



WORKING PAPER

TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 6: Future direction

6.1: Implementation plans and methodologies

SAFETY FRAMEWORK

(Presented by the United States)

EXECUTIVE SUMMARY

The aviation system block upgrade (ASBU) approach presented in the Global Air Navigation Plan (GANP) represents an integrated approach to addressing aviation's capacity, environmental and profitability challenges through 2030. Since transitions and new implementations continue to generate challenges that will have to be addressed, the same level of attention and integration needs to go toward developing a safety framework regionally and globally.

Action: The Conference is invited to agree to the recommendation in paragraph 4.

1. INTRODUCTION

1.1 For the aviation system block upgrades (ASBUs) to help form the air navigation systems of the future as envisioned in the Global Air Navigation Plan (GANP) and associated operational concepts, there needs to be a safety framework firmly in place, not just within a State as required by safety management systems, but also on a regional basis. Such a framework would require States and other stakeholders to cooperate as never before. Decisions will need to be made on how we will calculate and evaluate system performance (both before and after a block upgrade); how the international community will accomplish compliance monitoring; who will do the data collection and statistical analysis; what we will measure in terms of safety and performance indicators; and how this will feed into the development of appropriate global standards. There needs to be a structure in place for resolving these issues and more.

2. BACKGROUND

2.1 A safety framework has a number of components including a decision-making body, a regional reporting system, compliance monitoring and statistical analysis.

2.2 The decision-making bodies need to define operational services and expected outcomes that: ensure regional/global safety; leverage benefits from current capabilities through implementation of ground-based solutions; converge communication and surveillance standards; implement

performance-based communications and surveillance over procedural airspace; monitor implementation and performance of new technologies and procedures; facilitate the provision of air traffic services, operator readiness, common procedures for controllers and flight crew; facilitate global information exchange; etc.

2.3 To a greater or lesser extent, the planning and implementation regional groups (PIRGs) handle these issues regionally. However, the PIRGs were established when most of the aviation system was managed by State regulators and today there is a new dynamic where many States have separated air navigation service provision from the regulatory function. We need to also recognize there is a growing diversity of stakeholders, some of whom are commercial enterprises such as communication service providers that provide services to disciplines other than aviation and are not dependant on aviation for their viability. We need to consider if their business plans are consistent with the needs of the aviation community. Consequently, greater collaboration is called for amongst all types of service providers, regulators and industry going forward.

2.4 States and stakeholders need to consider what support is required to accommodate an evolving fleet, evolving operations, and evolving technologies that is consistent with converging to a globally compatible air navigation system as envisioned by the GANP. Specifically, States need to ensure that the PIRGs include the right mixture of regulatory oversight personnel, air carrier personnel, air navigation service personnel along with people with specialty skills including: communications, surveillance, mathematic and navigation. Even the comparatively wealthy regions sometimes have difficulty funding such enterprises and resourcing them with the proper expertise is even harder.

2.5 A robust regional reporting system is needed. The air traffic service provider States should ensure proper reporting. Data from such reports should be generated on a regional basis and used to inform States' decisions for instituting mitigations or implementing new processes, procedures, equipment, training or technologies. Such information would also be used to inform States' decisions for adopting an ASBU and supporting it after implementation. The Regional Reporting Agencies, which were established to collect data on a regional basis for monitoring reduced vertical separation minimum airspace, do some of this work currently, but they are going to need more resources to take on the activities involved in ASBUs.

2.6 An essential prerequisite to any successful integration is a well-thought out compliance monitoring programme. Compliance monitoring aids in detecting degradations in the technology, process or procedure so that action can be taken to fix deficiencies and permit the system to function as planned. This is an on-going effort that continues for as long as the technology, process or procedure is in place in the aviation environment. Without an effective compliance monitoring programme, users will not be able to rely on the technology, process or procedure, nor will they fully reap the benefits of their investment.

2.7 How safe is an air space? The correct categorization of reported occurrences is important, as well as reliable mathematical and statistical advice relating to the on-going monitoring of safety through the assessment of collision risk. In the North Atlantic Region PIRG, the Scrutiny Group and the Mathematicians' Working Group do this work. They too, will likely need additional resources to do the work needed for ASBUs.

2.8 Regulators too will need to stretch shrinking budgets and resources to deal with the ASBUs. In addition to resourcing the activities described above, they will need to look for responsible and reasonable means of recognizing the safety work done by other States. Regulators will need a regional, if not global, plan if they are to facilitate aviation and not be its stumbling block.

2.9 In summary, we need to have the ability to turn the data gathered from events into preventive actions. We need to recognize new stakeholders and include them in our decision-making process. We need to set the stage for continuous learning and improvement. Therefore, we need to look at the composition and the structure of these regional groups to ensure they have sufficient resources, along with the right terms of reference, working methods, participation and allocated lines of action to successfully develop, implement, maintain and constantly improve strategies and processes to safeguard aviation safety while increasing capacity and efficiency. The starting point should involve expanding a State's support for the PIRGs; expanding the roles and use of the Regional Monitoring Agencies; reporting of a wide variety of events and occurrences; enhancing the content of event reports; and compliance monitoring of communication, navigation and surveillance systems.

3. CONCLUSION

3.1 The aviation community needs a forum to study the issues, plan, fund, and resource a safety framework; and lay the foundation for success of the ASBUs. On this basis, the Conference is invited to agree to the recommendation below.

4. RECOMMENDATION

4.1 The Conference is invited to agree to the following recommendation:

Recommendation 6/x – Safety framework

ICAO put this issue on the agenda of the next Assembly with the aim of securing a plan from stakeholders to identify the issues; fund; and resource a safety framework that would lay the foundation for success of the aviation system block upgrades.

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