



AN-Conf/14-WP/213
5/9/24

FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, 26 August to 6 September 2024

REPORT OF THE COMMITTEE ON AGENDA ITEM 3

The attached report has been approved by the Committee for submission to the Plenary.

Mr. Padhraic Kelleher
Committee Chairperson

Note.— After removal of this covering sheet, this paper should be inserted in the appropriate place in the Report Folder¹.

¹ (16 pages)

Agenda Item 3: Air navigation system performance improvement**3.1: Proposals to improve the efficiency of air navigation services contributing to LTAG***Airspace optimization*

3.1 The Conference reviewed AN-Conf/14-WP/10, presented by the Secretariat, which brought forward an initiative to focus attention on the seamless implementation of longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere, with the objective of enhanced operational efficiency of the global air navigation system. Air traffic management (ATM) performance improvement was often hampered by the application of different separation minima across flight information region boundaries, or separation minima that are inconsistent with those typically applied across a region or sub-region. The Conference, in providing broad support for the proposal as a contribution to achieving the ICAO long-term aspirational goal (LTAG) for international aviation, noted the principal role that would be played by the planning and implementation regional groups (PIRGs), supporting collaboration and developing regional action plans to maximize the efficiency of traffic flows, as reflected in AN-Conf/14-WP/82, presented by Oman.

3.2 AN-Conf/14-WP/9, presented by the Secretariat, proposed a feasibility study to consider the potential benefits of an independent, objective and consistent air navigation efficiency audit programme. The working paper recalled that the Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) and compliance-based security audit had supported the development of corrective action plans and assistance strategies that can be the basis for securing funding and prioritizing implementation projects.

3.3 The Conference expressed support on the basis that the study into the feasibility of such a programme should determine if it should take the form of an audit or some alternative mechanism, such as an “assessment” or gap analysis of the management of air traffic flows. The study should also consider: if its scope should be commensurate with the complexity of air traffic operations in each State; whether all States would necessarily need to participate; and assess how to leverage existing mechanisms already in place to support monitoring of ATM performance. In further consideration of how to establish this study, the Conference agreed that ICAO must take into account the financial and workload impact upon the Organization, avoid duplication and apply lessons learned from the USOAP and Universal Security Audit Programme (USAP).

3.4 The Conference also stressed that the study should consider how to ensure a direct basis for securing funding and prioritizing projects that support capacity development, training and the implementation and modernization of ATM infrastructures and systems, contributing to cross-regional support initiatives to help States and regions develop more robust systems for air traffic management.

3.5 The Conference further emphasized the importance of involving States and international organizations, including the Civil Air Navigation Services Organisation (CANSO), International Air Transport Association (IATA), International Business Aviation Council (IBAC) and International Federation of Air Traffic Controllers Associations (IFATCA) in the conduct of the study and keeping them informed of its progress.

3.6 AN-Conf/14-WP/40, presented by the United Arab Emirates, and AN-Conf/14-WP/74, presented by IATA, IBAC and IFATCA, discussed establishing a framework for minimum service level procedures over oceanic and remote airspace, that would complement AN-Conf/14-WP/10 and AN-Conf/14-WP/9. The Conference agreed that while uniform application of separation minima would reduce bottlenecks and improve air navigation safety and efficiency, akin to the goals of Project 30/10, modern ATM solutions should also be applied across large portions of airspace that have similar traffic flow characteristics. These included air traffic flow management (ATFM), flexible use of airspace, free route airspace (FRA) and civil-military cooperation. The Conference

recognized that such initiatives should be based on the needs of a wide cross-section of the aviation community, which may entail sending out surveys, as necessary.

Trajectory-based operations

3.7 The Conference reviewed AN-Conf/14-WP/60, presented by Hungary on behalf of the European Union and its Member States², the other Member States of the European Civil Aviation Conference (ECAC)³, the European Organisation for the Safety of Air Navigation (EUROCONTROL) and Singapore, which advocated the need for a proactively and globally orchestrated approach to the development and implementation of trajectory-based operations (TBO), addressing all ATM processes that use or have an impact on flight trajectories. The Conference then reviewed AN-Conf/14-WP/48, presented by China, Indonesia, Japan, New Zealand, the Republic of Korea, Singapore, Thailand, the United States, and CANSO, which discussed an initiative of the Asia and Pacific Region to determine pathways to realize the TBO concept. The Conference also reviewed AN-Conf/14-WP/70, presented by Brazil, China, Japan, Singapore, Thailand and the United States, which described an ongoing study on TBO performance objectives and associated key performance indicators (KPIs).

3.8 The Conference noted the benefits of TBO in improving the predictability of aircraft movement and flight efficiency, as well as in increasing utilization of available airspace and aerodrome capacity and operator flexibility. The Conference recognized that these benefits would contribute to achieving the ICAO LTAG for international aviation of net-zero carbon emissions by 2050. While acknowledging that there would be varying degrees of readiness to implement TBO in different States and regions, the Conference stressed the importance of a well-prepared and coordinated implementation of TBO to accrue more substantial and immediate benefits. Consequently, the Conference agreed on the need for ICAO to expand its work programme to better plan and synchronize the development and implementation of all relevant TBO enablers. The Conference also highlighted that while ICAO continues its effort in regional and global implementation harmonization, States and PIRGs should focus on planning and implementation of mature and relevant TBO technical enablers, such as system-wide information management (SWIM) and flight and flow – information for a collaborative environment (FF-ICE).

3.9 In discussing specific TBO enablers, the Conference also provided broad support for the proposed actions concerning the development of provisions for automated air-ground trajectory synchronization as well as the investigation of the potential evolution of service delivery policy contained in the *Global Air Traffic Management Operational Concept* (Doc 9854), which could generate the necessary incentives in support of timely transition to TBO. With respect to the recommendations for ICAO KPI guidance contained in AN-Conf/14-WP/70, the Conference agreed to refer them to the appropriate expert group(s) for consideration in progressing TBO guidance development and the *Global Air Navigation Plan* (GANP, Doc 9750) performance framework update. The Conference welcomed the initiatives of studying performance metrics applicable to TBO and highlighted the importance of active collaboration among States and industry especially on a regional level. The Conference encouraged States and industry stakeholders to share the results of these studies with ICAO through appropriate expert group(s) or the GANP change management process.

3.10 Regarding the phasing out of provisions related to the ICAO flight plan, commonly referred to as FPL2012, the Conference noted that the discussion would be concluded under Agenda Item 3.2.

Airspace classification and promoting airspace delegation opportunities

² Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

³ Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, North Macedonia, Norway, San Marino, Serbia, Switzerland, Türkiye, Ukraine, and the United Kingdom.

3.11 AN-Conf/14-WP/94, presented by Japan, discussed measures available to improve airspace capacity and increase fuel savings through the establishment of free route airspace (FRA). The paper, complemented by AN-Conf/14-WP/38, presented by the United Arab Emirates, noted that FRA can be facilitated by considering airspace re-configuration and collaborating with neighbouring States and regions. The Conference, in recognizing that expansion of FRA initiatives across airspace boundaries should increase operational efficiency, agreed that the question of whether additional ICAO provisions and guidance material were necessary to facilitate harmonized FRA implementation should be referred to the appropriate expert group(s) for further consideration.

3.12 AN-Conf/14-WP/39, presented by the United Arab Emirates, discussed implementation of mandatory broadcast zones as a method to improve safety in complex airspace environments. While the use of mandatory broadcasts by visual flight rules aircraft in Class G airspace differed from the airspace classification provisions in Annex 11 – *Air Traffic Services*, the Conference agreed to refer the issue to the appropriate expert group(s) for consideration in conjunction with ongoing work on the applicability and evolution of flight rules stemming from the 41st Session of the Assembly.

3.13 AN-Conf/14-WP/89, presented by CANSO, proposed the need for stronger, more structured assistance from ICAO for cross-border service arrangements that would support States considering the benefits of such arrangements, and to provide guidance on how best to establish them. These arrangements were described as: a) small airspace boundary adjustments between neighbouring States; b) a single air navigation services provider providing air traffic services over more than one State (sometimes focused on upper airspace); and c) the establishment of an entirely new entity to provide air traffic services over multiple States. The paper noted several examples of service arrangements where significant benefits had been accrued, sometimes over many decades, however, a lack of guidance hindered the replication of such centralized airspace configurations. AN-Conf/14-WP/115, presented by the International Transport Workers' Federation (ITF), acknowledged the benefits of cross-border operations of air traffic services, and that such sectorization can be dynamic or fluid. While the paper proposed the need for a framework that incorporated complementary Standards and other safeguards, the Conference recalled existing, successful delegations of airspace, being indicative of the value of the current ICAO provisions across the Annexes.

Space transport operations

3.14 The Conference reviewed working papers: AN-Conf/14-WP/58, presented by Hungary on behalf of the European Union and its Member States⁴, the other Member States of ECAC⁵, EUROCONTROL, and Bolivia (Plurinational State of), Chile, Costa Rica, Cuba, Ecuador, Honduras and Mexico, and co-sponsored by Egypt, Libya and the United Arab Emirates; AN-Conf/14-WP/17, presented by the United States and New Zealand, and co-sponsored by Japan and the Republic of Korea; AN-Conf/14-WP/110, presented by Chile, cosponsored by 20 Latin American Civil Aviation Commission (LACAC) Member States⁶; and AN-Conf/14-WP/72, presented by IATA, IBAC, and IFATCA. These papers outlined the need for a reprioritized work programme for the next triennium to support the growth of the higher airspace and space transport industries, enhanced global coordination for space transport operations as well as longer term objectives, such as fostering strong cooperation between space and aviation sectors. The working papers also discussed the need for the development of guidance material related to airspace integration of space operations, and the importance of understanding the re-entry of space debris and uncontrolled space objects. The Conference supported these working papers, while acknowledging that space transport operations are distinct from higher airspace operations. It also noted, for instance, that space vehicles do

⁴ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

⁵ Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, North Macedonia, Norway, San Marino, Serbia, Switzerland, Türkiye, Ukraine, and the United Kingdom.

⁶ Argentina, Aruba, Belize, Bolivia (Plurinational State of), Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of).

not meet the definition of “aircraft” and, consequently, the airspace integration of such operations should be managed in separate workstreams within ICAO. The Conference recognized that the significant increase in space transport operations warranted that Member States and ICAO should address known airspace efficiency issues, including the development of appropriate guidance material. These issues included NOTAM coordination, stakeholder communication associated with specific operations but also ongoing engagement, consultation, sharing of best practices, ATFM concerns and, except for the use of telemetry data, data-sharing for real-time updates on the status of airspace. The Conference recognized the need for continued collaboration and, potentially joint events, with the Committee on Peaceful Uses of Outer Space, the United Nations Office of Outer Space Affairs (UNOOSA) and other UN agencies, as appropriate, while recognizing air law and space law are subject to different legal regimes.

Higher airspace operations

3.15 AN-Conf/14-WP/131, presented by Saudi Arabia and AN-Conf/14-WP/104, presented by the United States, called ICAO to prioritize higher airspace operations (HAO) in its work programme and include comprehensive solutions for safe separation management of aircraft as they ascend to, descend from, and operate within higher airspace.

3.16 The Conference supported the working papers recalling that they are consistent with, and provide further information to, decisions taken by the 41st Assembly and recommendations by the Thirteenth Air Navigation Conference. The Conference stressed the importance of taking a holistic approach to HAO, including a vision and global concept, as a basis for the step-by-step development of provisions for separation management, contingency planning, and for risk assessment and monitoring methodologies, including for uncontrolled descents of HAO vehicles.

3.17 The Conference reiterated the need for continued collaboration with other UN agencies, as appropriate.

Ground-based augmentation system and satellite-based augmentation system

3.18 The Conference reviewed AN-Conf/14-WP/127, presented by the Dominican Republic and co-sponsored by 19 LACAC Member States⁷, which proposed to consider the inclusion of new NOTAM codes to refer to the ground segment of the ground-based augmentation system Category I, II and III. Noting that the promulgation of information related to the operational status of the system, the Conference questioned the need to amend the codes; however, it was agreed to refer this work to the appropriate expert group(s) for further consideration.

3.19 The Conference reviewed AN-Conf/14-WP/128, presented by the Dominican Republic with the support of 19 LACAC Member States⁶, which highlighted the importance of the satellite-based augmentation system (SBAS) as a precise navigational tool for instrument approaches. The Conference supported the development of SBAS and encouraged further development of instrument procedures. The ongoing work related to the development of SBAS was noted and it was agreed to refer the working paper to the appropriate expert group(s) for further consideration.

Other air traffic management issues

3.20 The Conference reviewed AN-Conf/14-WP/139, presented by Colombia, calling for the development of additional regulations and Standards to support the global implementation of digital air traffic

⁷ Argentina, Aruba, Belize, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of).

services for aerodromes (DATS) and remote towers. The Conference noted that necessary ICAO provisions and guidance material concerning DATS were being developed and agreed to refer the paper to the appropriate expert group(s). The Conference requested that the expert group(s) include in their consideration cybersecurity aspects, as well as the impact of DATS and remote towers on flight safety, cross-border and contingency operations, aircraft equipage, fuel management, and air traffic controller training and licensing. Regarding the development of Standards for the certification and validation of DATS systems suppliers, the Conference also agreed to forward the proposal to the appropriate expert group(s), while noting the early stage of development and the ongoing evolution of DATS technologies.

3.21 The Conference reviewed AN-Conf/14-WP/54 Revision 2, regarding wildlife strike risk management, presented by Australia, Azerbaijan, Brazil, Cambodia, Fiji, India, Indonesia, New Zealand, Pakistan, Philippines, Singapore, Thailand, the United Kingdom, Airports Council International (ACI), Flight Safety Foundation and IATA. The Conference agreed that opportunities for the reduction of bird and other wildlife strike hazards by applying new methodologies and technologies should be considered by experts from an appropriately wide set of disciplines to develop, as appropriate, systematic best practice guidance on wildlife hazards, risk management and flight safety. On this basis, the Conference agreed to refer the contents of the paper to the appropriate expert group(s) for further consideration.

3.22 The Conference reviewed AN-Conf/14-WP/68, presented by China, and noted the efforts taken to promote the development and implementation of airport collaborative decision-making and the sharing of their experience in this respect. The Conference agreed to refer the content of the paper, that promoted the updating of ICAO guidance, particularly the *Manual on Collaborative Air Traffic Flow Management* (Doc 9971), and the sharing of successful implementation projects, to the appropriate expert groups for further consideration.

3.23 The Conference reviewed AN-Conf/14-WP/119, presented by Japan and Singapore, which highlighted the impact of ATM operations on reducing emissions in support of LTAG. The Conference was reminded that work was already ongoing in this area, particularly in respect of a review of the guidance for continuous climb operations and continuous descent operations, and agreed to refer the content of the paper to the appropriate expert group(s) for further consideration.

3.24 Information papers provided by: Brazil (AN-Conf/14-WP/189, AN-Conf/14-WP/190, AN-Conf/14-WP/191 and AN-Conf/14-WP/192); Brazil with the support of the United States and LACAC Member States⁸ (AN-Conf/14-WP/133); Chile with the support of 20 LACAC Member States⁹ (AN-Conf/14-WP/111 and AN-Conf/14-WP/112); China (AN-Conf/14-WP/174, AN-Conf/14-WP/175, AN-Conf/14-WP/181, AN-Conf/14-WP/182, AN-Conf/14-WP/183 and AN-Conf/14-WP/184); China, Singapore and Thailand (AN-Conf/14-WP/69); China and Thailand and co-sponsored by Singapore (AN-Conf/14-WP/178); China and co-sponsored by the Lao People's Democratic Republic (AN-Conf/14-WP/177); the Dominican Republic with the support of 19 LACAC Member States¹⁰ (AN-Conf/14-WP/129); South Africa (AN-Conf/14-WP/204 and AN-Conf/14-WP/205); Spain (AN-Conf/14-WP/162); the United Arab Emirates (AN-Conf/14-WP/42, AN-Conf/14-WP/43, AN-Conf/14-WP/45, AN-Conf/14-WP/46, AN-Conf/14-WP/47, AN-Conf/14-WP/169 and AN-Conf/14-WP/171); the United Kingdom (AN-Conf/14-WP/165); the United Kingdom and the United States (AN-Conf/14-WP/203); the United States (AN-Conf/14-WP/200); Uruguay with the support of 20 LACAC Member States¹¹ (AN-Conf/14-WP/156);

⁸ Argentina, Aruba, Belize, Bolivia (Plurinational State of), Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of).

⁹ Argentina, Aruba, Belize, Bolivia (Plurinational State of), Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of).

¹⁰ Argentina, Aruba, Belize, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of).

¹¹ Argentina, Aruba, Belize, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru and Venezuela (Bolivarian Republic of).

Venezuela (Bolivarian Republic of) (AN-Conf/14-WP/18 and AN-Conf/14-WP/30); the African Civil Aviation Commission (AFCAC) on behalf of 54 Member States¹² (AN-Conf/14-WP/85); the Air Transport Action Group (ATAG), ACI, CANSO, IATA, IBAC, International Coordinating Council of Aerospace Industries Associations (ICCAIA), IFATCA and International Federation of Air Line Pilots' Associations (IFALPA) (AN-Conf/14-WP/51); CANSO and IFATCA (AN-Conf/14-WP/35); the Central American Corporation for Air Navigation Services (COCESNA) on behalf of Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua (AN-Conf/14-WP/50); IATA (AN-Conf/14-WP/81); and IATA and IBAC (AN-Conf/14-WP/80) were noted.

3.25 As a result of the discussion, the Conference approved the following recommendations:

Recommendation 3.1/1 – Project 30/10 - Optimized implementation of longitudinal separation minima

That States:

- a) within the processes of the planning and implementation regional groups, actively collaborate with neighbouring States to implement Project 30/10 – implementation of longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere;

that ICAO:

- b) through the planning and implementation regional groups, develop regional action plans for the implementation of Project 30/10;
- c) monitor and support inter-regional collaboration for a harmonized implementation of Project 30/10; and
- d) consider other minimum service level procedures, via a framework, for implementation in oceanic and remote airspace.

Recommendation 3.1/2 – Study into the feasibility of establishing an ICAO air navigation efficiency programme

That ICAO undertake a study into the feasibility of establishing an ICAO air navigation efficiency audit programme, or other suitable initiative, involving States and international organizations throughout the study.

¹² Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Recommendation 3.1/3 – Enabling successful deployment of trajectory-based operations

That States:

- a) and regions expedite the implementation of trajectory-based operations enablers that are considered mature and relevant; and
- b) support ICAO in expediting its work programme on trajectory-based operations and its enablers, including the development of a plan and timeline for their implementations;

that ICAO:

- c) develop and maintain an ICAO work programme addressing the full scope of trajectory-based operations;
- d) develop ICAO provisions and guidance for automated air-ground trajectory synchronization; and
- e) investigate the need for the evolution of service priority policy in support of trajectory-based operations implementation.

Recommendation 3.1/4 – Free route airspace

That States:

- a) actively collaborate with neighbouring States to implement free route airspace;

that ICAO:

- b) develop provisions and guidance material to support harmonized implementation of free route airspace, including implementation across airspace boundaries and regions.

Recommendation 3.1/5 – Delegation of responsibility for provision of air traffic services

That ICAO develop a framework to support States considering delegation of responsibility for provision of air traffic services.

Recommendation 3.1/6 – Addressing the safe integration of space transport operations into the airspace system

That ICAO:

- a) work with Member States and international organizations to identify, compile and publish best practices, as necessary, related to the safe and efficient air navigation of aircraft around space transport operations; and
- b) develop guidance material for air navigation services providers related to the integration of space transport operations, including NOTAM dissemination, stakeholder communication

associated with specific operations, air traffic flow management, and data-sharing for real-time updates on the status of the airspace, excluding telemetry data of launch vehicles.

Recommendation 3.1/7 – Higher airspace operations

That ICAO:

- a) develop a holistic vision and global concept for higher airspace operations, including regulatory approval, coordination responsibilities and liability, for inclusion in its work programme for the next triennium; and
- b) develop provisions related to the safe and efficient transit of aircraft through controlled airspace and separation management in higher airspace, including air traffic management procedures contingency planning and risk assessment and monitoring methodologies, including for uncontrolled descents of higher airspace operations vehicles.

Agenda Item 3: Air navigation system performance improvement

3.2: Phasing out legacy systems

Optimizing and/or phasing out legacy systems

3.26 The Conference reviewed AN-Conf/14-WP/96, presented by Japan, which highlighted the need for a globally defined methodology for optimizing the use of legacy systems. Recognizing challenges faced by States and the benefits of innovation in the aviation system, particularly in the areas of communications, navigation and surveillance (CNS), the Conference agreed that ICAO should consider including optimization of utilizing legacy systems in the development of the CNS technology roadmap, leveraging the CNS minimum operation network concept in a globally harmonized manner. The Conference also stressed the importance of ensuring alignment with the GANP as well as taking into account local requirements for air navigation system resilience.

3.27 The Conference reviewed AN-Conf/14-WP/41, presented by the United Arab Emirates, which highlighted the benefits of modern ATM systems over existing legacy systems, and advocated the need for phasing out legacy systems to enhance the efficiency, safety and sustainability of global air navigation. Noting that ICAO provisions concerning disruption of services and contingency planning continued to apply, the Conference encouraged States to adopt a phased implementation plan to transition to modern ATM systems. The Conference agreed on the need for a global framework to guide the transition from legacy systems, and for a knowledge-sharing platform to facilitate the exchange of best practices and lessons learned, while recalling the important role of ICAO in implementation support.

Transition to flight and flow – information for a collaborative environment services and cessation of FPL2012

3.28 The Conference reviewed AN-Conf/14-WP/11, presented by the Secretariat, which outlined the progress made in the development of global provisions and guidance to enable the elective implementation of the FF-ICE services. The paper highlighted the potential challenges associated with the prolonged mixed-mode operations of the ICAO flight plan provisions, commonly referred to as FPL2012, and FF-ICE services, and proposed 2034 as a global target date for the cessation of FPL2012. The paper also proposed channelling appropriate efforts and resources of States, industry and ICAO to accelerate the harmonized implementation of FF-ICE services.

3.29 The Conference reviewed several papers that supported and complemented the proposed actions in AN-Conf/14-WP/11, including: AN-Conf/14-WP/71, presented by the United Arab Emirates; AN-Conf/14-WP/134, presented by Brazil and supported by LACAC Member States¹³; AN-Conf/14-WP/49, presented by the Agency for Air Navigation Safety in Africa and Madagascar (ASECNA) on behalf of its 18 African Member States¹⁴; and AN-Conf/14-WP/77, presented by IATA, IFALPA, IFATCA and IBAC.

3.30 The Conference also recalled the following working papers presented under Agenda Item 3.1: AN-Conf/14-WP/60, presented by Hungary on behalf of the European Union and its Member States¹⁵, the other Member States of ECAC¹⁶ and EUROCONTROL on setting an ambitious date for cessation of FPL2012; and AN-Conf/14-WP/48, presented by China, Indonesia, Japan, New Zealand, Republic of Korea, Singapore, Thailand, the United States and CANSO, on expediting the implementation of TBO building blocks, such as FF-ICE and SWIM, to prevent a prolonged period of mixed-mode operations.

3.31 The Conference reaffirmed the significant benefits that global implementation of FF-ICE services would bring about and expressed broad support for the need to minimize the duration of mixed-mode operations. The Conference acknowledged that prolonged mixed-mode operations would require additional resources to manage the complexity of both flight plan processing systems thus impeding the take-up rate of FF-ICE services and negating expected benefits. As a result, the Conference agreed on the need to establish a global target date to terminate the mixed-mode operations. It was further agreed that the efforts of ICAO be focused on developing necessary provisions and guidance to enable the global cessation of FPL2012.

3.32 The Conference emphasized the importance of an inclusive and coordinated approach on national and regional levels for planning the transition to FF-ICE services, and the critical role that the PIRGs would play in this process. Also stressed, was the need for collaboration among States to share experiences and resources, and the necessary guidance and support from ICAO. The Conference also recognized the benefits of establishing regional focus groups, as necessary, that would be tasked to coordinate and monitor the planning and implementation of FF-ICE services and provide necessary support throughout the transition period.

3.33 Concerning the global target date for the cessation of FPL2012, the Conference expressed strong support for the year 2034, recognizing the time required for States and industry to prepare for implementation and for ICAO to amend relevant provisions and guidance. It was further agreed, recalling the No Country Left Behind initiative, that ICAO should periodically assess and report on the readiness of the global ATM community, and factor this into determining the applicability dates for proposals for amendment to ICAO provisions concerning the cessation of FPL2012.

3.34 Information papers provided by the Netherlands (AN-Conf/14-WP/158 and AN-Conf/14-WP/159) were noted.

¹³ Argentina, Aruba, Belize, Bolivia (Plurinational State of), Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela (Bolivarian Republic of).

¹⁴ Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Gabon, Equatorial Guinea, Guinea Bissau, Madagascar, Mali, Mauritania, Niger, Rwanda, Senegal, Togo.

¹⁵ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

¹⁶ Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, North Macedonia, Norway, San Marino, Serbia, Switzerland, Türkiye, Ukraine, and the United Kingdom.

3.35 As a result of the discussion, the Conference approved the following recommendations:

Recommendation 3.2/1 – Phasing out and/or optimizing the use of legacy systems

That States:

- a) adopt a phased implementation plan for transitioning to modern communications, navigation and surveillance, and air traffic management systems while maintaining a minimum operation network for the provision of resilient air navigation services;

that ICAO:

- b) develop a global framework to guide Member States in phasing out and/or optimizing the use of legacy systems, ensuring consistency and interoperability;
- c) consider including a methodology to optimize the utilization of legacy systems in the communications, navigation and surveillance technology roadmap, leveraging the communications, navigation and surveillance minimum operation network concept, in a globally harmonized manner;
- d) establish a knowledge-sharing platform for Member States to share experiences, challenges and best practices related to the transition from legacy systems to modern air traffic management technologies; and
- e) provide implementation support for the transition from legacy systems to modern air traffic management technologies.

Recommendation 3.2/2 – Transition to flight and flow – information for a collaborative environment services and cessation of ICAO 2012 flight plan by 2034

That States:

- a) in support of the 2034 global cessation of the ICAO 2012 flight plan, commence the development of a national plan to transition to flight and flow – information for a collaborative environment services along with industry stakeholders;
- b) include plans for the implementation of both minimum and optional flight and flow – information for a collaborative environment services in the national air navigation plans;
- c) share experience and information for the implementation of flight and flow – information for a collaborative environment services;
- d) and planning and implementation regional groups, consider establishing regional focus groups for coordinating the planning and implementation of flight and flow – information for a collaborative environment services and providing necessary support throughout the transition period; and
- e) support and contribute to the work of their respective planning and implementation regional group and their sub-groups to develop a regional plan to transition to flight and flow –

information for a collaborative environment services on the basis of the 2034 global cessation of the ICAO 2012 flight plan;

that ICAO:

- f) amend relevant ICAO provisions and guidance material to enable the 2034 global cessation of the ICAO flight plan and associated air traffic services messages;
- g) through planning and implementation regional groups, provide guidance and support for the development of regional plans to transition to flight and flow – information for a collaborative environment to enable the 2034 global cessation of the ICAO 2012 flight plan;
- h) support inter-regional collaboration for a harmonized implementation of and transition to flight and flow – information for a collaborative environment services;
- i) monitor and support the progress of flight and flow – information for a collaborative environment services implementation and transition plan developments of States; and
- j) conduct a periodic assessment and report on the readiness of the global air traffic management community for the 2034 global cessation of the ICAO 2012 flight plan.

Agenda Item 3: Air navigation system performance improvement
3.3: Eighth Edition of the Global Air Navigation Plan (GANP)

Global Air Navigation Plan development

3.36 AN-Conf/14-WP/12, presented by the Secretariat, brought forward proposals for a series of major updates to the strategic and technical levels of the seventh edition of the *Global Air Navigation Plan* (GANP, Doc 9750), which would subsequently be presented for endorsement by the 42nd Session of the ICAO Assembly, as the eighth edition. The Conference agreed, in principle, with the proposed updates to the global strategic level. Mainly, the addition of two challenges and opportunities to reflect the priority areas of the 41st Session of the Assembly, a new approach to new entrants and artificial intelligence, the mapping between the strategic and technical levels, as well as the update to the performance ambitions and conceptual roadmap.

3.37 Regarding the proposed updates to the global technical level, the Conference agreed, in principle, with the update of the environment key performance area and the resilience focus area of the GANP performance framework. The Conference also agreed that the manner in which some environmental measures are referenced in the performance objectives should be reviewed by the appropriate expert group(s). The Conference noted that the latest industry technologies had been reflected in the ASBU framework. The Conference also acknowledged the need for ICAO to continue updating the global technical level, based on the changes to the strategic level, as highlighted in AN-Conf/14-WP/132, presented by Saudi Arabia and AN-Conf/14-WP/152, presented by the Republic of Korea. Given the importance of performance management and the integration of new concepts, the Conference agreed that ICAO: streamline the performance framework considering regional needs; update the link between the ASBU and the performance framework, including the areas of environment and resilience; develop guidance material and adopt validated use cases to support the deployment and implementation of new concepts. To facilitate this task, the Conference urged all Member States that have experience with new concepts to share their experience with other States through ICAO.

3.38 To improve the understanding of the GANP's structure, context and traceability of changes between its editions, the Conference agreed on the need to develop efficient communication strategies.

3.39 The Conference noted the concerns expressed in AN-Conf/14-WP/152 regarding the development of the electronic system for the management of regional air navigation plans (ANPs), in terms of timeliness, revision transparency and historical tracking of the revision process. The Conference agreed on the need for clear revision procedures and presentation methods, while preserving the original functions of the ANP and acknowledging the challenges of exclusively using online resources as reliable reference documents. ICAO should involve all relevant stakeholders in this development and roll-out process.

3.40 AN-Conf/14-WP/33, Revision 1 and AN-Conf/14-WP/64, Revision 1, presented by Iran (Islamic Republic of), raised the challenges regarding sanctions on civil aviation, limiting Iran (Islamic Republic of) in developing their air navigation system in line with ICAO provisions and the GANP. The Conference noted that the subject of sanctions was not limited to air navigation and had been raised at previous ICAO Assemblies by several States, including Iran (Islamic Republic of). The Conference also noted that the impact of sanctions on civil aviation and the planning for improving air navigation services was beyond the mandate of the ICAO expert group(s). The Conference highlighted that the subject of sanctions was outside of the scope of the Conference and recalled that the Economic Commission, during the 41st Session of the ICAO Assembly, recognized that sanctions issues were complex, political and sensitive, and it was decided that these matters be brought to the attention of the President of the Council, whose good offices had been involved in these issues in the past.

Global Air Navigation Plan implementation

3.41 The Conference supported AN-Conf/14-WP/84 and AN-Conf/14-WP/87, presented by AFCAC on behalf of 54 Member States¹⁷, which addressed the fragmented and non-uniform implementation of the GANP. AN-Conf/14-WP/84 emphasized the need to address the challenges that impede the implementation of air navigation efficiency improvements to effectively contribute to the achievement of the ICAO LTAG of net zero CO₂ emissions by 2050, a priority area to be reflected in the eighth edition of the GANP, as proposed in AN-Conf/14-WP/12. To address these challenges, the Conference encouraged States to take advantage of available funding sources, as well as to adopt cost effective and affordable mechanisms to address infrastructure gaps and leapfrogging. The Conference also urged ICAO to incorporate the necessary policies and guidelines, enable resource sharing, and promote the uniformity of application and mutual recognition of regulatory frameworks.

3.42 AN-Conf/14-WP/87 identified additional challenges, impeding the successful implementation of strategies outlined in the GANP, to attain a globally interoperable and seamless air navigation system. The Conference noted that ICAO should continue supporting all Member States through existing mechanisms, including regional plans and their associated programmes by providing increased training aimed at developing capacity to enhance implementation of the GANP. It was also recognized that workshops, in partnership with international organizations, would continue to be a cornerstone of educating policymakers on the importance of GANP implementation, as would the mobilization of funds for timely GANP implementation strategies, such as the Basic Building Blocks, infrastructure development and the ongoing assistance to States to develop their national ANPs to align with the regional ANPs.

¹⁷ Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

3.43 AN-Conf/14-WP/117, presented by ITF, outlined the need to develop Procedures for Air Navigation Services (PANS) and guidance material related to training of air traffic operations specialists. The Conference, while recognizing that training was an important aspect of implementation of air navigation improvements, expressed concerns that it was premature to develop PANS and guidance material for a new broad category of professionals that encompassed many unique roles and training needs. Nonetheless, the Conference noted that some of the air traffic operations specialists' roles were already addressed in PANS provisions.

3.44 Information papers provided by: Brazil (AN-Conf/14-WP/193); China (AN-Conf/14-WP/179); Saudi Arabia (AN-Conf/14-WP/194 and AN-Conf/14-WP/195); and Uruguay and 19 LACAC Member States¹⁸ (AN-Conf/14-WP/155) were noted.

3.45 As a result of the discussion, the Conference approved the following recommendations:

Recommendation 3.3/1 — Update to the global strategic level of the seventh edition of the Global Air Navigation Plan (GANP, Doc 9750)

That States:

- a) agree in principle with the addition of two challenges and opportunities, recognizing the priority areas of the 41st Session of the Assembly; the approach to the new entrants and artificial intelligence and the approach to map the strategic and technical levels, in the draft eighth edition of the Global Air Navigation Plan, to be presented for endorsement by 42nd Session of the Assembly; and
- b) agree in principle with the proposed update to the performance ambitions and conceptual roadmap;

that ICAO:

- c) take into consideration input from the Conference and other input arising from States, international organizations and other stakeholders in order to finalize the development of the eighth edition of the Global Air Navigation Plan for subsequent endorsement at the 42nd Session of the Assembly; and
- d) develop efficient communication strategies with Member States to enhance the accessibility, visibility and traceability of revisions to the entire GANP structure and context, from strategic to technical levels, and consider the development of an integrated document as part of this approach, for future updates of the GANP.

Recommendation 3.3/2 — Update to the global technical level of the seventh edition of the Global Air Navigation Plan and its regional and national levels

That States:

- a) agree in principle with the update of the environment key performance area, which will be reviewed by the appropriate expert groups, noting the ongoing work of the Committee on

¹⁸ Argentina, Aruba, Belize, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic and Venezuela (Bolivarian Republic of).

Aviation Environmental Protection on monitoring and reporting metrics for the long-term aspirational goal 2050, covering all in-sector CO₂ emissions reductions;

- b) agree in principle with the resilience focus area;
- c) use, in collaboration with the regional offices, the electronic system for the management of regional air navigation plans, when available; and
- d) consider the national air navigation plan template, when available;

that ICAO:

- e) update the performance assessment of the Aviation System Block Upgrade framework, with the new objectives on the environment key performance area and resilience focus area;
- f) continue the update of the Aviation System Block Upgrade framework and reflect the two additional challenges and opportunities proposed, recognizing the priority areas of the 41st Session of the Assembly, for the eighth edition of the Global Air Navigation Plan, to be presented for endorsement by 42nd Session of the Assembly;
- g) develop and disseminate a roll-out plan for the electronic system for the management of the regional air navigation plans, including clear revision procedures and presentation methods, in coordination with all relevant stakeholders, and provide the national air navigation plan template; and
- h) take into consideration input from the Conference and continue to work with States, international organizations and other stakeholders on the development of the eighth edition of the Global Air Navigation Plan for subsequent endorsement at the 42nd Session of the Assembly.

— END —