FLIGHT SAFETY FOUNDATION

CLOSING THE GAP BETWEEN APPROVAL AND ASSURANCE:

ALIGNING OBJECTIVES IN UAS SAFETY FRAMEWORKS

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EXECUTIVE SUMMARY

Risk-based frameworks have become central to the governance of remotely piloted aircraft system (RPAS) operations. As uncrewed aircraft system (UAS) activities expand across sectors and jurisdictions, operators are increasingly required to demonstrate compliance with multiple oversight and audit regimes designed to ensure safe and responsible operations.

This white paper examines the interaction between two such frameworks: the Specific Operations Risk Assessment (SORA) methodology and the Basic Aviation Risk Standard (BARS) RPAS framework.

This work was undertaken following a proposal submitted to Flight Safety Foundation's Advanced Aviation Advisory Committee by dual regime operators seeking to evaluate BARS-RPAS and SORA compatibility. The UAS operations – mostly in the humanitarian sector – were being approved under the SORA methodology and their efforts were audited and overseen under the BARS-RPAS methodology, often creating confusing and misaligned risk assessments and mitigation recommendations.

Against this backdrop, the paper analyzes areas of alignment and divergence between the two systems and identifies practical pathways to improve coherence, reduce duplication, and support consistent safety outcomes while maintaining the integrity of both frameworks.

INTRODUCTION

Global harmonization has been a fundamental principle of the aviation industry since the adoption of the Chicago Convention and the creation of an international order of governance, and the benefits of that harmonization have been immense. Aviation has become the safest mode of transportation, moving billions of passengers over an estimated trillion miles each year. Global harmonization continues to evolve as new countries, regions, companies, and technologies disrupt the status quo, driving continuous challenges and opportunities. One such new challenge is the integration and harmonization of uncrewed aircraft into, first, national airspace, and then, global airspace.

Uncrewed aircraft systems (UAS) are characterized by a technological maturation of such speed, scale, and scope that traditional approaches to oversight and compliance are being stretched to their limits. Organizations responsible for approving new operations, and those that have traditionally played a role in aviation compliance and auditing, have developed and refined novel approaches for their respective responsibilities.

The Flight Safety Foundation (FSF) Advanced Aviation Advisory Committee (AAAC) examined risk assessment methodologies applied globally in the UAS domain to understand where they diverge and how they might be better tailored; this effort looks to align methodologies in the interest of reducing confusion for organizations that use both, to reduce the friction between the methodologies themselves, and to serve as one example for how alignment in policy may reduce uncertainty in safety. The objective was to identify areas where the risk assessment methods differ, to understand their respective value, and to assess whether any recommendations could be developed that might alleviate those differences.

As part of this initiative, the AAAC conducted a comparative analysis of two prominent frameworks: the FSF Basic Aviation Risk Standard for Remotely Piloted Aircraft Systems (BARS-RPAS) and the Specific Operations Risk Assessment (SORA) developed by the Joint Authorities for Rulemaking on Unmanned Systems (JARUS). While the benefits of the work will be relevant to stakeholders unfamiliar with the specifics of SORA or BARS-RPAS specifically, this work best serves those with intimate knowledge of either, or both, methodologies.

THE HARMONIZATION HIERARCHY CHALLENGE

It was 38 years ago that the U.S. Federal Aviation Administration (FAA) worked with the European Joint Aviation Authorities (JAA) to harmonize airworthiness standards for manned aircraft and, though that harmonization set a foundation for collaboration and alignment, the implementation and compliance efforts often differ.

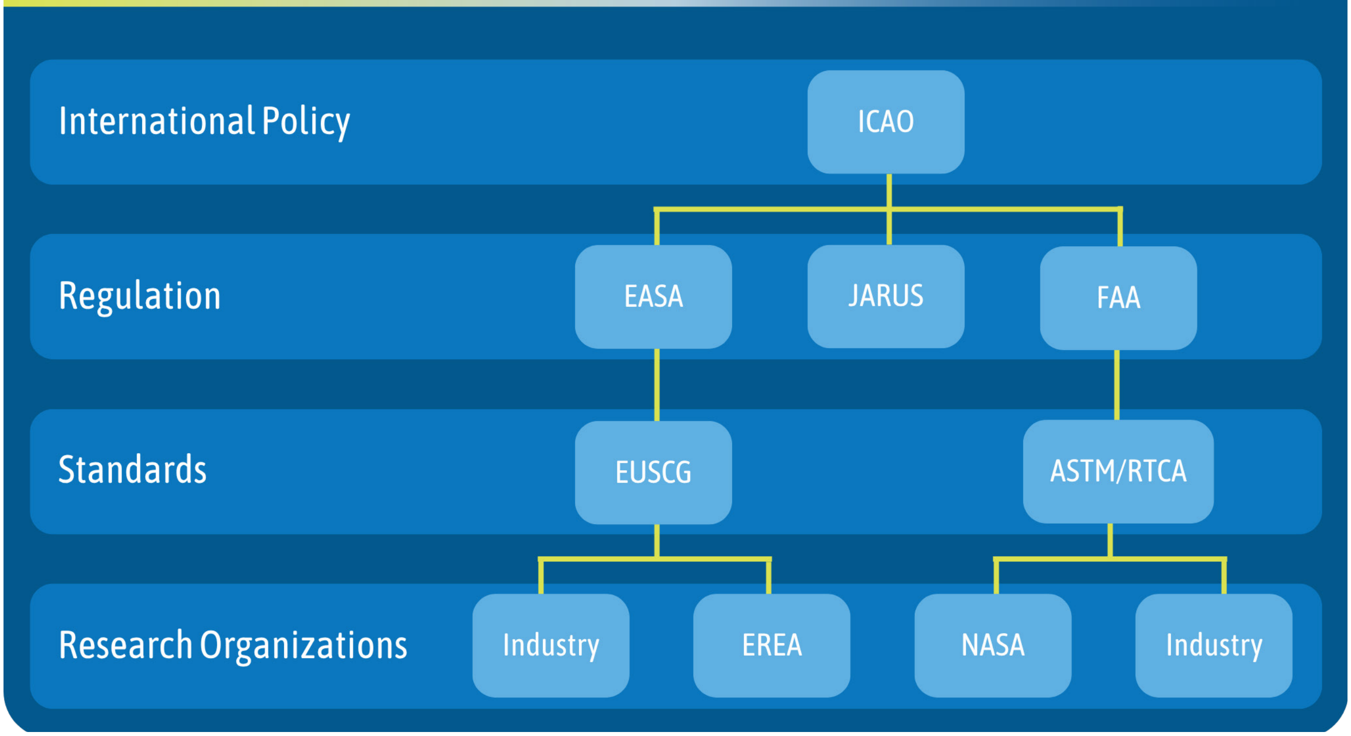
Aviation's successful expansion around the world began decades earlier, during World War II. Leaders in the aviation community anticipated a time when aircraft would dot the skies, moving people and goods across national boundaries without limits. Though that system would continue to evolve for decades, it was at this moment that the world came together to set up the initial guidance that would lead to the heavily regulated and harmonized system that enables the immense scale and safety we enjoy today.

The Convention on International Civil Aviation, also known as the Chicago Convention, adopted in 1944,, is still in place today and together with its annexes is the foundation of the aviation safety system. The Convention addressed mostly the free circulation of piloted aircraft but stipulated that uncrewed aircraft from one country may only fly over another country when the latter has given an explicit authorization.

Conditions and the pace of change were adequate until the recent development of civil UAS. Indeed, over the past 15 years, UAS regulatory approaches have evolved rapidly to align with their operational contexts and needs. Rwanda, for example, published the first performance-based drone regulation in the world, enabling regular beyond visual line of sight (BVLOS) operations at national scale long before any other nation. Today, the European Union Aviation Safety Agency (EASA) operates along a three-tiered system of approvals that breaks down risk into Open, Specific, and Certified categories based on a concept developed within JARUS. The FAA recently published a draft "meta" rule, 14 CFR Parts 108 and 146, that moves away from the EASA three-tiered approach by establishing specific technological requirements to enable large-scale, complex airspace operations.

In their efforts to approve more complex operations with rapidly changing technologies, authorities and industry stakeholders are turning to standards development organizations (SDOs) for means of compliance to regulations. Each SDO is different in its membership and fundamental approach, and though many organizations serve across the many entities that are developing standards, it is impossible to serve on all of them. As a result of this difference in membership, harmonization across the resulting standards will be lacking. These SDOs, including ASTM International, RTCA, the International Organization for Standardization (ISO), SAE International, the American National Standards Institute (ANSI), EUROCAE, the Single European Sky Air Traffic Management Research (SESAR) Joint Undertaking, and the General Aviation Manufacturers Association (GAMA), seek to work together to align efforts, but often they diverge where their memberships diverge (Figure 1).

Figure 1: Harmonization Hierarchy Example



This harmonization hierarchy allows underdefined areas of international policy to result in large differences in regulatory approaches as published, and then compliance as developed, which is where we find the UAS industry today. To avoid increasing divergence and to ensure that industry reduces friction between operations that can drive negative safety outcomes, government and nongovernment organizations must work together to ensure alignment across borders and cultures in the interest of safety. It is equally important for organizations that create policy and frameworks supporting decisions in aviation to hear from those who rely on those policies and frameworks.

ACHIEVING ALIGNMENT FOR APPROVAL AND COMPLIANCE METHODOLOGIES

The global proliferation of UAS operations has led to the development of multiple safety assurance frameworks addressing different regulatory and operational needs. While the JARUS SORA methodology has become a recognized reference for risk-based authorization of UAS operations across Europe, Africa, Australia, and, to a lesser extent, South America, the FSF BARS-RPAS program has served as an internationally applied assurance and oversight mechanism for contract operations, particularly in the resource and humanitarian sectors, mostly in Australia and Africa.

Given their different origins — SORA, developed by JARUS as a harmonized methodology for risk-based authorization, and BARS - originally developed by the mining mineral resource serving aviation organizations and now a more diverse group of operators - from an operational integrity and assurance context — the two frameworks serve complementary but distinct purposes. SORA provides a risk assessment methodology to determine whether an operation can be conducted in a safe manner, while BARS defines a control-based assurance system ensuring operators maintain safety compliance over time.

This work was undertaken following a proposal submitted to the AAAC by dual regime operators seeking to evaluate BARS-RPAS and SORA compatibility. The UAS operations – mostly in the humanitarian sector – were being approved under the SORA methodology, and their efforts were audited and overseen under the BARS-RPAS methodology, often creating confusing and misaligned risk assessments and mitigation recommendations. FSF and the AAAC saw value in comparing these frameworks to understand whether a structured dialogue between them could enhance global consistency in UAS safety management and promote reciprocal confidence between regulators, contracting entities, and operators while acting as a case study for alignment at the implementation — not regulatory — level. The expectation is that alignment between authorization and monitoring leads to better controls, normalization of those controls, and increased safety across organizations and borders.

COMPARATIVE METHODOLOGY AND ANALYSIS

The foundational question of the comparison was to assess what a BARS-RPAS approved operator would need to demonstrate to obtain authorization using SORA 2.5, and conversely, how an operation authorized under SORA 2.5 might demonstrate compliance with BARS-RPAS controls.

The research team adopted a bidirectional comparative process:

- Team members experienced in SORA conducted a review starting from each individual BARS-RPAS control and mapped it into the relevant SORA Operational Safety Objectives (OSOs) and other JARUS documents (e.g., Doc 12), noting where requirements were fully met, partially met, or not met.
- Group members experienced in BARS-RPAS performed the inverse review, starting from each SORA OSO and identifying the corresponding BARS-RPAS controls to assess equivalence or complementarity.

Both exercises used a structured datasheet (Annex II) designed to capture correspondence, divergences, and contextual observations. As the analysis progressed, it became evident that an effective comparison required a broader view of the JARUS system, as outlined in Table 1.

Table 1 // JARUS Overview

Reference of JARUS document	Contents of JARUS document
SORA 2.5 main body	Two-phase risk assessment process, determination of SAIL (safety assurance and integrity level is a measure of the safety level of an operation) and of operational safety objective (OSO) robustness. (Robustness has two components: integrity and assurance.)
SORA Annex A	Guidelines on collecting and presenting system and operation information for a specific UAS operation (Include a table of contents for the operations manual.)
SORA Annex D	Tactical mitigation performance requirements (TMPR): optional requirements that can be applied (e.g., detect and avoid) after strategic mitigations (e.g., operational limitations) of the air risk
SORA Annex E	Integrity and assurance levels for the OSOs: integrity and assurance level depends on the level of SAIL
JARUS Doc 12	Recommended operators requirements for Category A (open category (i.e., VLOS and 400 ft height max and maximal mass of the UAS <25 kg)) and for Category B (Specific category, all operations outside Category A and Category C (Certified))

Acronym Key:

JARUS: Joint Authorities for Rulemaking on Unmanned Systems, SORA: specific operations risk assessment, UAS: uncrewed aircraft systems, VLOS: visual line of sight

Note: This table may evolve as the work progresses.

The comparison revealed that while BARS-RPAS and SORA 2.5 differ in purpose, structure, and scope, both share a common risk-based logic rooted in the principles of assurance and integrity. BARS-RPAS uses explicitly a bow-tie risk model, and the initial versions of SORA were also based on a bow-tie risk model.

BARS-RPAS is a control-based assurance framework. It defines threat-specific requirements and provides a periodic audit program available to registered operators. Its design is prescriptive and emphasizes ongoing compliance verification. BARS-RPAS also requires operators to obtain the necessary approvals from the relevant national authorities (BARS-RPAS control 1.2). In that sense, BARS-RPAS comes in addition to the regulatory requirements established by the country of operation, and some of the BARS-RPAS controls may be covered by the regulatory approval obtained in that country.

SORA 2.5 is a methodology for pre-authorization risk analysis that determines the operational risk class (SAIL I–VI) based on ground and air risk (GRC, ARC) assessments and the applied risk-reduction measures. It defines tactical mitigation performance requirements according to the residual ARC, establishes corresponding OSOs linked to assurance and integrity levels, and specifies containment measures derived from the characteristics of the adjacent area. Its design is analytical and performance-based, emphasizing proportionality and flexibility.

The team compared corresponding themes between both frameworks, including personnel competence, maintenance, communication reliability, and emergency preparedness.

Selected examples are detailed in Annex II.

The comparison demonstrated that:

- Both frameworks rely on structured evidence to establish confidence in safety mitigations.
- BARS-RPAS achieves this through external verification and audit cycles; SORA achieves it through demonstrable compliance with OSOs, TMPR, and containment requirements, and traceable documentation.

In several domains — such as crew competence, fatigue management, and contingency planning — SORA's intent aligns closely with BARS objectives, though its expression remains less prescriptive. (For example, SORA asks for operational procedures to be established and BARS-RPAS asks for specific procedures such as battery-charging procedures).

The team initially explored comparing all SAIL levels to align BARS-RPAS controls with different robustness levels of SORA OSOs but narrowed the scope to SAIL III as a practical starting point. Future work may extend to higher SAILs. The analysis focused on SAIL III under SORA 2.5. This level was selected to simplify the work, and because the mitigation measures applicable to SAIL I and II were considered too limited in scope to enable a meaningful comparison with BARS-RPAS, which is inherently more demanding in its integrity structure. SAIL III was, therefore, deemed the most appropriate reference point to explore conceptual alignment.

An example of a SAIL III operation could be a BVLOS power line inspection conducted below 400 ft with a three-meter UAS equipped with a parachute over a sparsely populated rural area where the airspace is uncontrolled. A crude application of SORA indicates that such an operation is likely to be SAIL III.

The analysis confirmed that BARS-RPAS and SORA 2.5 cannot be mapped one-to-one as their purposes differ too significantly, but that their principles of safety assurance are compatible and, thus, many of the findings and observations can be useful in harmonizing the two approaches. BARS provides a structured, organization-level mechanism for continuous oversight and integrity, while SORA defines an operation-specific, harmonized risk-assessment framework adaptable across jurisdictions. Their combination could potentially reinforce both regulatory confidence and operational consistency. However, the use of SORA to define what is required can be reinforced by BARS-RPAS describing how.

Selected examples, stemming from the comparative analysis conducted by the team were used to illustrate how specific BARS-RPAS controls and SORA 2.5 OSOs align, diverge, or complement one another. The focus of this exercise was on SAIL III, as this level of assurance and integrity was considered sufficiently detailed to allow meaningful comparison with the BARS-RPAS framework.

The following topics were compared in the analysis:

- Competence and training;
- Communication;
- Command and control;
- Fatigue management and crew fitness;
- Maintenance and airworthiness assurance; and,
- Emergency preparedness and contingency management.

For each of these topics, the relevant BARS-RPAS controls and OSOs were identified and their requirements were described; the result of the comparison was included in an observation.

The most frequent observation is that while OSOs and controls share the same objectives, the OSOs are written in a broader, more generic manner than the controls, which are usually more precise. This finding leads to the suggestion that the BARS-RPAS controls could be used as points of attention in the relevant OSO. Another important finding is that the BARS-RPAS audit program could be used as a guideline for the oversight of the authorizations issued by the authorities

The comparative examples underscore that BARS-RPAS and SORA 2.5 apply the principles of assurance and integrity in distinct yet compatible ways. BARS provides structured, prescriptive requirements designed for verification through regular audits, whereas SORA applies a risk-based, analytical methodology to determine preauthorization safety acceptability.

Despite these structural differences, both systems pursue comparable outcomes. The analysis suggests that mutual recognition could be enhanced through the development of bridging documentation enabling translation between BARS compliance evidence and SORA assurance criteria.

Such efforts could contribute to greater coherence between contractual assurance systems and regulatory authorization frameworks, thereby strengthening the global ecosystem for safe and reliable UAS operations.

FINDINGS AND RECOMMENDATIONS FROM THE CASE STUDY

Comparing Flight Safety Foundation's BARS-RPAS and the JARUS SORA Version 2.5 unearthed practical ways to make both frameworks more complementary and easier to apply for regulators and operators. The key outcomes of this analysis:

- **Encourage international consistency in safety approaches** – The analysis highlights shared principles between two major global frameworks, helping regulators and industry work toward clearer and more aligned expectations for assessing and overseeing UAS operations.

- **Provide a basis for improving both BARS-RPAS and SORA** – The comparison shows where each framework can learn from the other: BARS-RPAS could become more adaptable to different risk levels, while SORA could offer clearer and more concrete guidance for implementation.

- **Identify what is needed to link approvals with ongoing safety oversight** – The work highlights best practices to achieve an end-to-end safety management process by comparing the frameworks by which aviation authorities perform their usual oversight and preauthorizations, SORA, and how BARS-RPAS compliance and auditing sets up programmatic benchmarks that support to the regulatory requirements to support continuous operational assurance.

- **Reduce duplication of effort for organizations applying under both systems** – For operators that must comply with both BARS-RPAS and SORA requirements, the mapping when completed (please see recommendation 1 below) will clarify what elements overlap and what additional information is needed, simplifying preparation and ensuring consistency across submissions.

- **Improve understanding of terminology and interpretation** – The analysis highlights some examples' (topic competence and training, notably) subtle differences in wording and intent that can lead to confusion. A complete review remains to be done (See recommendation 3 below). Clarifying these nuances can help stakeholders interpret and apply both frameworks more consistently and with fewer misunderstandings.

The research team recommends:

1. Continuing the comparative analysis to refine the mapping between SORA OSOs and BARS-RPAS controls and to identify points of equivalence or complementarity;

2. Developing a bridging document outlining potential pathways for reciprocal recognition between BARS-RPAS and SORA-derived frameworks;

3. Developing a glossary providing correspondence between BARS and SORA terms;

4. Expanding the survey, widening its scope to include industry stakeholders and authorities, in order to gather additional perspectives and establish a statistically representative dataset;

5. Encouraging dialogue between Flight Safety Foundation, JARUS, and national authorities to clarify how assurance and integrity principles can be consistently applied across frameworks.

6. Fostering cross-framework alignment by sharing comparative analysis with FSF BARS and JARUS SORA and integrating strength such as BARS' audit rigor into JARUS surveillance and SORA's proportionality into BARS guidance. In addition to these recommendations directly related to the work performed to date, the team also puts forward these more general recommendations:

    1. Validate UAS safety controls through a systematic review against documented incidents to confirm effectiveness and identify gaps;

    2. Analyze emerging UAS use cases to identify future operational threats to inform proactive risk strategies; and,

    3. Develop a comprehensive guideline for UAS risk management that spans the full UAS operational lifecycle, from preauthorization planning to post-operation review, and establish core pillars to address both current and emerging risks.

The analysis conducted by the AAAC highlights that while BARS-RPAS and SORA 2.5 differ in structure and purpose, they share a commitment to evidence-based safety assurance. BARS-RPAS emphasizes procedural rigor and continuous verification whereas SORA provides a harmonized methodology for quantifying and mitigating risk prior to authorization. That applies to a wide variety of operations.

Rather than viewing these systems as divergent, the research team considers them complementary tools capable of reinforcing one another. Establishing structured bridges between them could enable more coherent and globally consistent risk-based oversight of uncrewed operations.

SURVEY INSIGHT

To complement the comparative work, AAAC launched a survey targeting national aviation authorities. The objective was to assess how nations interpret and apply risk-based methodologies in UAS oversight.

The results, which included a total of 18 responses representing the European Union, Africa, North America, the Middle East, and Asia) suggest:

- Growing international convergence around a risk-based categorization of operations (open, specific, certified), consistent with ICAO and JARUS guidance;
- Broad acceptance of risk-based authorization processes, even in nations that have not formally adopted SORA; and,
- Recognition that post-authorization oversight remains a key challenge, with potential value in assurance models such as BARS.

These findings provide essential context for AAAC's work. Understanding how nations balance analytical and assurance-based approaches can inform the development of bridging tools that accommodate diverse regulatory environments.

CONCLUSION

This work highlights the challenge between prescriptive approaches to compliance and performance-based approaches to approvals and underscores the continued need for collaboration across industry and regulatory organizations. The JARUS SORA methodology has provided immense flexibility to regulators and drone operators alike in enabling more complex operations while the BARS-RPAS tools enable safety teams to ensure their operations are compliant and well maintained.

The aviation safety community is well served in aligning and harmonizing across boundaries and across regulatory hierarchies, and this case study highlights the need for such activities. By bringing together experts and users of both BARS-RPAS and SORA 2.5, the team was able to identify differences between the methods and make recommendations to both JARUS and Flight Safety Foundation that may lead to adjustments in the interest of alignment.

This work was presented to the BARS Technical Committee in November 2025 at the International Aviation Safety Summit, and changes are already being considered to align more closely with the SORA methodology, representing the importance and impact of the work, as well as the commitment from the BARS Technical Committee to continue to refine its guidance.

ANNEX I: DEFINITIONS – OVERVIEW OF BARS-RPAS AND SORA 2.5 STRUCTURES AND PRINCIPLES.

1. BARS-RPAS framework

The Basic Aviation Risk Standard for Remotely Piloted Aircraft Systems (BARS-RPAS) was developed by Flight Safety Foundation (FSF) as an extension of its broader BARS program. The framework provides a structured means for contracting organizations to evaluate and assure the safety performance of remotely piloted aircraft operators.

BARS-RPAS is based on a bow-tie risk model, in which safety risks are identified, mapped, and controlled through a set of defined controls. These controls are grouped according to operational and organizational themes, each comprising:

- A safety objective, describing the intended outcome;
- A series of requirements, specifying what must be in place to achieve the objective; and,
- Evidence criteria, indicating the information or documentation required to demonstrate compliance.

Operators participating in the BARS program undergo regular audits by accredited assessors to verify continued conformity with the controls. This process supports a system of continuous assurance, in which operational safety performance is monitored and validated over time.

In this sense, BARS-RPAS serves as an integrity and oversight mechanism, focusing on the verification of safety management practices rather than on preauthorization risk analysis. Its scope includes elements such as operator competence, operational planning, maintenance, communications, crew management, and emergency preparedness.

While the structure of BARS-RPAS is relatively prescriptive, this characteristic ensures consistency and clarity for contracting organizations and operators engaged in complex or high-risk operations.

2. SORA 2.5 methodology

The Specific Operations Risk Assessment (SORA) was developed by the Joint Authorities for Rulemaking on Unmanned Systems (JARUS) as a harmonized methodology for assessing the risks associated with unmanned aircraft operations in the specific category (Category B within the JARUS framework): These risks are the ground risk, the air risk and the risk of fly-away.

SORA provides a structured, step-by-step approach to determining whether a proposed operation can be conducted safely within an acceptable level of risk. It guides applicants and authorities through the identification of operational hazards and the selection of mitigations.

At the core of the SORA methodology lies the determination of a Specific Assurance and Integrity Level (SAIL), which ranges from I (lowest) to VI (highest). The SAIL value reflects the overall level of risk associated with an operation and determines the set of operational safety objectives (OSOs) that must be met. Each OSO is associated with defined levels of:

- Assurance – the level of confidence or proof required to demonstrate compliance with an OSO; and
- Integrity – the degree of robustness or reliability of the mitigation in achieving its intended safety function.

SORA 2.5 incorporates lessons learned from the earlier version 2.0, including more quantitative methods for ground risk evaluation and a phased approach to the risk assessment process. The methodology integrates with complementary JARUS documentation, such as:

- JARUS Doc 12, which provides recommendations for operational categories (A and B) and informs the regulatory context of SORA;
- SORA Annex E, which details the OSOs, their intent, and the required assurance and integrity levels; and
- SORA Annex A, which consists of guidelines on collecting and presenting system and operation information for a specific UAS operation.
- SORA Annex D tactical Mitigation Performance requirements (TMPR)

Through this structure, SORA provides an analytical framework that supports competent authorities in determining whether an operation is sufficiently safe to authorize. It also promotes consistency and transparency in how risks are evaluated and mitigations are applied.

3. Relationship between assurance and integrity

Both BARS-RPAS and SORA apply the principles of assurance and integrity, albeit in different forms and contexts:

- In SORA, assurance and integrity are formalized within the OSO structure, with each objective specifying the level of evidence and robustness required based on the operation's SAIL level.
- In BARS-RPAS, assurance is achieved through continuous verification and auditing processes, while integrity is embedded in the controls. As one of the controls is to obtain the necessary approvals in the country of operation, BARS-RPAS controls come in addition to the requirements necessary to obtain an approval, and some may be covered by these requirements.

Despite their differing structures, both frameworks converge on the objective of ensuring that safety measures are credible, demonstrable, and commensurate with the level of operational risk.

4. Comparative perspective

In summary:

- BARS-RPAS operates as a prescriptive assurance framework designed to support continuous oversight of operational safety.
- SORA 2.5 functions as a pre-authorization methodology aimed at quantifying and mitigating operational risks through structured assurance and integrity criteria.

Both systems share the same underlying philosophy of risk-informed decision-making, but they apply it at different stages of the operational lifecycle. Their complementary characteristics make them suitable candidates for further exploration of interoperability and bridging mechanisms within a global risk-based regulatory environment.

ANNEX II – COMPARATIVE EXAMPLES

This annex provides selected examples from the comparative analysis conducted by the working group, illustrating how specific BARS-RPAS controls and SORA 2.5 Operational Safety Objectives (OSOs) align, diverge, or complement one another. The focus of this exercise was on SAIL III, as this level of assurance and integrity was considered sufficiently detailed to allow meaningful comparison with the BARS-RPAS framework.

The examples presented below do not represent a complete mapping but rather highlight areas where common principles can be identified and where potential bridging mechanisms could be developed.

Competence and training		
SORA 2.5 OSO	**BARS-RPAS**	**Observation**
#1 – Competence of personnel: Requires demonstration that all personnel involved in the operation have the competencies necessary for their assigned tasks, commensurate with the assessed level of risk. Defines levels of assurance and integrity corresponding to the SAIL level, with higher-risk operations requiring more rigorous demonstration and validation of competence.	Control 1.1: Remote pilot qualifications, Experience and recency Requires operators to establish and maintain comprehensive training programs for all RPA personnel, including initial, recurrent, and conversion training. Emphasizes documented evidence of competence, certification of compliance, forms part of the audit process, and ensures continued conformity.	While BARS-RPAS and SORA differ in form — one being prescriptive, the other analytical — both frameworks converge on the principle that personnel competence is a key assurance component. The BARS verification process could serve as an example of how continuous oversight might complement SORA's pre-authorization assessment of competence.

Communications, command, and control		
SORA 2.5 OSO	**BARS-RPAS**	**Observation**
#6 – Communication performance and link management: Requires that the command and control (C2) link be robust and reliable for the intended operation. The level of assurance and integrity required increases with the SAIL level. At SAIL III, demonstration of redundancy and resilience is expected, supported by performance-based evidence.	Control 6.1 Return to Home (hardware and procedures) Establishes controls relating to communications reliability, link redundancy, and loss-of-link procedures. Includes specific requirements for maintaining continuous communication with air traffic services, where applicable, and mandates the availability of backup communication systems such as a secondary airband radio.	BARS-RPAS defines precise equipment and procedural requirements, while SORA adopts a performance-oriented approach that allows flexibility in achieving equivalent outcomes. A bridging mechanism could allow operators to translate evidence of BARS compliance into the form of assurance documentation acceptable under SORA.

Fatigue management and crew fitness		
SORA 2.5 OSO	**BARS-RPAS**	**Observation**
#17– Remote crew is fit to operate: Requires the operator to ensure that all personnel involved in the operation are fit to perform their tasks safely. The OSO does not prescribe specific rest limits but expects the operator to demonstrate that the implemented system ensures fitness for duty.	Control 1.7 Fatigue Management Requires operators to implement a fatigue management system covering duty and rest periods, record-keeping, and monitoring of personnel fitness for duty. Includes explicit limits on flight and duty times, along with procedures for reporting fatigue-related concerns.	The BARS-RPAS framework provides a higher level of prescription, while SORA allows a more adaptable approach. The principles, however, remain consistent, and the BARS fatigue management model could inform practical examples within SORA guidance material.

Maintenance and airworthiness assurance		
SORA 2.5 OSO	**BARS-RPAS**	**Observation**
#10 – Airworthiness of the unmanned aircraft: Requires that the design and maintenance of the unmanned aircraft be appropriate for the intended operation and risk level. Higher SAIL levels entail greater expectations regarding the demonstration of airworthiness and reliability.	BARS-RPAS 3 Requires a maintenance management system ensuring that all aircraft are maintained in accordance with approved data, and that maintenance personnel are appropriately qualified. Maintenance records must be available for review during audits.	Both frameworks link maintenance assurance directly to operational safety. While BARS-RPAS enforces this through explicit procedural controls, SORA relies on evidence-based assessment of system reliability. Opportunities exist to align terminology and expectations in this domain, particularly concerning documentation of continued airworthiness.

Emergency preparedness and contingency management		
SORA 2.5 OSO	**BARS-RPAS**	**Observation**
#08 – Operational procedures are defined, validated and adhered to: Requires the applicant to demonstrate that appropriate emergency and contingency plans are in place and commensurate with the assessed risk. The OSO emphasizes coordination with relevant authorities and stakeholders.	BARS-RPAS: Requires operators to have defined emergency response and contingency procedures covering communications failures, flight deviations, and incidents. These procedures are reviewed during audits to confirm their adequacy and effectiveness.	This area demonstrates strong conceptual alignment. Both frameworks recognize that robust contingency management contributes to operational integrity. BARS' audit-based validation could complement SORA's pre-authorization review, supporting a continuous assurance loop.

Acronym Key: BARS: Basic Aviation Risk Standard, OSO: operational safety objectives, RPAS: remotely piloted aircraft system, SAIL: safety assurance and integrity level, SORA=specific operations risk assessment