USOAP Continuous Monitoring Approach (CMA) Workshop

Module 2

Update Overview of the USOAP CMA

Objective

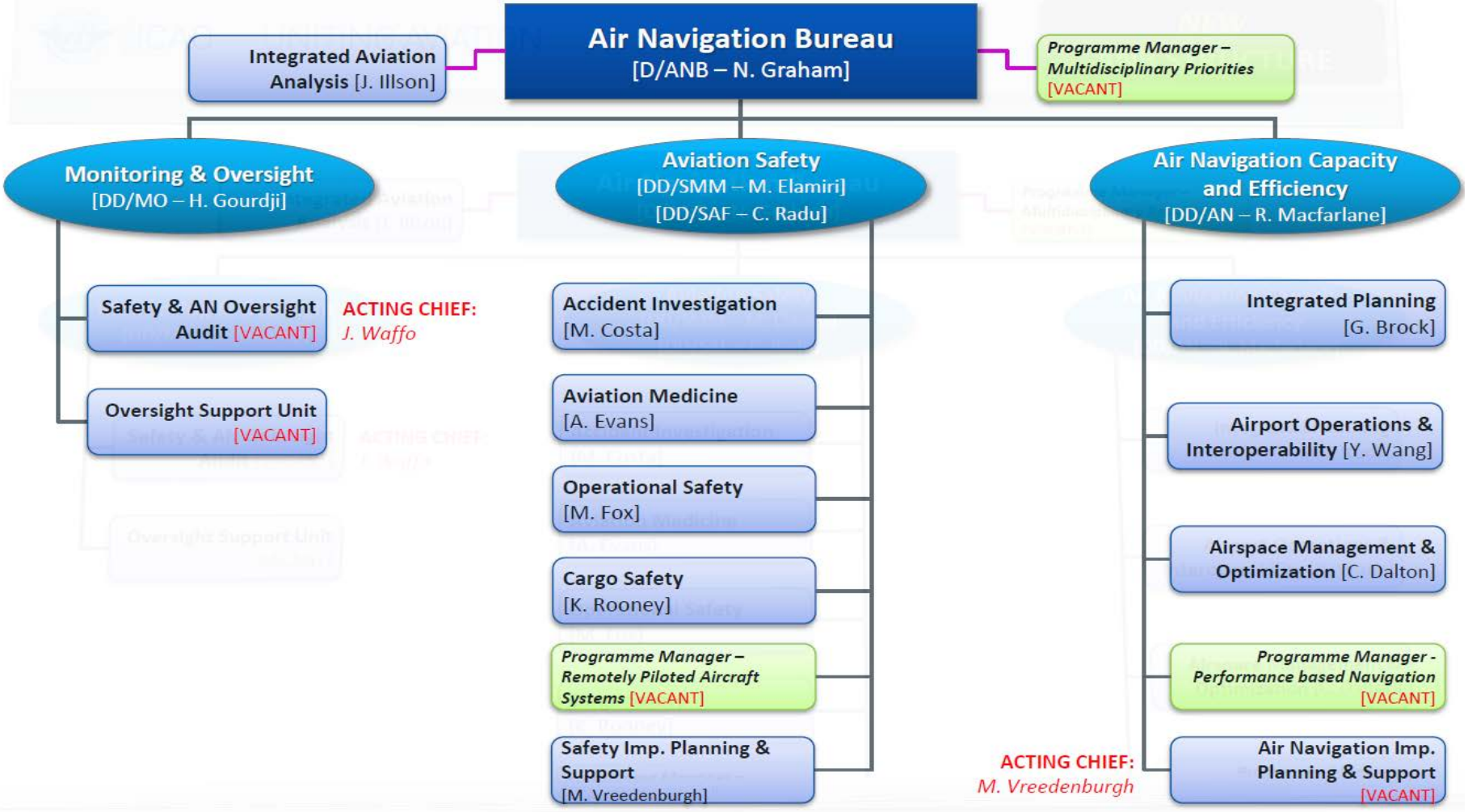
The objective of this module is to provide an updated overview of the USOAP CMA methodology.

Outline

- USOAP CMA
- Components of the USOAP CMA
  - Collection of safety information
  - Determination of State safety risk profile
  - Prioritization and conduct of USOAP CMA activities
  - Update on Lack of Effective Implementation (LEI) and status of Significant Safety Concerns (SSCs)
- Critical Elements (CEs) of the safety oversight system
- USOAP audit areas
- Annex 19 – Safety Management
- USOAP CMA computer-based training (CBT)

USOAP CMA

ANB Organizational Chart



USOAP CMA

Continuous monitoring (Online Framework)

Planning and scheduling

On-site activities

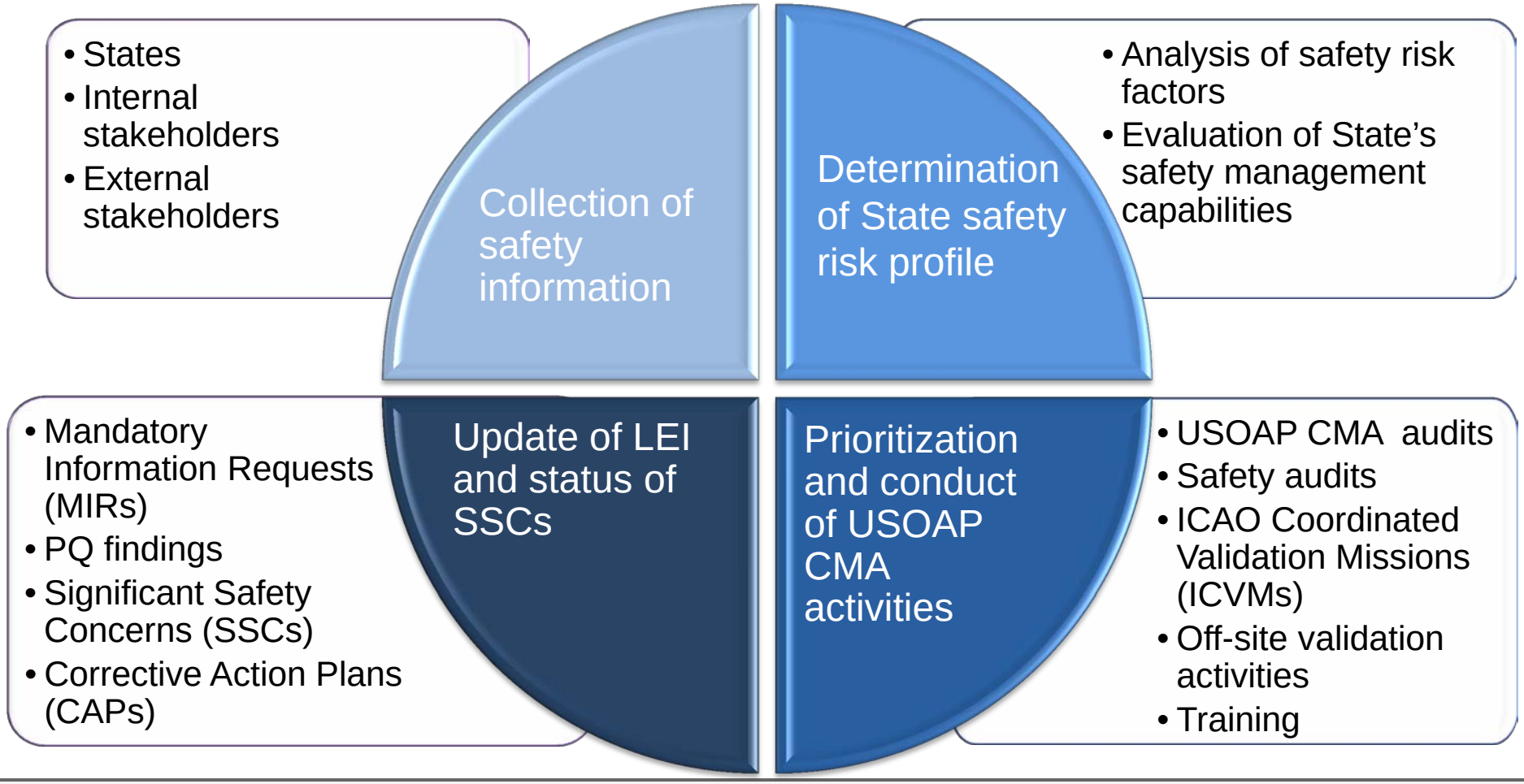
Off-site validation activities

Reports, analyses and working papers

Training and workshops

Components of the USOAP CMA

USOAP CMA components



Collection of safety information
Determination of State safety risk profile
Update of LEI and status of SSCs
Prioritization and conduct of USOAP CMA activities

Collection of safety information

States provide:

- The State Aviation Activity Questionnaire (SAAQ);
- Compliance Checklists (CCs) or Electronic Filing of Differences (EFOD);
- The self-assessment; and
- Updated CAPs.

Collection of safety information

Internal stakeholders include:

- ICAO Secretariat Bureaus/Sections; and
- Regional Offices (ROs).

Collection of safety information

External stakeholders include:

- Airports Council International (ACI);
- Civil Air Navigation Services Organization (CANSO);
- European Aviation Safety Agency (EASA);
- European Commission (EC);
- EUROCONTROL;
- Interstate Aviation Committee (IAC);
- International Air Transport Association (IATA); and
- other national, regional, supranational and international organizations recognized by ICAO.

Note: These organizations conduct activities that generate safety information.

Collection of safety information
Determination of State safety risk profile
Update of LEI and status of SSCs
Prioritization and conduct of USOAP CMA activities

Determination of State safety risk profile

Determination of State safety risk profile

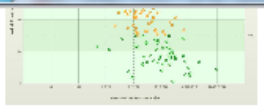
Safety risk factors include, but are not limited to:

- Previous USOAP activity results;
- Level of air traffic in the State; and
- Progress made by the State in resolving USOAP deficiencies.

Determination of State safety risk profile

Safety risk indicators:

- are monitored by ICAO HQ on an ongoing basis; and
- include, but are not limited to:
  - LEI vs. air traffic (exposure);
  - Existence of SSC(s);
  - Level of aviation activities for each audit area ;
  - Projected growth of aviation activities;
  - Level of acceptability of State's CAPs;
  - Progress in implementation of State's CAPs;
  - Ongoing or planned assistance projects; and
  - Major changes in the organizational structure.



Dataset: LEI
Last updated: 27/01/2013
Items: 188

Manage my Groups

Add or modify your custom groups of States.

New Edit

Choose your predictor (s)

Build a priority list

Report a problem >

LEI versus Traffic

Description

The below chart shows LEI versus commercial scheduled departures in 2011 per State for a defined group of States.

You can select a group of States from the drop-down menu. If a specific group of States does not exist, you can create that group through the "Manage my groups" section on the left. you can also view the composition of a selected group.

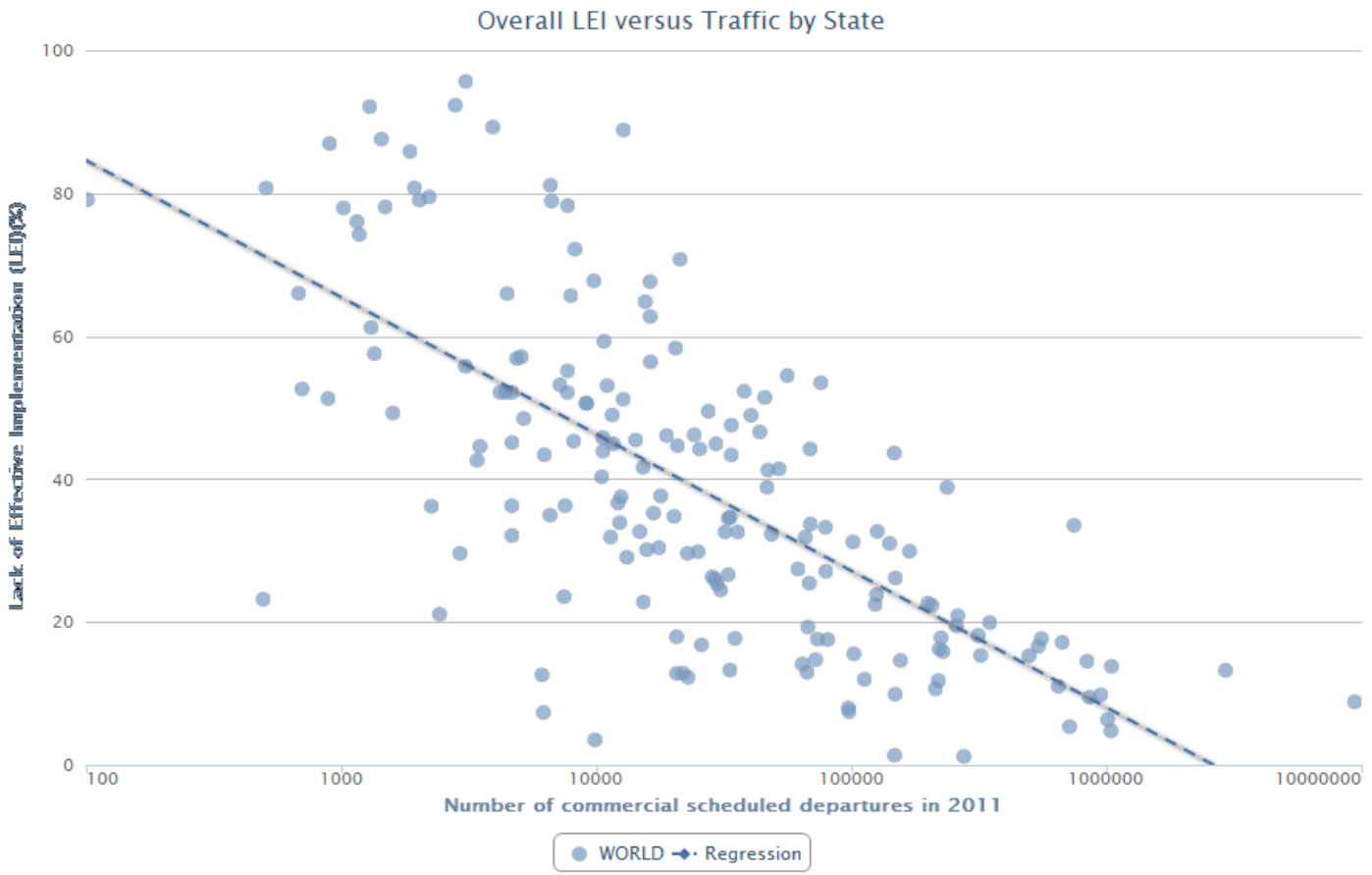
The LEI values may differ slightly from those published in the USOAP audit reports that were published from the period 2006 to 2010 due to changes in the LEI calculation algorithm as well as changes in the protocol question grouping structure performed since the State's audit.

Select a group

WORLD (Merens Marco, 1913 hits) Show State Names:

View group composition

Generate graph

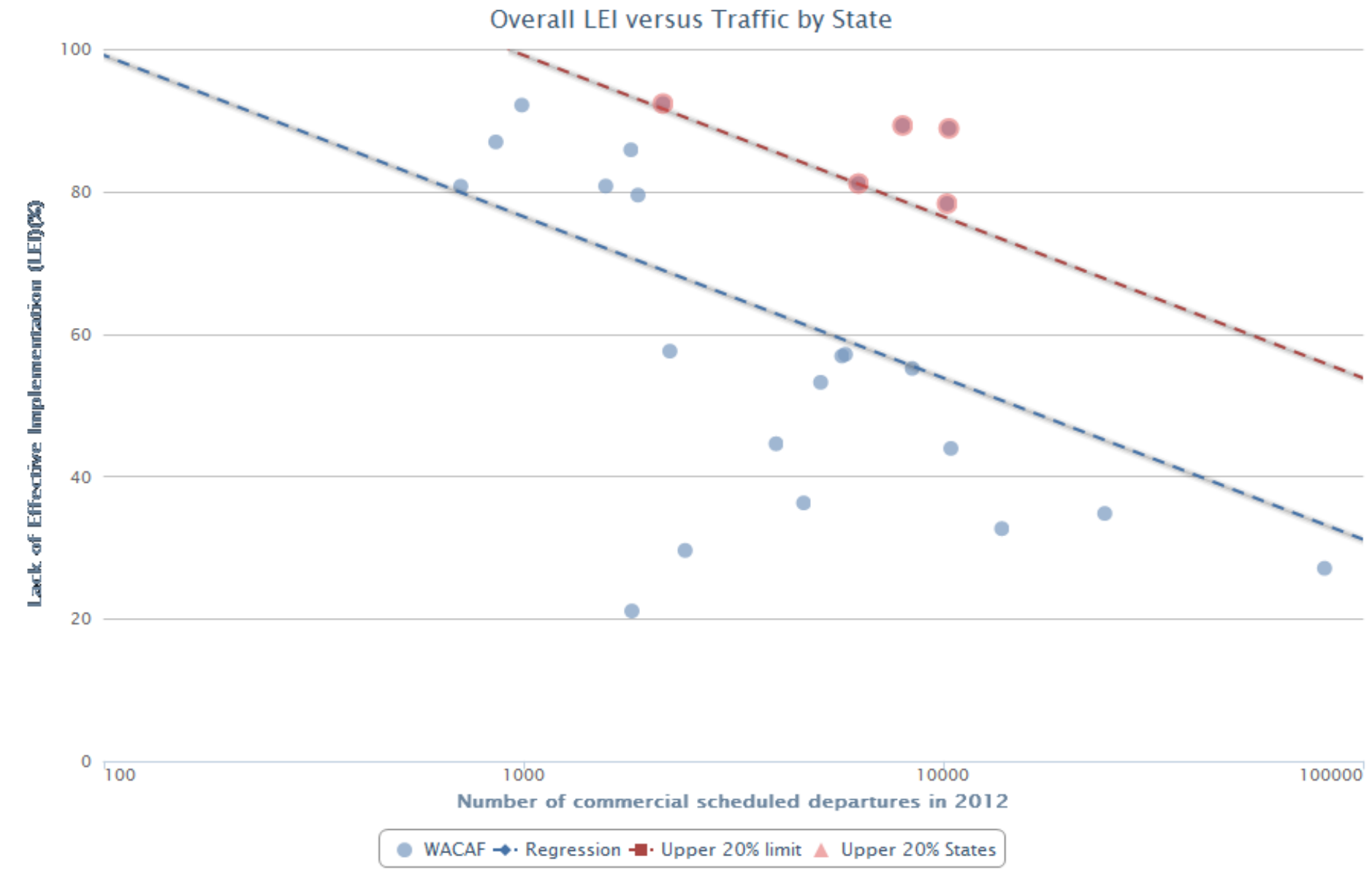


Select a group

WACAF (Merens Marco, 375 hits) Show State Names:

View group composition

Generate graph



Appendix 1 — Level of Aviation Activity in Each Technical Area

Area	Level of Activity			
Personnel Licensing and Training (PEL)	**Low**	**Medium**	**Medium – High**	**High**
Pilot licences issued/validated	< 200	201 – 500	501 – 1,000	(3027/56)
Aircraft maintenance licences issued/validated	1 – 50	51 – 200	201 – 500	(929/0)
Air traffic controller licences issued/validated	1 – 50	51 – 200	(205/0)	501 – 1,000
Flight Crew Training Organizations	1 – 5	(31)	21 – 100	> 100
Flight Crew Examiners designated by the State	1 – 20	(30)	101 – 500	> 500
Aircraft Operations (OPS)	**Low (< 5)**	**Medium**	**Medium – High**	**High**
Air Operator Certificates (AOCs) issued and valid		6 – 10	(16)	> 30
New AOCs issued in the past year	(0)			
Airworthiness (AIR)	**Low**	**Medium**	**Medium – High**	**High**
Aircraft registered in the State	< 50	51 – 100	101 – 500	(1310)
Valid Certificates of Airworthiness	< 50	51 – 100	101 – 500	(759)
Domestic Approved Maintenance Organizations (AMOs)	< 5	6 – 10	11 – 30	(69)
Approved production organizations	(0)			
Type Certificates (TCs) issued	(0)			
Air Navigation Services (ANS)	**Low**	**Medium**	**Medium – High**	**High**
	< 200 (daily)	**201 – 500 (daily)**	**501 – 1,000 (daily)**	**> 1,000 (daily)**
Aircraft movements (international + domestic) — landings and take offs: Current year		Jan to March: (210)		

Determination of State safety risk profile

Safety risk factors

- Previous USOAP activity results
- Level of traffic in the State
- Progress made by the State in resolving USOAP deficiencies

Safety risk indicators

- LEI vs. traffic (exposure)
- Existence of SSC(s)
- Level of aviation activities for each audit area
- Projected growth of aviation activities
- Level of acceptability of State's CAPs
- Progress in implementation of State's CAPs
- Ongoing or planned assistance projects
- Major changes in the organizational structure

Safety risk profile

- CMO determines the safety risk profile which is generated by determining safety risk factors and indicators.

Collection of safety information
Determination of State safety risk profile
Update of LEI and status of SSCs
Prioritization and conduct of USOAP CMA activities

Prioritization and conduct of USOAP CMA activities

States are prioritized by CMO, based on their safety risk profile taking into consideration the approved budget and resources available.

Prioritization and conduct of USOAP CMA activities

The scope of an ICVM is based on:

- Level of aviation activity in the State;
- State's self-assessment;
- Level of progress reported by State in implementing CAPs;
- Level of progress reported by States in addressing not satisfactory PQs; and
- Request by a State (cost-recovery ICVM).

Duration of an ICVM is determined by the scope.

Prioritization and conduct of USOAP CMA activities

The scope of a USOAP CMA audit is based on:

- All relevant PQs;
- Level of aviation activity in the State;
- State's self-assessment; and
- Request by the State (cost-recovery audit).

Duration of an audit is determined by the scope.

Prioritization and conduct of USOAP CMA activities

Off-site validation activity

- The objective is to validate CAPs implemented by a State without conducting an on-site activity, i.e. an audit or ICVM.
- This activity is conducted at ICAO HQ.
- CAPs addressing most of the PQ findings associated with CEs 1 to 5 (collectively known as “establishment” CEs) qualify for an off-site validation activity.

Prioritization and conduct of USOAP CMA activities

- CAPs related to the majority of PQ findings associated with CEs 6, 7 and 8 (collectively known as “implementation” CEs) do not qualify for an off-site validation activity.
- Such CAPs must be assessed and validated through an on-site activity.

Collection of safety information
Determination of State safety risk profile
Update of LEI and status of SSCs
Prioritization and conduct of USOAP CMA activities

Update of LEI/EI

Lack of Effective Implementation (LEI)

- The validation of collected safety information enables ICAO to continuously update the LEI of the safety oversight capability of a State.

- State LEI for the previous audit cycle is reported on iSTARS and the Online Framework (OLF).

Update of LEI – amendment process

Lack of effective implementation (LEI)

- PQs have been revised and updated and have become applicable based on a progressive transition which began in May 2013.

- The implementation of the new/amended PQs will result in minor impact to States' LEI due to the deletion of some PQs, adding of new PQs and merging of existing PQs with others.

Update of LEI – amendment process

- CMO revises and updates PQs on a periodic basis to reflect the latest changes in ICAO provisions and to harmonize and improve PQ references and content.

- Revision of PQs incorporates input from States, ICAO Air Navigation Bureau (ANB), ROs, USOAP mission team members and external stakeholders.

Update of LEI – amendment process

- Next one coming in the summer and will be applicable last quarter this year related to Annex 19

- Mapping between the previous and new/amended PQs will be covered in more detail in Module 3.

Update of LEI

Previous overall LEI calculation method

For calculation of overall LEI under the previous audit cycle (CSA 2005-2010), LEI for each CE was calculated

$$\text{CE(X) LEI (\%)} = \frac{\textit{number of not satisfactory PQs}}{\textit{total number of applicable PQs}} X\ 100$$

Then, the 8 LEIs for each CE were averaged.

$$\text{Overall LEI (\%)} = \frac{CE1+CE2+CE3+CE4+CE5+CE6+CE7+CE8}{8}$$

Update of LEI

LEI calculation as of May 2013

For calculation of LEI under USOAP CMA, the **total** number of not satisfactory PQs are divided by the **total** number of applicable PQs (the total number of PQs, minus added PQs, minus not applicable PQs).

Overall LEI (%)

$$= \frac{total\ number\ of\ not\ satisfactory\ PQs}{total\ new\ PQs - added\ PQs - not\ applicable\ PQs}\ X\ 100$$

Update of LEI

- Overall LEI results have changed since the CSA cycle due to the following:
  - PQs which had no CEs associated with them - removed;
  - Some PQs have been assigned to a different CE; and
  - Formula for calculating overall LEI has changed
- This has caused minor changes to the LEI of all States.

Update of LEI

A Mandatory Information Request (MIR) can be issues by CMO when:

- SAAQ, CCs and/or PQs are not submitted, are out-dated or are contradictory to other available information;
- CAPs are not submitted or are not kept up-to-date by State;
- Available information is insufficient; and/or
- Concerns are raised by internal/external stakeholders.

Update of LEI

Mandatory Information Request (MIR)

- States are required to provide status of PQ compliance using the “manage State self-assessment” tool on the OLF.

- CMO may communicate with States through MIRs to seek additional information with respect to compliance with requirements.

Update of LEI

- Status of PQs may be changed through the validation process conducted by CMO based on:
  - CAPs or other information received from States, supported by appropriate evidence; and
  - Information received from ICAO ROs, recognized organizations and other stakeholders.

- Status of PQs may also change based on information received from States in response to MIRs.

Update of LEI

With the new online monitoring activities, CMO may review and validate off-site some PQs related to CE-1 to CE-5.

However, validation of PQs related to CE-6 , CE-7, and CE-8 will typically require an on-site activity.

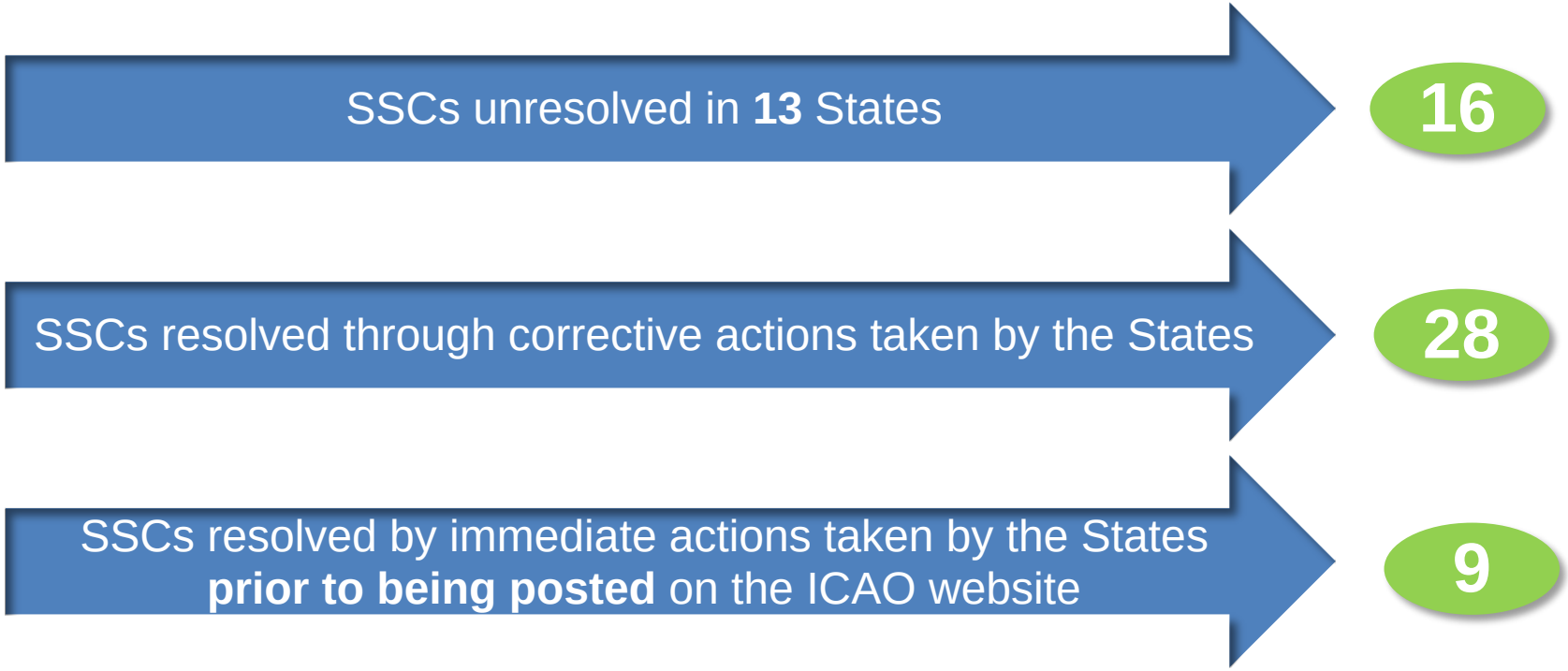
Status of Significant Safety Concerns (SSCs)

Definition of an SSC

"SSC occurs when the audited 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 Chicago Convention are not met, resulting in an immediate safety risk to international civil aviation."

Reference: EB 2010/7 dated 19 February 2010

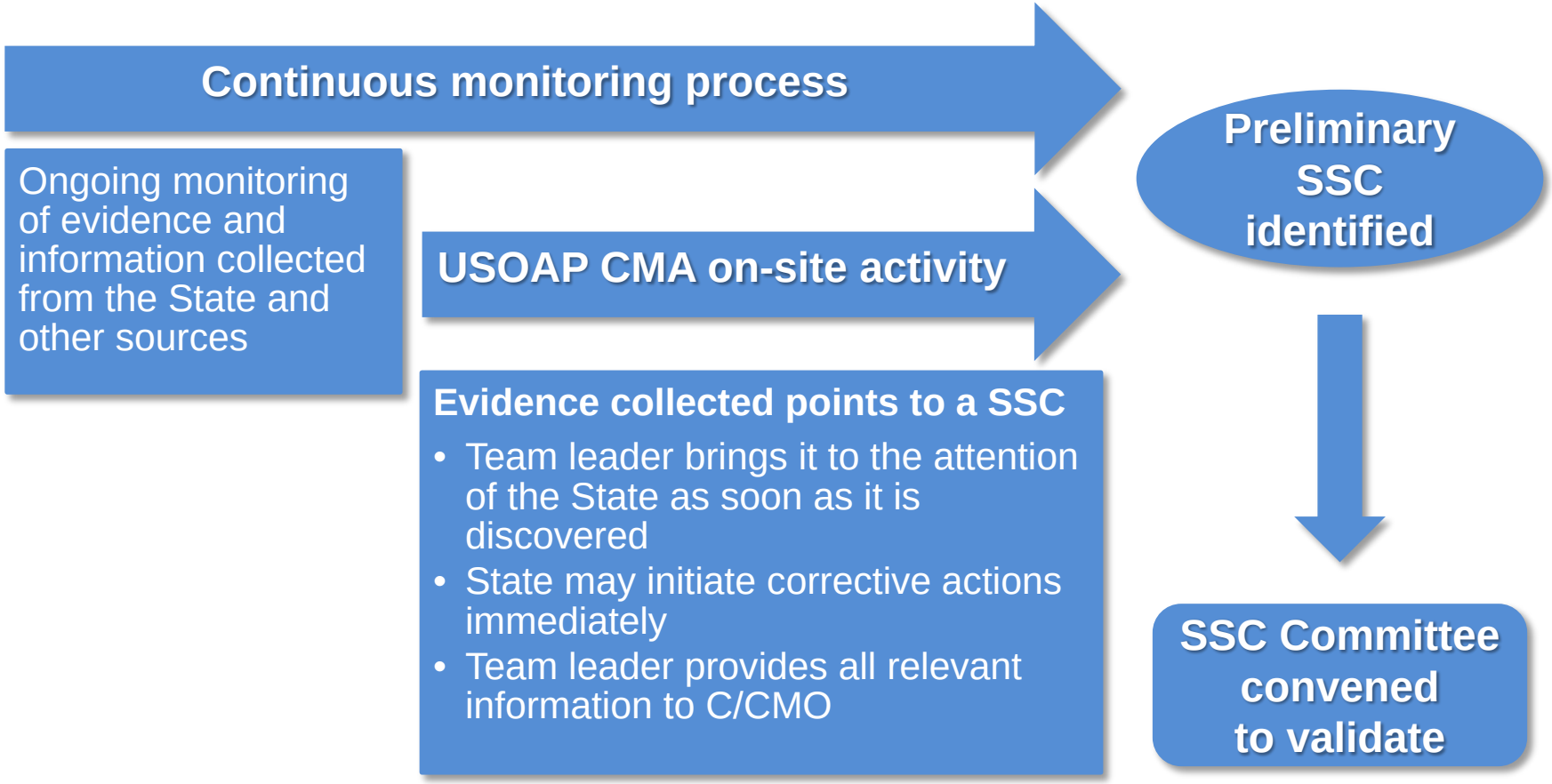
Status of SSCs



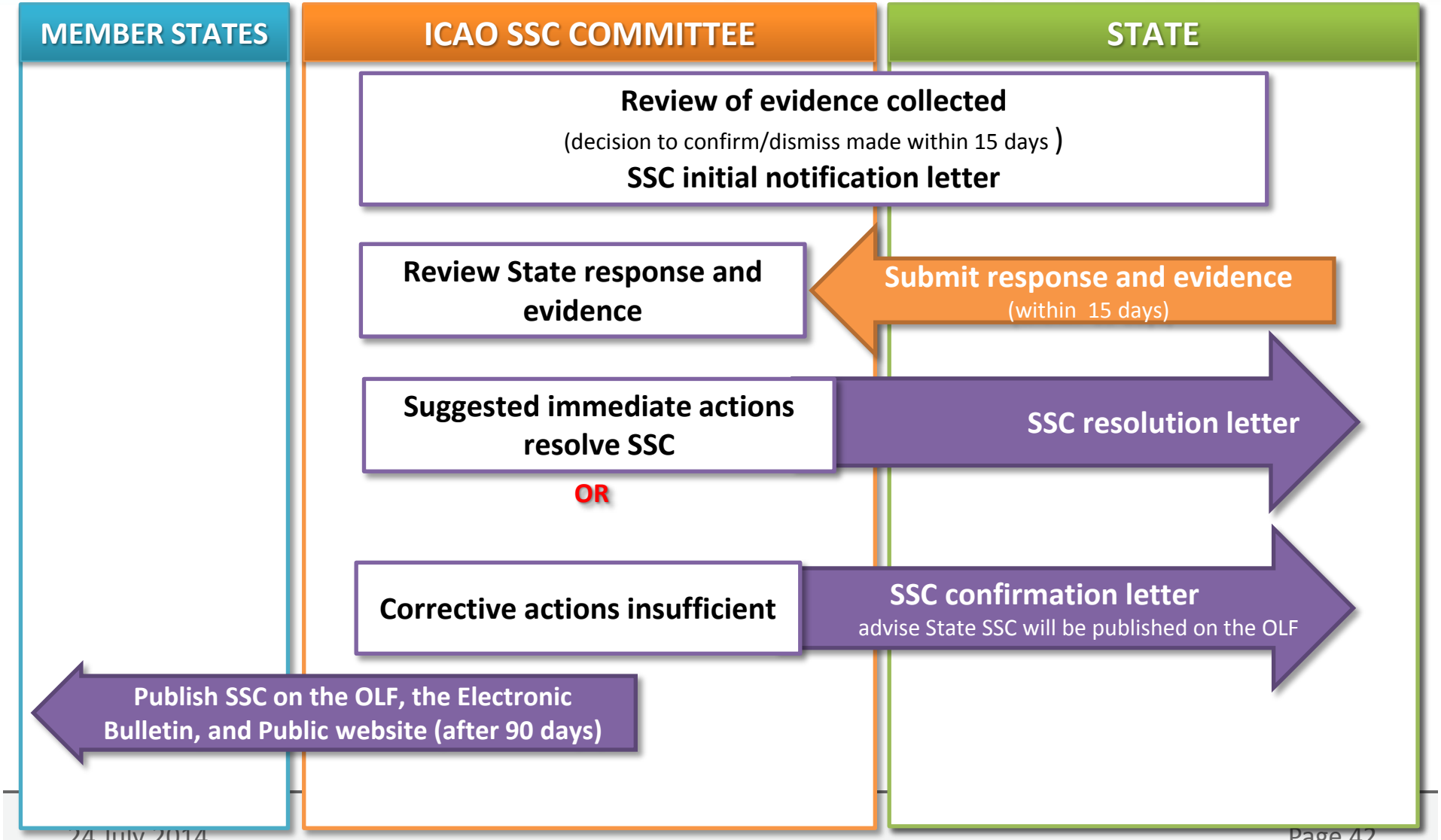
Note: Numbers last modified – 23 July2014

Status of SSCs

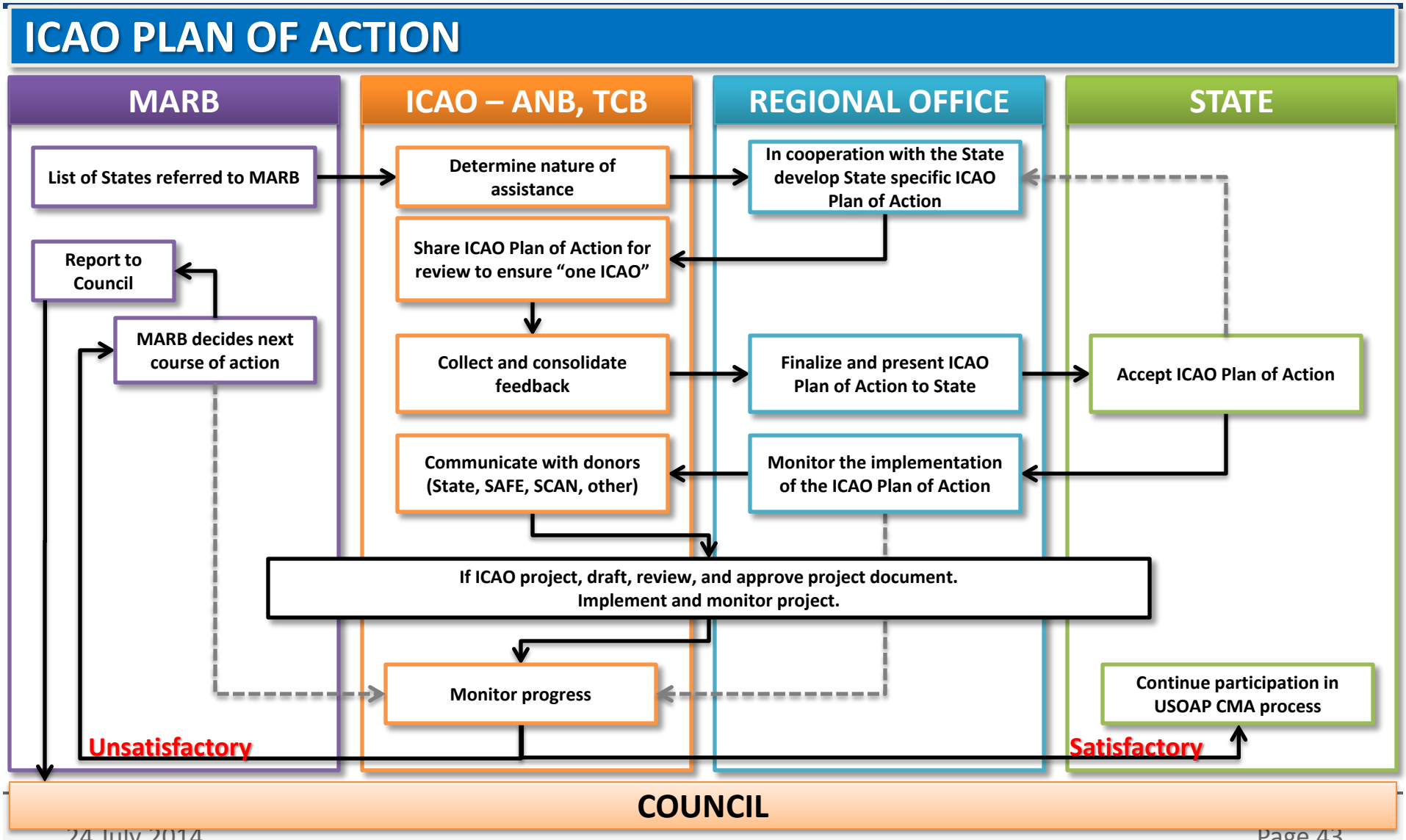
Mechanism



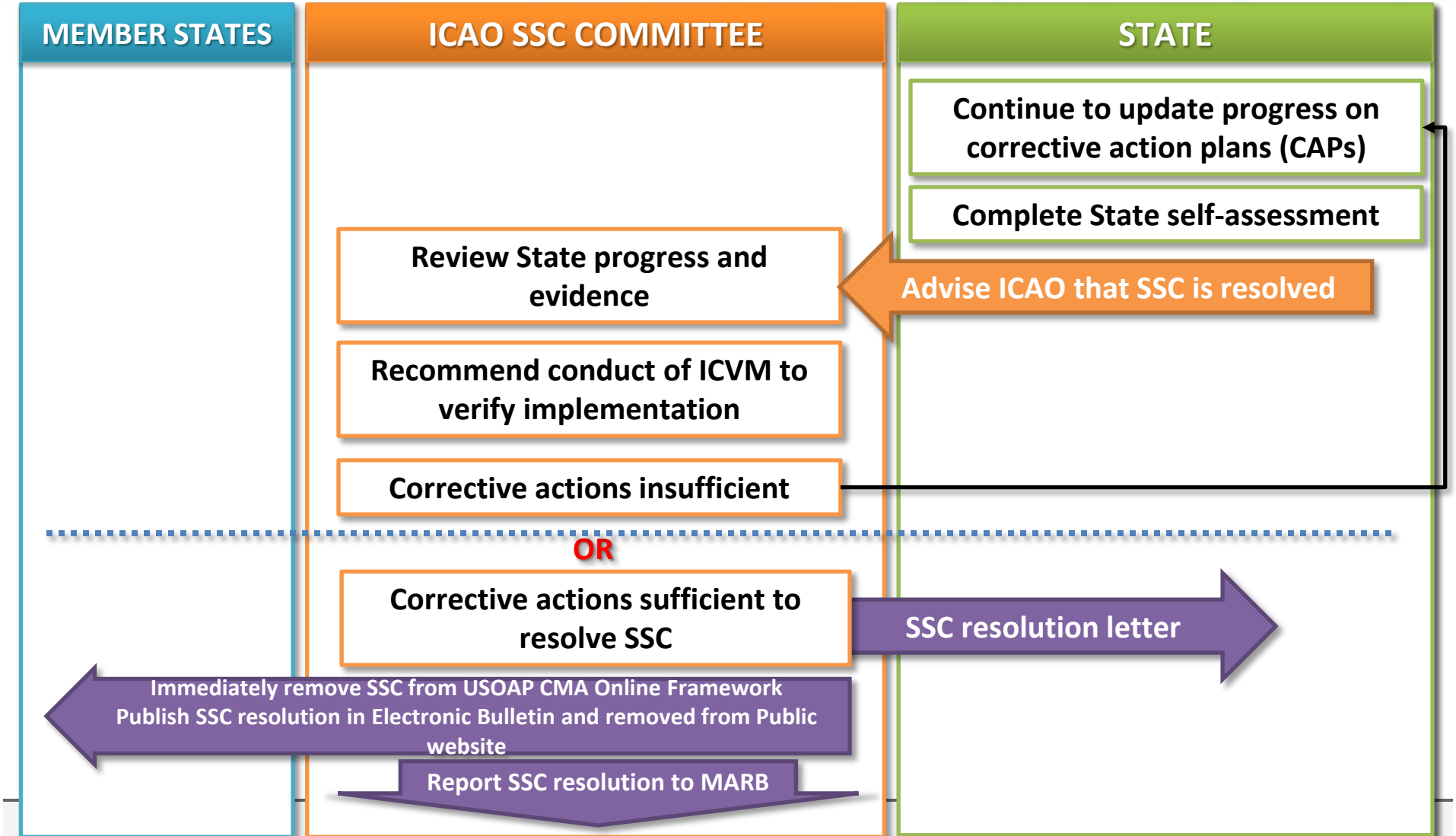
Status of SSCs – Mechanism (cont'd)



Status of SSCs – Mechanism (cont'd)

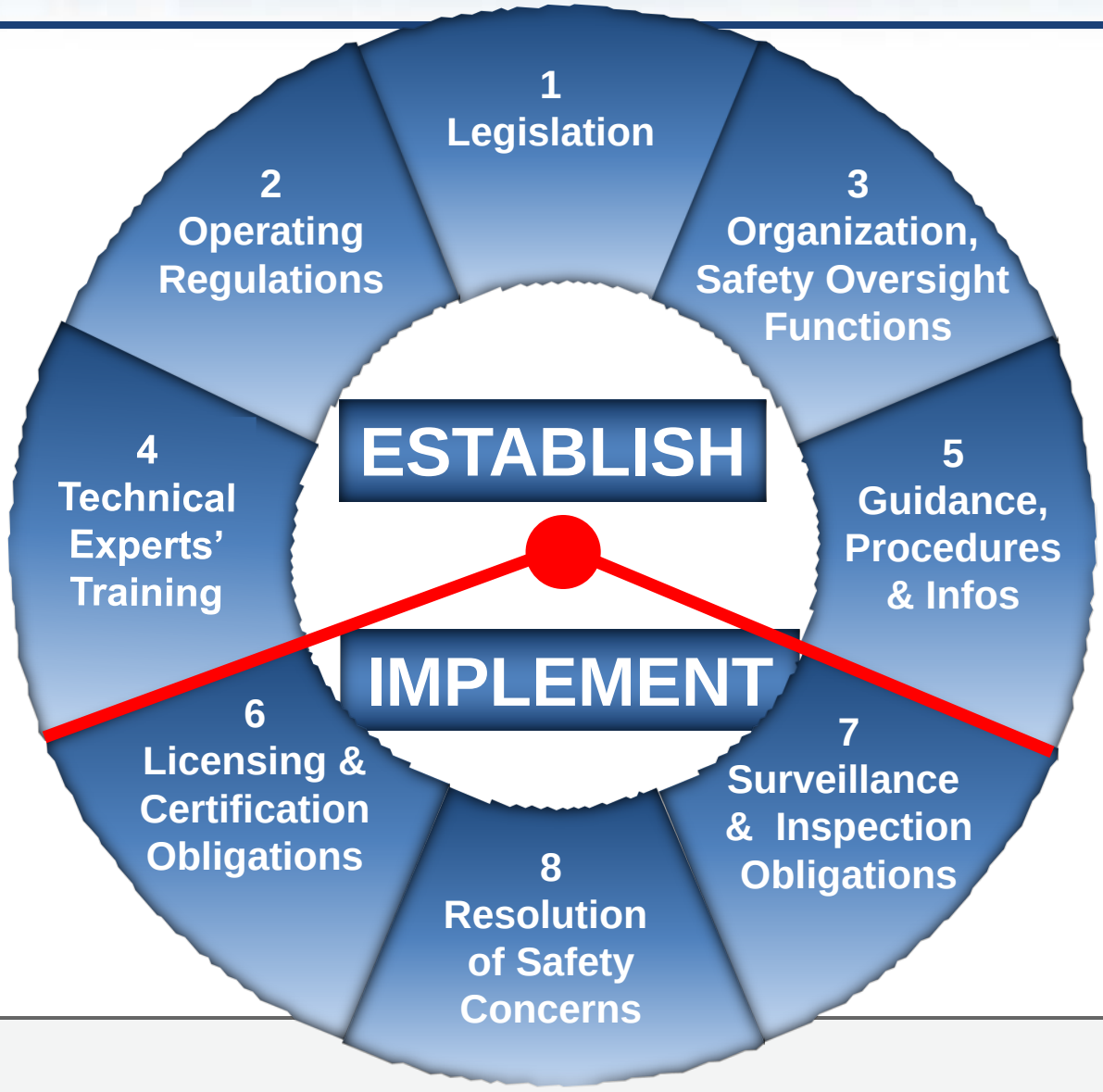


Status of SSCs – Mechanism (cont'd)



Critical Elements of the safety oversight system

Critical Elements of an Effective Safety Oversight System



CEs of the safety oversight system

ICAO carries out audits to determine Member States' safety oversight capabilities. These audits include:

- Assessing the effective implementation of the eight CEs of a safety oversight system; and

- Verifying the status of the Member States' implementation of:
  - all safety-related ICAO SARPs;
  - associated procedures;
  - guidance materials; and
  - best practices.

CEs of the safety oversight system

CE-1: Primary aviation legislation

- The State shall promulgate a comprehensive and effective aviation law, consistent with the size and complexity of the State's aviation activity and with the requirements contained in the Convention on International Civil Aviation, that enables the State to regulate civil aviation and enforce regulations through the relevant authorities or agencies established for that purpose.

- The aviation law shall provide personnel performing safety oversight functions access to the aircraft, operations, facilities, personnel and associated records, as applicable, of service providers.

CEs of the safety oversight system

CE-2: Specific operating regulations

- The State 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.

CEs of the safety oversight system

CE-3: State system and functions

- The State shall establish relevant authorities or agencies, as appropriate, supported by sufficient and qualified personnel and provided with adequate financial resources. Each State authority or agency shall have stated safety functions and objectives to fulfill its safety management responsibilities.

- The State shall ensure that inspectors 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.

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.

CEs of the safety oversight system

CE-4: Qualified technical personnel

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

- The State shall implement a system for the maintenance of training records.

CEs of the safety oversight system

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

- The State 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.

- The State shall provide technical guidance to the aviation industry on the implementation of relevant regulations.

CEs of the safety oversight system

CE-6: Licensing, certification, authorization and/or approval obligations

- The State shall implement documented processes and procedures to ensure that personnel and organizations performing an aviation activity meet the established requirements before they are allowed to exercise the privileges of a license, certificate, authorization and/or approval to conduct the relevant aviation activity.

CEs of the safety oversight system

CE-7: Surveillance obligations

- The State shall implement documented surveillance processes, by defining and planning inspections, audits, and monitoring activities on a continuous basis, to proactively assure that aviation license, certificate, authorization and/or 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.

CEs of the safety oversight system

CE-8: Resolution of safety issues

- The State shall use a documented process to take appropriate corrective actions, up to and including enforcement measures, to resolve identified safety issues.

- The State shall ensure that identified safety issues are resolved in a timely manner through a system which monitors and records progress, including actions taken by service providers in resolving such issues.

CEs of the safety oversight system

The definitions of the eight CEs of a safety oversight system are now an Appendix of Annex 19 and referred to as elements.

Guidance on the eight CEs is provided in ICAO Doc 9734, Part A.

As of January 2013, safety oversight information is available on the [ICAO public website](). URL: http://www.icao.int/safety/Pages/USOAP-Results.aspx

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Safety Oversight Information

Report a problem >

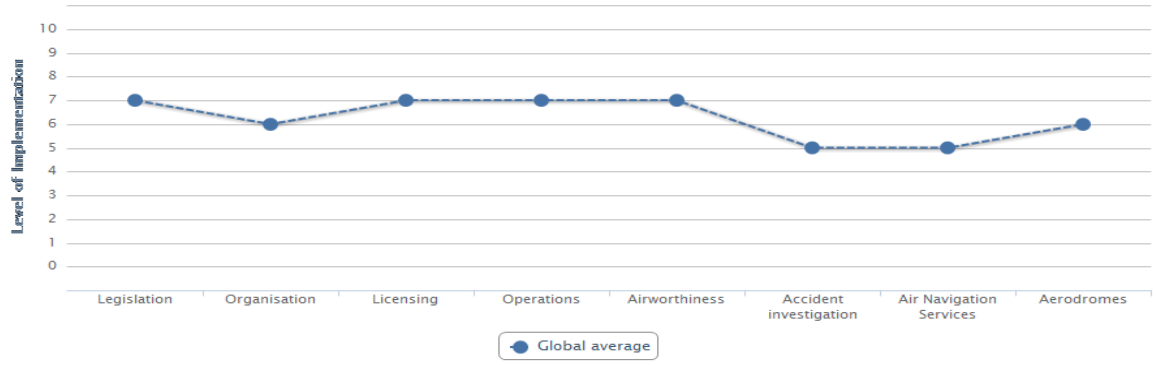
USOAP Continuous Monitoring Approach (CMA) Activities - Results

Description

This information has been generated and updated from the former ICAO Flight Safety Information Exchange (FSIX) website. You can use the search box to find a State and then compare the result of its last USOAP CMA activity with the global average or any other State on the list. The Level of Implementation of each Audit Area is rated from 0 to 10, with 0 being "not implemented" and 10 being "fully implemented".

Level of Implementation

Reset graph



State	Audit period	Progress validation period	Graph
Albania	01-Dec to 10-Dec-2009		Compare
Algeria	31-May to 09-Jun-2011		Compare
Andorra	26-Feb to 28-Feb-2007		Compare
Angola	26-Nov to 05-Dec-2008	15-Feb to 18-Feb-2010	Compare
Antigua and Barbuda	05-Nov to 14-Nov-2007		Compare
Argentina	25-Nov to 05-Dec-2008		Compare

USOAP CMA audit areas

USOAP CMA audit areas

Primary aviation legislation and civil aviation regulations (LEG)

Chicago Convention

Civil aviation organization (ORG)

SAAQ

Personnel licensing and training (PEL)

Annex 1, and 19

Aircraft operations (OPS)

Annexes 6, 9, 18, 19 and

PANS-OPS

Airworthiness of aircraft (AIR)

Annexes 6,7,8, 16 and 19

Aircraft accident and incident investigation (AIG)

Annex 13, and 19

Air navigation services (ANS)

Annexes 2,3,4,5,10,11,12,15, 19 and PANS-ATM

Aerodromes and ground aids (AGA)

Annex 14, and 19

Annex 19 – Safety Management

Annex 19 – Safety Management

The Air Navigation Commission, at the fourth and fifth meetings of its 190th Session on 8 May 2012, considered proposals developed by the Safety Management Panel (SMP) to transfer the provisions on safety management responsibilities and processes from existing Annexes for consolidation in new Annex 19 — Safety Management, and related consequential amendment proposals to existing Annexes developed by the Secretariat.

The new Annex 19 and consequential amendments to Annexes 1, 6, 8, 11, 13 and 14, Volume I have been applicable since 14 November 2013.

USOAP CMA CBT

USOAP CMA CBT

As per EB 2011/44, the first series of computer-based training (CBT) was launched to:

- Provide participants with a thorough understanding of the USOAP CMA methodologies and the essential knowledge required to participate in USOAP CMA activities; and

- Serve as an opportunity for States to enhance the competencies of their aviation safety personnel in the areas addressed by USOAP CMA.

USOAP CMA CBT

- Based on Assembly Resolution A37-5, States and recognized organizations are reminded and are called upon to nominate experts for secondment to ICAO on a long-or short-term basis to support USOAP CMA.

- Those who have already completed the online course will be registered once again to go over the revised course material without having to write another exam.

- The PEL CBT in now available.

- ICAO is working on the LEG/ORG CBT to be released by end of 2014.

Review

- USOAP CMA
- Components of the USOAP CMA
  - Collection of safety information
  - Determination of State safety risk profile
  - Prioritization and conduct of USOAP CMA activities
  - Update on Lack of Effective Implementation (LEI) and status of Significant Safety Concerns (SSCs)
- Critical Elements (CEs) of the safety oversight system
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