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TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

AIRPORT CERTIFICATION BASED ON CORRECTIVE ACTION PLAN (CAP) AS A KICK-OFF FOR A NEW REGULATORY APPROACH FOR SAFETY OVERSIGHT: THE CASE OF BRAZIL

(Presented by Brazil)

EXECUTIVE SUMMARY

This information paper describes the regulatory approach and practices undertaken by the Brazilian National Civil Aviation (ANAC) for implementing an airport certification program built on a risk-based perspective and on the idea of a progressive and sustainable improvement in the overall safety of existing airports. This approach consists of sequential steps, including an extensive diagnosis of the airport infrastructure, short-term corrective actions for operational and minor infrastructure issues, submission of the Aerodrome Manual to ANAC, and addressing the major infrastructure related issues in a Corrective Action Plan (CAP).

Accordingly, this process provides the necessary conditions level up the relationship between the State and the service provider when it comes to the safety oversight perspective. Fully adherent to ICAO references for airport certification and safety oversight principles, this approach has provided significant results in the Brazilian case and can be particularly useful for other developing countries, for whose adopting some of the ICAO Standards and Recommended Practices (SARPs) related to airport infrastructure can be a challenge, particularly regarding existing aerodromes.

Strategic Objectives:	This information paper relates to the Safety Strategic Objective.
Financial implications:	No financial implications.
References:	Annex 14 — *Aerodromes* Annex 19 — *Safety Management*

1. INTRODUCTION

1.1 The airport certification process can be a challenge for Member States where existing aerodromes have significant gaps regarding ICAO's SARPs, especially those related to the air side dimensions and the existence of obstacles. The point here is twofold. First, some of those existing infrastructures were built before the effective adoption of the ICAO´s SARPs in national regulation. Second, in some cases, the aerodrome site is constrained by incompatible land use, which is a serious issue for implementing air side modifications, such as runway end safety area (RESA) or providing standard distances between elements of the infrastructure in the movement area. In this context, addressing corrective actions consisting of construction/modification is usually problematic in the short term.

1.2 Brazil has been facing situations like those since the beginning of its airport certification program, in 2005, when the former civil aviation authority – DAC (Civil Aviation Department) published the first regulation on the matter. From that time on, airports mainly focused on developing aerodrome manuals and submitting them to be approved by the authority. The DAC was then replaced by ANAC and a dedicated Certification Process Division was created to handle the airport certification program. However, no matter the assumption of the organizational commitment and resource allocation, it was only in 2011 that Brazil had its first certified airport, Guarulhos International Airport, in the State of São Paulo (ICAO Code SBGR).

1.3 The main reason for certification processes to take this long was that after the on-site inspection issues related to operational procedures and, more frequently, non-compliant elements of infrastructure, typically led to a point in which the service providers either resolved all issues found in the inspections, or they could not be certified.

1.4 Based on this perspective, the certification process had the purpose of fixing all the significant issues in an airport once and for all. Obviously, for the most part of the Brazilian airports to achieve such a condition in a short term it was not economically reasonable. In some cases, the safety concerns could have been addressed by operational procedures or restrictions. Furthermore, it is to be noted a lack of enforcement by ANAC, who did not use to place restrictions upon airport operations, as well as other enforcement actions.

1.5 In the next section, a brief overview of the Brazilian certification program is provided, along with a discussion on the results obtained, based on the State's and ICAO's Universal Safety Oversight Audit Programme (USOAP) perspective. Finally, an overview on the State safety oversight regarding airports is provided.

2. DISCUSSION

Brief History of the Airport Certification Program

2.1 As previously commented, until 2011 the airport certification program in Brazil was essentially based on the idea of fixing all the significant issues in an airport as a pre-requisite for granting the certificate. This previous approach has led to serious difficulties for the certification program and low effective results regarding the State safety oversight.

2.2 Because of institutional learning process and maturity in embracing the concept of airport certification, the 'as low as reasonably practical' (ALARP) principle, and references related to the ICAO's State Safety Oversight, a paradigm change was applied to the Brazilian airport certification program. As such, the airport certification changed from the idea of fully fixing deficiencies towards the purpose of improving the State capability to effectively oversight the airport´s safety according to a risk-based approach.

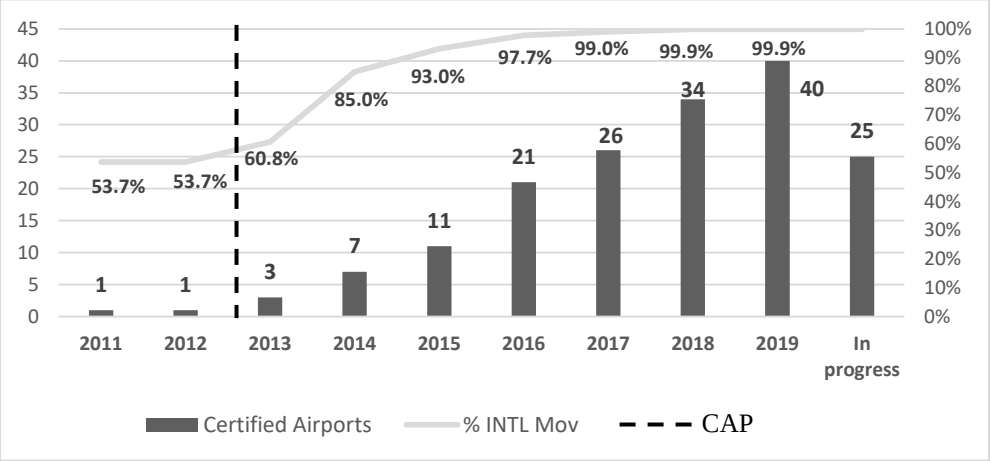
2.3 This new perspective comprises an extensive diagnosis of the existing airport infrastructure and operating procedures as the very first step. This diagnosis is followed by short-term corrective actions for any operational and minor infrastructure issues, the submission (or resubmission) of the Aerodrome Manual to ANAC, and the addressing of major infrastructure issues in a Corrective Action Plan (CAP). Accordingly, the idea was to certify an airport if it demonstrated an acceptable level of safety considering the intended operations, even if they had issues on dealing with some operational restrictions for a period. Therefore, after having been granted a certificate, the CAP would serve as the first input for surveillance activities - after all, it was a portrait of the remaining main issues from an aerodrome.

2.4 A summary of the adopted sequential approach is as follows:

a) diagnosis of the airport infrastructure and operating systems for safety purposes;
b) immediate addressing of minor issues (e.g. renewing markings, maintenance of green areas, etc.);
c) approval of the Aerodrome Manual (operational procedures described in the Manual also serve as input for on-site inspection);
d) addressing immediate and short-term actions to assure compatibility between available infrastructure and the intended aircraft operations – which may also include operational restrictions and aeronautical studies; and
e) addressing deficiencies that required medium and long-term actions, by means of a CAP.

2.5 In this context, it is noteworthy that the introduction of the CAP as a protocol between the State and the service provider has allowed airports to develop procedures and set mitigation measures to improve their operations safety, even when dealing with long-lasting construction works, or dealing with operational restrictions. Moreover, ANAC and other stakeholders are provided with updated information on the actual situation of these airports, including infrastructure and operational systems, which consists of mandatory input for the State safety oversight. The result is that now, 8 years later from the first certification, Brazil has certified 40 airports, with 100 per cent of the international flights taking place at certified airports. Figure 1 depicts this evolution in terms of number of certified airports and international movement.

Figure 1. Certification process evolution in Brazil



Current Stage of Implementation

2.6 It is necessary to bear in mind that the purpose of airport certification is improving the State capability to effectively apply safety oversight according to a risk-based approach. The recent achievements suggest an effective success in implementing the described certification program in terms of the regulatory objectives. In effect, not only the number of certificates granted increased to the point where virtually 100 per cent of the international traffic occurs at certified airports, but also, because of the certification process, these airports:

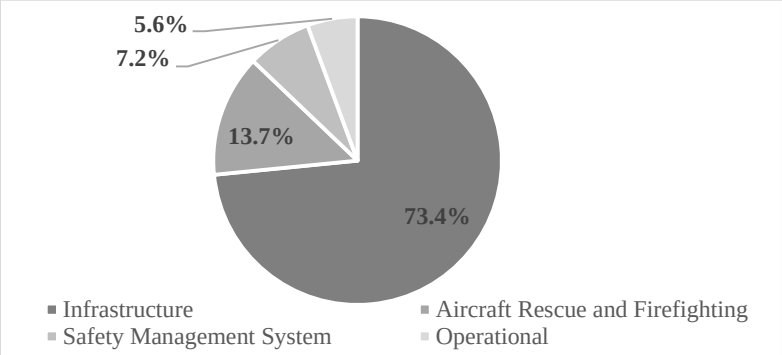
a) addressed several significant infrastructure issues;
b) improved their operating systems embracing a risk-based rationale with the implementation of safety management systems (SMS);

c) implemented mitigation measures based on operational restrictions, allowing their most demanding operations to occur according to a level of safety equivalent to that provided by the related Standard; and
d) adopted a formal planning to address other infrastructure issues not covered in the first stages of the certification process, which is overseen by the State and accessible by stakeholders.

2.7 In addition to those evidences, from a system perspective, the results of the current safety oversight activities suggest that certified airports demonstrate to be more willing to participate in safety initiatives coordinated by ANAC, including prevention of runway incursion and ground handling incidents, as well as reporting safety-related information. Overall, these findings seem to advocate that the certification process comes out to produce significant organizational changes and helps to induce new practices related to the safety monitoring at an airport.

2.8 Regarding the use of CAP as a safety oversight tool, it has been progressively incorporated in all the airport-related safety activities carried out by ANAC. In this sense, ANAC's Airport Annual Inspection Program is changing from the traditional practice of visual inspection of the infrastructure towards the perspective of systems audit, including regular oversight on the planned corrective actions and the outcomes of the airport's SMS. To illustrate how the CAP has been used in the certification program, Figure 2 summarizes categories for the main issues addressed:

Figure 2. Categories for issues in CAP



2.9 Regarding the infrastructure related issues, the main subcategories of items are associated with the implementation of RESA, relocation of navigation aids equipment, obstacle removal from runway strip, relocation of aprons and maintenance works on pavements. In the CAP, the airport operator and ANAC agree on the corrective actions and respective time schedule. Therefore, this formal planning is then considered as information for the regulatory processes.

2.10 In addition to this regulatory point of view, it is to be noted that under ICAO's USOAP perspective, this approach was decisive to unlock the certification process in Brazil. In effect, the AGA protocol is the one with the highest proportion of CE-6 items (certification). Despite the good results obtained in such protocol – 86 % in 2015, the audit report showed that most of non-complying issues were found in CE-6 protocol questions (PQs), which led to the conclusion that Brazil had not fully implemented the airport certification process. In 2015, when the audit was held, a low number of airports were certified, even though they covered 86.4 % of all international aircraft at that time. In the lasted self-assessment, the number of CE-6 PQs with findings dropped significantly, also affecting positively the CE-7 PQs, since CAP is an input for surveillance activities.

The CAP in the State Safety Oversight Framework

2.11 The implementation of the above described regulatory approach by ANAC-Brazil has provided significant advances in the overall safety of existing aerodromes. These improvements are specially related to aircraft-airport compatibility issues, which is consistent with the PANS-Aerodrome perspective to be fully incorporated by national regulation by the end of 2020.

2.12 About the use of the CAP in the State safety oversight practices, in the Brazilian case, for certified airports, execution of the planned actions is subject to regular monitoring, along with the assessment of airport infrastructure and procedures described in the Aerodrome Manual. This monitoring practice includes both documental analysis and on-site inspections, when necessary. Conversely, for non-certified airports, the safety oversight is based on the infrastructure elements and operational procedures as required by regulation.

2.13 Finally, this approach on the certification process becomes an important milestone for aerodrome operators to take part of a new regulatory context and relationship with the State, thus allowing the necessary conditions for an effective State safety oversight. Based on the certification process described, which provides the CAP as one of its main outcomes, a State gathers more knowledge on the real conditions of the aerodrome operations. As such, it is a fundamental step for an improved safety oversight, especially when it comes to better risk-management processes and reduction of uncertainties related to the airport system.

3. CONCLUSION

3.1 The Assembly is invited to:

a) consider and comment on the use of CAP as a tool for facilitating certification of existing airports by assuring a progressive and sustainable improvement in the overall safety and starting an effective State safety oversight; and

b) consider the relevance of this regulatory approach for Member States facing significant issues related to compatibility between aircrafts and existing airports.

— END —