



Global Aviation Safety Oversight System (GASOS)

Concept of Operations

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1. Introduction

In response to growing aviation safety oversight challenges experienced globally, ICAO is proposing the establishment of the Global Aviation Safety Oversight System (GASOS) within the framework of the Global Aviation Safety Plan (GASP). GASOS would be a voluntary and standardized assessment and recognition mechanism for safety oversight organizations (SOOs) such as State civil aviation authorities, regional safety oversight organizations (RSOOs), Accident Investigation Organizations (AIOs), and other State-based mechanisms (e.g. ICAO COSCAP programmes, regional CAAs...). GASOS aims at promoting the delegation of safety functions by States to ICAO recognized SOOs, while maintaining the States' obligations and responsibilities for safety oversight under the ICAO Convention.

The Forum on RSOOs for Global Aviation Safety held in Swaziland from 22 to 24 March 2017, supported the proposed ICAO Global Strategy and Action Plan for the improvement of RSOOs and the Establishment of a Global System for Provision of Safety Oversight¹, and of which one of the key objectives is the establishment of GASOS.

Using the ICAO Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA) methodology, GASOS will be a programme for measuring and recognizing the capability of SOOs to provide safety oversight, safety management and accident investigation functions on behalf of States.

This concept of operations outlines what GASOS is expected to be, its primary objectives, the main underlying principles, as well as the description of foreseen responsibilities, processes, boundaries and interfaces².

2. Current Situation and Justification for Changes

2.1 Description of the Current Safety Oversight System

States have extensive safety management responsibilities under the provisions of the Chicago Convention and its annexes. Today many States are relying extensively on national CAAs to discharge their responsibilities. For some States and for some functions, delegation is taking place in the frame of RSOOs or under the form of other state based mechanisms.

2.2 Justification for Change

Safety is the top priority and through the efforts and collaborative work of States, industry, international organizations and other stakeholders, the global aviation accident rate in recent years has remained low and stable. However, the aviation industry is changing and becoming more complex; new technologies are emerging and air traffic is forecast to double over the next fifteen years. Some States are not able to fulfil all their aviation safety oversight obligations effectively. Whereas it is expected that RSOOs and other regional mechanisms would provide tangible improvements, some of those organizations face specific challenges that do not allow them to deliver the expected results.³ The gap between the insufficient development of State safety oversight capabilities and the constant evolution of the industry will increase and may negatively impact aviation safety. States need effective, reliable and flexible alternatives to develop capacity for all safety functions in order to close this gap.

2.3 Required Changes

Changes are required to assist States improving their safety oversight performance. The main changes proposed under GASOS are to assess and recognize the capability of SOOs and to provide incentives to States to delegate safety functions to those SOOs that have been recognized to be competent. GASOS is the means to implement those changes, based also on the assumptions described below.

¹ [Global strategy and action plan for the improvement of Regional Safety Oversight Organizations \(RSOOs\) and the establishment of global system for the provision of safety oversight - ICAO](#)

² A parallel and complementary initiative is the development of an ICAO recognition scheme for Civil Aviation Safety Inspectors (CASI database). Both CASI and GASOS projects will be closely coordinated, in particular in regards to the harmonization of terminologies. Each project will have nevertheless its own set of documentation.

³ See also RSOO evaluation report, ICAO, November 2017.

2.4 Assumptions

The following assumptions are to be considered for GASOS:

Assumption 1: States have a national or regional legal framework that allows them to delegate safety functions to non-State entities, at the level of delegation that is considered under GASOS. Verification or implementation of this assumption (through legal measures) is the responsibility of each State willing to delegate.

Assumption 2: There is an interest of some States to have access to recognized SOOs for delegation of safety functions, and there is an interest for SOOs to have their capability recognized with a view to offer services to States. Verification of this assumption will be part of the GASOS “business case” and associated surveys.

Assumption 3: The GASOS initiative will have to be approved by States before any full scale operational implementation. Submittal of the GASOS proposal to States is planned at the 40th ICAO Assembly in September 2019.

3. GASOS overview

3.1 Objective

The main objective of establishing the GASOS is to strengthen State safety oversight and safety management capabilities by:

- Enabling the delegation of safety functions, as needed, by States to competent SOOs that have been assessed and recognized by ICAO; and
- strengthening existing SOOs to make them more effective and efficient in supporting States.

3.2 Guiding Principles and Considerations

- i. States maintain responsibility for safety oversight under the Chicago Convention.
- ii. GASOS is a voluntary programme and, in principle, is open to all SOOs. The application of an SOO to be recognized through GASOS is a voluntary decision of the organization. The use of recognized SOOs by States is also voluntary.
- iii. GASOS is an integral part of the ICAO strategy for reinforcing RSOOs, and should be seen by RSOOs as a means to support their reinforcement and recognition at global level, for providing safety oversight and safety management functions for states.
- iv. States are responsible to decide whether they want to discharge their safety responsibilities through full or partial delegation to one or more SOOs. In such cases, the States should:
 - decide if they call upon a recognized SOO, and which safety functions and levels of delegation they wish to implement; and
 - obtain assurance that the SOO capability remains valid in the context of state specific needs.
- v. A phased approach to the implementation of GASOS may be employed by ICAO in order to minimize risks related to assessment workload, depending on the outcomes of the business case and taking into account the advice of the ICAO GASOS Study Group.
- vi. GASOS will be based on a proven and credible methodology for the initial assessment and monitoring of a SOO’s capability. The USOAP CMA methodology will be used and adapted as required for this purpose.
- vii. The GASOS assessment criteria will be maintained to be closely consistent with relevant USOAP-CMA PQs.
- viii. Consistency with high level GASP objectives, goals and targets will be maintained through the GASOS assessment methodology and assessment criteria.

- ix. Similarly, the assessment and monitoring of an SOO’s capability will have to be performed by recognized competent personnel and the use of USOAP qualified auditors is therefore foreseen.
- x. GASOS will aim also at driving efficiency in safety oversight monitoring activities. Therefore, duplication of activities should be avoided to the maximum extent possible:
 - In the case of a State that is delegating certain safety functions to a recognized SOO, the scope and depth of USOAP-CMA activities for that State will be reduced, as applicable, depending on the functions delegated and the associated levels of delegation.
 - In case of an SOO applying for recognition under GASOS which is also subject to USOAP-CMA, the initial GASOS assessment will take credit of the latest USOAP-CMA outcomes, to the extent applicable.
- xi. Appropriate interfaces will be designed between GASOS and USOAP-CMA. Both programmes have different but complementary objectives, and both programmes have synergies.
- xii. Since GASOS is intended to contribute to the GASP long term strategic objective of achieving worldwide high safety oversight capabilities, it will be based on a principle of high level of technical capability.
- xiii. The GASOS programme will be managed by ICAO on a cost recovery basis, i.e. without seeking to make profits. Any unutilized revenue would be ring-fenced within the programme. Funding and technical resources mobilized from voluntary contributions by States, International Organizations and Industry is also a consideration.
- xiv. The GASOS programme will be based on the principle of transparency, with the aim to make information available to stakeholders and to the public to the extent possible.
- xv. The GASOS programme is also seen as contributing to the United Nations Sustainable Development Goals, in particular Goal 9 – Industry, Innovation and Infrastructure.

3.3 GASOS Description

3.3.1 Components of the system

GASOS is a system:

- To assess, recognize and monitor the capability of SOOs to perform safety functions, as defined in the scope of recognition (safety functions and delegation levels), and
- To publish a Directory of ICAO recognized SOOs, including their scope of recognition (safety functions) for the use by States willing to delegate such functions.

3.3.2 GASOS is composed of the following actors, key activities and main outputs (*elements directly interfacing with GASOS but not strictly part of it are shown in italics*):

Actors	Key Activities	Main Outputs
ICAO	GASOS methodologies and processes Assessment, Recognition and Monitoring of SOOs	List of safety functions (GASOS functions) GASOS assessment criteria and mapping with corresponding USOAP PQs GASOS Directory SOO Recognition Certificates ICAO GASOS Manual ICAO Manual 9734 Part B updated
SOOs (already recognized)	Maintain capability demonstration <i>Perform safety functions on behalf of States</i>	Annual Activity Questionnaire
SOOs (applying for recognition)	capability Demonstration <i>Perform safety functions on behalf of States</i>	Self-assessment check-lists

States	Access the GASOS Directory <i>Take decisions on delegations of safety functions and implement them</i>	<i>Documented information on delegation decisions</i>
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A summarized visual representation of GASOS is further provided below:

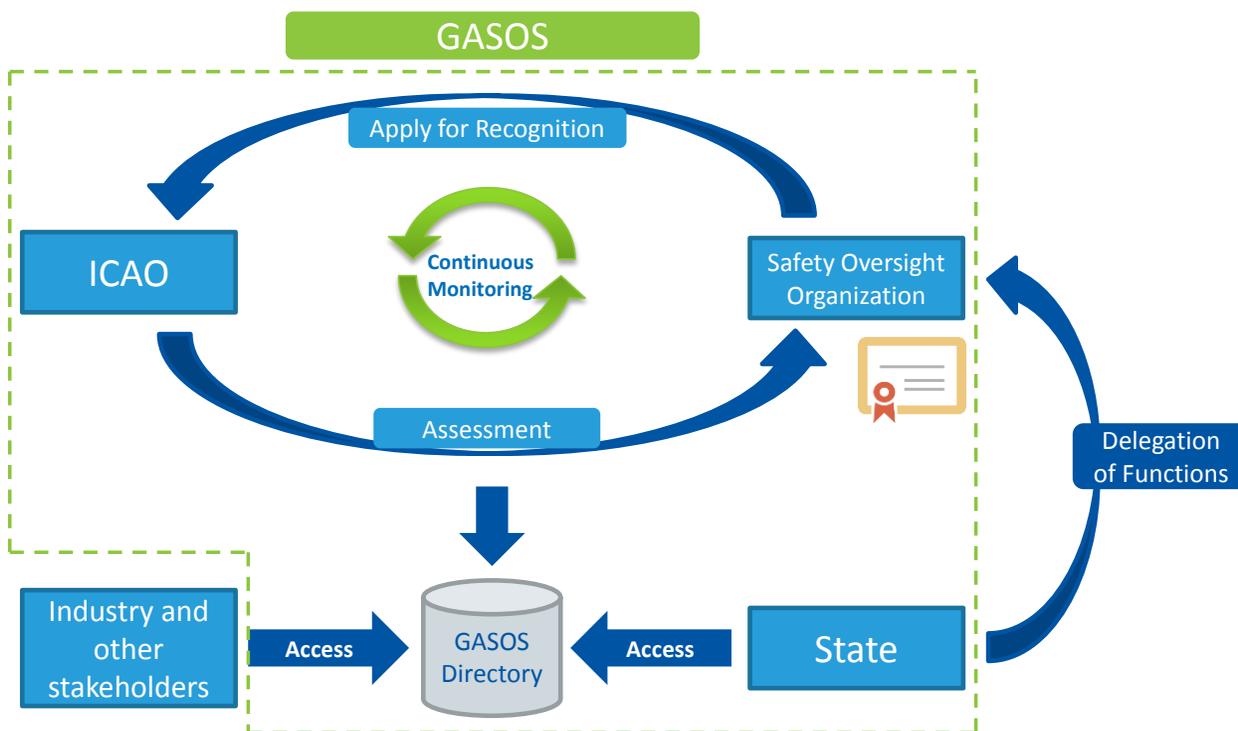


Figure 1: GASOS Visual Representation

3.3.2 The GASOS Safety Functions and Delegation levels

A State can delegate certain safety functions (safety oversight, safety management or accident investigation functions) at three different levels, which correspond roughly to different levels of authority delegation or legal empowerment:

Delegation at Level 1: Advisory and coordinating functions

Delegation at Level 2: Operational assistance functions

Delegation at Level 3: Certifying functions, issuance of regulations, and full safety investigations

Examples of functions in the three levels of delegations are given in the glossary (Appendix B). The comprehensive GASOS List of Functions is being maintained as a separate document (“GASOS List of Functions”).

3.3.3 The GASOS Directory and electronic tools

The development of the GASOS Directory and other supporting electronic tools is envisaged. The GASOS Directory will contain public information on recognized SOOs, including details on their scope of recognition/Level in terms of safety functions.

Other electronic tools are envisaged to support GASOS activities, such as:

- Electronic publication of the list of safety functions, the GASOS assessment criteria and mapping with related USOAP CMA PQs; and
- an on-line environment where SOOs can apply for GASOS recognition, as well as edit and maintain their self-assessment information including additional supporting evidence and annual reports/questionnaire.

3.4 Responsibilities

3.4.1 Responsibilities of ICAO

ICAO is responsible for establishing and operating an ICAO GASOS programme, i.e. for the permanent deployment of dedicated resources and activities that will enable the establishment and functioning of GASOS. ICAO is responsible for implementing processes for:

- Maintaining the GASOS assessment criteria, with the objective to maintain consistency with the USOAP PQs, to the extent possible;
- conducting the initial assessment of SOOs and monitoring of the recognized SOOs;
- maintaining the GASOS Directory of recognized SOOs;
- maintaining required supporting electronic tools; and
- implementing an independent quality management system for the GASOS programme.

Before undertaking assessment or monitoring activities, ICAO is responsible for ensuring that any required formal agreement between the SOO and ICAO is in place.

Regarding internal responsibilities within ICAO, the Air Navigation Bureau (ANB) will have the overall responsibility for the GASOS programme.

3.4.2 Responsibilities of SOOs

SOOs applying to ICAO for recognition under GASOS are responsible for:

- Designating an accountable head of SOO;
- designating a technical focal point for all GASOS assessment and monitoring activities;
- defining their intended scope of recognition;
- conducting a self-assessment;
- providing all of the necessary documentation and evidence required to apply for recognition; and
- demonstrating their capability to ICAO.

Recognized SOOs are responsible for:

- Ensuring their capability demonstration is valid, also in the context of State specific aspects such as language, knowledge of national aviation regulations and specificities of the national aviation activity;
- maintaining data and reporting to ICAO their activities; and
- communicating with ICAO.

3.4.3 Responsibilities of States

States which are delegating certain safety functions to a SOO remain responsible for ensuring that their safety obligations are properly discharged.

States are responsible to take the decisions pertaining to delegation: whether they delegate or not, to which organization (s), for which function and at which Level, and in particular for ensuring that there is full clarity in the description of functions and authority levels which are delegated. In particular, States are responsible for ensuring that their accident investigations are conducted by an AIO that is independent from SOOs and other entities that could interfere with the conduct or objectivity of an investigation.

States are responsible for getting the assurance that the SOO's capability is valid, also in the context of State specific aspects such as language, knowledge of national aviation regulations and specificities of the national aviation activity.

States are responsible for implementing any required formal agreement before delegating safety functions.

States are responsible to ensure that efficient technical coordination mechanisms are in place, between the CAA and the SOO, and also between SOOs if more than one SOO is engaged by the State. In case of Level 2 delegations where the State CAA retains the final approving authority, it is expected furthermore

that the CAA retains the capability to review the report or equivalent outcome in order to take the necessary approval decisions.

3.5 Impact on ICAO provisions

This section provides an overview of which adaptations are considered necessary to the ICAO regulatory and guidance framework.

As a result of the initial legal analysis, it has been determined that the GASOS concept is compatible with the ICAO Convention and existing SARPs. A more thorough legal review by ICAO is underway and expected by the third quarter 2018.

New guidance material is found necessary in two main areas:

- Guidance for SOOs that are either applying for recognition or maintaining their recognition. A new ICAO “GASOS Manual” will describe in more detail the GASOS processes, provide the list of safety functions and activities against which recognition can be sought, document the recognition assessment criteria and also the respective tasks and responsibilities of ICAO and SOOs related to the GASOS processes and methodologies.
- Guidance for States on delegation mechanisms, within ICAO Document 9734 part B. Such guidance should address in particular the following aspects:
 - definition of the scope and level of delegations,
 - compatibility with the national legal framework,
 - how national specific aspects (such as regulations or related? aviation activity) are being addressed,
 - the level of monitoring that the State should exercise itself on the SOO,
 - interface and coordination aspects between SOO(s) and the State’s CAA, etc., and
 - remaining technical State responsibilities in case of Level 2 delegations.

3.6 Phased Approach to Implementation

A phased approach by ICAO may be necessary to mitigate certain risks associated to the implementation of GASOS. It is expected that if needed, such a phasing would be planned following the outcomes of the business case and taking into account the advice of the GASOS Study Group.

The present view/position on phasing is that the initial phase of GASOS implementation would focus on the recognition of volunteer RSOOs, State CAAs, and other State-based mechanisms such as COSCAPs or RAIOS. Other organizations (e.g. international organizations) may be considered in subsequent phases.

4. High level description of GASOS processes

4.1 Initial recognition of an SOO

4.1.1 Description of process phases

The initial recognition of an SOO takes place in four phases as described below.

Phase 1: Application and pre-assessment

An SOO may voluntarily submit an application for recognition, using an on-line application form. The application will include preliminary information on the organization, including supporting documentation, the intended scope of recognition, and the safety activities already performed by the SOO on behalf of States, if applicable.

ICAO will then perform a pre- assessment of the application package in order to determine the eligibility for a full GASOS assessment. The applicant will be informed by ICAO if the application requires more information or is either approved to move forward or rejected. In case the scope of the application covers multiple technical areas, ICAO may consider applying a modular approach to the assessment (with multiple assessment teams and keeping the possibility to phase the recognition steps). Once the application is approved to move forward, ICAO will send the SOO the necessary information to begin the next phase.

The pre-assessment will be based upon checking whether the applying SOO meets the definition of an SOO (cf. Appendix 2), whether it is eligible in the frame of the relevant GASOS phasing criteria, and whether, based on the information already available to ICAO, it can be reasonably expected that the SOO is able to demonstrate capability for the proposed safety functions and delegation levels.

Phase 2: Self-assessment and preparation of the on-site assessment

The SOO will provide a self-assessment to demonstrate their capability against the applicable assessment criteria, along with relevant supporting documents. After review of the self-assessment, ICAO will establish an assessment team and initiate the preparation of the on-site assessment.

The assessment team will be composed of qualified GASOS assessors (either ICAO staff or external qualified staff such as State CAA staff - qualified USOAP auditors trained to GASOS assessors). The size and composition of the team will be determined depending on the SOO size and intended scope of recognition. The team will prepare an on-site assessment plan based on the results of the self-assessment, documentation/evidence provided by the SOO with their application, and the level of recognition sought.

Phase 3: The on-site assessment

The assessment team, under the leadership of a team leader, will establish an on-site assessment plan that will define in detail the scope and planning of the on-site activity. The on-site assessment methodology will follow the principles underlying the USOAP CMA activities (reference: chapter 7 of the USOAP CMA manual, fourth edition). In a case where the SOO is subject to USOAP CMA for a scope that encompasses or overlaps the intended scope of recognition, credit may be taken from the most recent USOAP CMA results to when and where possible.

The assessment team will conduct the on-site assessment, collect evidence, complete an assessment check-list and identify potential findings and observations, in order to verify the demonstration of capability of the SOO against applicable assessment criteria. The assessment team will inform the SOO of any identified findings requiring corrective action.

In a case where an SOO applies for functions at Level 2 or Level 3 without having organizational experience of actually performing such functions, the assessment will consider also the experience available with individual technical personnel of the SOO, as well as other aspects such as training, processes and procedures. Additional mitigations might be furthermore considered in the frame of the monitoring of the SOO.

Phase 4: Final phase / Recognition

During the final phase, a Corrective Action Plan (CAP) process will be initiated for any identified findings and the applicant SOO will update its capability demonstration accordingly.

The assessment team will prepare its assessment report that will provide a summary of the assessment activities and their outcome. The SOO will have the possibility to comment upon the draft report and list of findings before it is finalized.

The report will include, in case of a satisfactory assessment, a recommendation to issue a recognition certificate and level, and will also document any remaining open findings, that will be considered by ICAO in the frame of the monitoring activities.

After closure of all findings and satisfactory internal ICAO peer review of the assessment report, a GASOS recognition certificate will be issued to the SOO, including the scope of recognition. The GASOS directory will be updated accordingly and an SOO risk profile will be generated by ICAO in support of the future GASOS monitoring activity.

As this overall process has the potential to generate conflicts of technical opinion between the SOO and ICAO, procedures for resolution of conflict and for contested decisions will be needed.

4.1.2 Methodology for establishing the applicable assessment criteria

The assessment criteria will be based on a set of generic criteria that will be identical for each applicant SOO and a set of specific criteria that will be dependent upon the list of functions elected by the SOO to be recognized for.

Information on both generic and specific assessment criteria is to be made publicly available by ICAO. These assessment criteria will be derived, adapted and maintained from current USOAP CMA PQs. The correspondence between GASOS assessment criteria and USOAP CMA PQs will be maintained also by ICAO (so-called “mapping”).

4.1.3 Timeline for SOO Recognition under GASOS

The timeline for the recognition process will depend on the availability of resources, and reactivity/responsiveness and performance of both the SOO and ICAO, therefore a specific timeline is difficult to set. General considerations that affect the timeline include: ICAO decision to accept or reject a new application, following the pre-assessment: within 2 weeks of application receipt;

- Completion of self-assessment by applying SOO: within 2 to 4 months after acceptance of the application by ICAO;
- availability of on-site assessment plan: 1 month before the on-site assessment;
- duration of on-site assessment: 5 to 7 days;
- agreement on Corrective Action Plan: within 2 weeks after the on-site assessment;
- assessment report: within 1 month after the on-site assessment; and
- closure of all findings: within 6 months after the on-site assessment.

4.2 Changes to the scope of recognition of an SOO

In case an SOO is seeking a change in the scope of recognition, it should apply for a change to its recognition certificate. The process steps, methodologies and timeline will be similar to the case of an initial recognition process, adapted to the extent and nature of the change. In particular, the decision whether a new on-site assessment is needed will be linked to the significance of the change in recognition.

4.3 Monitoring and re-assessment of an SOO

Monitoring of the SOO will be achieved through a combination of activities performed both by the recognized SOO and under the ICAO GASOS Programme.

4.3.1 SOO tasks for monitoring

The SOO will have to:

- On a yearly basis, provide updated information to ICAO on its activities through filling a GASOS Annual Activity Questionnaire.
- Answer, if requested to do so, Mandatory Information Requests (MIR) submitted by ICAO.
- Maintain an updated Corrective Action Plan (CAP) (for the follow-up of findings).

4.3.2 ICAO tasks for monitoring

ICAO will perform monitoring activities which may include the following:

- Off-site review of the documentary evidence submitted regularly by the SOO
- Updating the SOO risk profile
- Mandatory Information Request (MIR): e.g. to confirm certain elements of the capability demonstration, or to gather evidence after a change in the applicable assessment criteria, or when deteriorating safety performance is observed in States for which the SOO is active, or following feedback from States which are delegating functions or activities to this SOO.
- Analysis, prioritization and planning of re-assessment activities.

ICAO will define and prioritize its re-assessment activities using the following information inputs:

- the SOO Safety Risk Profile: based on the size of the SOO’s activity and associated aviation activity, the safety performance of the States for which the SOO is active;
- date of last on-site assessment activity;
- the importance of the changes affecting the SOO’s capability demonstration since last on-site assessment (changes in the organization or in its level of activity, or in the applicable assessment criteria);

- Feedback from States which are delegating safety functions to this SOO; and
- Any other relevant information

4.3.3 Re-assessment of the SOO

A decision to re-assess an SOO will be made using a risk-based approach as an outcome of the ICAO monitoring activities. A standard interval for re-assessment is expected to be on average every 3 years.

If any findings are identified during a re-assessment the SOO must correct those findings within the timeframes specified in the CAP and agreed by ICAO. If findings are not corrected within the specified timeframes, or if any serious deficiencies are identified, ICAO may suspend, limit or revoke the SOO recognition.

4.4 Surrender, limitation, suspension or revocation of an SOO recognition

4.4.1 Surrender

A recognized SOO may decide to surrender its recognition certificate, e.g. if it does not intend to provide safety services anymore to States (notwithstanding any permanent regional cooperation framework) or if it is not interested in maintaining ICAO recognition while continuing to provide services.

4.4.2 Limitation, suspension or revocation

ICAO may decide to limit, suspend or revoke the recognition of an SOO in the following cases:

- Where serious deficiencies are found in the capability demonstration of the SOO;
- Where findings have been identified during monitoring or re-assessment of the SOO and the findings are not corrected within the specified timeframes of the CAP; or
- If the SOO is inactive in providing safety services for an extended period of time.

4.5 Maintaining GASOS Methodologies and Processes

Under the ICAO GASOS programme, there is a need for ICAO to develop, publish and maintain the methodological and process elements needed for assessment and monitoring, as described above.

5. Boundaries and Interfaces

5.1 Boundaries

5.1.1 Technical scope boundaries

The technical scope of recognition can include all functions required under a State's Safety Programme (Annex 19 chapter 3), including:

- Safety oversight functions as described in ICAO documents 9734 part A (Safety Oversight Manual);
- State specific safety management functions (such as safety data collection and analysis, safety risk management or safety promotion); and
- accident and incident investigation functions as described in Annex 13.

GASOS includes also safety functions related to the oversight of RPAS operations.

5.1.2 Functional scope boundaries

GASOS functionally includes the ICAO GASOS programme and also all activities performed by SOOs in order to obtain recognition and to maintain their recognition. It does not encompass the delegation activities themselves, i.e. the decision making, selection, implementation and/or monitoring processes put in place by States or groups of States to delegate certain safety functions to SOOs.

However, the need to develop further guidance for States on delegation mechanisms is acknowledged. There also should be information flowing into the GASOS programme about the delegations that are actually put in place, coming both from States and from the SOOs, in order to support GASOS monitoring activities and to help in determining if GASOS meets its primary objectives.

5.2 Interfaces

5.2.1 Interface with a State's Safety Oversight System

States may call upon the services of ICAO recognized SOOs to discharge certain safety functions or to receive support in performing them. The GASOS Directory will be primarily a source of information for States, where they can find the list of organizations which have been found competent by ICAO for specified functions and levels.

If States decide to conduct a technical assessment of the SOO, they are recommended to share relevant information with ICAO. In addition, States will have to provide information to ICAO about delegations to SOOs they put in place - in the framework of the information they provide to USOAP-CMA.

5.2.2 Interface with USOAP CMA

USOAP CMA and GASOS are both ICAO programmes that share many commonalities (in the areas of methodologies and resources), but there are a number of fundamental differences:

- USOAP CMA is assessing and measuring the safety oversight capability of States; GASOS is assessing and recognizing the safety oversight capability (for a defined scope of safety functions) of organizations that States can call upon to reinforce their safety oversight capability by delegation of functions.
- USOAP CMA is mandatory for States; participation to GASOS is voluntary for SOOs and use of it is voluntary for States.

As both programmes involve the monitoring of safety oversight capability, there is a need to avoid duplication of monitoring. Therefore, in cases where a State delegates certain oversight functions to a GASOS recognized SOO, credit may be applied to the results of the GASOS monitoring results in order to minimize the extent of USOAP CMA activities on the State, as applicable based on the delegation level.

An example of possible "credit" is given as follows: in a case where a State delegates certain primary oversight functions at Level 2 to an SOO, credit may be given in the area of Critical Element⁴ regarding the qualification and training of Technical Personnel.

5.2.3 Interface with the RSOO Cooperative Platform

RSOOs are an essential component of global aviation safety and as such ICAO has undertaken a number of initiatives as part of a strategy to strengthen RSOOs, such as the establishment of the RSOO Cooperative Platform (RSOO-CP). The RSOO-CP aims to bring RSOOs together to exchange best practices, share and collaborate on the development of manuals and checklists, cooperate on providing technical assistance and assist ICAO in related provisions development and global programme implementation.

GASOS is an integral part of the ICAO strategy for reinforcing RSOOs, therefore, the RSOO-CP and GASOS initiatives are closely coordinated.

6. Preliminary Impact Analysis

The preliminary impact analysis provides an analysis of how GASOS is expected to impact the main stakeholders, in terms of benefits and challenges, assuming that GASOS is implemented and operates as expected.

	Expected benefits	Expected challenges
States	<p>States will have access to a directory of competent SOOs as an alternative to having all safety functions implemented in-house with the required staffing and systems.</p> <p>States will have the flexibility to choose and combine delegations from different recognized SOOs to discharge their safety responsibilities.</p> <p>States will be able to increase their safety oversight capability when calling upon the services of recognized SOOs.</p> <p>An increase of effective implementation of safety oversight can be expected, nationally, regionally and globally.</p> <p>States with strong safety oversight capabilities and spare resources can seek recognition for certain functions and be called upon by other States and SOOs for certain safety functions.</p>	<p>States have to take decisions related to delegations and implement them from a legal, contractual, financial and operational point of view. They will have to decide upon any additional requirements (such as proficiency with language or national aviation requirements).</p> <p>States will have to ensure that those technical responsibilities for delegation are clearly defined and that the necessary technical coordination is taking place between the CAA and the SOO(s).</p>
RSOOs	<p>RSOOs are encouraged to seek and obtain recognition for those functions that they perform on behalf of States, thereby increasing their visibility and credibility.</p> <p>The recognition process is expected to further help the strengthening of the RSOO (through the recognition activities themselves and the associated improvement incentives) and to contribute to more delegations from the States to their RSOO.</p>	<p>Some RSOOs may have to significantly reinforce their capabilities or have their delegation framework reconsidered, in order to achieve recognition for Level 2 and Level 3 functions.</p>
Other SOOs	<p>Other SOOs have access to a recognition system that can help them in obtaining new delegations.</p>	
ICAO	<p>In the long term, safety oversight monitoring activities may be streamlined, if the focus is progressively shifted from monitoring all States to monitoring a smaller number of recognized SOOs.</p> <p>Global increase in effective implementation of safety oversight.</p>	<p>ICAO needs to permanently maintain the systems, resources and tools under an ICAO GASOS programme, in order to maintain GASOS.</p>
Aviation System	<p>Aviation industry and passengers are expected to benefit from increased overall safety levels resulting from increased safety oversight capabilities on a global level.</p>	

APPENDIX A: Acronyms

AIO	Accident Investigation Organization
AOC	Air Operator Certificate
CAA	Civil Aviation Authority
CAP	Corrective Action Plan/Process
CASI	Civil Aviation Safety Inspector
GASOS	Global Aviation Safety Oversight System
GASP	Global Aviation Safety Plan
MIR	Mandatory Information Request
PQ	Protocol Question
RAIO	Regional Accident Investigation Organization
RSOO	Regional Safety Oversight Organization
SARPs	Standards and Recommended Practices
SME	Subject Matter Expert
SOO	Safety Oversight Organization
SSP	State Safety Programme
USOAP CMA	Universal Safety Oversight Audit Programme Continuous Monitoring Approach

APPENDIX B: Glossary

Accident Investigation Organizations (AIOs): An organization which is either a (State) accident investigation authority, or a regional accident investigation organization (RAIO), or another type of organization which performs or intends to perform accident investigation functions on behalf of States, in the context of ICAO Annex 13. Independence is required between AIO and SOO functions.

Civil Aviation Safety Inspector (CASI): A qualified person authorized by a State or a Safety Oversight Organization to carry out safety oversight activities for civil aviation.

(Source: ICAO Doc 10070 - Manual on the Competencies of Civil Aviation Safety Inspectors)

Delegation (of a Safety function): a State can delegate certain safety functions (safety oversight, safety management or accident investigation functions) at three different levels, which correspond roughly to different levels of authority delegation or legal empowerment:

Delegation at Level 1: Advisory and coordinating functions

- Develop aviation safety legislation or regulations for transposition into national or regional regulations system in a given area
- Assist in the identification and notification of differences to SARPs
- Develop manuals, checklists and other guidance material
- Coordinate a pool of inspectors or experts
- Provide expert advisory services in any area of safety oversight, state safety management or safety investigation
- design and/or develop IT tools supporting safety oversight

Delegation at Level 2: Operational assistance functions

- Develop of a full set of aviation safety legislation and regulations in a given area, for adoption by States, including the responsibility for the maintenance of this regulatory set
- Deliver training for civil aviation safety inspectors or experts
- Conduct inspections or full technical investigations aiming at supporting the decision to issue, maintain, amend or revoke a certificate, license or approval
- Conduct surveillance activities, identification of safety deficiencies, recommendations for corrective actions (without enforcement powers)
- Conduct parts of safety investigations (under Annex 13)
- Conduct State specific safety management activities such as: establishment of a safety data collection and processing system (SDCPS), safety data analysis, hazard identification and development of risk mitigation strategies, SPI development and safety promotion.

Delegation at Level 3: Certifying functions, issuance of regulations, full safety investigations

- In addition to safety functions delegated at Level 2, the delegation at Level 3 includes the actual empowerment to issue, amend or revoke licenses, certificates, authorizations and approvals (i.e. the empowerment to issue certain legally binding decisions).
- Draft aviation safety regulations and make them effective
- Conduct full Annex 13 safety investigations, including issuance of the investigation report and associated safety recommendations

Global Aviation Safety Oversight system (GASOS): GASOS is a system:

- To assess, recognize and monitor the capability of Safety Oversight Organizations (SOOs) to perform safety functions and activities, as defined in the scope of recognition, and
- To publish information on ICAO recognized SOOs in a directory for use by States willing to delegate safety functions.

ICAO GASOS programme: The ICAO GASOS programme is the set of policies, activities and resources that are deployed/ developed by ICAO to enable the establishment and continuous functioning of GASOS.

GASOS Directory: an ICAO-maintained repository of information on recognized SOOs, including details on their scope of recognition.

Recognition of an SOO, scope of Recognition: the recognition of an SOO is a decision by ICAO that the SOO has been found to be competent to perform certain safety functions and activities, those functions or activities being defined in the scope of recognition. The scope of recognition includes a list of GASOS functions and activities that can be further determined according to “qualifiers” such as the types of personnel, product categories, aviation operations or aviation services to which those functions and activities relate.

Some qualifiers may be explicitly included in the approved scope of recognition (and therefore require a change to the scope of recognition in case of update), others may be accepted as being directly declared and updated by the SOO (such as for example a list of aircraft types).

Regional Safety Oversight Organization: the term “RSOO” covers, in a general sense, a number of legal forms and institutional structures that range from highly formalized international intergovernmental organizations, such as the European Aviation Safety Agency (EASA) and the Pacific Aviation Safety Office (PASO), to less institutionalized projects established under the ICAO Cooperative Development of Operational Safety and Continuing Airworthiness Programme (COSCAP).

(Source: ICAO Doc 9734 part B – The Establishment and Management of a Regional Safety Oversight Organization)

Responsibility/accountability: the state of being responsible for an undertaking, person, thing or action and for which an organization or individual or both are liable to be called to account. An ICAO Contracting State and its respective civil aviation authority are ultimately responsible for the implementation of ICAO SARPs within their State. A State may either perform these obligations or, through mutual agreement, have another organization perform and be accountable for these functions; however, the State retains the responsibility under its duties of sovereignty.

(Source: ICAO Doc 9734 part B – The Establishment and Management of a Regional Safety Oversight Organization)

Safety function (or GASOS function): in the context of GASOS, safety functions or GASOS functions are the set of functions that can be part of the GASOS scope of recognition of a SOO. They are defined in such a way to represent the range of all safety management responsibilities a State has under ICAO Convention and Standards (Annex 19 chapter 3) (see also to Appendix F – Integrated State Safety Programme) and include 3 types of functions:

- Safety oversight functions
- (State specific) Safety management functions
- Accident investigation functions

A distinction is made between primary and secondary functions. A primary function is an overarching safety oversight, safety management or accident investigation function. For example, a primary safety function would be directly related to the issuance or maintaining of a certificate, license or approvals issued to service providers, individuals or products. A secondary safety function would be related to either specific approvals in the frame of a higher level approval / primary function (e.g. EDTO versus AOC) or correspond to specific areas of expertise that are needed in the frame of a higher level approval/primary function

(State specific) Safety management function: those are functions required under Annex 19 which are neither oversight functions nor accident investigation functions. They include, for example, collection and analysis of safety information, hazard identification and safety risk assessment, State safety performance, and safety promotion.

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

Safety oversight: A function performed by a State to ensure that individuals and organizations performing an aviation activity comply with safety-related national laws and regulations.

Safety Oversight Organization (SOO): An SOO is a State CAA, an RSOO, an AIO, or any other international, regional or sub-regional aviation safety oversight body or state-based mechanism that carries out safety functions on behalf of a State or group of States. Functions performed by AIOs are independent from the functions performed by other types of SOOs.

APPENDIX C: Reference Documents

ICAO Resolution A39-14 on Regional cooperation and assistance to resolve safety deficiencies, establishing priorities and setting measurable targets

ICAO Annex 19 – Safety Management – Second edition

ICAO Document 10004 – 2017-2019 Global Aviation Safety Plan

ICAO Document 9859 – Safety Management Manual – Fourth edition

ICAO Document 9735 – Universal Safety Oversight Audit Programme Continuous Monitoring Manual – 4th edition

ICAO Document 9734 – Safety Oversight Manual Part A - The Establishment and Management of a State Safety Oversight System – Third edition

ICAO Document 9734 – Safety Oversight Manual part B - The Establishment and Management of a Regional Safety Oversight Organization – Second edition

ICAO Document 10070 – Manual on the Competencies of Civil Aviation Safety Inspectors

Forum on Regional Safety Oversight Organizations (RSOOs) for Global Aviation Safety, 22-24 March 2017, Ezulwini, Swaziland – Report

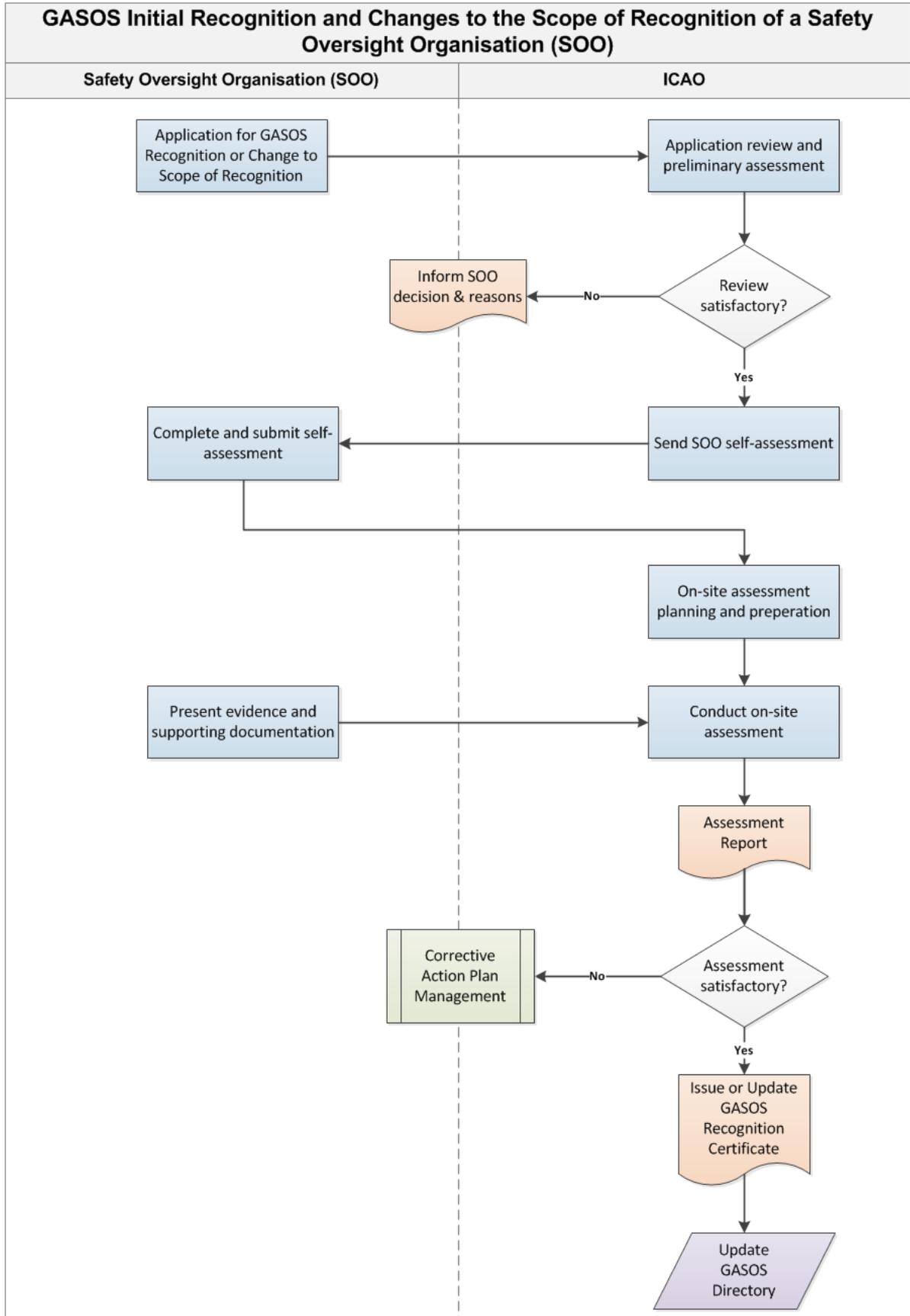
Global strategy and action plan for the improvement of Regional Safety Oversight Organizations (RSOOs) and the establishment of global system for the provision of safety oversight - ICAO

Report on the ICAO evaluation of Regional Safety Oversight Organizations, November 2017

GASOS – Report of Feasibility Study – ICAO – 11 October 2017

GASOS – List of Functions – Draft June 2018

APPENDIX D: GASOS Process Charts



APPENDIX E: GASOS Risk Register (Extract, high exposure risks only – 12 July 2018)

Risk Description	Impact Description	Response (Prevent, Mitigate or Accept)	Mitigation Action Description
Methodology used by recognised Safety Oversight Organisations may not continue to comply with ICAO SARPs, resulting in incomparability with USOAP Protocol Questions.	States will be unaware that they are not meeting their requirements and responsibilities because they are using an ICAO recognized SOO. State would have impression of having met responsibilities but will have not.	Mitigate	a) Recognition criteria includes requirement for SOO to have effective internal audit system that checks compliance b) Effective design of GASOS audit and continuous oversight of SOOs c) State oversight of SOO (volume and focus tbd)
State may not have the resources or capability to ensure continuing oversight over the work of the recognized Safety Oversight Organization (inadequate monitoring by States).	Inadequate delegating framework and monitoring of SOOs leading to certificates issued incorrectly and inadequate enforcement.	Mitigate	a) States must be reminded of obligations when using recognised SOOs. Guidance should be developed on the roles of the State under GASOS environment (e.g. management of outsourced suppliers), being clear on differences in obligations/role when using SOOs at different GASOS levels
States may continue to use RSOOs that do not meet GASOS standards for any reason.	No improvement in efficiency and effectiveness of oversight and adverse impact on GASOS business case.	Mitigate	States should be consulted on what would encourage them to use a GASOS recognised organisation? GASOS should be promoted and States be encouraged to enhance the capabilities of their RSOOs for GASOS recognition. States be incentivised to use GASOS recognized entities.
Limited ICAO resources for implementation and management of the recognition process.	Ineffectiveness of GASOS.	Prevent	a) Build robust Business Case and secure funds before launch. b) Confirm resources with the required skills set can be sourced. c) Insert 'Go/No Go' event in plan to confirm funds and resources available before launch
Underperformance by recognised SOOs means they may not continue to comply with SARPS	States will be unaware that they are not meeting their requirements and responsibilities because they are using an ICAO recognized SOO. Reputational risk to ICAO if assessment mechanism proves ineffective. Legal risk to recognized SOOs. Low EI scores for State relying on performance of recognized SOOs	Mitigate	a) Recognition criteria includes requirement for SOO to have effective internal audit system that checks compliance b) Effective design of GASOS audit and continuous oversight of SOOs c) State oversight of SOO (volume and focus tbd)
States may continue to use RSOOs that do not meet GASOS standards for any reason.	SOOs would have little incentive to seek GASOS recognition, making it difficult to justify resources required to continue to run GASOS (adverse impact on GASOS business case) No improvement in efficiency and effectiveness of oversight.	Mitigate	States should be consulted on what would encourage them to use a GASOS recognised organisation? GASOS should be promoted and States be encouraged to enhance the capabilities of their RSOOs for GASOS recognition. States be incentivised to use GASOS recognized entities.

States don't provide resources for GASOS assessments	Assessments would fall back on ICAO auditors resulting in the unlikelihood of being able to complete assessments. This could lead to lack of confidence in GASOS	Mitigate	Consult States. May have to allow states to charge for oversight service.
GASOS Framework design embeds status quo and does not create any fluidity	No changes of RSOO to SOO, or SOO to SOO occur	Mitigate	Framework review in November 2018

APPENDIX F: Integrated State Safety Programme (source: SMM manual)

