



ASSEMBLY — 39TH SESSION

TECHNICAL COMMISSION

Agenda Item 34: Aviation safety and air navigation policy

GANP UPDATE

(Presented by Slovakia on behalf of the European Union and its Member States¹, the other Member States of the European Civil Aviation Conference²; and by EUROCONTROL)

EXECUTIVE SUMMARY

The GANP and its maintenance process are essential tools in facilitating a timely, interoperable and harmonised performance-based evolution of ATM. The GANP 2016 edition includes a number of improvements which are fully endorsed. Further enhancements are proposed for the next edition to evolve the GANP towards a performance driven strategic planning environment which interacts with regional development and implementation programmes.

Action: The Assembly is invited to request ICAO for the next edition of the GANP to:

- a) formulate global Performance Objectives and a Global ATM Vision consistent with the *Global Air Traffic Management Operational Concept* (Doc 9854);
- b) further improve the consistency and complementarity between the GASP and the GANP, whilst recognizing their respective need as standalone documents;
- c) further enhance the global ATM Architecture with the objective to increase understanding of the dependencies between GANP modules and elements;
- d) identify within the GANP essential improvements based on a list of agreed criteria; and
- e) intensify efforts to stabilize ICAO provisions and GANP lifecycle through 3 year minor and 6 year major updates as relevant.

<i>Strategic Objectives:</i>	This working paper relates to all Strategic Objectives.
<i>Financial implications:</i>	The activities referred to in this paper will be undertaken subject to the resources available in the 2017-2019 Regular Programme Budget and/or from extra budgetary contributions.
<i>References:</i>	Doc 10007, <i>Report of the Twelfth Air Navigation Conference (AN-Conf/12)</i> Doc 9854, <i>Global Air Traffic Management Operational Concept</i> Doc 9750, <i>Global Air Navigation Plan (2016 Edition proposed to the Assembly)</i>

¹ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom

² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine

1. INTRODUCTION

1.1 The *Global Air Traffic Management Operational Concept* (Doc 9854) outlines the target for the evolution of ATM. One of the key features of the Global Concept is collaboration, harmonisation and integration of ATM components. The Global Air Navigation Plan (GANP) specifies the operational improvement steps towards the Global Concept delivering performance improvements.

1.2 The GANP 2016 edition is a significant improvement and is well supported. The GANP 2019 edition should further move to a performance-driven approach and concrete further improvements are hereto proposed.

2. DISCUSSION

2.1 *Performance and vision*

2.1.1 To provide orientation and a framework for national/regional performance management and also as justification, for the implementation guidance of the ICAO provisions in relation to the modules and elements of the GANP, it is proposed to formulate and include a limited (3-4) set of global non-binding Performance Objectives referring to the foreseen air traffic evolution and global air traffic flows. They should be accompanied by measureable indicators driving the right reporting behaviours.

2.1.2 Based on these Performance Objectives a further framing and direction should be provided in the GANP in terms of a Global vision for 2040 outlining in 1-2 pages the main evolutionary path. The Performance Objectives and the Global vision will enhance the strategic value of the GANP, its standardisation and provision roadmaps and support the implementation plans of regions and States.

2.1.3 The improvements specified in the GANP modules/elements are realised through stakeholder investments which in most cases need to be justified through measurable & monetised performance benefits. Therefore operational performance is the main driver and it is necessary to select the right improvement for a performance need or anticipated performance gap. For this it is necessary to develop first a good and shared understanding of needs and cause(s) of the performance gaps. The operational improvements should embrace effective changes to these causes and influence diagrams could be used to facilitate this process and to visualise the causes and effects. It is proposed to develop and include them in the GANP and to position the modules/elements using these models.

2.2 *GASP – GANP alignment*

2.2.1 The GASP and the GANP are complementary documents: the objective of the GANP is to plan the evolution of ATM towards the Global Concept to meet performance objectives (including safety) while the GASP essentially specifies the overall safety framework, with the safety methods and principles to be applied. The complementarity of these two documents can be improved through consistency of vision and ambition, better cross referencing and alignment of the "safety" component in ATM: E.g. the Performance Objectives of the GANP should include an objective on air traffic management safety as the most important Key Performance Area and Indicator.

2.2.2 For modules and elements that need to cater for safety, further consistency between the two documents would be achieved when the GASP addresses the methods, culture and measures related to the ATM safety performance objective while the GANP addresses the plan of improvements for achieving the Performance Objectives.

2.2.3 In the future evolution of these plans, it is recommended to introduce a more systematic way to address safety aspects per module and place a stronger emphasis on safety performance. This would allow States and regional safety oversight organizations (RSOOs) to better plan and adapt their State and/or regional safety plans.

2.3 *Logical global architecture*

2.3.1 The GANP 2016 edition initial description of the Global Concept component interactions is very much welcomed. Considering that the current ATM system is a complex system of systems with many stakeholder dependencies and interactions, the transition towards the concept implementation will require, at technical level more, collaboratively developed, dedicated guidance based on a detailed and easy to understand architectural view of the Global Concept.

2.3.2 Often ATM improvements have effects/impacts in several areas that need to be well understood during the development and validation process. It is also well known that the current regulatory and standardisation environment mirrors the complexity mentioned above. To overcome this and at the same time making it possible to manage the quality and consistency of all standards and regulations there is a need to establish a well understood architecture of the vision and ambitions.

2.3.3 Actively managing harmonisation and collaboration implies managing the inherent and increasing complexity of transiting to the Global ATM system as a system of systems. The introduction of the (very) high level system architecture in the GANP 2016 edition is a first step articulating the view of the Global Concept. The system architecture is not an objective of its own but is needed to manage complexity of change by understanding and managing dependencies between GANP modules/elements, the GASP and domains/areas of the aviation system. It is proposed that the next version of the global ATM architecture is developed towards this objective.

2.4 *Identification of essential improvements*

2.4.1 The GANP 2016 edition includes specifications of modules and elements all relating to implementations of local, regional or global improvements. Some of these modules/elements require global coordination for reasons of harmonisation, global interoperability and/or economies of scale. FICE, TBO, SWIM and ACAS are examples of essential improvements. It is proposed, as an alternative to the notion of minimum path (as introduced in the 2016 GANP edition), to include in the next edition of the GANP a clear set of performance based development and implementation criteria. Hereby the GANP modules/elements should be identified which form the ATM global backbone meeting regional and global needs.

2.5 *The overall GANP lifecycle*

2.5.1 The GANP and its updates steer national/regional processes and programmes focused on the full life cycle of ATM performance improvements meaning definition, development/validation and implementation of ATM operational improvements. Large regional programmes such as SESAR, NextGen and others define master plans and implementation plans; they organise deployment activities and ensure proper reporting and monitoring of the results. ICAO Regional Offices develop and maintain Regional Air Navigation Plans. Standards-making organizations develop industry standards. States and RSOOs need to update their oversight and certification requirements to allow for a safe and timely implementation. Airframe, avionics and ground ATM industries participate in the above and respond with development plans and new requirements for their respective products. These are all major activities which, to stay effective & efficient, need not to be changed too frequently by GANP updates. Therefore it

is important to execute the GANP lifecycle in such a way that these existing modernisation initiatives, processes and programmes can remain practically aligned.

2.5.2 It is proposed to plan, as relevant, for major/significant updates not more frequently than every 6 years and minor updates every 3 years. To further support management of change and stability it is proposed to introduce levels of detail in the GANP with the highest level as an executive document presenting the Performance Objectives, vision and high-level plans. The levels below the executive level provide increasing levels of detail which can be updated more frequently and should be supported by information management tools.

2.5.3 The update rate of ICAO provisions should also allow for a satisfactory implementation by States/regions and industry. The ever increasing number of ICAO provisions raises concerns as to the long term sustainability of the ICAO framework. The need for stability was already noted by the Twelfth Air Navigation Conference (AN-Conf/12) (REC.1/1 (e)) and several Assembly resolutions over the years (latest: A38-11). ICAO is requested to intensify efforts to stabilise the body of ICAO provisions.

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