICVM)** – this is a USOAP activity during which an ICAO team of subject matter experts collects and assesses evidence provided by the State, demonstrating that the State has implemented corrective actions to address previously identified findings or Significant Safety Concerns (SSCs). The collected evidence and information are validated at ICAO Headquarters; and
- c) **Off-site validation activity** – an ICAO team of subject matter experts assesses corrective actions implemented by a State to address certain findings without an on-site visit to the State. ICAO validates the submitted supporting evidence at ICAO Headquarters. This type of activity is limited to Protocol Questions (PQs) that do not require on-site verification, i.e. mainly those related to the establishment of legislation, regulations, policies and procedures.

Note. – Further details about USOAP CMA activities are described in Doc 9735 – Universal Safety Oversight Audit Programme Continuous Monitoring Manual.

1.2.7 This report uses data from the USOAP CMA online framework (OLF), which is the main tool for the collecting, continuous monitoring and reporting of USOAP CMA data. It provides ICAO, Member States and other authorized users with a suite of web-integrated applications. The OLF allows access to safety-related information and documentation generated during USOAP CMA activities on Member States.



CHAPTER 2

Fundamentals of USOAP CMA



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2.1 CRITICAL ELEMENTS

2.1.1 Critical Elements (CEs) are the building blocks upon which a State's safety oversight system is based. Each Member State should address all CEs in its effort to establish and implement an effective safety oversight system that reflects the shared safety-related responsibilities of the State and the aviation community. CEs cover the whole spectrum of civil aviation activities.

2.1.2 The eight CEs of a State's safety oversight system are outlined in Annex 19 – *Safety Management*, Appendix 1, and elaborated in Doc 9734 – *Safety Oversight Manual*, Part A – *The Establishment and Management of a State Safety Oversight System*. The eight CEs are reproduced from Annex 19, Appendix 1 as follows:

CE-1 Primary aviation legislation

1.1 States shall promulgate a comprehensive and effective aviation law, commensurate with the size and complexity of their aviation activity and consistent with the requirements contained in the Convention on International Civil Aviation, to enable the oversight and management of civil aviation safety and the enforcement of regulations through the relevant authorities or agencies established for that purpose.

Note. – This includes ensuring that the aviation law remains relevant and appropriate to the State.

1.2 The aviation law shall provide personnel performing safety oversight functions access to the aircraft, operations, facilities, personnel and associated records, as applicable, of individuals and organizations performing an aviation activity.

CE-2 Specific operating regulations

2.1 States shall promulgate regulations to address, at a minimum, national requirements emanating from the primary aviation legislation, for standardized operational procedures, products, services, equipment and infrastructures in conformity with the Annexes to the Convention on International Civil Aviation.

Note. – The term “regulations” is used in a generic sense and includes, but is not limited, to instructions, rules, edicts, directives, sets of laws, requirements, policies and orders.

CE-3 State system and functions

3.1 States shall establish relevant authorities or agencies, as appropriate, supported by sufficient and qualified personnel and provided with adequate financial resources for the management of safety.

3.2 States authorities or agencies shall have stated safety functions and objectives to fulfil their safety management responsibility.

Note. – This includes the participation of the State aviation organizations in specific activities related to the management of safety in the State, and the establishment of the roles, responsibilities and relationships of such organizations.

3.3 **Recommendation.** – States should take necessary measures, such as remuneration and conditions of service, to ensure that qualified personnel performing safety oversight functions are recruited and retained.

3.4 States shall ensure that personnel performing safety oversight functions are provided with guidance that addresses ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of official duties.

3.5 **Recommendation.** – States should use a methodology to determine their staffing requirements for personnel performing safety oversight functions, taking into account the size and complexity of the aviation activities in their State.

Note. – In addition, Appendix 5 to Annex 6, Part I, and Appendix 1 to Annex 6, Part III, require the State of the Operator to use such a methodology to determine its inspector staffing requirements. Inspectors are a subset of personnel performing safety oversight functions

CE-4 Qualified technical personnel

4.1 States shall establish minimum qualification requirements for the technical personnel performing safety-related functions and provide for appropriate initial and recurrent training to maintain and enhance their competence at the desired level.

4.2 States shall implement a system for the maintenance of training records for technical personnel.

CE-5 Technical guidance, tools and provision of safety-critical information

5.1 States shall provide appropriate facilities, comprehensive and up-to-date technical guidance material and procedures, safety-critical information, tools and equipment, and transportation means, as applicable, to the technical personnel to enable them to perform their safety oversight functions effectively and in accordance with established procedures in a standardized manner.

5.2 States shall provide technical guidance to the aviation industry on the implementation of relevant regulations.

CE-6 Licensing, certification, authorization and approval obligations

6.1 States shall implement documented processes and procedures to ensure that individuals and organizations performing an aviation activity meet the established requirements before they are allowed to exercise the privileges of a licence, certificate, authorization or approval to conduct the relevant aviation activity.

CE-7 Surveillance obligations

7.1 States shall implement documented surveillance processes, by defining and planning inspections, audits and monitoring activities on a continuous basis, to proactively assure that aviation licence, certificate, authorization and approval holders continue to meet the established requirements. This includes the surveillance of personnel designated by the Authority to perform safety oversight functions on its behalf.

CE-8 Resolution of safety issues

8.1 States shall use a documented process to take appropriate actions, up to and including enforcement measures, to resolve identified safety issues.

8.2 States shall ensure that identified safety issues are resolved in a timely manner through a system which monitors and records progress, including actions taken by individuals and organizations performing an aviation activity in resolving such issues.



2.2 AUDIT AREAS

2.2.1 USOAP audit and validation activities cover the following eight audit areas:

- 1) primary aviation legislation and specific operating regulations (LEG);
- 2) civil aviation organization (ORG);
- 3) personnel licensing and training (PEL);
- 4) aircraft operations (OPS);
- 5) airworthiness of aircraft (AIR);
- 6) aircraft accident and incident investigation (AIG);
- 7) air navigation services (ANS); and
- 8) aerodromes and ground aids (AGA).

2.3 PROTOCOL QUESTIONS (PQS)

2.3.1 Protocol Questions (PQs) are the primary tool for assessing the level of EI of a State's safety oversight system and accident/incident investigation capabilities. They are questions developed based on; the Chicago Convention, safety-related Standards and Recommended Practices (SARPs) established in the Annexes to the Convention, Procedures for Air Navigation Services (PANS), ICAO documents, and other guidance material. Each PQ contributes to assessing the EI of one of the eight CEs in one of the eight audit areas. PQs are organized by audit area and CE, and are sufficiently flexible to allow for the appropriate evaluation of the scope and complexity of each State's aviation activity.

2.3.2 The use of standardized PQs ensures transparency, quality, consistency, reliability and fairness in the conduct of USOAP CMA activities.

2.3.3 Any change in the status of a PQ for a State will lead to an update of the EI value.

2.3.4 When ICAO cannot obtain sufficient evidence indicating compliance, a deficiency is identified, and a finding is issued when:

- a) there is a lack of compliance of the State's safety oversight system with the Chicago Convention.
- b) there is a lack of implementation of SARPs and PANS; and/or
- c) there is a lack of application of ICAO documents, guidance material and relevant safety-related practices in general use in the aviation industry to support the implementation of the SARPs and PANS.

2.3.5 Issuing a finding changes the status of the associated PQ to "Not Satisfactory" and decreases the State's EI value. Each finding is based on one PQ.

2.3.6 If a PQ is not applicable to the State's safety oversight system (e.g. PQs related to design and manufacturing of aircraft), the status of the associated PQ is considered "Not Applicable" until the State's situation changes, and the PQ becomes applicable.

2.3.7 In order for ICAO to close a finding, the State must address the associated PQ by resolving all the deficiencies detailed in the finding, and ICAO must verify the evidence to change the PQ status.

2.3.8 The 2020 edition of the PQs (totalling 790) was used during the reporting period for USOAP audit and validation activities.

2.3.9 At the end of last year, ICAO published the 2024 edition of the USOAP CMA PQs (Electronic Bulletin 2024/22 refers). The 2024 edition presents a set of new PQs addressing SSP as a separate audit area while Safety Management System (SMS) PQs were integrated into existing audit structure and topics. Performance-based aspects were reflected in the design of the SSP and SMS PQs as well as the guidance for review of the PQs. The new SSP and SMS PQs will be audited following the traditional "satisfactory" or "not satisfactory" approach for consistency but will be based on States' performance in the implementation of SSP and SMS. In addition, this PQ edition includes updates resulting from amendments to ICAO provisions such as Annexes to the Chicago Convention, PANS, and guidance material.

2.3.10 The 2024 edition of PQs will become applicable for USOAP CMA activities starting after 1 July 2025, providing States with more than eight months to familiarize themselves with the new PQs. Adjustments would also follow after beta testing of this new methodology.

2.4 EFFECTIVE IMPLEMENTATION

2.4.1 Effective implementation (EI) is a measure of the State's safety oversight capability. A higher EI indicates a greater degree of safety oversight capabilities, and vice versa.

2.4.2 The overall EI is an indicator of a State's safety oversight capabilities when measured across the full scope of applicable PQs. It is calculated based on the following formula:

$$\text{EI (\%)} = \frac{\text{Total number of satisfactory PQs}}{\text{Total number of applicable PQs}} \times 100$$

2.4.3 The EI can be calculated for each CE, each audit area, and as an overall value.

2.4.4 The overall EI is recalculated following each cycle of amendments of PQs, resulting in scores that are more reflective of the States' current safety oversight capability. The effect of the EI recalculation will vary from State to State.

2.4.5 Following implementation of recommendations by the Group of Experts for a USOAP CMA Structured Review (GEUSR), two types of specific EIs were added to the "State Profile Dashboard" of the OLF. These serve as indicators of the level of safety in specific aspects of a State's safety oversight and accident/incident investigation systems, and are the Implementation EI and the Priority PQ (PPQ) EI.

2.4.6 The Implementation and PPQ EI values are calculated with the above formula, using their respective "implementation" (CEs 6 to 8) and "priority" PQs.

2.4.7 A State with a low PPQ EI should address the deficiencies and/or weaknesses in their systems on an urgent basis since these PQs have a significant impact on operational safety and can indicate an elevated risk of significant safety concerns (SSCs).



CHAPTER 3

USOAP CMA Results



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3.1 USOAP ACTIVITY PLAN

3.1.1 USOAP CMA activities for Member States are planned annually by ICAO using a risk-informed approach by taking into consideration various factors such as previous audit results, level of aviation activities in States, and progress in resolving identified deficiencies. USOAP Activity Plans are published twice a year via ICAO’s Electronic Bulletin, one provisional in June and an updated version in January of the following year. They list completed and planned audits, ICVMs, off-site validation activities and workshops for the current and next year.

3.1.2 States interested in receiving a USOAP CMA activity, either on-site or off-site, are advised to contact the Deputy Director, Monitoring, Analysis and Coordination, by email at USOAPInbox@icao.int. These requests are considered with the use of established criteria and factors, including progress achieved and documented by the State on the OLF, as well as available ICAO resources.

3.2 GEOGRAPHIC DISTRIBUTION OF ACTIVITIES

3.2.1 Regional balance is an important consideration in the planning of USOAP CMA activities. Figure 3-1 shows the total number of activities conducted in each ICAO region and the number of States that received one or more activities for the reporting period between 1 January 2022 and 31 December 2024. A breakdown of the types of activities by region is given in Figure 3-2, and Figure 3-3 depicts cases by region where the same State received more than one activity during the reporting period.

3.2.2 The geographical distribution of different types of USOAP CMA activities conducted globally are shown below in Figures 3-4 to 3-8.

Figure 3-1. Overview of USOAP CMA Activities conducted in each ICAO region during the reporting period.

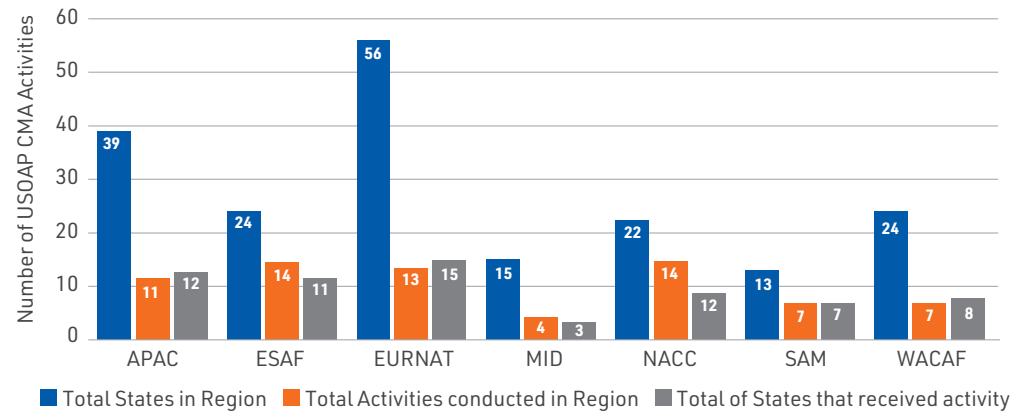


Figure 3-2. Number of USOAP CMA activities conducted in each ICAO region by type during the reporting period.

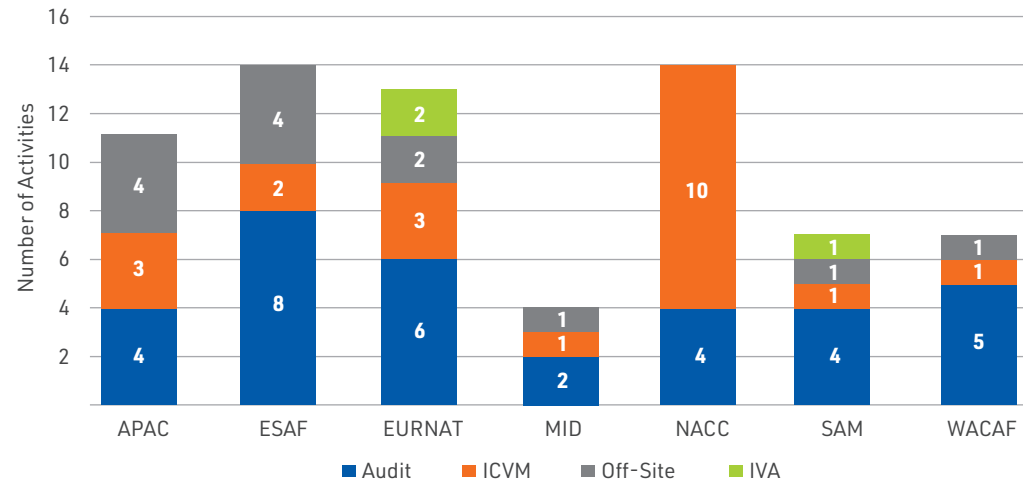


Figure 3-3. Number of States in each ICAO region that received more than one USOAP CMA activity during the reporting period.

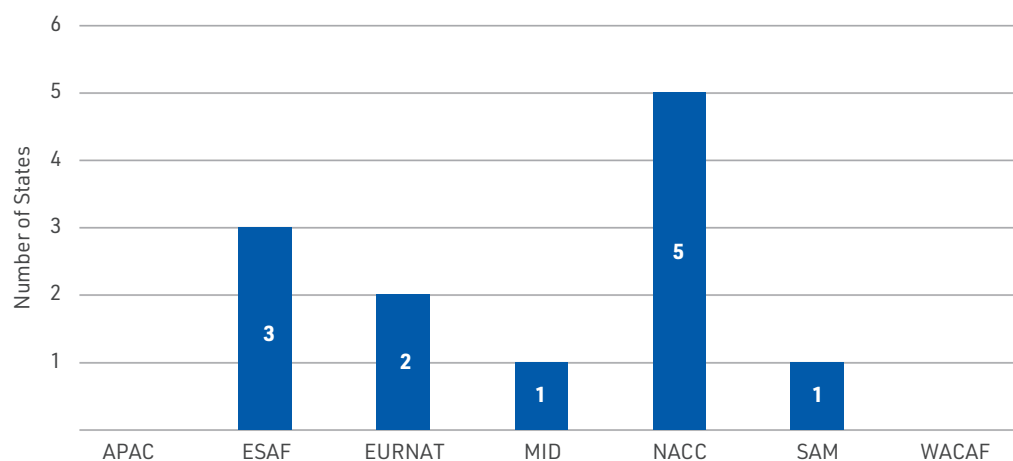


Figure 3-4. Geographical illustration of CMA activities conducted during the reporting period.

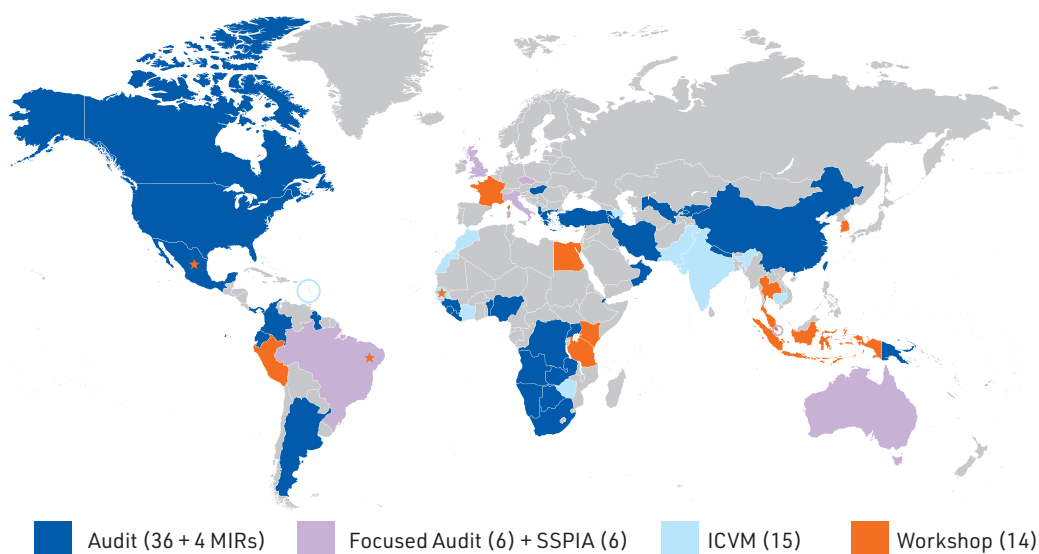


Figure 3-5. Geographical distribution of CMA audits (full scope and focused) conducted during the reporting period.

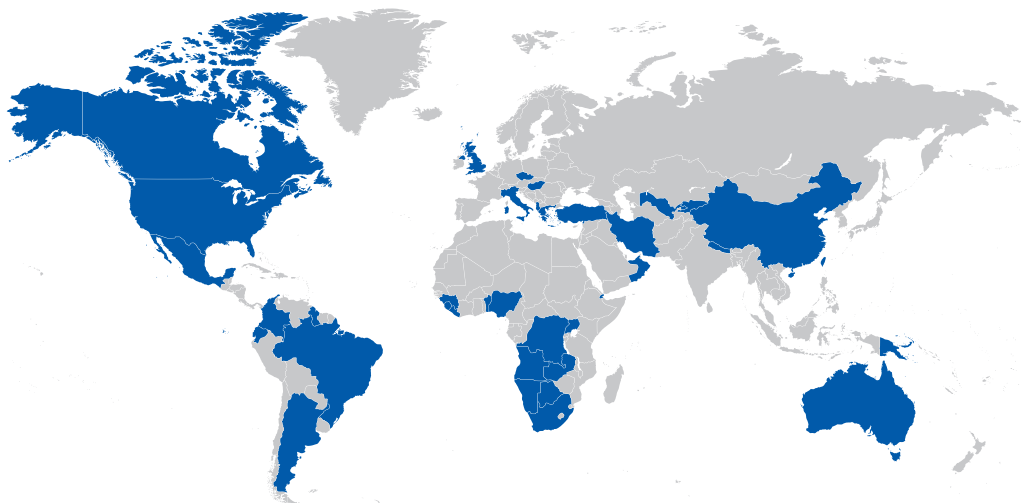


Figure 3-6. Geographical distribution of ICVMs conducted during the reporting period.

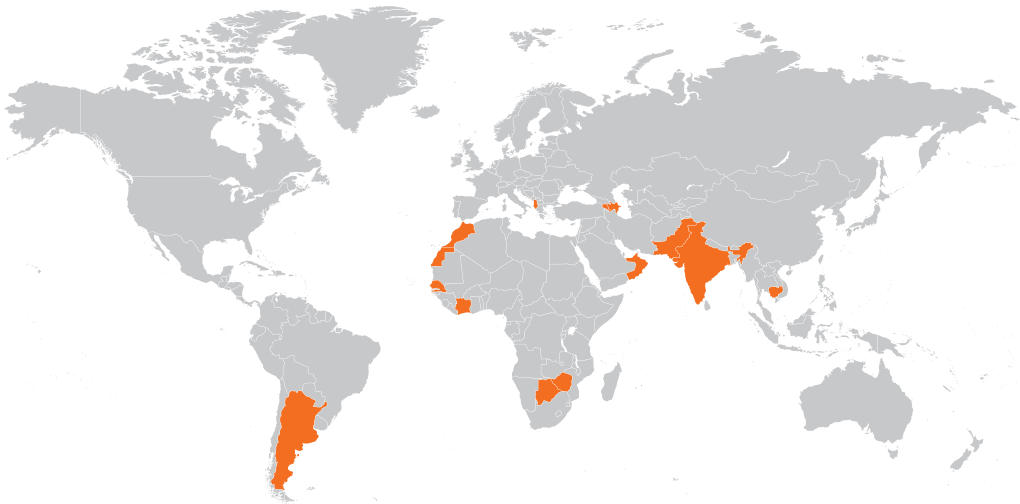


Figure 3-7. Geographical distribution of off-site validation activities conducted during the reporting period.

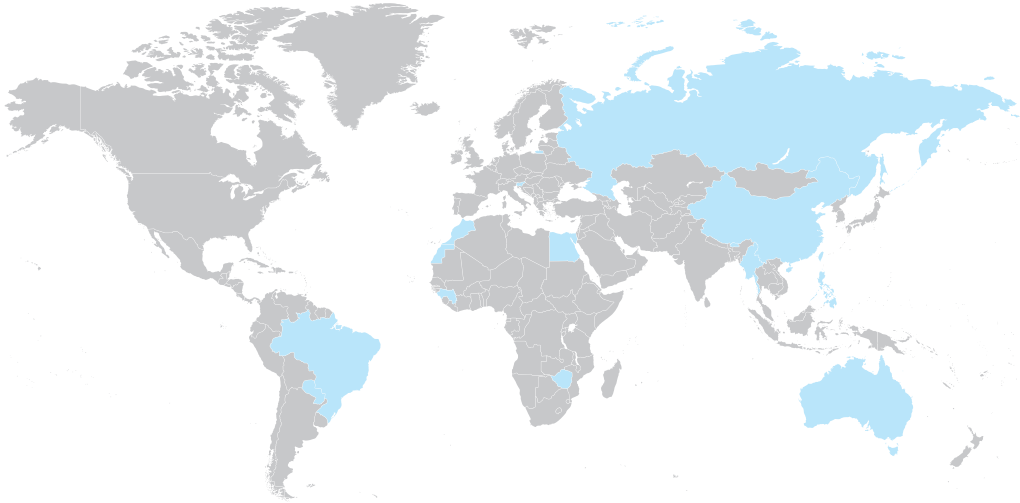
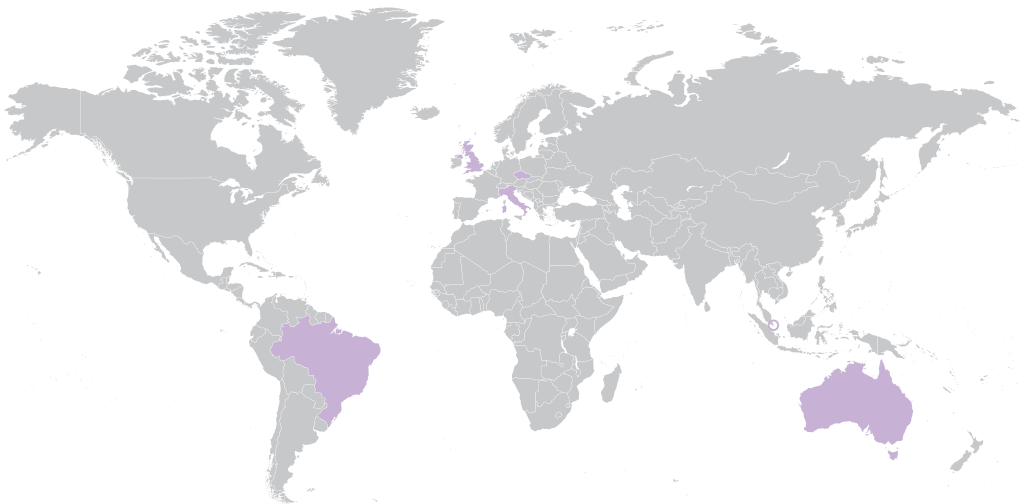


Figure 3-8. Geographical distribution of SSPIAs (including beta testing) conducted during the reporting period.



3.3 GLOBAL RESULTS BY CRITICAL ELEMENT

3.3.1 Using ten years of audit data collected for USOAP activities under the CMA, the following results have been prepared to illustrate the evolution and progress of States' EI between 2014 and 2024 for 159 out of 193 participant Member States.

3.3.2 The global average EI of these ICAO Member States increased from 62.47 per cent to 68.67 per cent over the last ten years, representing a growth of +6.21 per cent. It was also observed that States gained maturity and built capacity while undertaking USOAP CMA activities, in particular CEs 1 to 5.

3.3.3 In terms of global average EI by CEs, as shown in Figure 3-9, all CEs present an increase by the end of 2024. The largest increase in this comparison was observed in CE-4 (+14.7 per cent), and among CEs 1 to 5, there was an average increase of +9.6 per cent.

3.4 GLOBAL RESULTS BY AUDIT AREA

3.4.1 At the end of 2024, all audit areas saw an increase of their respective EI values at the global level. The highest EI was observed in AIR at 82.5 per cent. On the other hand, AIG had the lowest EI at 56.1 per cent.

It should be noted that the results of the audit areas of AIG, ANS and AGA may be affected by their late integration in 2005 compared to PEL, OPS and AIR which were integrated in 1999.

3.4.2 USOAP CMA activities have indeed identified that many States still lack adequate legislation, regulations and procedures related to aircraft accident/incident investigations, as well as sufficient human and financial resources to discharge their obligations called for in Annex 13.

3.4.3 The graph in Figure 3-10 shows the progress achieved by States in all USOAP audit areas within this 10 year period of data collection. The average increase is +7.7 per cent and the technical areas with the highest improvements are ANS (+9.5 per cent) and AIR (+8.0 per cent).

Figure 3-9.
Global EI comparison by Critical Element between 2014 and 2024.

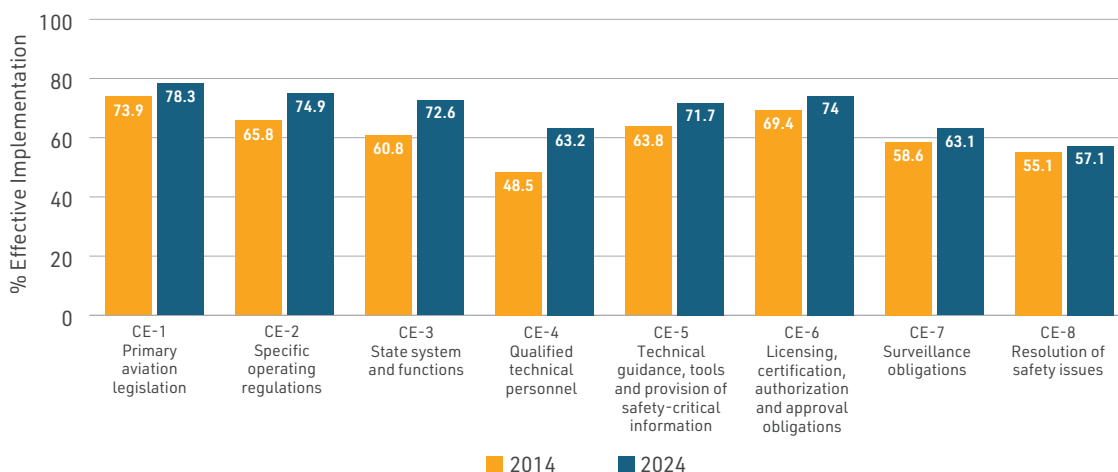
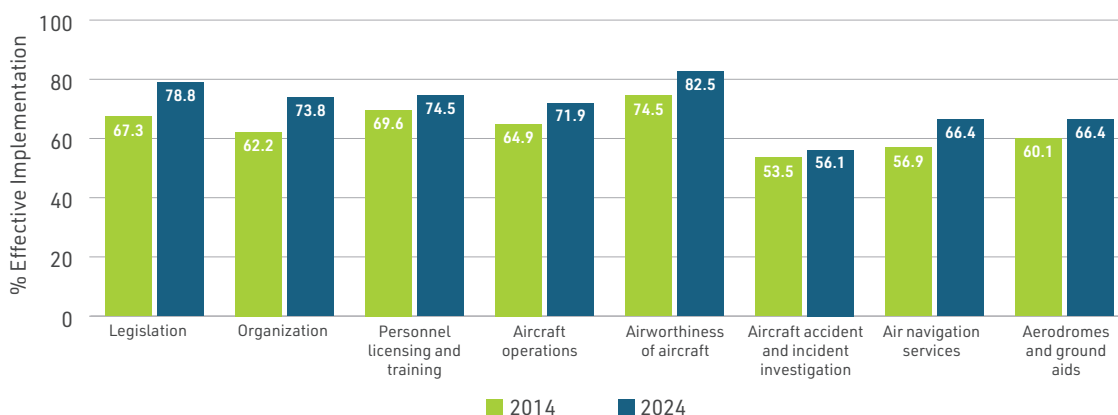


Figure 3-10.
Global EI comparison by audit area between 2014 and 2024.



3.5 REGIONAL RESULTS BY CRITICAL ELEMENT

3.5.1 The regional average EI by CE for each of the seven ICAO Regions over the last 10 years is presented below in Figures 3.9 to 3.15.

Figure 3-9. APAC – Regional Average EI (%) by Critical Element (2014 - 2024).

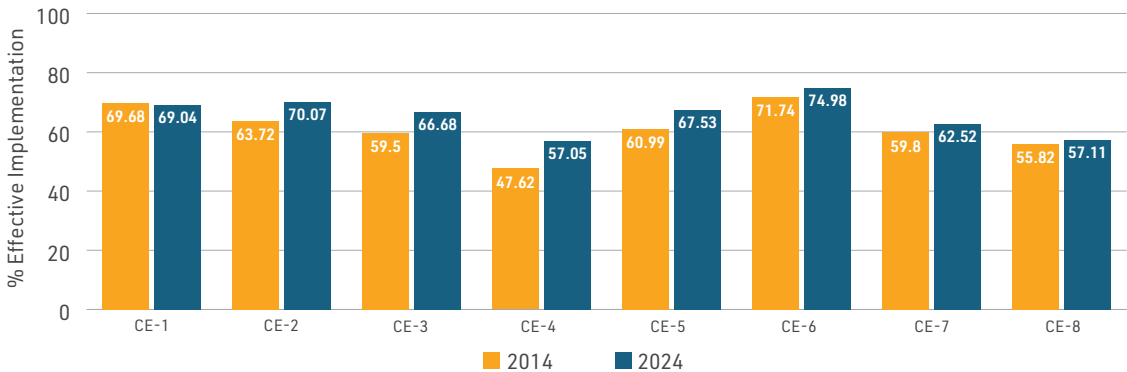


Figure 3-10. ESAF – Regional Average EI (%) by Critical Element (2014 - 2024).

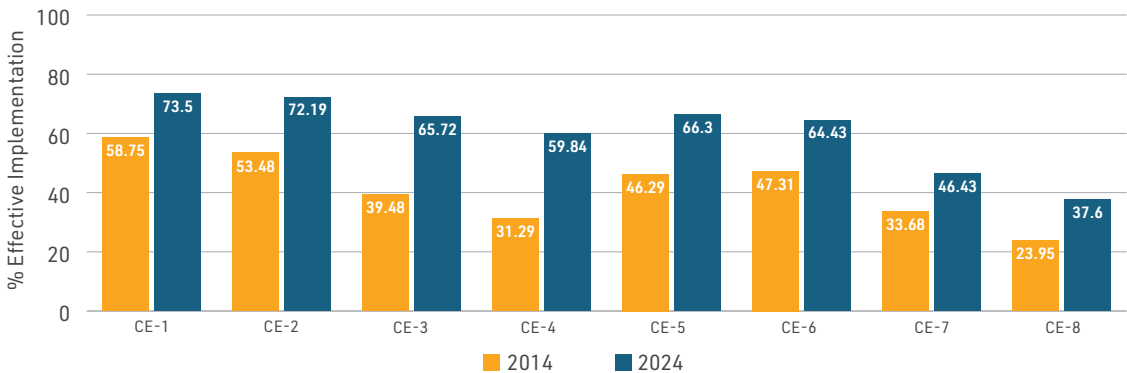


Figure 3-11. EUR/ NAT – Regional Average EI (%) by Critical Element (2014 - 2024).

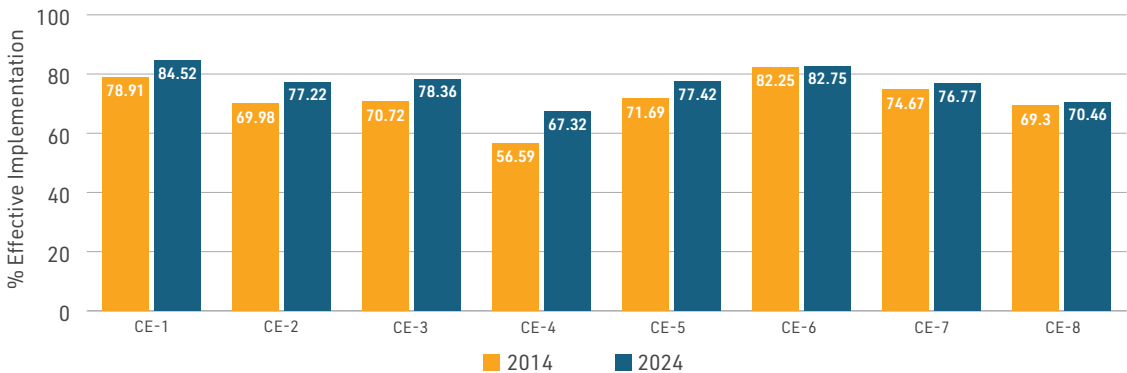


Figure 3-12.
MID – Regional
Average EI (%) by
Critical Element
(2014 - 2024).

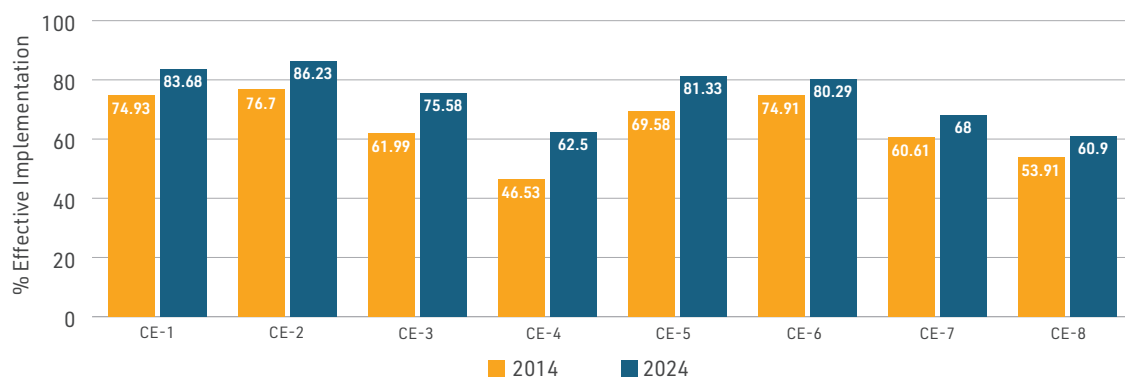


Figure 3-13.
NACC – Regional
Average EI (%) by
Critical Element
(2014 - 2024).

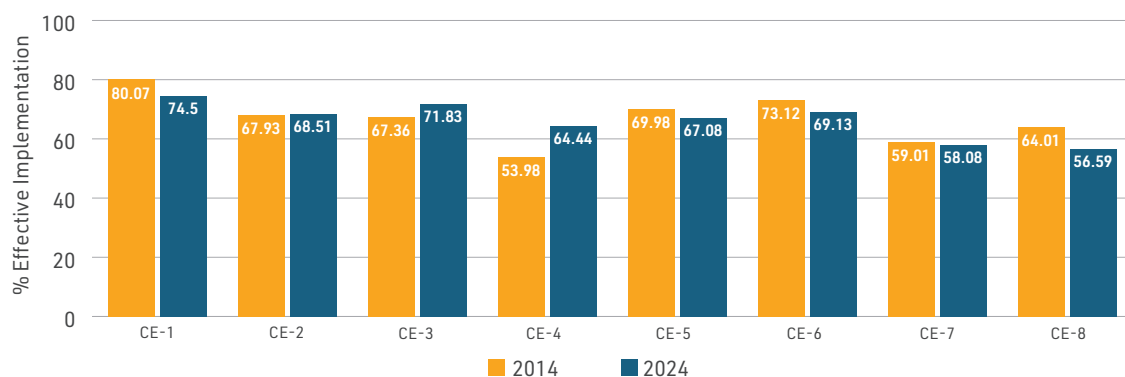


Figure 3-14.
SAM – Regional
Average EI (%) by
Critical Element
(2014 - 2024).

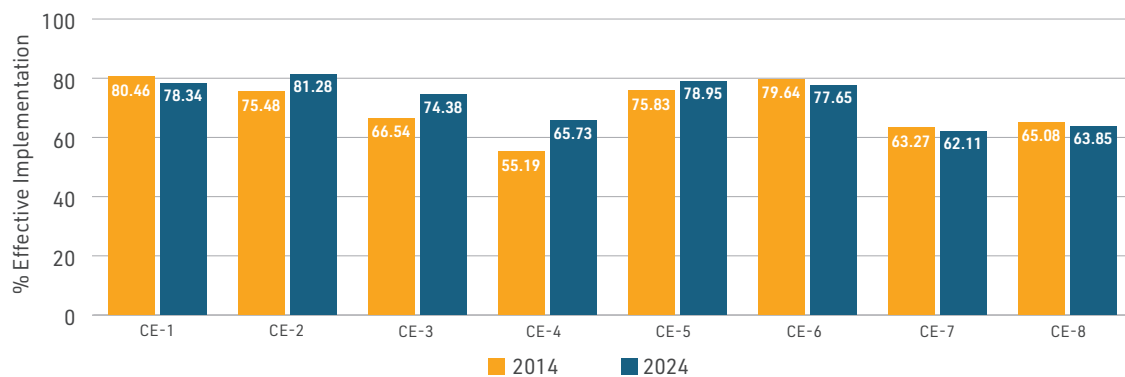
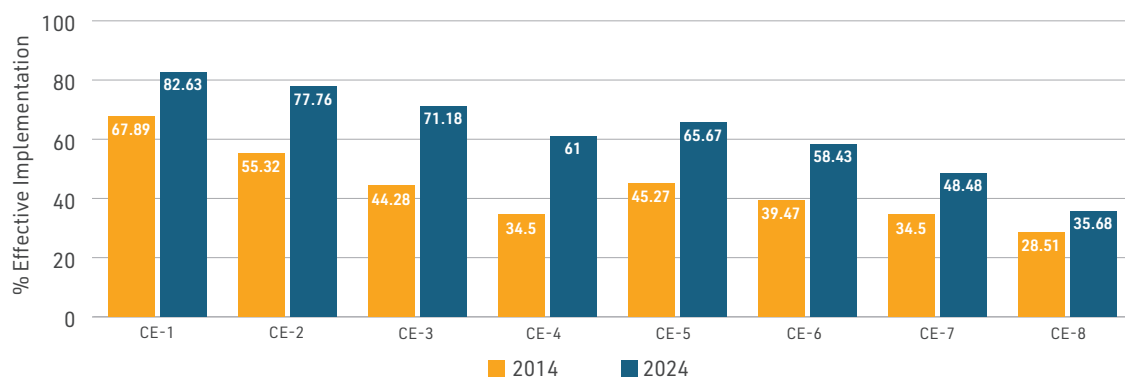


Figure 3-15.
WACAF – Regional
Average EI (%) by
Critical Element
(2014 - 2024).



3.6 REGIONAL RESULTS BY AUDIT AREA

3.6.1 The regional average EI by audit area for each of the seven ICAO regions over the last 10 years is presented below in Figures 3.16 to 3.22.

Figure 3-16.
APAC – Regional
Average EI (%) by
audit area (2014
– 2024).

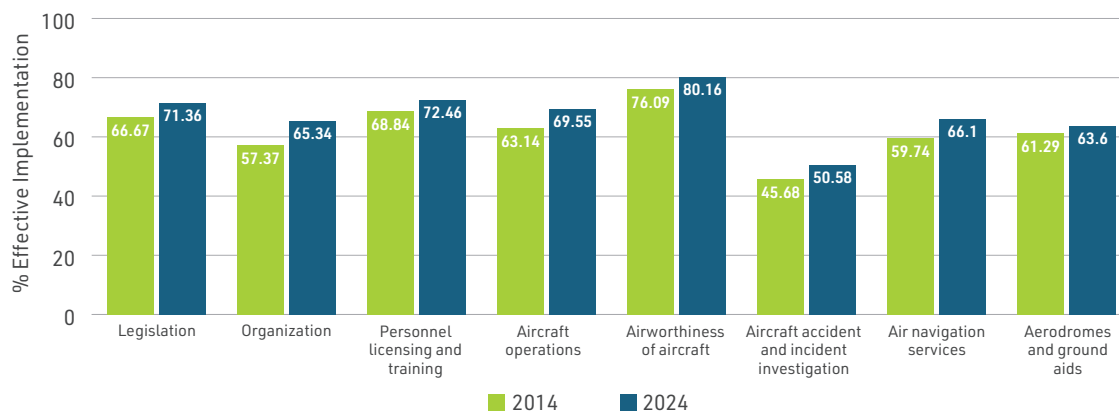


Figure 3-17.
ESAF – Regional
Average EI (%) by
audit area (2014
– 2024).

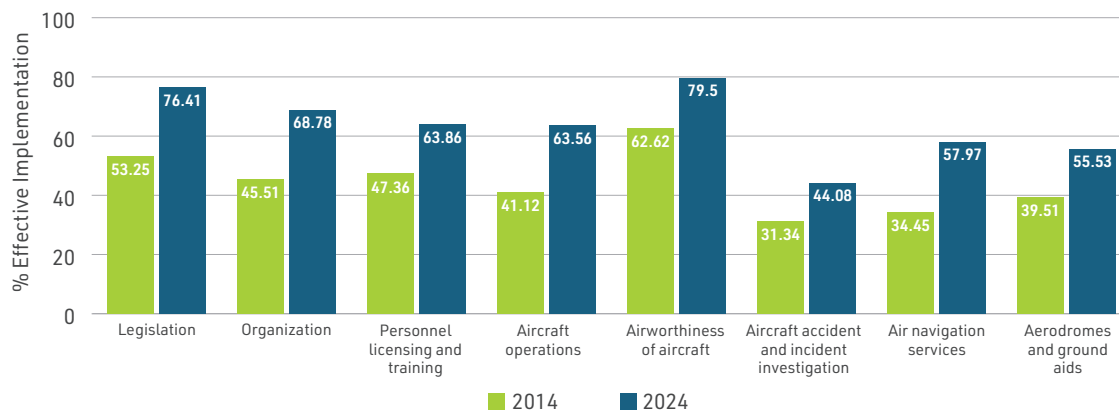


Figure 3-18. EUR/
NAT – Regional
Average EI (%) by
audit area (2014
– 2024).

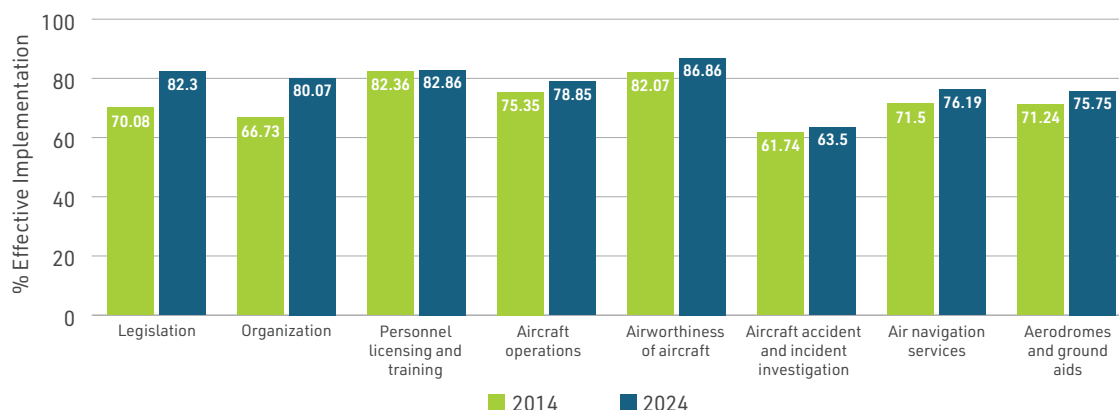


Figure 3-19.
MID – Regional
Average EI (%) by
audit area (2014
- 2024).

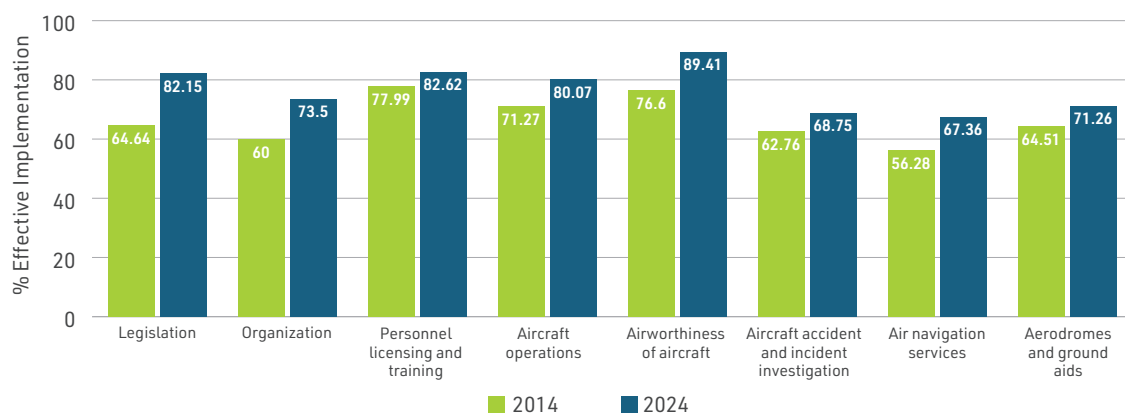


Figure 3-20.
NACC – Regional
Average EI (%) by
audit area (2014
- 2024).

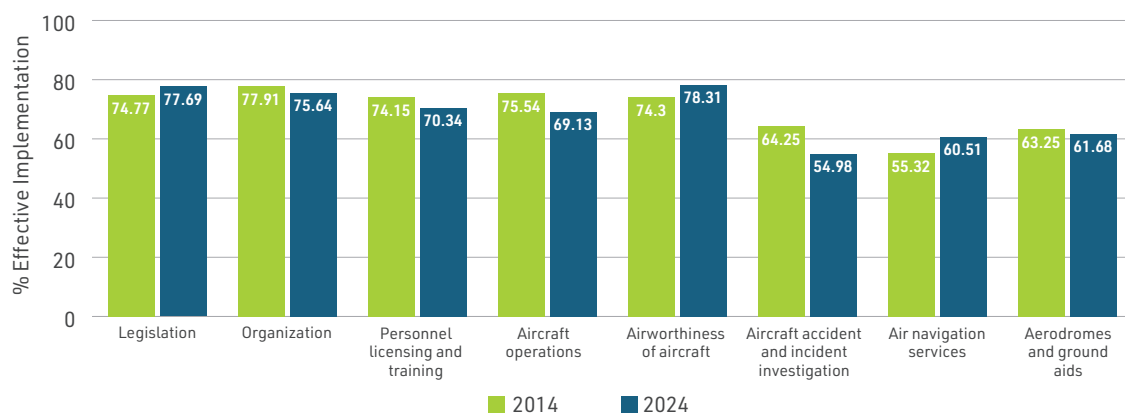


Figure 3-21.
SAM – Regional
Average EI (%) by
audit area (2014
- 2024).

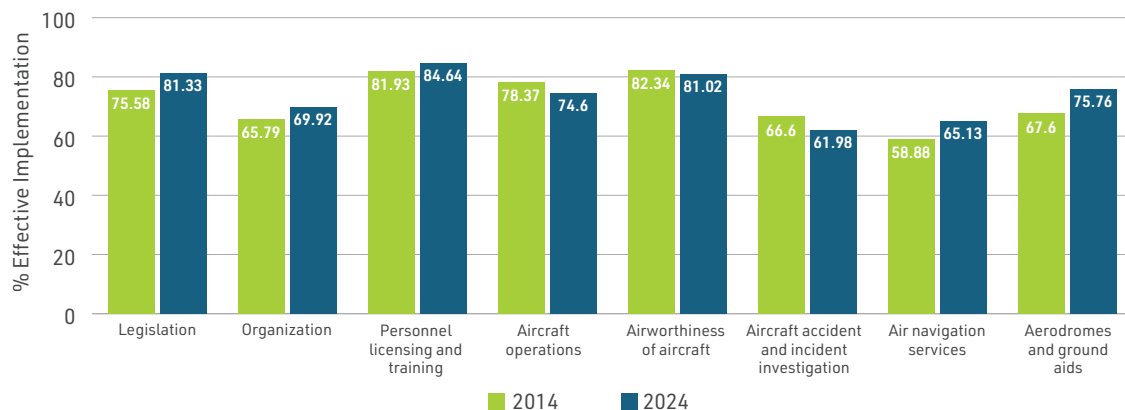
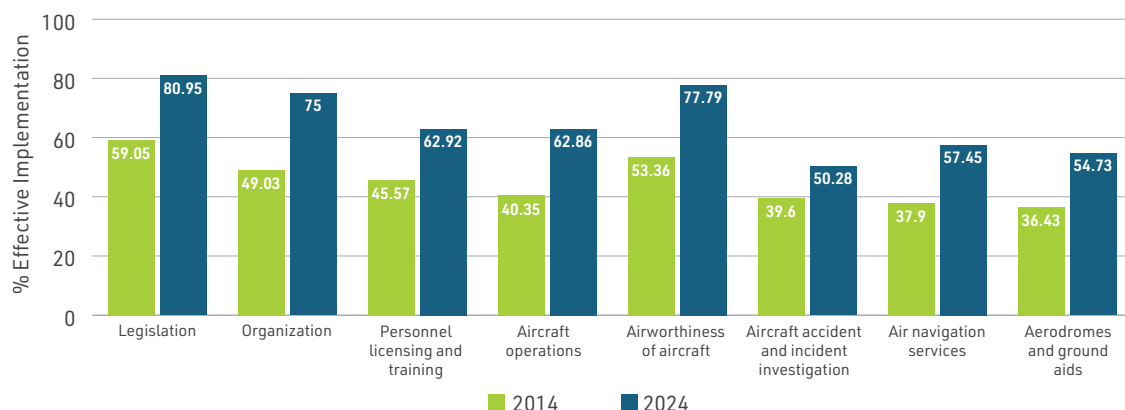


Figure 3-22.
WACAF – Regional
Average EI (%) by
audit area (2014
- 2024).



3.7 USOAP CMA ACTIVITIES IMPACT

3.7.1 Fatal Accidents Analysis

3.7.1.1 The inception of the USOAP CMA 25 years ago was prompted by a rising trend in both fatal and non-fatal accidents during the late 1980s and 1990s - a pattern that was expected to worsen with increasing traffic volumes. The below analysis examines the number of fatal accidents that occurred between 1975 and 2024.

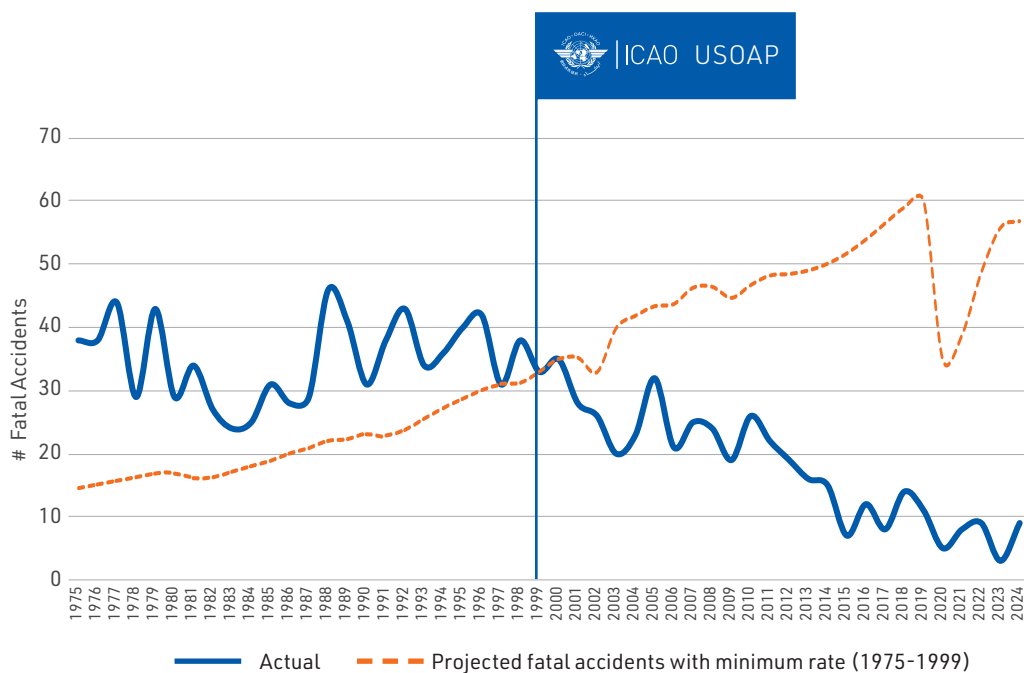
3.7.1.2 Figure 3-23 shows a comparison between two curves - the blue line that shows the downward trend in the number of fatal accidents observed between 1975 and 2024, and the orange dotted line projecting what fatal accidents would have been in the same period if we used the minimum rate of fatal accidents of the period 1975-1999 with the associated air traffic.

3.7.1.3 The launch of the USOAP CMA in 1999 together with other contributing factors including but limited to, growing safety concerns, implemented oversight measures, and improvements in technology had a positive effect on improving global aviation safety. Of these combined global efforts, aviation has become one of the safest modes of transportation.

3.7.2 Results variation in audits

3.7.2.1 Since the launch of USOAP 25 years ago 187 Member States* have been audited. After the transition to the Continuous Monitoring Approach in 2014, 159 States had received at least one CMA activity. As of 31 December 2024, ICAO Member States have achieved a global average EI of 68.67 per cent.

Figure 3-23. Comparison of fatal accidents - actual vs. projected between 1975 and 2024



Note: Fatal Accidents 1999-2024. Source: Flight Safety Foundations (FSF).

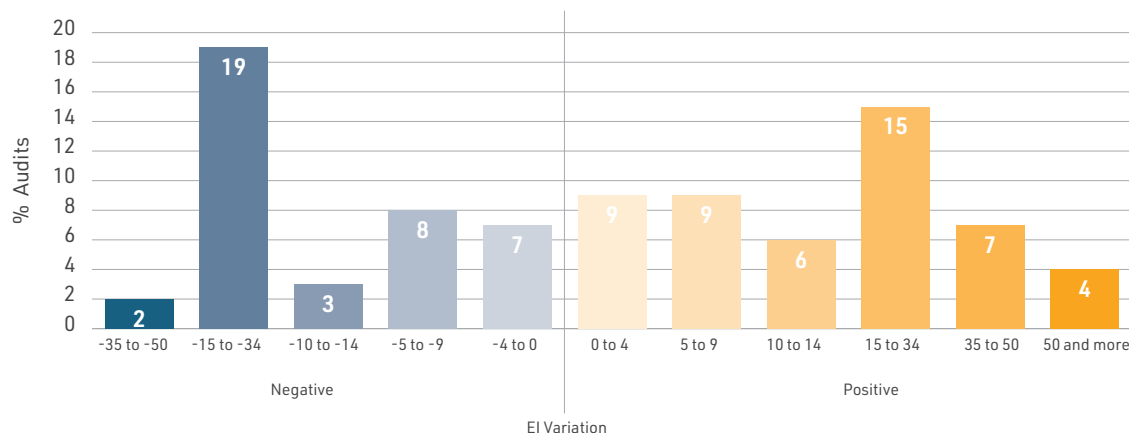
* Dominica, Kiribati, Somalia, South Sudan, Tuvalu and Yemen have not yet been audited by ICAO. Afghanistan and Iraq have received documentation-based audits.



3.7.2.2 The graph in Figure 3-24 shows the EI variation for audits carried out over the last 10 years. EI variation is defined as the difference between the EI of the last CMA audit results and the EI of the previous. Member States which only had one CMA audit were excluded from this analysis.

3.7.2.3 The global average EI variation is +4.94 points. Further, it was observed that more States (50 cases) improved their score (EI variation +20.76 points) than those which received a lower EI (39 cases, EI variation -15.34 points). States show a tendency to improve their results with every new audit activity, indicating the positive effect of USOAP on States' safety oversight.

Figure 3-24. EI variation in audits 2014-2024





CHAPTER 4

Venues for improvement in the eight audit areas identified during USOAP CMA activities



ICAO USOAP
Continuous Monitoring Approach

This chapter highlights aspects related to safety oversight and aircraft accident/incident investigation that have been identified during USOAP CMA activities, and present as continuous challenges to most States. The information in this chapter is not intended to present a detailed or exhaustive list of all deficiencies identified through the programme, and does not address operational safety issues in the various areas. Rather, this chapter focuses on issues related to States' safety oversight systems as well as their systems for the independent investigation of aircraft accidents and serious incidents, and the reporting and analysis of occurrences.

Note 1. – Appendix B presents global EI values for each subgroup of the eight audit areas.

Note 2. – States without sufficient resources or competencies might consider delegating specific safety oversight functions and activities to a regional safety oversight organization (RSOO), a regional accident and incident investigation organization (RAIO) or another State. States may also consider delegating activities to other recognized entities (such as trade associations, industry representative organizations or other bodies) that may collect and analyse data on their behalf, provide training or conduct surveillance and monitoring activities. However, it must be noted that the ultimate responsibility for safety oversight remains with the States themselves. This statement is true regardless of the safety oversight-related functions and activities that they may choose to delegate. This warrants the understanding that although a State may delegate specific functions and activities, there is still a need for sufficient personnel to interact with the delegated entity and to process information provided by that entity.

4.1 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE LEG AREA

4.1.1 Developing and maintaining a comprehensive and up-to-date set of regulations

4.1.1.1 In the area of LEG, an improvement in EI was observed when compared with the last triennium. However, one third of ICAO Member States continue to face challenges in establishing comprehensive procedures to amend either their civil aviation regulations or primary aviation legislation in a timely manner, to bring them into full accord with applicable provisions contained in the ICAO Annexes.

4.1.1.2 The findings observed include, but are not limited to, procedures lacking:

- a) an acceptable level of detail and customization regarding the processing of ICAO State letters;
- b) coordination with all relevant entities, including technical and legal experts, within or outside of the State's civil aviation authorities (CAAs);
- c) realistic but effective timelines for each step of processes; and
- d) a comprehensive set of steps, starting from the identification of the need for amendments of the regulatory framework of a State, up until the actual promulgation and publication of amended or new legal requirements.

4.1.1.3 The absence of States having comprehensive and up-to-date legal frameworks, consistent with ICAO safety-related requirements, is due not only to deficiencies in the procedures, but also to limited qualified human resources in States to support the rule-making process. Consequently, the legal basis for States to perform their safety oversight functions and duties is either incomplete or not in conformance with the latest SARPs. While an improvement in the LEG area has been observed in States that have adapted or adopted regulations from other sources, 35 per cent of these States do not have an established and comprehensive process to ensure that their regulatory scheme is up-to-date following the amendments of ICAO Annexes.

4.1.2 Identifying differences with SARPs, notifying them to ICAO and publishing significant differences in the Aeronautical Information Publication (AIP)

4.1.2.1 Over 60 per cent of audited States have established an effective system for the identification and notification of the differences between SARPs and their national regulations and practices to ICAO, as required by Article 38 of the Chicago Convention. This represents a slight improvement in comparison with last triennium.

4.1.2.2 80 per cent of States continue to have difficulties identifying and publishing their significant differences in their AIP, as required by Annex 15.

4.1.2.3 The identification of differences requires sufficient understanding of the ICAO provisions involved, which may be limited by the following:

- a) the availability, qualification and training of the State's personnel;
- b) the complexity or formulation of the ICAO provisions; and

- c) the difficulty associated with the assessment of the level of compliance of national regulations and practices with SARPs.

4.1.2.4 The identification of significant differences requires a more thorough evaluation of States' national regulations and practices vis-a-vis ICAO provisions, particularly those concerned with aircraft operations and the provision of facilities and services.

4.1.2.5 For some States which have established procedures for the notification of differences, these procedures often do not; contain the necessary coordination with all relevant entities including technical and legal experts within or outside of the State's CAA, or have realistic but effective timelines for each step of the process. In other States, procedures are robust, but implementation is not undertaken due to the lack of detail and clarity on steps to be taken, or to limitations of available qualified human resources.

4.1.3 Transfer of certain safety oversight functions and duties

4.1.3.1 The majority of ICAO States that have ratified Article 83 *bis* for the transfer of functions and duties between the State of Registry and the State of the Operator face either one or both of the following challenges:

- a) Most of these States have not amended their primary aviation legislation and/or related operating regulations to provide for the recognition of certificates of airworthiness, radio licences, and crew licences issued or rendered valid by the State of the Operator in lieu of the State of Registry; and/or
- b) States with air operators using foreign-registered aircraft which have entered into agreements under Article 83 *bis* either; do not meet minimum requirements or have not modified their primary aviation legislation to provide for the transfer of relevant functions and duties.

4.1.3.2 The absence of an adequate legal framework for the transfer, or recognition of such transfer, of functions and duties under Article 83 *bis* results in ambiguous safety oversight responsibilities between the State of the Operator and the State of Registry, increasing the safety risks associated with the operation of these aircraft.

4.1.4 Establishing and implementing policies and procedures for granting exemptions

4.1.4.1 While improvements were observed when compared with the last triennium, still 35 per cent of States face challenges in the granting of exemptions. Some of the most common challenges States face when granting exemptions are the lack of criteria and or appropriate review of robust and documented safety risk assessments or aeronautical studies to support such requests and/or the imposition of limitations, conditions or mitigation measures.

4.1.4.2 Certain States are still to include the legal basis for granting exemptions in their primary aviation legislation. Often regulatory requirements are not comprehensive, or the formal policy and/or associated procedures are not detailed enough or fully implemented. In other instances, non-compliances with established requirements are not documented or are not duly processed through a risk assessment mechanism.

4.2 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE ORG AREA

4.2.1 Ensuring that safety oversight and accident/incident investigation authorities have sufficient human and financial resources

4.2.1.1 Most States still continue to face challenges to establish a mechanism to ensure the availability of sufficient personnel to meet their national and international obligations. This remains the main obstacle to the implementation of an effective State safety oversight system.

4.2.1.2 45 per cent of States do not ensure that their civil aviation and/or accident investigation authorities (AIAs) are able to attract, recruit and retain a sufficient number of qualified technical personnel to perform their functions and responsibilities. This is further challenged by high remuneration structures from the industry, organizations, and even other State authorities.

4.2.1.3 35 per cent of States have not established and implemented an effective mechanism to ensure that each safety oversight authority has sufficient financial resources to meet its national and international obligations. The impact of industry operations being reduced over the last triennium may further increase funding difficulties in some States.

4.2.2 Defining functions and responsibilities of authorities related to safety oversight or aircraft accident/ incident investigation

4.2.2.1 More than a quarter of States have not clearly defined the functions and responsibilities related to safety oversight and AIG in their relevant authorities. Specifically, they do not ensure that relevant technical areas are outlined, overlaps are avoided, and the size and complexity of their aviation activities are commensurate with personnel.

4.3 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE PEL AREA

4.3.1 Approving training programmes related to the first issuance of licences and ratings

4.3.1.1 Currently half of ICAO Member States have implemented an effective process to approve training programmes related to the first issuance of licences and ratings.

4.3.1.2 For the other half, the system for approving training programmes is not yet fully developed and/or effectively implemented. The lack of qualified inspectors capable of reviewing and approving training programmes in these States is the key reason behind delayed implementation. In addition, the training procedures implementation is not sufficiently comprehensive and does not include; domestic and foreign programmes for all types of licences, and ratings for pilots, air traffic controllers and aircraft maintenance engineers.

4.3.2 Ensuring supervision and control of flight and practical test delivery by the designated flight and practical examiners

4.3.2.1 There has not been any substantial improvement since the last triennium, as the majority of States have not implemented an effective system for the supervision and control of flight and practical test delivery. This requirement ensures the consistency and reliability of testing by the presence of designated flight and practical examiners related to flight crew, air traffic controller and aircraft maintenance engineer licences. Many States have not considered all aspects necessary to implement this requirement appropriately such as; the supervision of designated examiners, an adequate level and frequency of surveillance activities, as well as the availability of procedures and guidance material for inspectors.

4.3.2.2 Additionally, States do not account for aspects related to the development of procedures and checklists related to; the observation of examinations, and competency assessments of examiners during the conduct of examinations and checks for all types of licences. Often, supervision tasks are carried out by other sections within the CAA in coordination with the Licensing Authority, however, coordination among CAA entities is not properly documented. Insufficient qualified personnel needed to perform supervision tasks, as well as attrition, continues to be a challenge.

4.3.3 Implementing a surveillance programme of approved training organizations (ATOs)

4.3.3.1 Most States have not implemented an effective programme for the surveillance of ATOs for pilots, air traffic controllers and aircraft maintenance engineers. This applies to both domestic and foreign ATOs which provide training to service providers' staff. Many States have not; ensured consistency in their methods of surveillance, appropriately determined the frequency of inspections, included random inspections in their surveillance programme, and have not developed and maintained an effective system to keep track of their surveillance activities in relation to ATOs.

4.3.4 Performing surveillance activities in relation to air traffic controllers

4.3.4.1 Despite a slight improvement, over 40 per cent of States have not established and implemented an effective system for the surveillance of air traffic controllers, to ensure that they continue to comply with the conditions of their privileges while performing their functions. Deficiencies have been found in areas such as; the development and implementation of surveillance programmes and plans, the availability and training of inspectors, the development of inspector procedures and guidance, the conduct of random and periodic inspections, and the analysis of surveillance data to determine areas of concern like non-compliance with regulations and unsafe practice. The challenge becomes greater for instances where both the civil aviation authority and air navigation service provider (ANSP) are under the same management.

4.3.5 Supervising and controlling designated medical examiners (DMEs)

4.3.5.1 Approximately 45 per cent of States have not effectively implemented a system for the supervision and control of DMEs. In many States, familiarization training of appointed medical assessors has not been tailored to enable them to clearly understand their duties and



responsibilities within the CAA, particularly with respect to the supervision and control of DMEs. These duties and responsibilities should include; the inspection of premises and equipment, the verification of the use of the latest SARPs and relevant guidance material by DMEs as applicable, the provision of up-to-date refresher training, the timely transmittal of reports to the Licensing Authority, and record-keeping of sensitive and confidential information of applicants and licence holders.

4.4 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE OPS AREA

4.4.1 Ensuring availability of sufficient qualified technical staff

4.4.1.1 An improved OPS EI was observed this triennium. However nearly half of the Member States are still struggling to attract and retain sufficiently qualified technical personnel and resources in order to carry out their certification and surveillance obligations, both nationally and internationally.

4.4.1.2 Despite some progress, more than 55 per cent of States still have not fully implemented training plans for their technical staff to ensure that all required initial, recurrent, specialized and on-the-job (OJT) training, are provided to ensure that their inspectors acquire and maintain the required level of knowledge, skills, competence and qualifications.

4.4.2 Ensuring that air operators comply with all regulations during certification

4.4.2.1 Close to 30 per cent of States have not implemented detailed and comprehensive procedures to ensure that their air operators review and implement all regulations before an air operator certificate (AOC) or any specific approval is granted.

4.4.2.2 Nearly 35 per cent of States have not finalized implementing procedures to ensure that air operators have established; aircraft ground handling training requirements, subcontracting policies, handling processes, as well as procedures and practices for all ground handling operations.

4.4.2.3 A third of ICAO States have not ensured that air operators have established organizational and management systems for the operational control of all flights, including aircraft tracking and location of an aeroplane in distress, and risk management (assessment and mitigations) when intending to operate over or near conflict zones.

4.4.3 Transport of dangerous goods by air

4.4.3.1 Two thirds of ICAO States are yet to establish and implement processes for reporting incidents and accidents involving dangerous goods. Moreover, they lack procedures for investigating and compiling information on such occurrences both domestically and internationally.

4.4.3.2 A number of States have not implemented procedures to grant dangerous goods approvals and exemptions (under Annex 18) that include risk assessments, when required under specific conditions of the Technical Instructions.

4.4.3.3 Most States have not yet implemented procedures to ensure that the organizations (or agencies) and air operators which are involved in the transport of dangerous goods by air, have transitioned to competency-based initial and recurrent dangerous goods training programmes.

4.4.4 Implementing surveillance programmes

4.4.4.1 45 per cent of States still have not finalized implementing a comprehensive surveillance programme to verify that all their AOC holders comply, on a continuing basis, with national regulations and international standards, as well as provisions of the AOCs and associated operations specifications.

4.4.4.2 Less than 40 per cent of States have not yet implemented a system to track deficiencies identified and to accept or validate corrective actions taken by air operators. A similar percentage of States have not used their tracking system to record past deficiencies when establishing their surveillance programme or when carrying out risk assessments.

4.4.5 Implementation of an enforcement system

4.4.5.1 Approximately 40 per cent of States have not yet implemented procedures to take graduated enforcement actions, such as fines, restrictions or suspensions, when air operators do not rectify, in a timely manner, deficiencies that were identified during surveillance activities.

4.4.5.2 A lesser number of States in this triennium have not implemented enforcement procedures to address situations in which entities and air operators, involved in the transport of dangerous goods by air, have not rectified deficiencies that they have been notified of in a timely manner.

4.5 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE AIR AREA

4.5.1 Implementing training programmes for airworthiness inspectors

4.5.1.1 To date, there has not been significant improvement from last triennium as only 40 per cent of States have appropriately implemented a training programme for airworthiness inspectors. Focusing specifically on States that have received one of the various USOAP CMA activities during the period under review, the “not satisfactory” percentage stands at slightly over 62 per cent. Past triennia suggested a positive trend towards more formalized training programmes among the States, with a slow positive climb, however these results indicate that it remains a key area of concern. As such, States which do not have a foothold in this area would benefit from continued support and assistance from other ICAO Member States.

4.5.2 Implementing a comprehensive procedure for the amendment of enabling airworthiness regulations and national standards, including the identification and notification of differences to ICAO

4.5.2.1 While a solid majority of States have promulgated and implemented aviation regulations, approximately 50 per cent remain deficient in the area of implementing procedures for the amendment of their enabling airworthiness regulations and national standards. The process of a State amending these regulations and standards should be recognized globally as firstly, a key indicator of a State’s maturation process within the aviation community, and secondly, as a more comprehensive and State-tailored approach to the continuity of overall aviation safety, provided that they are continuously reviewed and refined.

4.5.2.2 As a key requirement for clear and effective global communication, Member States are required to identify and notify to ICAO, differences between their national requirements and practices, and those established by international standards as contained in the Annexes. With the growing popularity and use of the Compliance Checklist/Electronic Filing of Differences (CC/EFOD) module on the OLF, there has been a positive trend in the number of States meeting this requirement. For the period under review, 43 per cent of States have used this OLF feature.

4.5.3 Taking appropriate actions when information obtained from reliability monitoring indicates a degraded level of safety

4.5.3.1 Compared to the previous triennia, approximately 67 per cent of States have now established or implemented a formal system to conduct ongoing surveillance of their air operators' reliability programmes. As part of the maintenance programme approval process, the air operators should submit a reliability programme and appropriate information to the CAA for evaluation and approval. The reliability programme should be administered and controlled by the air operators, and monitored by the CAA's airworthiness inspectors. In the event that; an acceptable level of reliability is not maintained, an observable negative trend exists, or significant deficiencies are detected in the design or conduct of operations, the State of the Operator should initiate a special evaluation, impose operational restrictions, if necessary, and/or stipulate corrective actions for the operator. These steps should be adopted immediately in order to resolve the problems in a timely manner or suspend the affected authorization unless there is a corrective action plan acceptable to the CAA.

4.5.3.2 In connection with the information stated above in 4.5.3.1, 46 per cent of States have not established and implemented a documented process to initiate special evaluations or impose special operational restrictions when information obtained from reliability monitoring indicates a degraded level of safety. This figure is slightly lower than the one reported in the previous triennium, 49 per cent, and while it is positive to note that there was an improvement over the past three years, nearly half of the States still cannot ensure that appropriate actions are taken as an outcome of the surveillance of reliability programmes.

4.5.4 Establishing or implementing surveillance programmes for AOC holders and/or approved maintenance organizations (AMOs)

4.5.4.1 Nearly half of audited Member States have not implemented formal surveillance programmes for AOC holders and/or AMOs to verify their respective certificates, as well as their continuing compliance with national regulations and international standards. This shortcoming translates to a potential lack of implementation, at the operational level, of well-intended and safety-based rules and policies. As such, in the area of AIR, global aviation safety efforts remain at risk of being ineffective due to the lack of assurance of compliance with safety-related requirements and best practices.

4.5.4.2 Although there has been a steady improvement in establishing or implementing surveillance programmes for AOC holders and/or AMOs, this continues to be a common challenge in nearly half of all Member States. To date, 68 per cent of States have implemented an effective tracking system for deficiencies identified during surveillance activities and their timely resolution. On the other hand, 35 per cent of Member States have not established and/or effectively implemented a documented comprehensive process or method to track identified deficiencies, including the subsequent evaluation of corrective actions presented by their AOC holders or AMOs. In turn, this reduces the CAA's abilities to take appropriate actions, including enforcement measures, to ensure the timely resolution of deficiencies.

4.5.5 Conducting effective surveillance of the performance of delegated safety oversight tasks

4.5.5.1 Currently, less than half of Member States have not established and/or effectively implemented a documented comprehensive process to conduct surveillance of the tasks performed by delegated entities/individuals.

4.6 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE AIG AREA

4.6.1 Independent accident and incident investigations

4.6.1.1 Independent accident investigation authorities (AIAs) have been established by 44 per cent of States, which is a slight improvement over the previous triennium. This demonstrates that more than 50 per cent of States still do not have the necessary legislation and/or organization to ensure that their AIAs would have unrestricted access to and control over the information related to its investigations, and would not receive or seek instructions in the conduct of investigations. This is notable as the lack of independence of the AIA from judicial and civil aviation authorities, can negatively affect the conduct or objectivity of AIG, and in turn, risk weakening the credibility of conclusions and safety recommendations stemming from them.

4.6.1.2 On average, 41 per cent of States have established and implemented measures to ensure separation between investigations conducted under Annex 13 and those by judicial authorities. This is a slight increase over the previous triennium. Such separation requires States to have established formal arrangements like Memorandums of Understanding (MOUs), so that Annex 13 investigations are not impeded by administrative or judicial investigations or proceedings. Regarding the protection of accident and

incident investigation records, in particular cockpit voice recorder (CVR) recordings and airborne image recordings, more than 50% of States do not have the necessary legislative provisions and/or MOUs. A possible reason could be the lack of a competent authority that is able to determine whether the disclosure or use of AIG records outweighs the likely adverse impact that may be had on that or any future investigations, both domestically and internationally.

4.6.2 Conduct of accident and serious incident investigations

4.6.2.1 Although half of Member States have implemented policies and procedures to ensure the institution and conduct of investigations into accidents, only 38 per cent of States have established the necessary process to ensure the effective investigation of serious incidents, as required by Annex 13. This results in potential lessons left undrawn or simply ignored, at the detriment of the improvement for safety. The investigation of serious incidents (verified or potential) in an effective manner is greatly impacted by the lack of immediate reporting by service providers to the AIA of the State of Occurrence. To ensure the proper notification of accidents and serious incidents within a State, its legislation should provide; for its AIA to be immediately notified of any accident or incident in its territory, and sufficient details on the type of incidents that are or may be considered as serious incidents which require immediate notification to the AIA. It was also observed that States lack implemented processes to determine whether a given incident is to be considered a "serious incident", using risk-based analysis, as described in Attachment C to Annex 13.

4.6.2.2 The timely identification of serious incidents is more challenging for States which either do not have a permanent, independent investigation authority, or have such an authority but without all the necessary qualified and experienced personnel. Audit results show that 60 per cent of States do not have a sufficiently detailed methodology to identify staffing needs for the various investigation-related activities, including; notifications, first actions after an accident or serious incident, organization and conduct of the investigation, as well as Final Report development. In cases where States do not have their own appropriately qualified personnel, or not in sufficient numbers, arrangements with other States or regional organizations could be put in place. When a State delegates the conduct of all investigations under their responsibility to another State or an RAIO, that State would still need to have an AIA established, in accordance with standard 3.2 of Annex 13. In this case, the AIA could be composed of a skeleton staff (e.g. one to three persons) necessary to run its function and services. One of the roles of the delegating

State's AIA would be to institute the investigation, as per standard 5.1 of Annex 13.

4.6.3 Facilities, equipment and training for accident/incident investigators

4.6.3.1 Less than 25 per cent of States have appropriately implemented a comprehensive and detailed training programme for their investigators. Even though many States have started developing such training programmes, the content is often insufficient. In many cases, recurrent, as well as specialized and advanced training are not addressed in sufficient practical details. This is particularly true for recurrent training regarding safety at the accident site. The implementation of training programmes is often limited by an insufficient budget, and an ad hoc, rather than planned approach to the provision of training. Only a small number of States – mostly States with more mature AIAs provide their investigators with the necessary training to effectively conduct their tasks. The provision of investigation-related training is particularly challenging for States which do not have a permanent investigation authority.

4.6.3.2 The facilities and office equipment available to the entity in charge of AIG are appropriate for 76 per cent of States. However, more than 53 per cent of them do not provide investigators with all necessary investigation and protective equipment, means of communications and/or transportation to enable the conduct of investigations. In particular, only 48 per cent of States' AIAs have the necessary procedures and guidance material for the protection of investigators against biological and other hazards at the accident site. In addition to this, the guidance material is not always customized as needed to reflect local conditions and safety equipment available. Most States also lack a system to keep track of the availability of collective and individual equipment to ensure that all personnel who may need to access the accident site are provided with equipment in sufficient quantity in a timely manner.

4.6.4 Release of investigation reports and assistance to aircraft accident victims and their families

4.6.4.1 Less than 49 per cent of States have effective procedures to ensure that the Final Reports of their investigations are completed as soon as possible and made publicly available in a period of 12 months. Procedures are also lacking with respect to the State ensuring that if the report is not made available within 12 months, an interim statement is made publicly available on each anniversary of the occurrence, detailing the progress of the investigation and any safety issues raised. As a result, most States do not send their Final Reports to ICAO and

all States involved, including those having suffered fatalities or serious injuries to their citizens.

4.6.4.2 Only 39 per cent of States have established and implemented procedures to ensure that relevant and timely information on the progress of investigation is provided to families and accident survivors. Out of those States subject to the requirements for assistance to aircraft accident victims and their families, only seven per cent have established a comprehensive system to ensure that:

- a) all air operators and aerodrome operators have established their family assistance plans;
- b) family assistance plans are periodically reviewed by the State and service providers; and
- c) all air operators have arrangements with aerodromes in which they operate to implement the family assistance plans.

4.6.4.3 Some Final Reports are not publicly available because of; lack of provision in the State's national legislation, insufficient resources of the AIA, or a specific decision by national authorities not to release the Final Report. In cases where a Final Report or interim statement is not released, Annex 13, Recommended Practice 6.6.1 could be used, to request consent from the State conducting the investigation to make a statement listing safety issues.

4.6.4.4 In addition to Final Reports being released after the completion of accident or incident investigations, ADREP Data Reports are also to be sent to ICAO after the completion of an investigation. The ICAO database containing individual ADREP reports on accidents and incidents sent by Member States, when constantly updated and maintained, is a rich data source of validated information regarding global accidents and incidents. It can be used by both ICAO and Member States in AIG, as well as in safety management activities. However, only 28 per cent of States have developed and implemented procedures to ensure that ADREP data reports are sent to ICAO in a format compatible with the ADREP taxonomy containing coded information like occurrence class, occurrence category, aircraft manufacturer/model, flight phase, or event type coding (including the operational, human factor and organizational aspects).

4.6.5 Analysis of accident/incident data for safety management

4.6.5.1 A growing number of States have established an effective mandatory safety reporting system to facilitate the collection of information on actual or potential safety deficiencies, as required by Annex 19. Such a system needs

to be supported by appropriate legislation/regulations, procedures and guidance material. Many States have not clarified in their regulations, the types of occurrences to be reported and their timelines.

4.6.5.2 55 per cent of States compared to 60 per cent previously have yet to establish an accident and incident database to facilitate the effective analysis of information on actual or potential safety deficiencies, and to determine any preventive actions required. Many States produce statistical information about the accident/incident data collected but do not carry out further analysis. In addition, the data collected is not always shared with the concerned stakeholders, like the CAAs or RSOOs to facilitate the identification of safety deficiencies and preventive actions. The unavailability of such information could affect the ability of the State to effectively implement an SSP.

4.7 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE ANS AREA

4.7.1 State responsibilities concerning an instrument flight procedure design (FPD) service

4.7.1.1 The most relevant concern continues to be that only 33 per cent of States ensure that the FPD service conducts maintenance and periodic review of instrument flight procedures for aerodromes and airspace (including its flight validation). Even though the requirements for the revision interval (i.e. not to exceed five years) are often published, lack of surveillance activities and enforcement actions allow the FPD to exceed prescribed requirements, without ensuring that they continue to comply with changing criteria and meet user requirements.

4.7.1.2 In addition, the lack of effective mechanisms to ensure revision of the FPDs leads to a negative impact on safety. Only 60 per cent of States have established and implemented a mechanism to ensure the flight procedures are in accordance with the criteria promulgated by the State, such as an approval process, as prescribed in Annex 11.

4.7.2 Fatigue Management for Air Traffic controllers

4.7.2.1 Although Annex 11 provisions regarding fatigue management for air traffic controllers were adopted in 2016 and have been applicable since 2020, only 52 per cent of States have developed prescriptive limitations, and 30 per cent have demonstrated a mechanism in place to monitor and evaluate its implementation. In addition, 25 per cent have developed and implemented processes to accept variations to the prescriptive limitations.

4.7.2 Search and Rescue services

4.7.2.1 Among the services in air navigation, search and rescue (SAR) continues to represent the major challenge for States when performing their safety oversight function. The overall EI of respective PQs is below 50 per cent and a further breakdown shows that only 33 per cent of States ensure that their SAR organization coordinates with those of neighbouring States, and 45 percent perform surveillance effectively.

4.7.2.2 Regarding rescue coordination centres (RCCs) and rescue sub-centres (RSCs), about 53 per cent of States ensure that each employs a sufficient workforce in coordination and operational functions. Only 39 per cent of States ensure that their RCCs and RSCs are staffed 24 hours a day by trained personnel proficient in the use of the English language.

4.7.2.3 Only 45 per cent of States ensure that detailed plans of operation for the conduct of SAR within its area are developed in accordance with their national requirements. This includes the identification of designated public or private SAR units that are suitably located and equipped for SAR operations.

4.7.2.4 Roughly 54 per cent of States do not have a mechanism to ensure that SAR personnel are regularly trained, and that appropriate SAR exercises are arranged.

4.7.3 Implementing a formal surveillance programme and enforcement actions for Air Navigation Service Providers (ANSPs)

4.7.3.1 About 46 per cent of States have not developed a comprehensive surveillance programme in ANS. A common problem is that planned surveillance activities do not cover all facilities, aeronautical information products, and requirements within the full scope of ANS.

4.7.3.2 Even though there is no certification standard for ANSPs, States are required to verify compliance status on a continuing basis to ensure that the service provider is in accordance with the applicable national regulations and international standards. To achieve this objective, States need to develop and implement a formal surveillance programme that would cover all significant aspects of the services provided.

4.7.3.3 Further to this, 49 per cent of States have shown a lack of real effective authority to take appropriate actions to resolve identified safety issues, up to and including enforcement measures. States should ensure that identified safety issues are resolved in a timely manner through

a system that monitors and records progress, including actions taken by individuals and organizations performing aviation activities to resolve them.

4.7.4 Technical Guidance for the ANS inspectorate

4.7.4.1 It is common to identify incipient mechanisms to assess the proper implementation of standards or national provisions. States struggle to develop comprehensive and up-to-date technical guidance material and procedures to perform their safety oversight functions effectively. Even more challenging is the implementation of technical guidance to the industry regarding relevant ANS regulations.

4.7.4.2 Technical guidance materials are often developed to mirror the USOAP PQs instead of procedures or checklists that focus on specific and detailed aspects of verification to confirm an effective implementation. Usually, it is unclear what is to be verified, by which method, which type of results are to be obtained, and how completed checklists and related documents should be filed.

4.8 HIGHLIGHTS OF ISSUES IDENTIFIED IN THE AGA AREA

4.8.1 Maintaining sufficient qualified technical staff

4.8.1.1 63 per cent of States have not ensured that their aerodrome regulatory authorities have sufficient human resources to carry out their functions and mandate.

4.8.1.2 Furthermore, 75 per cent of States have not fully and appropriately implemented all training requirements based on training plans for their technical staff.

4.8.2 Implementing aerodrome certification requirements

4.8.2.1 More than 70 per cent of States have not developed guidance and implemented processes for the use of aeronautical studies or risk assessments to justify an application for an exemption for certification requirements, and by the same token, an evaluation of their alternative approaches to ensure an equivalent level of safety.

4.8.2.2 57 per cent of States have not yet regulated or ensured the implementation of a provision of runway end safety areas (RESA) at aerodromes.

4.8.2.3 More than half of Member States have not yet established and implemented a comprehensive enforcement system to deal with identified AGA deficiencies, including the categorization of the seriousness of deficiency

and deadline for correction, as well as ensuring safe aerodrome operation.

4.8.3 Establishing and implementing a formal surveillance programme for certified aerodromes

4.8.3.1 States are required to establish and implement a surveillance programme that normally includes procedures for each type of surveillance activity, as well as periodic and non-periodic inspections. Around 60 per cent of States have not developed or implemented a formal surveillance programme for the continuing supervision of the operations conducted by aerodrome operators. In addition, 47 per cent of States have not developed and implemented procedures for the continuing surveillance of aerodrome certificate holders.

4.8.4 Establishing and implementing a comprehensive enforcement system

4.8.4.1 Almost 60 per cent of States have not yet developed and implemented a process to take actions, including enforcement, if the aerodrome operator does not rectify deficiencies found during surveillance activities within a reasonable time.

4.8.4.2 Around 55 per cent of States have not established and implemented a process for the management of conflicts between safety and environmental requirements to ensure that aviation safety is not compromised.

4.8.5 Obstacle Limitation Surfaces (OLS) and Wildlife Hazard Management (WHM)

4.8.5.1 36 per cent of States have not yet ensured the implementation of requirements relating to the group of OLS at and around aerodromes, or established coordination with the relevant land-use authorities in the interest of aviation safety.

4.8.5.2 Nearly 40 per cent of States have not yet established and implemented a process to mitigate against an increase or potential increase in the wildlife strike hazard due to land use development likely to attract wildlife around an aerodrome.



CHAPTER 5

States engagement in the USOAP CMA



ICAO USOAP
Continuous Monitoring Approach

5.1 EFFECTS OF CANCELLATIONS AND POSTPONEMENTS OF USOAP ACTIVITIES

5.1.1 Assembly Resolutions A40-13, clause 13, and A41-18, Appendix D, clauses 3 and 7, adopted by the 40th and 41st Sessions of the ICAO Assembly, urge Member States to cooperate with ICAO and accept activities planned by the USOAP CMA, without any changes, unless there are compelling reasons not to do so in order to facilitate the smooth functioning of these audit programmes.

5.1.2 The rate of States requesting the cancellation or postponement of USOAP CMA activities has increased significantly in this triennium, with ten postponements. The postponement or cancellation of a planned USOAP activity by a State has a direct negative impact on the programme, affecting resource allocation, activity planning,

and team member scheduling. Changes to Activity Plans can further affect the sustainability of human resources, as staff scheduling and the on-the-job training of potential auditors depend on planned activities and the availability of short-term secondments. Scheduled activities that are not deployed, result in an unaddressed priority that the USOAP CMA must reassess within the planning cycle of the following year. It is therefore critical that all States accept activities scheduled in their USOAP Activity Plans. The cooperation of all States in this matter is essential to improve the efficacy and efficiency of this programme.

5.1.3 USOAP Activity Plans are posted on a biannual basis. States are therefore urged to ensure that their respective administrations are ready to participate in scheduled activities and prepare the necessary documentation in support of such activities.

Figure 5-1. Number of USOAP auditors by technical audit area

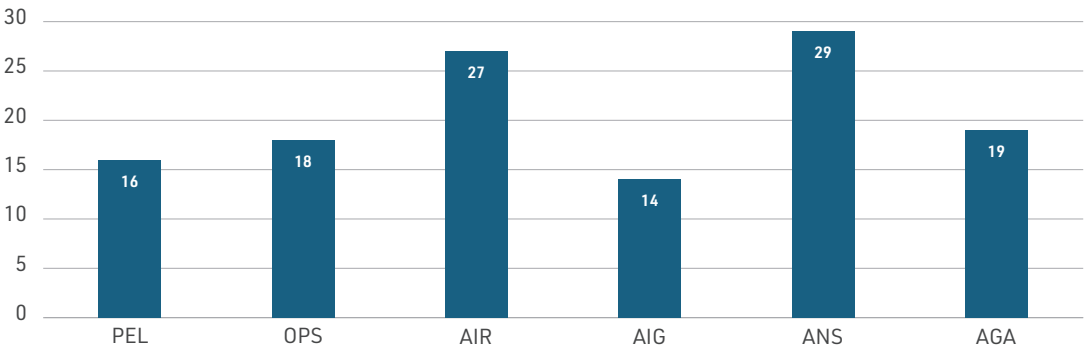
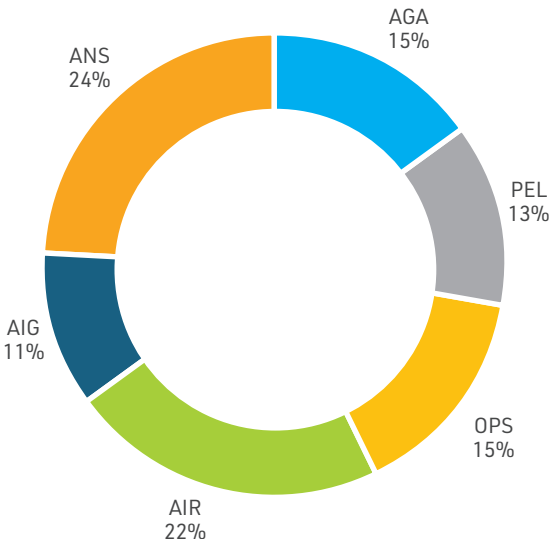


Figure 5-2. Percentage of USOAP auditors by technical audit area



5.2 USOAP CMA ROSTER

5.2.1 The USOAP CMA relies on the regular conduct of activities to reflect current information on States' efforts to develop and manage their safety oversight, AIG, and safety management responsibilities. The demand of these activities exceeds the capacity of ICAO staff supporting the USOAP CMA, and States are urged to nominate subject matter experts (SMEs) as potential auditors with specific combinations of area of expertise, and language. The criteria that potential auditors must meet for each USOAP technical audit area are outlined in State letter AN

19/34 - 24/80. States are strongly encouraged to nominate female experts to support ICAO's Assembly commitment to enhance gender equality and the advancement of women in aviation. Information addressing the USOAP CMA training process is available online.

5.2.2 Figures 5-3 to 5-5 provide a summary of active USOAP CMA auditors by technical audit area, language, age, and gender. As of 31 December 2024, the total number of auditors in the roster is 114. On the charts, the same auditor may be counted in more than one technical audit area and language, as applicable.



5.3 LONG-TERM SECONDMENTS

States also continue to support the efforts of the USOAP CMA through the provision of long-term secondments, contributing to the successful operation and evolution of

the programme. ICAO highly appreciates the contribution of long-term experts from Canada, China, Dominican Republic, France, Republic of Korea, Saudi Arabia, Singapore, the United States and the European Union Aviation Safety Agency (EASA).



Figure 5-3. Number of USOAP auditors by technical audit area and language

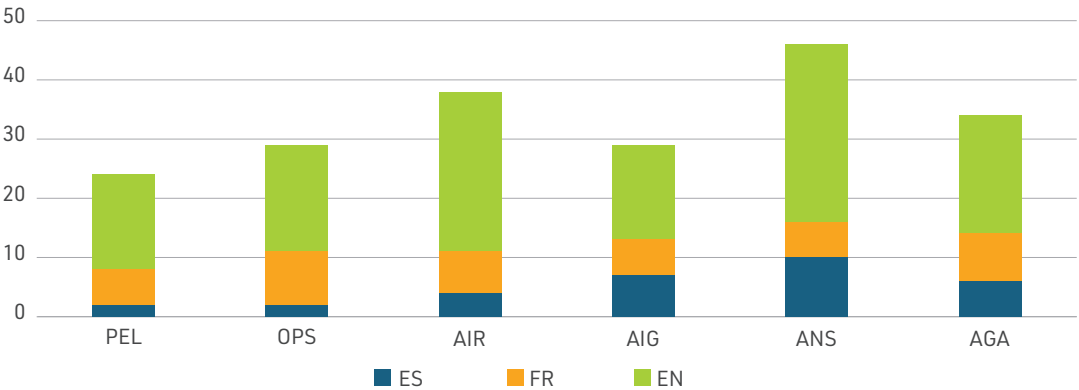


Figure 5-4. Number of USOAP auditors by age group

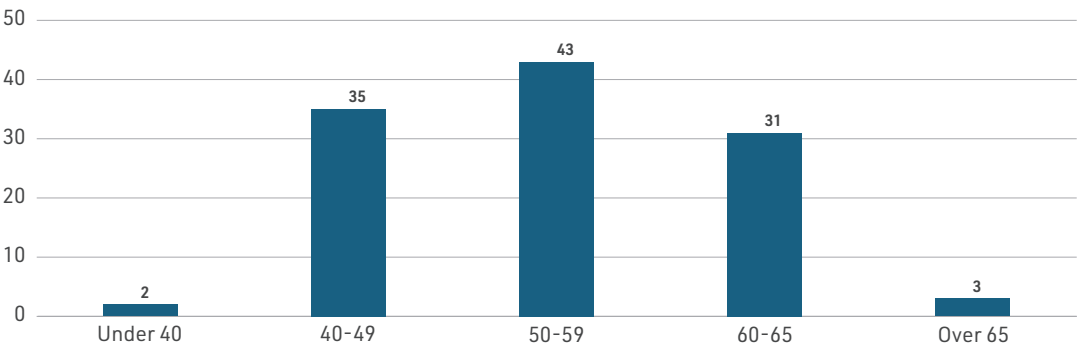
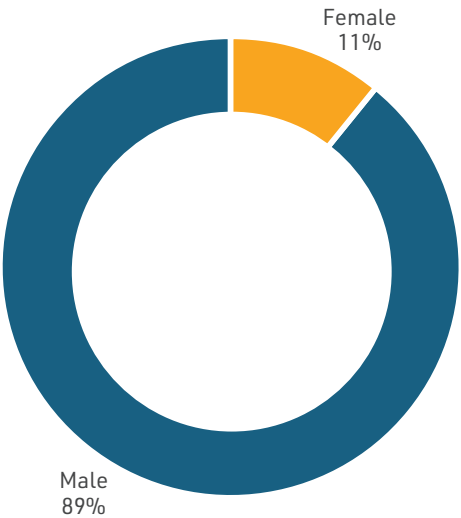


Figure 5-5. Percentage of USOAP auditors by gender







CHAPTER 6

USOAP CMA evolution highlights



ICAO USOAP
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6.1 SUSTAINABILITY AND IMPROVEMENTS

6.1.1 Quality

6.1.1.1 The Monitoring, Analysis and Coordination branch (MAC) of the Air Navigation Bureau (ANB) at ICAO is the entity responsible for the execution of the USOAP CMA.

Through the implementation of a risk-reduction strategy, the programme continued to address and mitigate the associated operational risks, such as cancellations of activities and organizational challenges.

Further risk-reduction was achieved through maintaining an ISO certified quality management system in place. During this triennium the programme underwent internal and external audits in accordance with the requirements of ISO 9001:2015. This provides ongoing confidence and assurance for the Council and States regarding the quality, transparency and consistency of USOAP.

6.1.1.2 The established Running Action Item List (RAIL), which captures organizational challenges which the programme faced had 10 action items concerning issues to be tracked and addressed were entered between 2022 and 2024. Also during this period, 22 corrective measures (some from the last triennium) were implemented, and by the end of 31 December 2024, only eight action items were still ongoing.

6.1.1.3 Data collected by ICAO through the USOAP CMA Quality Management System (QMS) indicated an overall satisfaction rate of 94 per cent from States that provided feedback on CMA activities conducted. This represents an improvement of 7.9 per cent compared to last triennium.

6.1.2 Guidance Material and Communications

6.1.2.1 In 2023 ICAO released the fifth edition of the *Universal Safety Oversight Audit Programme Continuous Monitoring Manual* (Doc 9735) which included organizational improvements and updates from the implementation of the recommendations of GEUSR, the USOAP-AG and the HLCC. USOAP workshops conducted in all ICAO regions did not only inform Member States of the changes made to Doc 9735, but the opportunity was taken to also receive feedback on this new edition.

6.1.2.2 Communication within ICAO, as well as with Member States and partners continued to be a priority for the programme during this triennium. Newsletters and updates on the evolution of the USOAP CMA were issued regularly and are available on ICAO's public website. ICAO also conducted an information session on the USOAP CMA

evolution during the Fourteenth Air Navigation Conference (AN-Conf/14) providing an update on the progress of the programme and the engagement of States in its processes.

6.1.2.3 The sharing of information between ICAO Headquarters and its Regional Offices continued through regular meetings to support the prioritization of Member States for USOAP CMA activities and other associated tasks. ICAO also conducted regular exchanges with its partners, such as the United States, EASA and the European Commission, that enabled; the coordination of activities, strengthening synergies to minimize the burden on States regarding potential duplicated activities, and contributions to the prioritization process.

6.1.3 USOAP CMA Training

6.1.3.1 During this triennium, USOAP focused on monitoring and improving the performance of its training programme and courses. Various aspects of training materials were reviewed and updated. The auditor training is pivotal for carrying out the Programme's mandate of activities; therefore, it was necessary to invest time and resources to ensure continued accuracy and effectiveness of the USOAP training.

6.1.3.2 USOAP CMA Computer-Based Training (CBT) (Phases I and II), which was completely revamped in the previous triennium, is the corner stone of the USOAP CMA auditor training. Its performance was closely monitored and improved through regular content updates and adjustments. In addition to providing effective training to potential auditors, this self-study online course proved useful to State representatives, ICAO staff and other stakeholders seeking to improve their overall knowledge of the Programme's activities. The USOAP CMA CBT ranks among the top performing courses in the ICAO Global Aviation Training (GAT) portfolio and has been completed by well over 1,000 trainees including 83 auditor candidates over the triennium.

6.1.3.3 The new instructor-led Auditor Preparation course that launched at the end of 2021, aimed to improve auditor candidates' performance during their on-the-job training (OJT), and was delivered three times per year on average. This course proved its value in improving the success rate of OJT checkout missions by providing USOAP auditors-in-training with hands-on competencies (e.g. knowledge, skills, and attitudes) required to perform audits effectively. In addition to this, the course drew considerable interest from States seeking to train their non-auditor technical staff involved in supporting USOAP CMA activities. To date, 81 trainees from 35 States and seven international organizations have successfully completed the Auditor Preparation course.



6.1.3.4 USOAP CMA workshop material was updated to include new content from the fifth edition of Doc 9735 that was published in 2023. The update also included the addition of a module covering new developments on OLF and other USOAP CMA tools. Workshop material will once again be soon updated with the new edition of the 2024 Protocol Questions (PQs) and the introduction of a new State Safety Programme (SSP) audit area.

6.1.3.5 In 2024, USOAP jointly with GAT and other ICAO Bureaus, developed a new training programme for young aviation professionals called “Essential Soft Skills for NextGen Aviation Professionals”. It was based primarily on content from USOAP CBT Phase I, and includes a self-study online course as well as a workshop. Preliminary feedback received from test-users was very positive (97% approval rate) and a strong potential interest to this training was indicated.

6.2 IMPLEMENTATION OF RECOMMENDATIONS OF USOAP ADVISORY GROUP

6.2.1 Following a recommendation from the ICAO Thirteenth Air Navigation Conference (AN-Conf/13), the USOAP-AG was established to address the duplication of efforts and find synergies to enhance the efficiency of the USOAP CMA while maintaining safeguards to guarantee the independence, universality, standardization and global acceptance in the implementation of the programme (the *Thirteenth Air Navigation Conference. Montréal, 9 – 19 October 2018. Report* (Doc 10115), Recommendation 6.3/1, refers). The Council agreed to 42 recommendations resulting from the outcome of a consultation with Member States, in addition to views expressed by the Air Navigation Commission (C-DEC 225/6). These recommendations were endorsed by the 41st Session of the Assembly as a part of the USOAP CMA evolution plan (A41-WP/665, paragraph 15.4 refers).

6.2.2 Out of the 42 recommendations resulting from the USOAP-AG, 27 have already been closed with actions indicated below in Table 6-1 during the reporting period.

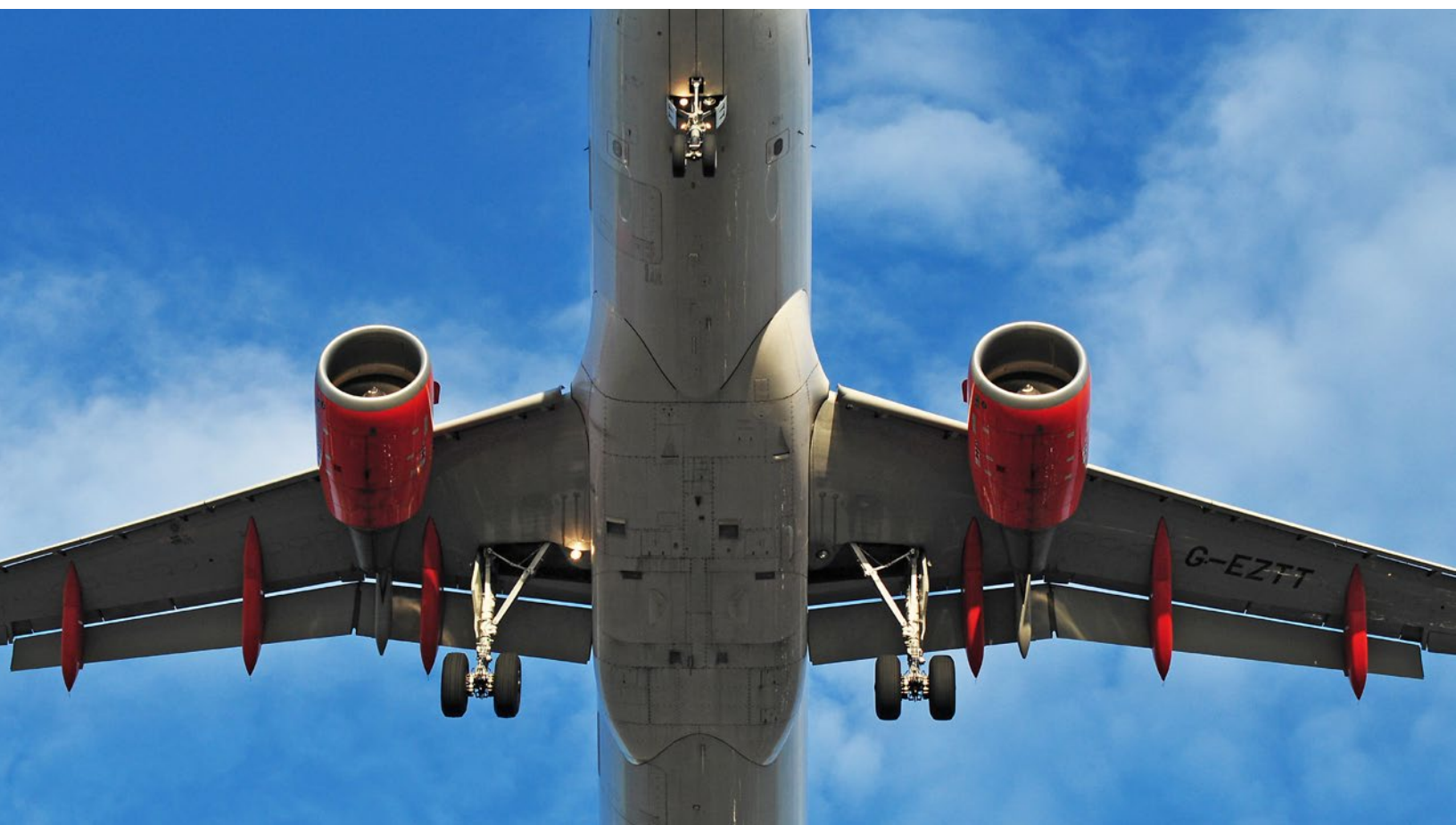


Table 6-1. Status of recommendations resulting from the USOAP-AG

No.	Recommendation	Action taken
Recommendations regarding data, information and intelligence in support of the USOAP CMA		
A.4	Map relevant stakeholder and industry audit/assessment programmes, including their specific outputs, to the applicable USOAP audit areas, critical elements and/or SSP components.	The USOAP-AG implementation group completed this task in November 2024 leading to the implementation of recommendations A.5 and A.6.
A.7	Explore the possibility to develop and implement data bridging mechanisms to facilitate the use of relevant data from stakeholders or industry audit/assessment programmes into the USOAP CMA.	The Secretariat developed data-bridging mechanisms that can be established with relevant stakeholders or partners.
Recommendations regarding the validation by USOAP of outputs from stakeholders' audit/assessment programmes		
B.2	Explore forms or mechanisms to enhance synergies between USOAP and stakeholders programmes with a view of reducing the burden on States while safeguarding the global acceptance of the USOAP.	Following two meetings of the proposed Aviation Information Sharing Mechanism ¹ (October 2022 and June 2023), stakeholders raised legal and technical challenges to continue the proposed multilateral mechanism to enhance synergies among stakeholders. Stakeholders agreed to close this recommendation and maintain the current bilateral interactions to enhance synergies with ICAO.
B.3	Regularly share or coordinate the USOAP Activity Plan with the schedules of stakeholders' audit/assessment programmes.	ICAO regularly shares and coordinates the USOAP Activity Plan with stakeholders.
Recommendations regarding coordination mechanism/consultation platform		
C.1	Consider the establishment of an internal coordination mechanism to facilitate the sharing of data and information that may be useful for inter alia the monitoring of States under the USOAP CMA and the coordination amongst ICAO recognized industry assessment programmes.	A procedure has been established within the periodic review of the USOAP CMA prioritization process to coordinate the inputs of data and information available within ICAO but outside of the USOAP CMA as well as from ICAO partners.
C.2	Establish a consultation platform with selected States, stakeholders and industry partners to provide strategic and technical advice on a continuous basis for the evolution of the USOAP CMA to further enhance its efficiency and effectiveness. Consistent with its current governance model, the consultation platform may start specific initiatives and provide advice to the Secretariat related to the proposals on the evolution of the USOAP CMA to be presented to the Council for approval. Regular triennial reports to the Assembly and annual reports to the Council remain unaffected.	The consultation platform has been established and it is hosted within the USOAP CMA Community. The initiative was launched in two phases. In the first phase, launched in 2024, the ICAO Secretariat and Regional Offices received access to the USOAP Community. In the second phase, launched in 2025, States (National Continuous Monitoring Coordinators) were invited to join the USOAP Community.

¹ Participants to the AISM are ICAO, States and regional safety oversight organizations, or any other international, regional or sub regional aviation organization operating audits, inspections, reviews, evaluations and/or assessments on the safety oversight, accident/incident investigation and safety management capabilities of States, with an agreement to share relevant information amongst all Participants.



No.	Recommendation	Action taken
Recommendations addressed to manage requests for cancellations or postponements, including enhanced transparency		
D.1	Issue a State letter recalling States to abide by the Resolution A40-13 and the Council-approved MoU regarding the USOAP CMA and accept scheduled USOAP CMA activities contained in the USOAP Activity Plan that should also be communicated to States using a State letter.	EB 2024/26 addresses this recommendation.
D.2	Call on States to communicate a request for a postponement or cancellation to MO as soon as possible but no later than 120 days before the scheduled activity as published in the June edition of the USOAP Activity Plan. Unless exceptional circumstances arise, invite States to reimburse the non-recoverable costs incurred as a result of the postponement or cancellation if requested within 120 days of the scheduled activity. The consultation platform mentioned in Recommendation C.2 may contribute to the definition of exceptional circumstances.	Doc 9735, Fifth Edition, paragraph 3.5.4.3 addresses this recommendation.
D.3	In parallel with the recommendation in item D.4 below, publish postponements or cancellations of the USOAP CMA activities and the associated reasons in the USOAP Activity Plan.	The USOAP Activity Plan, which is available only to ICAO Member States, contains cancellations and postponement with relevant reasons.
D.4	Consider an escalating process to engage States requesting postponements or cancellations that may include the issuance of a mandatory information request (MIR) and a subsequent significant safety concern (SSC), if appropriate.	Doc 9735, Fifth Edition, paragraphs 3.5.4.8 and 3.5.4.9 address this recommendation.
D.5	Develop detailed guidance material to address principles, effects, implications, calculation methods and alternatives to the Programme and States resulting in postponements and cancellations, as well as justified reasons and exceptional circumstances for a postponement or cancellation of an activity, and a mechanism to resolve disagreements between States and ICAO.	Doc 9735, Fifth Edition, paragraph 3.5.4.1, 3.5.4.2, 3.5.4.4 and Clause 31 of the MoU address these recommendations.

No.	Recommendation	Action taken
Recommendations regarding human resources		
E.1	Perform an analysis of activities conducted and resources available to ICAO, including Monitoring and Oversight (MO) and Regional Offices (RO) in order to identify needs, challenges, opportunities and possible solutions to execute the USOAP CMA.	ICAO identified the human resources needed to evolve and execute the USOAP CMA.
E.2	Strive to sufficiently staff MO, including those resources in the ROs, to ensure the sustainability of the USOAP CMA.	The 41st Session of the Assembly allocated a budget that partially funds the evolution and execution of the USOAP CMA. The ICAO Secretary General allocated additional funds in 2022 and the USOAP will request extra funding for the next triennium; the programme will seek and mobilize additional resources.
E.3	Re-issue State letter AN 19/34-15/35 with a special emphasis on the areas and languages the programme requires at that point in time while highlighting that the CBT is provided free of charge to nominees that qualify according to the requirements in State letter AN 19/34-15/35.	SL 2024/80 addresses this recommendation.
E.4	Modify the section of "required qualifications and experience" in each attachment to State letter AN 19/34-15/35 to require "complete fluency both spoken and written in English, French or Spanish and working knowledge of English".	SL 2024/80 addresses this recommendation.
E.6	Consider the principles contained in Doc 10070, Manual on the Competencies of Civil Aviation Safety Inspectors when re-issuing State letter 15/35.	SL 2024/80 addresses this recommendation.
E.7	Promote the new State letter during high-level meetings or activities attended by senior officials.	SL 2024/80 promoted during the AN-Conf/14 and A42.
E.8	Establish and implement a mechanism (e.g. online tool or database) for Member States to notify the availability of short-term secondments to serve as auditors/subject matter experts (SMEs) during USOAP CMA activities.	The USOAP launched a survey to identify the availability of experts in the roster.
E.9	Provide States with detailed information in Doc 9735 addressing prioritization, planning and allocation of human resources to perform USOAP-CMA activities.	Doc 9735, Fifth Edition, section 3.5.2 addresses this recommendation.
E.10	Review the need for the current target requiring three auditors/SMEs in the roster (short-term secondments) per one audit area and per activity.	A study is conducted on an annual basis to determine an ideal number of auditors in the roster for each planned year. An attainable and realistic number/range should be sought in the mid-term. Many factors affect the required number of auditors in the roster.

No.	Recommendation	Action taken
E.11	Explore the possibility of requesting States to engage their retired USOAP-qualified personnel to perform USOAP CMA activities as short-term secondments.	As a result of a survey conducted by the USOAP regarding the availability of USOAP experts, it was identified that three auditors will retire between 2024 and 2026. None of these experts are suitable to pursue this process. The programme will run the process again in 2027.
E.12	Explore the expansion of the USOAP CMA designee programme with defined criteria to include former seconded State personnel with experience as USOAP CMA auditors/SMEs.	Designee programme already considers personnel from States and not only from ICAO.
E.13	Enhance the guidance as well as the training and qualification process by establishing and implementing a documented system to evaluate candidates, focusing on knowledge, skills, attitudes and experience.	Doc 9735, Fifth Edition, section 8.2 addresses this recommendation.
E.14	Enhance the training process by providing a classroom-style training that addresses both onsite and off-site activities and simulates at least one USOAP CMA activity. The training should include an assessment of the candidates before advancing to the final on-site assessment during the OJT.	The USOAP CMA developed the Auditors Preparation Course and provided its first session (virtual classroom) in 2022. In 2023, two Auditor Preparation Courses were conducted.
E.15	Provide remote face-to-face training and incorporate recurrent training as part of periodic training plans.	The USOAP CMA provides this training on an ad hoc basis.
E.16	Improve associated guidance addressing the preparation, conduct and reporting, including information on how to write findings, FAQs on frequently "difficult" or "problematic" PQs to provide better post-training reference materials.	The Auditor Preparation Course addressing this recommendation was launched in October 2022. The USOAP provided a corrective action plan (CAP) assessment workshop to regional officers in September 2022.
E.17	Introduce a monitoring mechanism to evaluate auditor performance.	The team leader reporting and the technical review serves as this mechanism.

6.3 IMPLEMENTATION OF RELEVANT RECOMMENDATIONS OF THE HIGH-LEVEL CONFERENCE ON COVID-19 (HLCC)

6.3.1 Integration of the State Safety Programme Implementation Assessment (SSPIA) with USOAP CMA activities

6.3.1.1 The SSPIA was a performance-based activity under the USOAP CMA framework. Through this programme, ICAO assesses the level of maturity of a State Safety Programme (SSP) by conducting a systematic and objective review of the State's implementation and maintenance of it. A specific set of PQs (referred to as "SSP PQs") were introduced for this purpose and they were assessed using an associated maturity level matrix. An SSPIA assessment tool was also developed, and matrices were used in the quantitative assessment of the maturity levels achieved by a State in its SSP implementation.

6.3.1.2 The HLCC, held from 12 to 22 October 2021, recommended that ICAO *inter alia* integrate SSPIAs with traditional USOAP CMA activities. The implementation of this recommendation was initiated in May 2022, and by the end of 2023, seven separate SSPIAs had been conducted by USOAP using maturity levels. With this experience, different options were explored to integrate SSPIA with traditional USOAP CMA activities.

6.3.1.3 As a result, a set of new Protocol Questions (PQs) addressing SSP and safety management systems (SMS) were developed to align as best as possible in the existing audit PQ structure and topics, with a new audit area being added. Performance-based aspects were reflected in the design of the SSP and SMS PQs as well as the guidance for their review. The new SSP and SMS PQs will not only be audited following the traditional "satisfactory" or "not-satisfactory" approach for consistency, but will be based on States' performance in implementation of SSP and SMS. The beta testing of the new methodology is planned for 2025. The applicability date of the SSP and SMS PQs will be determined based on the outcomes of the beta tests.



6.3.2 Data Management for the OLF

6.3.2.1 In 2013 ICAO launched the USOAP CMA “online framework” (OLF) which presents a suite of web integrated applications and centralized database systems that enable:

- a) the collection of safety-related information and documentation from ICAO, States, and other authorized users;
- b) the analysis of data and information for continuous monitoring; and
- c) the administration and management of Protocol Questions (PQs), findings, significant safety concerns (SSCs), mandatory information requests (MIRs), corrective action plans (CAPs), State Aviation Activity Questionnaires (SAAQs) and CCs/EFOD.

6.3.2.2 In 2021 the HLCC noted the development of procedures on data management for the OLF and recommended that ICAO continue this work to support activities of Member States in managing their USOAP-related information. Subsequently, ICAO progressed further procedures for the management of data collected and generated by the USOAP CMA, as well as guidelines for States and stakeholders regarding the interaction of data and information available in the OLF. Ultimately, these measures aim at providing clarity, improving quality, and increasing the reliability of data and information in the OLF.

6.3.2.3 The OLF provides modules that support USOAP CMA monitoring functions and States can submit and obtain both data and information. The data and information provided by States are not validated, but collected by ICAO to be used for; the prioritization of States for USOAP activities, the determination of their scope, and the preparation for their conduct. Regarding privacy, data and information in these modules are only available to the State that provides it, and can only be used by ICAO for monitoring purposes provided that the State concerned authorizes their release.

6.3.2.4 ICAO does, however produce data and information which can be accessed by all Member States through dedicated modules in the OLF. They all stem from the conduct of USOAP CMA activities and include; the State Profile Dashboard, Significant Safety Concerns, USOAP Reports, PQ Findings, and E-supplements. In accordance with the Code of Conduct on the sharing and use of safety information endorsed by the Council on 15 June 2011 (C-DEC 193/3), the data and information generated by ICAO shall be used in an appropriate, fair and consistent manner, solely to improve aviation safety.

6.3.2.5 If an RSOO, RAIO or any other entity performs safety-related activities on behalf of one or more States, ICAO, with the consent of these States, may elect to enter into a working arrangement with them as appropriate. Through this mechanism the State duly delegates safety-related activities to facilitate monitoring, and these RSOOs, RAIOs or entities are enabled to provide or access data and information in the OLF.

6.3.2.6 The procedures addressing data management for the OLF include provisions on the collection, storage, protection, processing, and use of data, as well as its sources. They also provide guidance on the management of ICAO administrators and users, as well as Member States, RSOOs/RAIOs and similar entities. These procedures are also consistent with the ICAO Enterprise Data Management as well as ICAO Information Security established practice.



APPENDICES



ICAO USOAP
Continuous Monitoring Approach

Appendix A

DEFINITIONS AND TERMINOLOGY

DEFINITIONS

Audit. A USOAP CMA activity during which ICAO assesses the effective implementation of the eight critical elements (CEs) of safety oversight and accident and serious incident investigation systems by conducting a systematic and objective review of a State's safety oversight and accident and incident investigation system.

Audit area. Refers to civil aviation areas covered in a USOAP CMA audit or validation. There are eight audit areas for USOAP audit or validation activities, namely, primary aviation legislation and specific operating 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).

Compliance Checklist (CC). Checklist used by States to provide information on compliance with the relevant Annexes to the Convention.

Corrective action plan (CAP). A plan of action to eliminate the cause of a deficiency or finding.

Critical elements (CEs). The critical elements of a safety oversight system that 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 EI of the CEs is an indication of a State's capability for safety oversight.

Documentation-based Audit. A USOAP CMA off-site activity during which ICAO conducts a systematic and objective review of the establishment and/or implementation of a State's safety oversight system whose security situation, as classified under the UN Security Level System, precludes an on-site activity by ICAO and/or whose limited level of aviation activities does not warrant an on-site activity. (Note: This audit type, by itself, does not result in an EI score).

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

Finding. Generated in a USOAP CMA activity as a result of a lack of compliance with Articles of the *Convention on International Civil Aviation* (Doc 7300), ICAO Assembly Resolutions, safety-related provisions in the Annexes to the Convention, Procedures for Air Navigation Services (PANS) or a lack of application of ICAO guidance material or good aviation safety practices. Each finding is expressed in terms of one Protocol Question (PQ); issuance of a finding changes the status of the related PQ to not satisfactory.

ICAO Coordinated Validation Mission (ICVM). An activity during which an ICAO team of subject matter experts collects and assesses evidence provided by the State demonstrating that the State has implemented corrective actions (or mitigating measures for significant safety concerns) to address previously identified findings; ICAO validates the collected evidence and information.

Mitigating measure. An immediate action taken by a State to resolve a significant safety concern (SSC).

Objective evidence. Information that can be verified, supporting the existence of a documented system and indicating that the system generates the desired results.

Off-site validation activity. A USOAP CMA activity during which an ICAO team of subject matter experts assesses corrective actions implemented by a State and validates submitted supporting evidence at the ICAO HQ without an on-site visit to the State.

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.

Protocol Question (PQ). The primary tool used in USOAP for assessing the level of EI of a State's safety oversight and aircraft accident/incident investigation systems based on the CEs. The PQs are developed based on the *Convention on International Aviation* (Doc 7300), SARPs, PANS and related guidance material.

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

Scope. Audit areas and protocol questions (PQs) addressed and covered in a USOAP CMA activity.

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.

Validation. A USOAP CMA activity during which ICAO validates and confirms evidence and information provided by a State, which demonstrate the State's implementation of corrective actions to address previously identified findings and/or its implementation of mitigating measures to resolve Significant Safety Concerns (SSCs). Examples of validation activities are the ICAO Coordinated Validation Mission (ICVM), off-site validation activity and integrated validation activity.

ACRONYMS AND ABBREVIATIONS

AGA	Aerodromes and ground aids	OAS	Safety and Air Navigation Oversight Audit Section
AIG	Aircraft accident and incident investigation	OPS	Aircraft operations
AIR	Airworthiness of aircraft	ORG	Civil aviation organization
ANB	Air Navigation Bureau	PANS	Procedures for Air Navigation Services
ANS	Air navigation services	PEL	Personnel licensing and training
AOC	Air operator certificate	PQ	Protocol Question
CAA	Civil Aviation Authority	RCMC	Regional Continuous Monitoring Coordinator
CAP	Corrective action plan	RSOO	Regional safety oversight organization
CC	Compliance Checklist	RAIO	Regional accident and incident investigation organization
CE	Critical element	SAAQ	State Aviation Activity Questionnaire
CMA	Continuous Monitoring Approach	SARPs	ICAO Standards and Recommended Practices
EFOD	Electronic filing of differences	SMS	Safety Management System
EI	Effective implementation	SSC	Significant Safety Concern
GASP	Global Aviation Safety Plan	SSP	State Safety Programme
GEUSR	Group of Experts for a USOAP CMA Structured Review	USOAP	Universal Safety Oversight Audit Programme
ICVM	ICAO Coordinated Validation Mission	USOAP-AG	ad hoc USOAP CMA Advisory Group
LEG	Primary aviation legislation and specific operating regulations		
MIR	Mandatory information request		
MO	Monitoring and Oversight (MO) of the Air Navigation Bureau		

Appendix B

STATISTICAL DATA FOR SUBGROUPS OF EACH AUDIT AREA

The following graphs depict the global EI for each subgroup in the eight audit areas for the 2022 to 2024 triennium.

Figure B-1. Global EI for each subgroup of LEG between 2022 and 2024

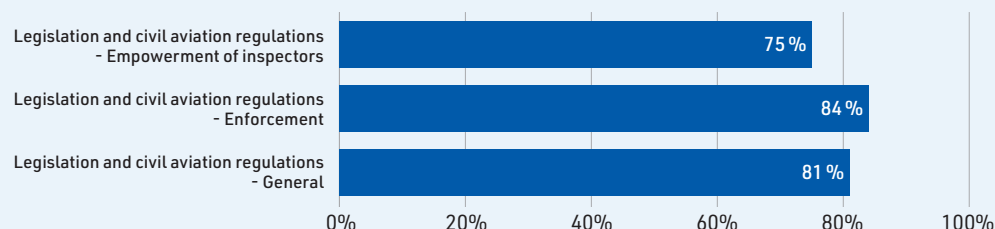


Figure B-2. Global EI for each subgroup of ORG between 2022 and 2024

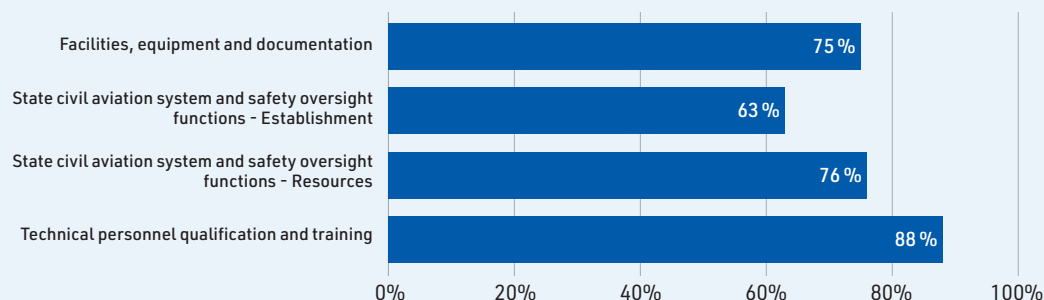


Figure B-3. Global EI for each subgroup of PEL between 2022 and 2024

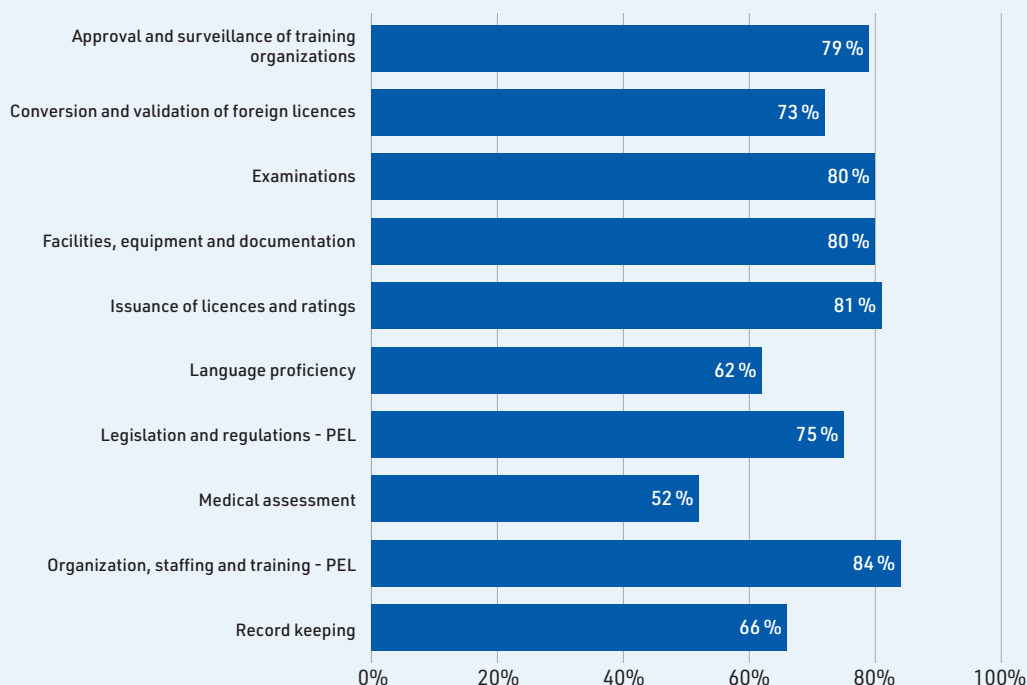


Figure B-4. Global EI for each subgroup of OPS between 2022 and 2024

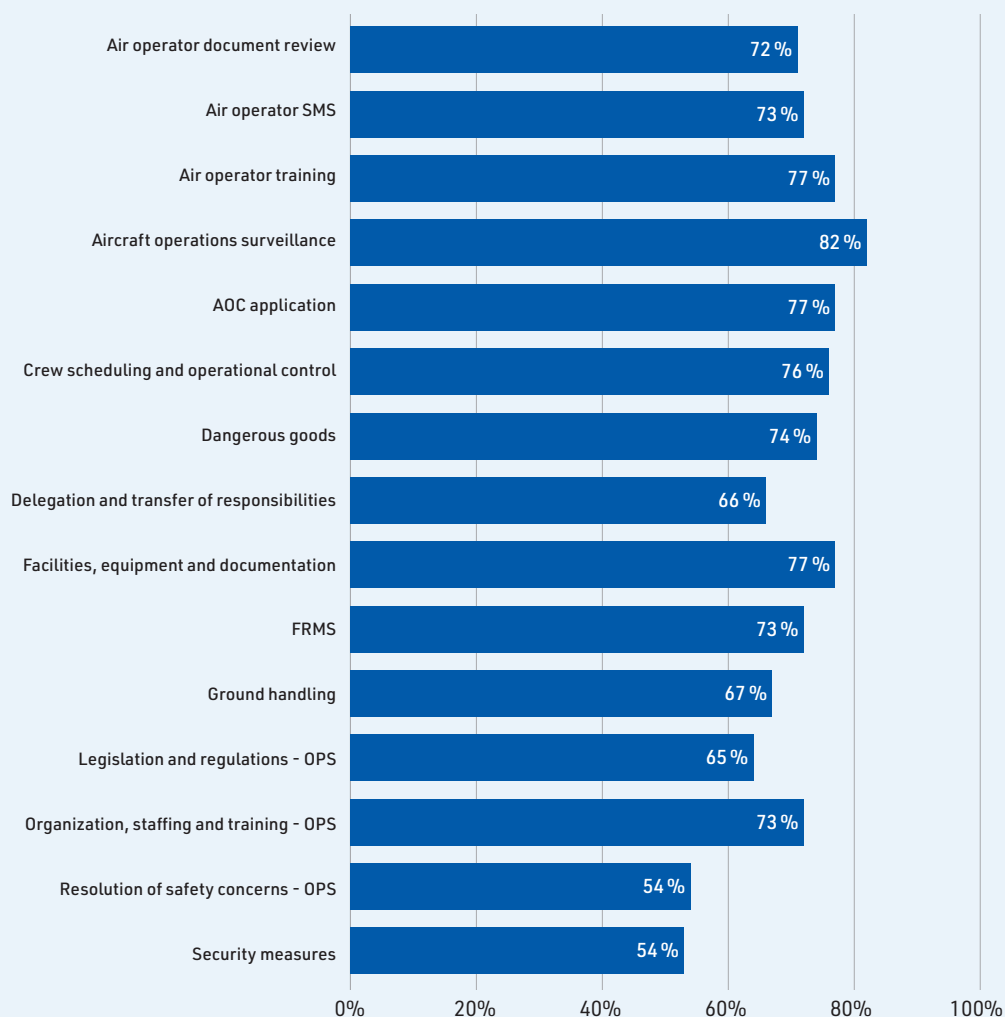


Figure B-5. Global EI for each subgroup of AIR between 2022 and 2024

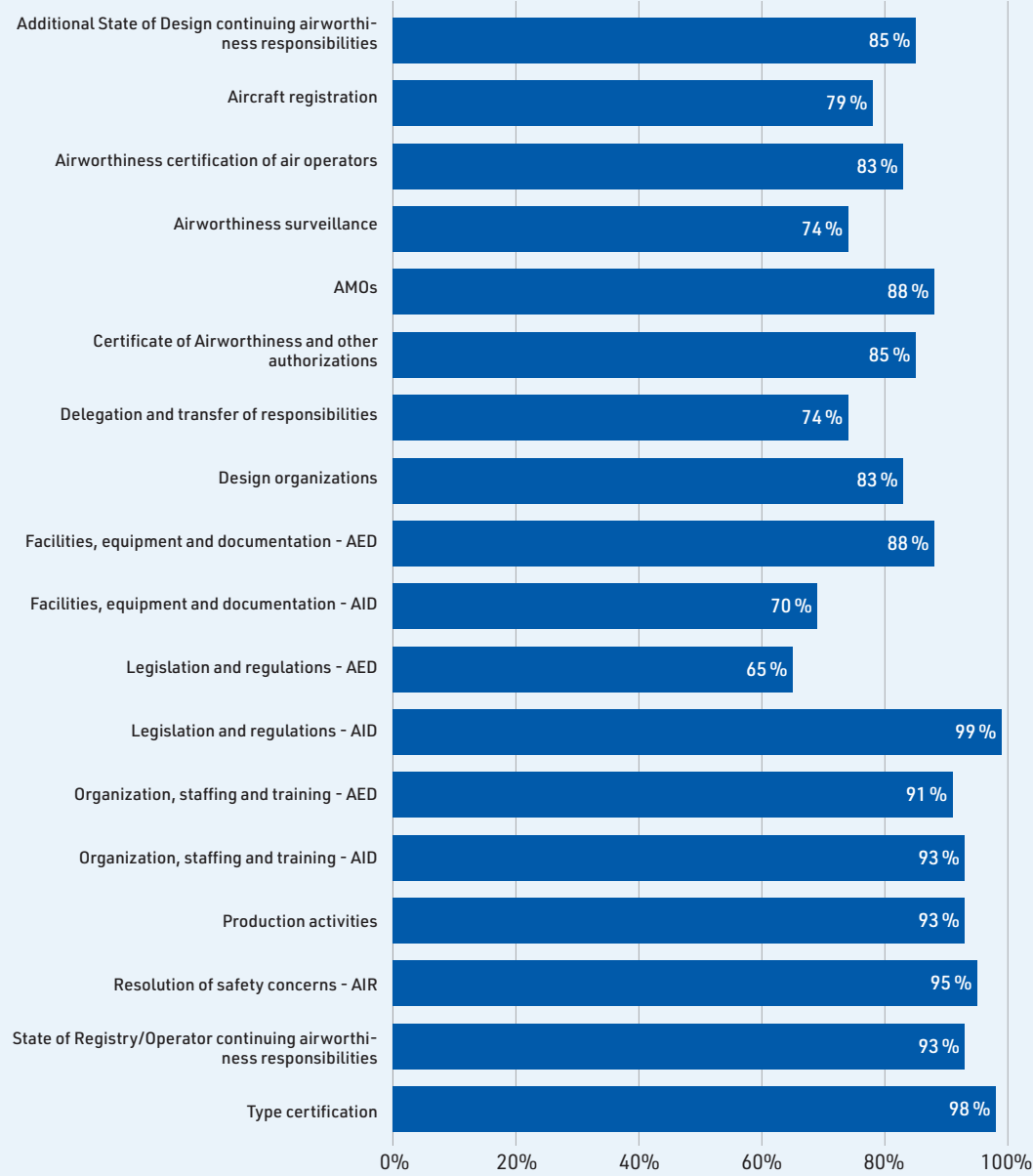


Figure B-6. Global EI for each subgroup of AIG between 2022 and 2024

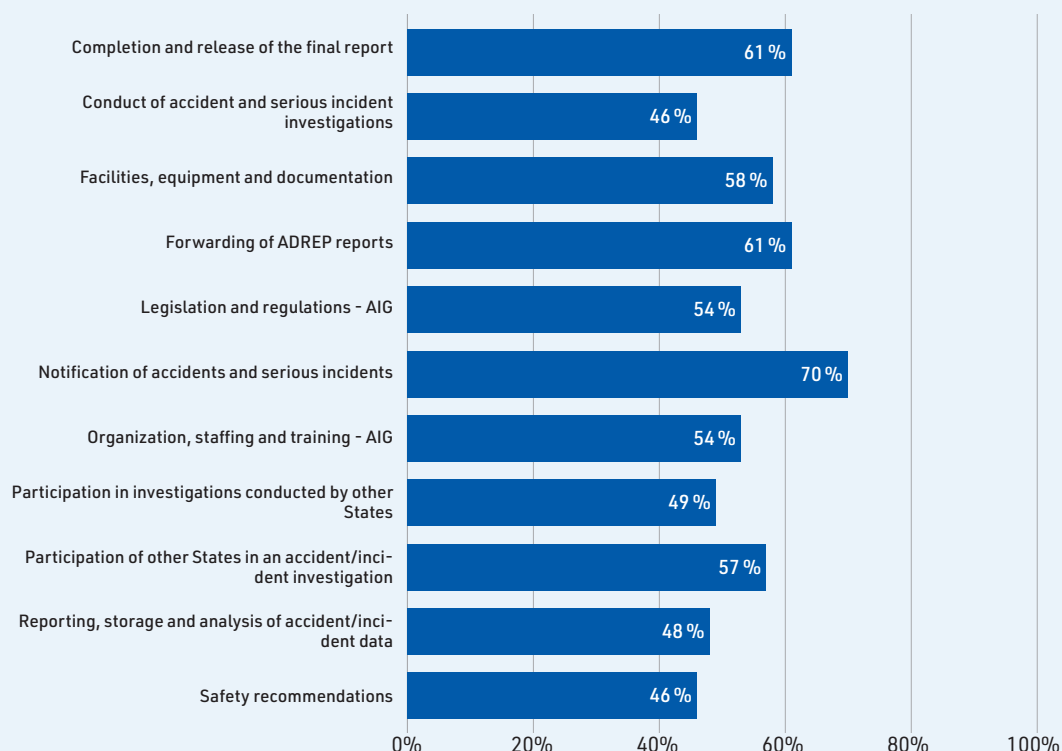


Figure B-7. Global EI for each subgroup of ANS between 2022 and 2024

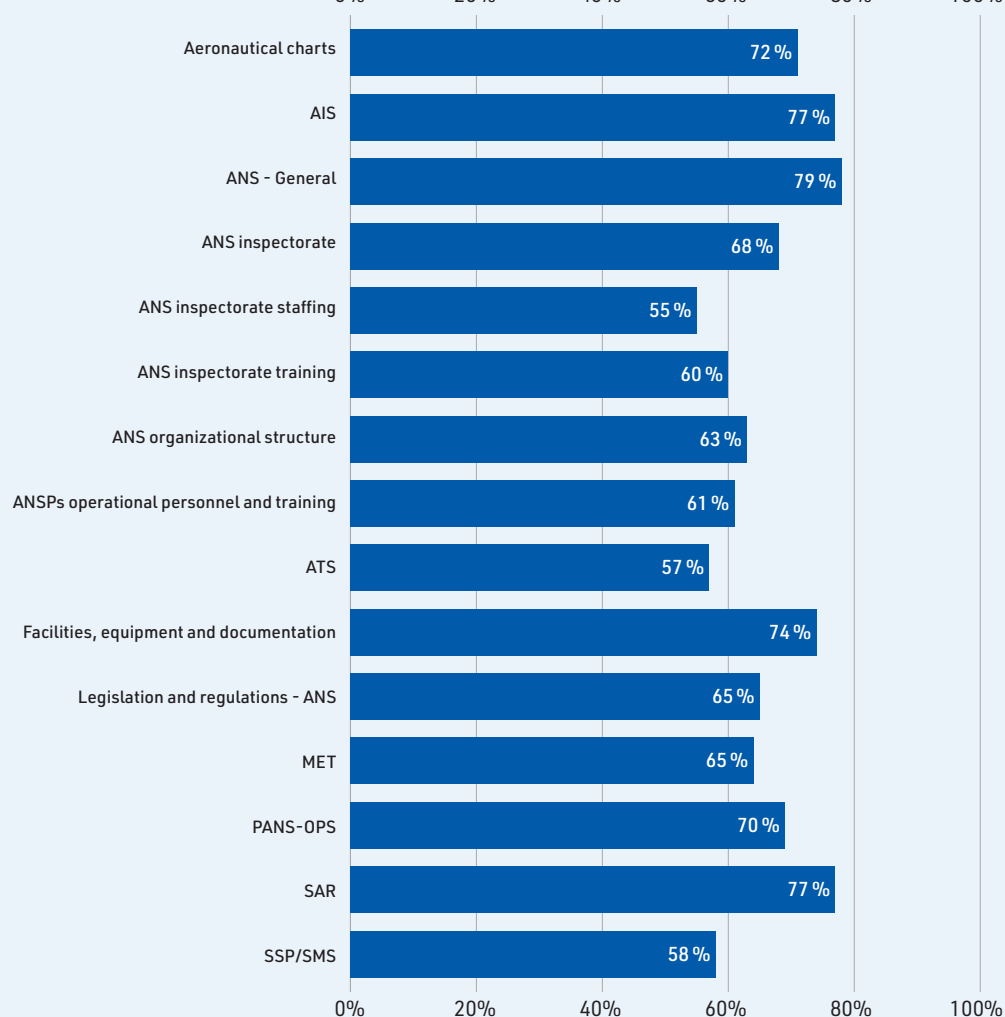
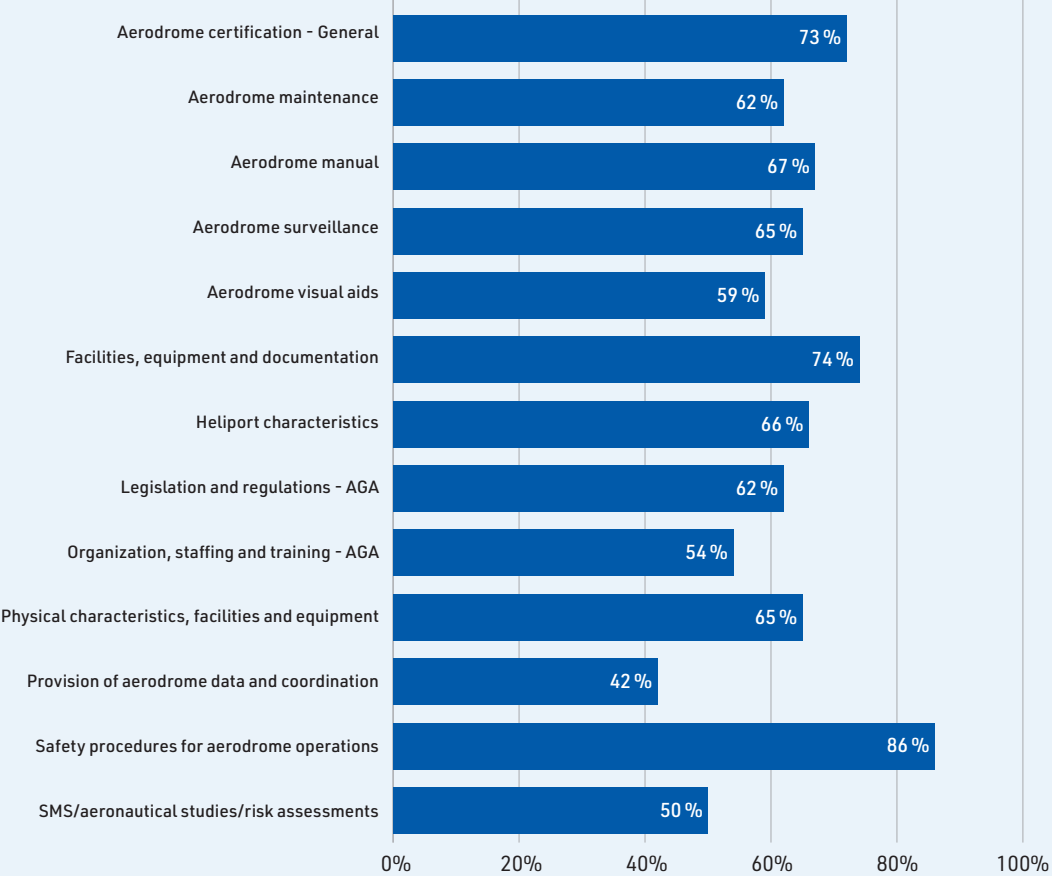


Figure B-8. Global EI for each subgroup of AGA between 2022 and 2024



Appendix C

USOAP CMA ACTIVITIES COMPLETED (2022 to 2024)

Tables C-1 to C-3 below include information on USOAP CMA activities completed from 1 January 2022 to 31 December 2024.

APAC: Asia and Pacific Office
ESAF: Eastern and Southern African Office
EUR/NAT: European and North Atlantic Office
MID: Middle East Office
NACC: North American, Central American and Caribbean Office
SAM: South American Office
WACAF: Western and Central African Office

Table C-1. USOAP CMA activities conducted in 2022.

No.	State	ICAO Region	Type of USOAP CMA Activity	Dates
1	Albania	EURNAT	CMA Audit	6 to 18 Jul 2022
2	Angola	ESAF	CMA Audit	30 Nov to 12 Dec 2022
3	Antigua and Barbuda	NACC	ICAO Coordinated Validation Mission	28 Feb to 04 Mar 2022
4	Argentina	SAM	CMA Audit	22 Jun to 04 Jul 2022
5	Australia	APAC	Off-site Validation Activity	9 to 18 Nov 2022
6	Azerbaijan	EURNAT	ICAO Coordinated Validation Mission	1 to 08 Jun 2022
7	Bhutan	APAC	Off-site Validation Activity	9 Sep to 31 Oct 2022
8	Botswana	ESAF	ICAO Coordinated Validation Mission	15 to 22 Jun 2022
9	Colombia	SAM	CMA Audit	30 Mar to 04 May 2022
10	Democratic Republic of the Congo (the)	WACAF	CMA Audit	31 Aug to 12 Sep 2022
11	Djibouti	ESAF	CMA Audit	1 to 14 Feb 2022
12	Djibouti	ESAF	CMA Audit	25 Oct to 06 Nov 2022
13	Eritrea	ESAF	Off-site SSC PQs Management/Validation Activity	12 to 16 Sep 2022
14	Grenada	NACC	ICAO Coordinated Validation Mission	28 Feb to 04 Mar 2022
15	Guinea	WACAF	Off-site Validation Activity	26 Oct to 30 Dec 2022
16	India	APAC	ICAO Coordinated Validation Mission	9 to 16 Nov 2022
17	Iran (Islamic Republic of)	MID	CMA Audit	29 Aug to 10 Sep 2022
18	Italy	EURNAT	Focused Audit	28 Jun to 05 Jul 2022
19	Liberia	WACAF	CMA Audit	20 Apr to 02 May 2022
20	Luxembourg	EURNAT	Integrated Validation Mission	7 to 11 Feb 2022
21	Myanmar	APAC	Off-site Validation Activity	13 Sep to 30 Dec 2022
22	Nepal	APAC	CMA Audit	13 to 25 Apr 2022
23	Paraguay	SAM	Off-site Validation Activity	28 Oct to 30 Dec 2022
24	Philippines (the)	APAC	Off-site Validation Activity	9 Sep to 30 Dec 2022
25	Republic of Moldova (the)	EURNAT	CMA Audit	26 Jan to 07 Feb 2022

No.	State	ICAO Region	Type of USOAP CMA Activity	Dates
26	Russian Federation (the)	EURNAT	Off-site MIR PQs Management/Validation Activity	18 Apr to 24 Jun 2022
27	Saint Kitts and Nevis	NACC	ICAO Coordinated Validation Mission	28 Feb to 04 Mar 2022
28	Saint Lucia	NACC	ICAO Coordinated Validation Mission	28 Feb to 04 Mar 2022
29	Saint Vincent and the Grenadines	NACC	ICAO Coordinated Validation Mission	28 Feb to 04 Mar 2022
30	Seychelles	ESAF	Off-site Validation Activity	14 Sep to 31 Oct 2022
31	Singapore	APAC	Focused Audit	18 to 22 Apr 2022
32	Slovenia	EURNAT	Off-site Validation Activity	1 Sep to 30 Dec 2022
33	Zimbabwe	ESAF	Off-site Validation Activity	13 to 30 Sep 2022

* Antigua and Barbuda; Grenada; Saint Kitts and Nevis; Saint Lucia; and Saint Vincent and the Grenadines.

Table C-2. USOAP CMA activities conducted in 2023.

No.	State	ICAO Region	Type of USOAP CMA Activity	Dates
1	Antigua and Barbuda	NACC	ICAO Coordinated Validation Mission	29 Nov to 06 Dec 2023
2	Argentina	SAM	ICAO Coordinated Validation Mission	13 to 17 Feb 2023
3	Australia	APAC	Focused Audit	12 to 19 Sep 2023
4	Belize	NACC	CMA Audit	22 Nov to 04 Dec 2023
5	Brazil	SAM	Focused Audit	31 May to 07 Jun 2023
6	Cambodia	APAC	ICAO Coordinated Validation Mission	2 to 11 Oct 2023
7	Canada	NACC	CMA Audit	31 May to 14 Jun 2023
8	Czechia	EURNAT	Focused Audit	2 to 06 Oct 2023
9	Ecuador	SAM	CMA Audit	6 to 18 Sep 2023
10	Egypt	MID	Off-site MIR PQs Management/Validation Activity	12 to 14 Apr 2023
11	Greece	EURNAT	CMA Audit	6 to 18 Dec 2023
12	Grenada	NACC	ICAO Coordinated Validation Mission	29 Nov to 06 Dec 2023
13	Kyrgyzstan	EURNAT	CMA Audit	13 to 25 Sep 2023
14	Morocco	EURNAT	ICAO Coordinated Validation Mission	18 to 26 Oct 2023
15	Nigeria	WACAF	CMA Audit	30 Aug to 11 Sep 2023
16	Oman	MID	ICAO Coordinated Validation Mission	7 to 16 Nov 2023
17	Papua New Guinea	APAC	CMA Audit	14 to 26 Jun 2023
18	Saint Kitts and Nevis	NACC	ICAO Coordinated Validation Mission	29 Nov to 06 Dec 2023
19	Saint Lucia	NACC	ICAO Coordinated Validation Mission	29 Nov to 06 Dec 2023
20	Saint Vincent and the Grenadines	NACC	ICAO Coordinated Validation Mission	29 Nov to 06 Dec 2023
21	Sierra Leone	WACAF	CMA Audit	31 May to 12 Jun 2023
22	South Africa	ESAF	CMA Audit	22 Mar to 03 Apr 2023
23	Uganda	ESAF	CMA Audit	6 to 18 Sep 2023
24	Uzbekistan	EURNAT	CMA Audit	17 to 29 May 2023
25	Zimbabwe	ESAF	ICAO Coordinated Validation Mission	21 to 28 Jun 2023

Table C-3. USOAP CMA activities conducted in 2024.

No.	State	ICAO Region	Type of USOAP CMA Activity	Dates
1	Albania	EURNAT	ICAO Coordinated Validation Mission	11 to 19 Dec 2024
2	Armenia	EURNAT	CMA Audit	24 Jan to 05 Feb 2024
3	Armenia	EURNAT	ICAO Coordinated Validation Mission	12 to 16 Aug 2024
4	Benin	WACAF	CMA Audit	17 to 29 Jul 2024
5	Botswana	ESAF	CMA Audit	18 to 27 Jun 2024
6	Brazil	SAM	Integrated Validation Mission	7 to 11 Oct 2024
7	China	APAC	CMA Audit	16 to 30 Apr 2024
8	Côte d'Ivoire	WACAF	ICAO Coordinated Validation Mission	23 to 28 Oct 2024
9	Guyana	SAM	CMA Audit	29 May to 10 Jun 2024
10	Hungary	EURNAT	CMA Audit	6 to 18 Nov 2024
11	Mexico	NACC	CMA Audit	14 to 27 Feb 2024
12	Morocco	EURNAT	Integrated Validation Mission	31 Jul to 02 Aug 2024
13	Namibia	ESAF	CMA Audit	6 to 18 Mar 2024
14	Oman	MID	CMA Audit	23 Jan to 01 Feb 2024
15	Pakistan	APAC	ICAO Coordinated Validation Mission	5 to 12 Jun 2024
16	Panama	SAM	CMA Audit	18 to 30 Sep 2024
17	Rwanda	ESAF	Off-site MIR PQs Management/Validation Mission	06 to 08 August 2024
18	Senegal	WACAF	ICAO Coordinated Validation Mission	17 to 24 Apr 2024
19	Türkiye	EURNAT	CMA Audit	4 to 16 Sep 2024
20	United States of America (the)	NACC	CMA Audit	10 to 24 Jul 2024
21	Viet Nam	APAC	CMA Audit	15 to 27 May 2024
22	Zambia	ESAF	CMA Audit	21 Aug to 02 Sep 2024

ICAO's USOAP CMA Community



An innovative way to expand the Programme's global outreach via a private community setup and to better serve ICAO Member States in coordination with our Regional Offices.

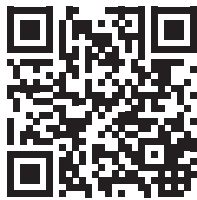
AUDIENCE

- National Continuous Monitoring Coordinators (NCMCs)
- State aviation safety personnel facilitating USOAP CMA activities
- ICAO qualified auditors, experts and staff, including Regional Offices
- USOAP Consultation Group Members
- Programme stakeholders, staff and alumnae

BENEFITS

- Growing Programme outreach
- Dynamic environment for engaging and exchanging with NCMCs and ROs
- Direct channel for insight and communication with the States
- Leveraging digital technologies and social media to efficiently carry out our mandate and enhance our services
- Increased visibility of USOAP CMA

For more information:
www.usoap-community.icao.int



ICAO USOAP
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