



Agenda Item 5: Operational implementation of new ATM automated systems and integration of the existing systems

SUPPORT FROM EASA IN ATM AUTOMATION AND INTEROPERABILITY – WORKSHOP FOR THE DGAC CHILE

(Prepared by EASA)

SUMMARY

This information paper presents the context, approach and results of the “Workshop on ATM Automation”, provided by EASA to operational personnel from DGAC Chile within the scope of the EU-LAC Aviation Partnership Project, with the objective of providing an integrated vision of the impact of automation on Air Navigation services, its benefits, challenges and key aspects for Chile and the region.

References

N/A

1. Background

1.1 The European Union Aviation Safety Agency (EASA) is the entity in charge of ensuring that the levels of safety in civil aviation in Europe are harmonized and of the highest level. The main tasks of EASA are:

- Drafting Implementing Rules and other regulatory instruments
- Certifying and approving products and organizations at European level
- Providing supervision and support to member states
- Promoting the use of European and global standards
- Cooperating with international actors for the advancement of global aviation safety

1.2 In this context, EASA manages technical cooperation projects globally, providing support to states and regional organizations with the development of civil aviation through the promotion of European experiences and standards, as well as the participation of European industry.

1.3 Within these technical cooperation projects, the EU-LAC Aviation Partnership Project is an initiative financed by the EU and implemented by EASA with the civil aviation authorities of Argentina, Brazil, Chile, Colombia and Mexico as bilateral partners, as well as the SRVSOP (Regional Safety Oversight Cooperation System for Latin America), ACSA (Central American Agency for Aeronautical Safety) and CASSOS (Caribbean Aviation Safety and Security Oversight System) as regional partners. The project also works in cooperation with the regional EU delegations, the ICAO regional offices, and aeronautical industry.

1.4 The EU-LAC Project aims to identify the challenges and improvement areas at national and regional level in order to provide support through activities such as institutional and technical support, workshops and trainings, and collaboration with industry.

1.5 One of the support areas is ATM interoperability and automation, where the aim is to advance the harmonized implementation of automated processes and systems in order to improve the capacity, efficiency and safety of air navigation.

2. Analysis

2.1 After the request from DGAC Chile and coordination with the SRVSOP regarding identification of needs, EASA proposed the preparation of a workshop on ATM automation, with the objective of providing a global and integrated vision of automation in air navigation, the evolution and innovation areas in the sector, as well as the challenges being tackled with automation and how they have been managed in Europe. This approach was adapted taking into account specific aspects relevant to the situation in Chile as well as in the region, the role of industry as a key partner, and the importance of interoperability and human factors as transversal aspects.

2.2 The workshop covered the following main topics (all workshop material and information can be found at www.eu-lac-app.org):

- International and regulatory frameworks of Air Navigation
- Introduction to ATM automation and interoperability
- Innovation in ATM and SESAR
- ATM Systems
- Networks and communications
- Safety Nets
- AIDC
- ATFM and AIM
- Remote Towers
- Safety oversight
- Human factors

2.3 Additionally, INDRA and THALES participated in the workshop as industry partners, presenting the importance of automation in their systems and solutions, and how they work together with their customers in order to ensure the fulfillment of the operational and technical requirements with their automated ATM systems.

2.4 The workshop took place from 7th to 10th of October 2019 in the premises of the “Escuela Técnica Aeronáutica” of DGAC Chile, with the participation of 18 attendees with extensive operational experience within the DGAC.

3. Conclusions

3.1 The workshop provided a platform for sharing the benefits and challenges of automation, and the key aspects necessary to tackle them in an optimal way.

3.2 The following conclusions and key messages were obtained from the activity:

- Automation is mainly enabled by the ability of systems to share and process digital

- information.
- To enable this capability, certain communications infrastructure and data processing ability is required, as well as the standards necessary to ensure the interoperability of information.
 - Being civil aviation a global sector in nature, in order to obtain the most benefits, open standards and procedures must be followed and coordinated globally. In this sense, the Global Air Navigation Plan (GANP) from ICAO offers a guide to states with regards to the enablers and dependencies between systems and services that should be taken into account when implementing modernizations at national level.
 - The deployment of systems in air navigation should follow an integrated strategy, where the interfaces between systems are a key factor to ensure their capacities are exploited to the fullest.
 - Working together with industry systems providers to ensure interoperability is a key aspect to take into account when designing, procuring, deploying and validating systems.
 - Human factors are an important aspect of any technical or operational change, especially with automation since it changes the role of the user. It is thus important to involve operational personal from the beginning when designing and deploying an automated system.
 - A spirit of cooperation between states at a high level is key for obtaining the mutual benefits of automation. For this reason, it is necessary to foster and support the implementation of data sharing agreements and interoperability activities, since without high level support the activities at technical and operational level cannot obtain the required results.
 - In Europe, the implementation of automation through an integrated approach following systems engineering methodologies with the SESAR programme has allowed the development and deployment of new technologies in a synchronized and interoperable way.
 - In Europe, the centralization of certain services at a regional level has allowed to solve some of the problems stemming from a lack of harmonization which create barriers for automation. Some examples of these are the centralization of flight plan management, Air Traffic Flow Management (ATFM) or Aeronautical Information Management (AIM). These services also pose challenges in the SAM region and a harmonized or centralized approach could be of great importance for ensuring interoperability and enabling automation.

3.3 The expectations for air traffic increase in the SAM region are high, and due to the importance of civil aviation as an economic powerhouse, it is important that measures are in place so that this growth is not hindered. For this reason, it is recommended to take a proactive approach in tackling the challenges that this growth will bring to air navigation. This will require cooperation and collaboration in order to ensure the interoperability of systems at technical and operational level. This must be supported through the establishment of bilateral and multilateral agreements and through the provision of resources to interoperability activities.

4. **Suggested actions**

4.1 It is suggested to the meeting to:

- a) Take note of the information paper;
- b) Evaluate the suitability of making a similar workshop within the frame of the SRVSOP; and

- c) Contact EASA for the identification of cooperation areas relevant to this topic and which could be performed within the frame of the EU-LAC APP.

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