



WORKING PAPER

ASSEMBLY — 42ND SESSION

EXECUTIVE COMMITTEE

Agenda Item 13: Aviation Security - Policy

IMPLEMENTATION OF SIGESA AND *AVSEC CORE* IN THE PLURINATIONAL STATE OF BOLIVIA - OUTCOMES

(Presented by Bolivia (Plurinational State of))

EXECUTIVE SUMMARY

The Directorate General of Civil Aviation (DGCA) established the State Aviation Security Management System, SIGESA, in 2024. This initiative is consistent with the objectives of the Global Aviation Security Plan (GASeP), and was essential to preparations for the Universal Security Audit Programme – Continuous Monitoring Approach (USAP-CMA) audit.

SIGESA included the development and roll-out of the web-based application *AVSEC Core*, a tool for the collection, processing and analysis of civil aviation security data.

The consolidation of SIGESA and roll-out of *AVSEC Core* in our State have served to boost our institutional capacities and optimize the resources allocated to our objectives. These advances have significantly improved the effective implementation of ICAO Standards and Recommended Practices, as confirmed by the USAP-CMA audit conducted in March-April of this year.

Action: The Assembly is invited to:

- a) acknowledge and disseminate the case study of Bolivia;
- b) facilitate the sharing of knowledge and replicability; and
- c) promote the use of digital tools for security data management.

<i>Strategic Goals:</i>	This working paper relates to Strategic Goal of <i>Every Flight is Safe and Secure</i> .
<i>Financial implications:</i>	None.
<i>References:</i>	ICAO Document 8973 – <i>Aviation Security Manual</i>

¹ Spanish version provided by Bolivia (Plurinational State of)

1. INTRODUCTION

1.1 The Directorate General of Civil Aviation (DGCA), the supreme civil aviation authority of Bolivia, has implemented the State Aviation Security Management System, SIGESA. This initiative seeks to consolidate an effective and sustainable civil aviation security system that is fully aligned with the objectives of the Global Aviation Security Plan (GASeP).

1.1.1 SIGESA is an organized framework of methods, procedures and resources established by the DGCA. Its main objective is to ensure that all processes overseen by the DGCA in our civil aviation security system not only achieve the security targets, but also proactively drive continuous improvement. As well, the system generates reliable information that is essential for deep data analysis and effective risk management.

1.1.2 The following processes in our civil aviation security system have been identified and classified:

- a) AVSEC inspections (quality control);
- b) AVSEC training;
- c) Certification for AVSEC personnel and trainers;
- d) Approval of security programs for airports, aircraft and in-flight service providers;
- e) AVSEC incident reporting;
- f) AVSEC risk management and threat assessment;
- g) USAP continuous monitoring.

1.1.3 SIGESA implementation covered the following key components:

- a) Establishment of AVSEC processes: AVSEC processes have been structured and enhanced to make them more agile and comprehensive, with clearly defined interdependencies;
- b) Document production: Guidance material has been developed for internal and external use;
- c) Training of AVSEC personnel: The AVSEC training programme was completed for all staff in the AVSEC unit;
- d) Database structuring: An inter-connected database was designed, developed and consolidated to store and manage the data generated by the processes;
- e) Continuous monitoring and incident detection: Continuous monitoring was introduced in respect of process outcomes, for the timely detection of incidents and systemic deficiencies in industry;
- f) Data-driven decision making: Appropriate, effective decisions and corrective actions were applied on the basis of rigorous analysis of available information.

1.2 AVSEC Core is a web-based application developed by the engineer Erwin Carrión, who is currently the Chief of Quality Control in the AVSEC Section of the DGCA Air Transport Department. The main purpose of this tool is to digitalize and transfer all of the AVSEC processes to an on-line environment, which streamlines their implementation and allows for efficient data collection and processing.

1.2.1 The start-up AVSEC Core prototype has four (4) modules: AVSEC inspection; AVSEC training; AVSEC incident reporting, and USAP continuous monitoring. These modules have significantly increased effective implementation by our State, as reflected in the good results of our USAP-CMA audit.

2. BENEFITS OF SIGESA AND AVSEC CORE

2.1 Greater operational efficiency: AVSEC Core optimizes aviation security management in the following ways:

2.1.1 Streamlining of processes: By moving AVSEC processes to a web environment, AVSEC Core allows for faster and more fluid execution, with reduced response times and increased staff productivity.

2.1.2 Centralization of information: All aviation security data are consolidated in a single inter-connected database. This eliminates information dispersal, facilitates access, and ensures that everyone involved is working with the same current data.

2.1.3 Standardization of procedures: Integrating the methods and procedures validated by SIGESA ensures that tasks are executed uniformly and consistently, with fewer operational errors and variations in implementation.

2.2 Improved decision making and risk management: AVSEC Core is fundamental to proactive risk management thanks to its capacity to provide:

2.2.1 Reliable information for analysis: The collection and structured processing of data ensures that the information produced is reliable and accurate. This is crucial for conducting an exhaustive analysis and gaining a clear and up-to-date picture of our aviation security system.

2.2.2 Timely detection of incidents and deficiencies: Continuous monitoring of the outcomes of processes and the consolidation of data serve to detect any deviation or systemic deficiency, either in industry or in our own AVSEC processes.

2.2.3 Proactive risk management: With more accurate data and timely analysis, the DGCA can better assess threats and manage risks proactively, allowing for corrective and preventive actions to be applied before a problem escalates.

2.3 Strengthening compliance and building capacities

2.3.1 Improving effective implementation (EI): The USAP-CMA audit confirmed that SIGESA and AVSEC Core have helped to improve the level of compliance with ICAO Standards and Recommended Practices. The results of the USAP-CMA audit conducted by the ICAO ASA Section in March-April of this year place Bolivia above the regional and global EI average, a major milestone.

2.3.2 A basis for continuous improvement: Despite having been implemented just one year before in 2024, SIGESA and AVSEC Core were crucial to the good results of the USAP-CMA audit. As they mature, these data collection and performance analysis tools will be essential in maintaining a cycle of continuous improvement in our civil aviation security system.

2.4 In summary, AVSEC Core is not just a digital tool, but a strategic component that modernizes aviation security management in Bolivia, making it more efficient, data-driven and geared for continuous improvement.

3. CHALLENGES IN IMPLEMENTING SIGESA AND AVSEC CORE

3.1 Adding and expanding modules: We are currently in the process of incorporating new modules into AVSEC Core, digitalizing AVSEC processes already managed under SIGESA. It is important for all the processes to be digitalized, monitored and capable of generating information for analytics.

3.2 Strengthening of technology infrastructure: As the volume of data and the number of users grow, and with the addition of new modules in AVSEC Core, it will be necessary to migrate to more robust databases or business software solutions for scalability and optimization.

3.3 Continuous training: In view of the constant evolution of the tool and regular staff turnover, the DGCA will be implementing an on-going training plan which will enable all users to master the system and maximize its functionalities, for continuing operational efficiency.

3.4 Information security: Robust cybersecurity measures are required for the handling of critical aviation security data, to protect the integrity, confidentiality and availability of information.

3.5 The DGCA is committed to addressing and overcoming these challenges, and will see to it that SIGESA and AVSEC Core continue to be a fundamental pillar in the improvement of civil aviation in Bolivia.

4. CONCLUSIONS

4.1 This working paper describes the experience of the Directorate General of Civil Aviation (DGCA) of Bolivia in implementing the State Aviation Security Management System SIGESA and AVSEC Core. The initiative was planned, developed and implemented entirely by young Bolivian personnel in the AVSEC Section of the DGCA.

4.2 In light of the nature of this initiative and its success, Bolivia recommends that ICAO help to share our experience broadly with other States in the region. We firmly believe that the internal planning, development and implementation led by talented young nationals can serve as a high-value replicable model for countries seeking to build their capacities in aviation security in an efficient and sustainable manner.

4.3 The State of Bolivia stands ready to collaborate and assist other States wishing to emulate our endeavors. The AVSEC team in the DGCA is available to share the knowledge gained, offer methodological guidance, and help identify solutions suited to the circumstances of each country, thus contributing to the collective strengthening of regional aviation security.