



Agenda Item 6: Follow-up to the conclusions of GREPECAS/18 and recommendations of the AN/Conf-13 related to AIM

Follow-up to the recommendations of AN/Conf-13 related to AIM

(Presented by the Secretariat)

| | |
|--|---|
| SUMMARY | |
| This working paper presents the follow-up to the recommendations of the Thirteenth Air Navigation Conference held in Montreal, Canada, on 9-19 October 2018. | |
| REFERENCES: | |
| <ul style="list-style-type: none"> • Report of the Thirteenth Air Navigation Conference, Montreal-Canada, 9-19 October 2018. | |
| ICAO strategic objectives: | <i>A - Safety</i> <i>B – Air navigation capacity and efficiency</i> <i>E – Environmental protection</i> |

1. Introduction

1.1 The Thirteenth Air Navigation Conference was held in Montreal (Canada) on 9-19 October 2018.

1.2 The agenda for the Conference included a broad range of issues related to flight safety and air navigation capacity and efficiency of interest to the Directors General of Civil Aviation, as well as to air navigation service providers and all airspace users.

2. Discussion

2.1 The Meeting will recall that, according to the agenda of the Thirteenth Air Navigation Conference, issues related to AIM were discussed under Agenda Items 1, 2 and 3.

2.2 Regarding AIM, the relevant recommendations were the following:

- a) Recommendation 1.2/1, item b), on the ASBU framework and the BBBs;
- b) Recommendation 1.4/1, item b), on the cost-benefit of investment projects;

- c) Recommendation 2.2/2, item d), on the publication of information on the use of GNSS elements in aeronautical information publications (AIPs);
- d) Recommendation 3.1/1, items a), b), c) and d), on SWIM implementation;
- e) Recommendation 3.5/1, items a) and b) on ICARD database management;
- f) Recommendation 4.2/1, items a) and b) on the implementation of minimum navigation services.

2.3 Regarding e-TOD, the meeting established an *ad hoc* group to analyse the strategy to meet this standard. The conclusions of this group are contained in **Appendix A** to this working paper.

2.4 Upon reviewing these recommendations, the Meeting should plan the monitoring activities to be taken by the States. **Appendix A** to this working paper contains the aforementioned recommendations.

2.5 Based on these, the Meeting could formulate the following conclusion:

Draft Conclusion SAM/AIM/12-XX: Follow-up to the recommendations of AN/Conf-13 on AIM:

That those States that have not done so yet:

- a) review and update the ASBU framework and BBBs related to AIM;
- b) conduct a cost-benefit study related to the implementation of AIM enhancements;
- c) ensure compliance with ICAO provisions regarding the publication of information on the use of GNSS elements in aeronautical information publications (AIPs);
- d) support and prepare roadmaps for SWIM implementation;
- e) support proper management of ICARD database codes; and
- f) plan the implementation of basic services defined in the basic building blocks (BBBs) in the national air navigation plans.

3. **Suggested action**

3.1 The Meeting is invited to:

- a) take note of the information provided in this working paper;
- b) analyse the information contained in Appendix A; and
- c) consider formulating the conclusion shown as a draft in paragraph 2.5.

| Appendix A | | |
|---|---|---|
| Recommendations of the Thirteenth Air Navigation Conference concerning AIM | | |
| Recommendation | Title | Text |
| 1.2/1 | GLOBAL TECHNICAL LEVEL OF THE SIXTH EDITION OF THE GLOBAL AIR NAVIGATION PLAN (DOC 9750, GANP) | <p>That States:</p> <ul style="list-style-type: none"> a) agree with the proposed change management process to maintain an up-to-date aviation system block upgrade (ASBU) framework with the formal involvement of the ASBU Panel Project Team (ASBU PPT) to improve transparency, consistency and stability; b) agree, in principle, with the updated ASBU framework and consider the initial version of the basic building block (BBB) framework; <p>That ICAO:</p> <ul style="list-style-type: none"> c) map the global technical level of the <i>Global air navigation plan</i> (Doc 9750, GANP) with the strategic level; d) make available the ASBU and BBB frameworks in an interactive and simplified format, as part of the web-based GANP portal, emphasising the relationship between both frameworks, and between the frameworks and the regional air navigation plan (ANP) elements; e) enable the capability, within the GANP portal, to upload relevant information related to the development and deployment of the ASBU and proposed BBB frameworks in order to allow States, Regions and industry to share information; f) incorporate a flexible framework for emerging air navigation concepts such as unmanned aircraft systems (UAS), UAS traffic management (UTM), big data and the aviation internet, into future editions of the GANP; g) include a global aeronautical distress and safety system (GADSS) thread in the sixth edition of the GANP in line with ICAO provisions; h) design a thread for a global aviation internet network in the GANP, in coordination with aviation and non-aviation-related industries; i) emphasise and enhance a human-centric approach to system design and processes for change management; j) support the conduct of trials for new air navigation concepts as outlined in the ASBU |

| | | |
|--------------|---|---|
| | | <p>framework within the GANP; and</p> <p>k) continue to work with States, international organisations, air traffic management (ATM) modernisation programmes, and other stakeholders on the development of the global technical level of the sixth edition of the GANP for subsequent endorsement at the 40th Session of the ICAO Assembly.</p> |
| <p>1.4/1</p> | <p>COST-BENEFIT ANALYSIS (CBA) IN SUPPORT OF ASSETS DEPLOYMENT</p> | <p>That States:</p> <p>a) perform a cost-benefit analysis (CBA) as part of all required impact assessments, in coordination with air navigation service providers (ANSPs) and among other relevant stakeholders, when defining optimum solutions for improvements in the performance of the air navigation system through the use of the aviation system block upgrade (ASBU) framework; and</p> <p>b) use a simplified mechanism, if they do not have a process already in place, such as the checklist available on the global air navigation plan (GANP) portal, for CBA of air navigation infrastructure investment projects to support improvements as described in the ASBU framework; and</p> <p>That ICAO:</p> <p>c) support the implementation of applicable CBA methodologies through dedicated workshops.</p> |
| <p>2.2/2</p> | <p>GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) EVOLUTION</p> | <p>That States:</p> <p>a) when defining their air navigation strategic plans, take advantage of the improved robustness and performance offered by dual-frequency, multi-constellation global navigation satellite system (DFMC GNSS) to deliver incremental operational benefits and encourage related industry developments;</p> <p>b) avoid, in principle, prohibiting the use of available GNSS elements if they perform according to ICAO standards and recommended practices (SARPs) and can meet all safety and regulatory requirements for the intended operations;</p> <p>c) avoid mandating equipage or use of any particular GNSS core constellation or augmentation system unless clear operational benefits are offered in return and appropriate consultations have been made with the relevant airspace users;</p> |

| | | |
|--------------|---|---|
| | | <ul style="list-style-type: none"> d) ensure implementation of ICAO provisions for publication of information related to the use of GNSS elements in aeronautical information publications (AIPs); e) take timely action to meet the long-term goal whereby every State accept for lateral navigation use of all GNSS elements that are compliant with the SARPs, thus creating a positive environment for DFMC GNSS. <p>That ICAO:</p> <ul style="list-style-type: none"> f) continue the development of SARPs and guidance material for existing and future GNSS elements in coordination with recognised standards-making organisations; g) further develop provisions intended for States and organisations that provide GNSS services regarding publication of service performance standards, regular performance assessment and timely notification of events that may affect the service; and h) develop additional guidance addressing technical and regulatory aspects to assist States in their acceptance and use of existing and future GNSS elements. |
| <p>3.1/1</p> | <p>SYSTEM-WIDE INFORMATION MANAGEMENT (SWIM)</p> | <p>That States:</p> <ul style="list-style-type: none"> a) support developments and implementation of system-wide information management; b) via the mechanism of the planning and implementation regional groups (PIRGs), showcase regional system-wide information management (SWIM) demonstrations, highlighting the operational and economic benefits of SWIM, and evaluate possible transition and mixed-mode scenarios; c) share information, lessons learned and observations regarding SWIM development and implementation; d) develop national implementation plans in alignment with regional strategies and priorities and in accordance with the strategy outlined in the <i>Global air navigation plan (Doc 9750, GANP)</i>, which would include SWIM; <p>That ICAO:</p> <ul style="list-style-type: none"> e) while making use of already developed standards and recommended practices, continue the development of provisions related to information services, while including relevant guidelines, governance aspects, information content and related information exchange |

| | | |
|--------------|---|--|
| | | <p>models, and supporting the technical infrastructure and governance for SWIM, in sufficient detail to ensure safe, efficient and secure globally seamless operations;</p> <ul style="list-style-type: none"> f) consider the concept of a global SWIM framework as part of the GANP and the aviation system block upgrades (ASBU); g) consider security-by-design principles when developing interconnected trusted global SWIM frameworks; h) develop provisions related to the harmonisation of information exchange models and globally-interconnected registries; i) through regional events, and in collaboration with States and industry, promote SWIM and its benefits as described in the Manual on System-Wide Information Management (SWIM) (Doc 10039) as well as implementation of best practices to the aviation community; and j) provide assistance to States to support the implementation of Annex 15 – <i>Aeronautical information services</i> and the <i>Procedures for air navigation services – Aeronautical information management</i> (Doc 10066, PANS-AIM). |
| <p>3.5/1</p> | <p>ICAO LOCATION INDICATOR SYSTEM AND DATABASE OF SIGNIFICANT POINTS</p> | <p>That States and industry stakeholders:</p> <ul style="list-style-type: none"> a) urgently complete the population of the ICAO International Code and Routes Designators (ICARD) database with all five-letter name codes (5LNC) used worldwide to ensure the accuracy of the database; b) ensure that whenever a 5LNC that is used for military purposes is published in an ICAO Aeronautical Information Publication (AIP) and consequently coded into aircraft flight management system (FMS), such 5LNCs are coordinated through the ICARD process. <p>That ICAO:</p> <ul style="list-style-type: none"> c) continue to address the limitations of both location indicator and 5LNC availabilities in the short-term and determine a long-term solution; d) consider, when developing such solutions, the need for global harmonisation and interoperability; e) continue with its efforts to improve awareness and training on the use of ICARD in the regions that do not actively use ICARD; |

| | | |
|--------------|---|---|
| | | <p>f) continue to work towards removing duplicated 5LNCs and sound-like conflicts; and</p> <p>g) implement improvements to the ICARD database functionality, including the use of maps depicting flight information regions (FIRs), more information regarding 5LNC history and sound-like proximity checks for codes held in reserve but not yet allocated to a region.</p> |
| <p>3.5/2</p> | <p>COORDINATED CRISIS MANAGEMENT</p> | <p>That States:</p> <p>a) along with industry stakeholders, engage in an active and coordinated manner when dealing with crisis management, enhanced preparedness for disasters, contingency planning and post crisis reviews; and</p> <p>that ICAO:</p> <p>develop guidance on a coordinated approach to crisis management, including subjects such as business continuity, the role of air traffic flow management (ATFM) in support of crisis management and the importance of post crisis reviews</p> |
| <p>4.2/1</p> | <p>IMPLEMENTATION OF MINIMUM AIR NAVIGATION SERVICES</p> | <p>That States:</p> <p>a) consider the use of more advanced technologies and procedures, in coordination with international organisations and industry stakeholders, to provide the minimum air navigation services for international civil aviation, taking into account the principles of global interoperability and performance specification compliance;</p> <p>b) include planning for the implementation of the basic services outlined in the basic building blocks (BBBs) framework within their national air navigation plans.</p> <p>That ICAO:</p> <p>c) in coordination with the planning and implementation regional groups (PIRGs) and by making use of existing reporting mechanisms, verify the provision of the minimum air navigation services for international civil aviation, as outlined in the BBB framework, through the methodology for the identification of air navigation deficiencies against the regional air navigation plans;</p> <p>d) develop the necessary tools to support the PIRGs in the verification of the provision of the basic building block (BBB) services at the regional and national levels;</p> <p>e) coordinate the interoperability of systems and harmonisation of procedures at a regional level, through the PIRGs, in relation to the use of advanced technologies and concepts of operations, taking into account global requirements;</p> |

| | | |
|--------------|--|--|
| | | <ul style="list-style-type: none"> f) in line with the No Country Left Behind (NCLB) initiative, provide the necessary technical assistance to States for the provision of basic air navigation services as identified by the PIRGs and as reflected in State national air navigation plans; and g) urge the aviation manufacturing industry to create a testing environment for States to justify procurement decisions which guarantee interoperability and system functionality within local specific environments, as a follow-up to the provision of basic air navigation services. |
| <p>4.3/1</p> | <p>IMPROVING THE PERFORMANCE OF THE AIR NAVIGATION SYSTEM</p> | <p>That States:</p> <ul style="list-style-type: none"> a) adopt and adapt as needed, the six-step performance management process for the planning and implementation of air navigation improvements and reflect this process in their national air navigation plans; b) align their national air navigation plans with regional plans to attain a globally harmonised performance management process and support the achievement of global performance objectives; c) support ICAO in promoting the No Country Left Behind (NCLB) initiative and reaffirm their commitment to the development of timely and accurate national air navigation plans aligned with regional and global plans; <p>That ICAO:</p> <ul style="list-style-type: none"> d) encourage the planning and implementation regional groups (PIRGs) to embrace a performance-based approach or implementation and adopt the six-step performance management process, as described in the <i>Manual on global performance of the air navigation system</i> (Doc 9883), by reflecting the process in Volume III of all regional air navigation plans; e) continue to expedite the work on performance indicators related to the <i>Global air navigation plan</i> (Doc 9750, GANP), including review of the work by an appropriate group of performance experts and consider establishing such an expert group under the Global air navigation plan (GANP) study group; and f) examine possible operational incentives in the development of new air traffic management (ATM) concepts. |