Third Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/3)

Video Teleconference, 9 to 11 February 2022

Agenda Item 2: Planning, Design, Construction and Operations of Aerodromes

ICAO HQ UPDATE ON AGA MATTERS

(Presented by the Secretariat)

SUMMARY

This paper presents information related to aerodrome activities carried out recently in the Airport Operations and Infrastructure section, Air Navigation Bureau, ICAO Montreal.

1. INTRODUCTION

1.1 The Airport Operations and Infrastructure Section (AOI) delivers ICAO provisions on aerodrome matters to support States, air navigation service providers, aerodrome operators and air operators to achieve the relevant regulatory and operational improvements through its multi-disciplinary work programmes and technical expertise. The Section advises States, ICAO Council and Air Navigation Commission (ANC) on aerodrome matters with overall responsibility for Annex 14 — *Aerodromes*, *Procedures for Air Navigation Services (PANS) - Aerodromes* (Doc 9981) and related documents.

1.2 In order to achieve the above, various programmes and activities had been conducted with the assistance of the Aerodrome Design and Operations Panel (ADOP). The Panel continues the tasks of the former Aerodromes Panel with greater emphasis on efficiency and capacity issues through enhanced aerodrome operations. It also undertakes specific studies and subsequently develops provisions relating to aerodrome design and operations, as outlined in the Global Air Navigation Plan (ICAO GANP Portal) and Global Aviation Safety Plan (Doc 10004).

2. DISCUSSION

Recent amendments to Annex 14 and PANS-Aerodromes (Doc 9981)

2.1 State letter AN 4/1.2.28-20/35 dated 3 April 2020 contains **Amendment 15** to **Annex 14, Vol I** with applicability dates of November in the years 2020, 2022 and 2024. The amendment consists of:

a) (aerodrome design and operations) specifications concerning, inter alia, provisions related to airport master planning for the expansion of existing and construction of new airports to cater for the rapid growth of air transport; accommodation of aeroplanes with folding wing tips; a new methodology for reporting pavement strength; improvements to selected physical characteristics and visual aids used at aerodrome with the objectives of enhancing safety as well as capacity and efficiency; and

b) (aerodrome operational management) consists essentially of the inclusion of notes to the specifications stemming from the amendment to the *Procedures for Air Navigation Services (PANS) - Aerodromes* (Doc 9981) as a result of the introduction of new chapters on aerodrome operational management (training; inspections of the movement area; work in progress; foreign object debris control; wildlife hazard management; apron safety; runway safety; and airside driver permit scheme and vehicle/equipment safety requirements).

2.2 State letter AN 10/1.1, AN 11/1.3.33, AN 11/6.3.32, AN 3/5.13, AN 4/1.2.29, AN 2/2.7, AN 13/2.1, AN 4/27 and AN 2/33-20/73 dated 30 July 2020 contains **Amendment 16** to **Annex 14, Vol I** with a deferred applicability date of 4 November 2021 regarding changes to applicability dates of SARPs and PANS related to the enhanced global reporting format for assessing and reporting runway surface conditions (GRF) due to the COVID-19 pandemic.

2.3 State letter AN 4/16.10-20/22 dated 6 April 2020 contains **Amendment 9** to **Annex 14, Vol II** with applicability dates of 5 November 2020. The amendment covers extensive amendments related to heliport physical characteristics, visual aids and rescue and firefighting, as well as modifications to several associated definitions. In addition, due to the restructuring of Annex 15 — *Aeronautical Information Services*, a consequential editorial amendment to Notes 1 and 2 of paragraph 2.4.5 is included in the Amendment 9 to Annex 14, Volume II.

2.4 State letter AN 4/27-20/25 dated 10 June 2020 contains **Amendment 3** to **PANS-Aerodromes (Doc 9981)** with applicability dates of 5 November 2020 and 28 November 2024 (pavement rating). The amendment consists of eight new chapters regarding day-to-day aerodrome operational management and from the third meeting of the Aerodrome Design and Operations Panel (ADOP/3) regarding a consequential amendment to the PANS-Aerodromes concerning aerodrome specifications (see para 2.1 b) above).

AGA Work Programme via Job Cards

2.5 The work of the ADOP is managed through a system of job-cards, approved by the ANC, in order to clearly define the work the Panel intends to undertake and to ensure that there is sufficient information on context, justification, milestones and clear deliverables for all work items of the Panel in order to facilitate monitoring and reporting.

2.6 In the area of aerodromes, currently there is a total of 17 (+1*) job cards covering all aspects of aerodrome design and operations, including heliports. Brief statements of each job card describing the nature of work is included in **Attachment** to this information paper.

(integration of RPAS at aerodromes)*

Updates to Guidance Materials

2.7 In support of the amendments in paragraphs 2.1 to 2.4, and as part of the ongoing process of continual updates to guidance materials, Secretariat had successfully updated, and/or developed new, the guidance materials below:

***Aerodrome Design Manual (*Doc 9157) series:**

- Part I RUNWAYS:
  (new) 4th Edition, 2020 (available on ICAO-NET)

- Part 2 TAXIWAYS, APRONS & HOLDING BAYS:
  (new) 5th Edition, 2020 (available on ICAO-NET)

- Part 3 PAVEMENTS:
  (new) 3rd Edition, 2021 (final editing in progress)

- Part 4 VISUAL AIDS:
  (new) 5th Edition, 2020 (available on ICAO-NET)

***Airport Services Manual (*Doc 9137) series**

- Part 3 WILDLIFE HAZARD MANAGEMENT:
  (new) 5th Edition, 2020

Others

- Manual on Ground Handling (Doc 10121):
  (new) 1st Edition, 2019

- Heliport Manual (Doc 9261), Part I (Offshore Manual)
  (new) 4th Edition, 2020

- Heliport Manual (Doc 9261), Part II (Onshore Manual)
  (new) 4th Edition, 2021 (final editing in process)

- Airport Planning Manual (Doc 9184), Part 1 — Master Planning
  (new) 3rd Edition, 2022 (in progress)

- Manual on Certification of Aerodromes (Doc 9774)
  (new) 2nd Edition, 2022 (in progress)

- Manual on the ICAO Bird Strike Information System (IBIS) (Doc 9332)
  (new) 2nd Edition, …. (in progress)

Current Issues

ICAO initiative for Aerodromes Restart – iPack

2.8 Resuming aerodrome operations after a partial or full aerodrome closure due to COVID-19 pandemic involves extensive preparatory checks to ensure safety and efficiency. To this end, a sample checklist had been developed to facilitate a quick recovery for aerodromes by checking key elements in areas such as aerodrome infrastructure, aerodrome operations, certification and compliance, coordination and collaboration, and human resource, competency and training. Further details are available on ICAO COVID-19 AGA webpage at: https://www.icao.int/safety/COVID-19OPS/Pages/aga.aspx

2.9 AOI provided support to States and airports to cope with the challenges caused by the COVID-19 pandemic, through Implementation Packages (iPack). An iPack is a bundle of standardized guidance material, training, tools and expert support, which aim to facilitate and guide the implementation of Annex 14, Vol I provisions for State entities (e.g. Governments, Civil Aviation Authorities, National Air Transport Facilitation Committees...), aviation service providers, supply chain stakeholders and their personnel.

2.10 An iPack on Aerodromes Restart had been developed to facilitate and guide Civil Aviation Authorities and/or aerodrome operators in applying Annex 14, Volume I and other relevant ICAO provisions, to ensure safety, regularity and efficiency of aerodrome operations after a partial or full aerodrome closure due to the COVID-19 pandemic.

2.11 The objective of this Aerodromes Restart iPack is that after having successfully implemented this iPack, CAAs and/or aerodrome operators will be better equipped to ensure a safe and seamless restart of aerodromes:

(a) review the conditions of aerodrome infrastructure, and initiate actions, as necessary;

(b) review the procedures relating to aerodrome operations and initiate actions, as necessary;

(c) review the status of aerodrome certification and compliance and initiate actions, as necessary;

(d) review the coordination and collaboration processes required at an aerodrome and initiate actions, as necessary; and

(e) review aerodrome related human resources, competency and training requirements and initiate actions, as necessary.

2.12 To support the achievement of the above objectives, the Aerodromes Restart iPack includes relevant documentation, tools and an online course. A dedicated expert will work remotely with the CAA and/or aerodrome operator, providing guidance in their implementation efforts to achieve the objectives of the iPack.

2.13 To further support States in their restart activities, an Aerodrome Restart online course has been developed, through ICAO's Global Aviation Training Section. This course, of a 5 hour duration, aims to provide Civil Aviation Authorities and aerodrome operators with the knowledge and skills required in applying Annex 14, Volume I and other relevant ICAO provisions, to ensure safety, regularity and efficiency of aerodrome operations after a full or partial aerodrome closure due to the COVID-19 pandemic.

2.14 In addition to being integrated in the iPack referenced in para 2.13, this course can be procured independently through ICAO's training website. This website also provides descriptions of over 200 courses available in virtual, online and classroom formats, including newly developed courses related to COVID-19, and can be accessed through the following link:

https://www.icao.int/training/Pages/Training-Catalogue.aspx

Tasks arising from 40th session of ICAO Assembly

2.15 The 40th Session of the Assembly (A40) was held from 24 September to 4 October 2019 at ICAO Headquarters. The A40 resulted in the adoption of Assembly Resolutions and decisions, of which the implementation timeline was assessed against the impact of the COVID-19 pandemic.

2.16 A number of subjects had been raised in the Assembly related to aerodromes:

a) *Global provisions for design, certification and operations of water aerodromes*

Review existing SARPs related to aerodromes and develop specific SARPs in the appropriate Annexes to the Convention in order to address the design, certification, management, safety and reporting requirements for water aerodromes operations.

b) *Small aerodromes in mountainous areas*

Review guidance contained in *Stolport Manual* (Doc 9150) with a view to updating the material.

c) *Assistance to Victims of Air Disaster*

Refer to the appropriate expert groups issues raised regarding appropriate plans on providing timely and effective assistance to aircraft accident victims and their families within emergency plans of airport operators.

d) *Securing land reserves*

Raise awareness on the impact of illegal occupation of airports on the safe operation and expansion of airports (action taken via State letter AN 4/17 – 21/9 dated 10 February 2021)

e) *Aerodrome certification*

Review aerodrome certification provisions to ensure certification coverage at aerodromes where operational responsibilities are shared between independent organizations with updated guidance in Doc 9774 complementing SARPs and PANS-Aerodromes.

2.17 During the mid-triennial review of the implementation of resolutions and decisions of A40, it was noted that several decisions of the Assembly require ICAO to identify resources for implementation. In light of this, further work on the items listed in paragraph 2.16 (except items d) and e)) will be progressed pending the identification of resources.

Implementation Programmes

Global Reporting Format

2.18 ICAO HQ has continued to work closely with the regional offices to encourage States and industry to prepare for the 4 November 2021 applicability date. Since the GRF Global Symposium of 2019, some 20 ICAO-sponsored regional seminars and workshops have taken place, initially as face-to-face, but more recently as virtual events. These have been reinforced by States and industry seminars and workshops. This programme of events is on-going and will continue until the applicability date.

2.19 In parallel to awareness events a series of training courses has been developed, targeting airport operations staff, flight crew and air traffic services. These courses have been developed by ICAO/GAT in cooperation with ACI, IATA and CANSO, respectively. These courses are only available in the English language, but there is now a facility, through ACI, to arrange an on-line instructor-based course for airport operations staff in Spanish. Other languages may be including should a demand emerge.

2.20 Although a complete set of ICAO SARPs and guidance has been published, additional clarifications and guidance in support of implementation are being developed when the need arises. Example topics are ATIS messages, use of the SNOWTAM, change management when implementation the GRF, runway assessment techniques and the upgrade/downgrade procedure.

2.21 Finally, an implementation monitoring process based upon a set of implementation milestones and data provided through the regional offices has been developed. This process includes an implementation map that is already available on the ICAO GRF web page at https://www.icao.int/safety/Pages/GRF.aspx.

2.22 Recent surveys by IATA and ACI indicate that their membership is increasingly aware of the need to implement the GRF there are still gaps. Therefore, ICAO's efforts in support of implementation need to continue.

Runway Safety

2.23 Half of all aviation accidents are related to runway safety, which remains a top priority for ICAO. The Runway Safety Programme (RSP), a collaborative effort between ICAO and its stakeholders aiming to reduce the number of runway safety related accidents, has stepped up its efforts over the last year.

2.24 Starting with a global webinar highlighting the potential link between runway safety, confidence in aviation and the challenges faced during the crisis and recovery. Building upon this, a RSP meeting took place in early 2021, when it was agreed to launch an update 2017 Global Runway Safety Action Plan (GRSAP) for delivery by Q2 2022. The meeting also confirmed the importance of Runway Safety Teams (RST), but noted that they needed to be established at more airports. To this end, there was agreement to arrange a second global runway safety webinar, focusing on RST, to take place during Q4 2021.

2.25 In parallel, the ICAO runway safety Go-Team methodology has been updated to better facilitate the use of virtual means. A closer cooperation with ACI's APEX programme is also being explored. An effective cooperation between ICAO HQ and the Regional Offices is achieved through regular coordination meetings and collaboration on activities such as the aforementioned revision of the Go-Teams methodology. Regional Officers also participate in the RSP meetings. More information on runway safety is available at https://www.icao.int/safety/RunwaySafety/Pages/default.aspx.

OLS Global Symposium

2.26 The 12th Air Navigation Conference and the 38th ICAO Assembly called for a review of the Annex 14 Obstacle Limitation Surfaces (OLS). This task is allocated to the OLS Task Force (OLSTF) and included in job card ADOP003 (see **Attachment**). The results of this work will bring significant changes to management of obstacles, resulting in improvements to aircraft operations and civil planning with the provisions planned for an applicability year of 2026.

2.27 To raise awareness and secure 'buy-in' early coordination with a wide range of stakeholders took place, commencing with a global symposium which was held virtually on 8 - 10 December 2021 in cooperation with ACI. This global symposium presented the new OLS methodology and provided affected stakeholders the opportunity to discuss and provide feedback on the change. All materials related to Global Symposium on OLS is available at https://www.icao.int/Meetings/OLSS2021/Pages/presentations.aspx.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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BRIEF DETAILS OF ADOP JOB CARDS

ADOP 001 *Assessment and reporting of runway surface conditions*

While techniques for the measurement of runway friction provide useful information for runway surface friction maintenance purposes, they are not suitable in all weather conditions when the runway is contaminated and the information when used in reports could be misleading to pilots. Reports used by pilots need to be reviewed for adequacy, completeness and relevance. Pilots of modern aircraft also need reports that are directly related to the performance of the aircraft. Aerodrome operators need clear guidelines on maintaining runway friction and assessing conditions for reports. Developments have also taken place in runway pavement design and construction that aid friction and drainage. The current guidance on measuring and maintaining runway friction, accounting for the entire runway surface, will be reviewed and updated as necessary.

ADOP 002 *Aircraft arresting systems*

Amendment 11 to Annex 14 Volume 1 establishes the installation of an arresting system in lieu of part or all of a runway end safety area (RESA) subject to acceptance by the State. Some guidance material is developed on the parameters that should be considered in the design of an arresting system. Further work is needed to develop a definition of arresting system, provisions for the promulgation (in Annex 14) and to address operational issues, including undershoots and access by emergency services and inconsistency with existing provision 9.9.4 and 9.9.5. There may be a need to review existing guidance material for RESA.

ADOP 003 *Obstacle limitation surfaces at aerodromes*

Annex 14 Vol I Obstacle Limitation Surfaces mostly reflect considerations applicable before the 1970`s and do not address capabilities of the modern aircraft operations. The Obstacle limitation surfaces as currently specified in Annex 14 Vol I do not properly bound the intended instrument procedures and they may not be relevant to the obstacle environment for those procedures. The degree of freedom from obstacles at and in the proximity of an aerodrome should be balanced in order to ensure a safe and efficient use of the aerodrome environment. Annex 14 Vol I surfaces do not take into account the operations required for that aerodrome, in both near-term and long-term conditions; in these conditions it is extremely difficult and costly for States to justify airspace protection limits. Current provisions are lacking of standards and guidelines for conducting aeronautical studies to assess permissible penetrations as a harmonized process that is uniformly applied by States. As a consequence of the problem statements above indicated, a review of the obstacle limitation surfaces (OLS) applied at aerodromes and guidance on a penetration of any OLS is required.

ADOP 005 *Review of Aerodrome Reference Code design method and governing parameters*

Annex 14 Volume establishes the Aerodrome Reference code system which interrelates design characteristics. Aircraft design factors have changed, notably the relationship between wingspan and landing gear width. Landing gear widths are mostly related to fuselage width, not to wingspan, hence some inconsistencies for some aeroplanes, including the Dash 8-400, 757, 747-8, 777-8/9, AN124 and A380. Consideration must be made to separate the reference field length from aeroplane design code. Further, flight profile (arrival / departure) and associated minima must be introduced to support designs that will enable future development

of the GANP. Design allowances are needed for aeroplanes that have been certified to operate on runway widths that are one reference code lower than would otherwise be specified by wingspan or maximum gear span. This work item should, where relevant, encompass existing approved/legacy work programme items. In some cases, an approved/legacy work programme item may need to be cancelled or modified. The work needs to take into account how any proposed new system will be implemented at existing aerodromes and how any transition will take place.

ADOP 006 *International provisions addressing Ground Handling at aerodromes*

A safe and reliable flight requires a whole range of ground services to be safely and successfully completed on the ground between aircraft arrival and departure, according to a common set of requirements that can be implemented worldwide in a standardized manner. More and larger aircraft, an increase in ground support equipment and faster turnaround times, all contribute to the challenge of improving operational safety. Ground handlers face a complex and potentially dangerous environment on the ramp. Currently, aircraft ground damage and personal injury costs billions of dollars and thousands of lost man hours per year. The Ground Handling Task Force of the ADOP has been established to determine the status and future needs of international provisions for airport ground handling at aerodromes.

ADOP 008 *Airfield Pavement Management*

The introduction of aircraft with higher ACN require current ICAO provisions for permitting overloading operations on runways and movement areas to be reviewed. Similarly, the 30-year old ACN/PCN pavement reporting system needs to be redeveloped in light of new and emerging technologies in pavement engineering. Other aircraft pavement related issues include PFC/Groove surface equivalency and its means of compliance for new coating material claiming equivalency with PFC/groove.

ADOP 009 *Aerodrome emergency response planning including rescue and fire fighting*

Annex 14 Vol I contains requirements related to the coordination of emergency response and provisions for rescue and firefighting services at the level of an aerodrome. Nonetheless, there is a need to develop performance-based provisions with regard to evolution of existing provisions and taking into account the tasks involved and applicable risk. There is a need to develop generic procedures and/or guidance on the development of procedures for the emergency response including RFF at or in the vicinity of an aerodrome for incorporation in PANS-Aerodromes. Aerodromes lack direction on RFF requirements when the aerodrome is used for other than destination operations. Current language causes confusion among air carriers and has limited the operational flexibility of air carriers to identify suitable alternate airports with appropriate RFF capability.

ADOP 010 *Heliport Design and Operations Pavement Management*

Certain aspects of ICAO heliports related provisions need to be reviewed, updated, and modernized:
a) The applicability of Annex 14 Vol II, certification of heliports and the implementation of Safety Management need further development of provisions.
b) Annex 14 Vol II section 5.3 concerning lights needs to be reviewed due to technological advance in helicopters and heliports.

c) Based on the review of proposed amendment arising from the second meeting of the Aerodromes Panel (AP/2), FATO surface characteristics, including slopes, need to be reviewed.
d) A review of the criteria used for categorization of heliports for RFF, including a study comparing the advantages of using D-values (or t-values) versus fuselage length/width values needs to be undertaken, and where appropriate, develop related RFF provisions for heliports;
e) Several areas where the provisions for the marking of FATOs and TLOFs were non-existent, insufficient or could be improved; and
f) Doc 9261 Heliport Manual (1995) has been updated in scope of two parts: Offshore (Part I) and Onshore (Part II). A detailed and modern guidance is provided on physical characteristics, obstacle surfaces, visual aids and RFF related chapters in terms of design, construction, operation and safety.

ADOP 011 *Visual aids for day/night and all weather operations*

Recent and proposed future additions to Annex 14 for visual aids might, in the context of proliferation, have a detrimental impact on aerodrome safety and operational efficiency; hence, review the appropriateness and effectiveness of current and emerging aerodrome visual aid systems for day/night and all weather operations and runway safety taking into account human factors and aircraft performance, navigation capabilities and operations, and develop new or amended provisions as necessary

ADOP 012 *Surface management including prevention of runway incursions*

Airport safety and capacity are more and more dependent of the surface management processes and tools. Issues to be addressed include how to diminish the number of runway incursions or to improve surface movement to increase capacity as well as the interrelation of A-SMGCS with other airport management functions such as A-CDM and runway sequencing. This job card specifically considers how A-SMGCS including visual aids contribute to solving those issues.

ADOP 013 *Standardized taxiway naming convention*

Runway safety and the prevention of runway incursion remains a high priority for all States and continues to be an area where incidents and accidents occur. A standardized taxiway naming convention is intended to eliminate confusion regarding proximity to a runway, and to ensure that an extra level of awareness is available to aircraft crews or vehicle operators. Changing the names of existing taxiways and holding positions on several aerodromes, publishing of all new maps, training of all tower controllers. Standardized naming convention is expected to reduce runway incursions.

ADOP 014 *Airport Planning*

ICAO guidance material on Airport Master Planning (Doc. 9184, Part 1) has not been updated since 1987. This guidance material needs a complete review to include the most up-to-date airport planning tools and techniques. In addition, SARPs on airport planning requirements may be needed in Annex 14, Volume I to support airport capacity enhancements in a timely manner to avoid airport congestion and delays. Good airport planning, including master planning, is vital in building the airport capacity timely in a phased approach, thus avoiding significant delays in the future due to capacity constraints. Airport capacity will be increased; and airport delays will be reduced through more precise and up-to-date airport planning.

ADOP 015 *Reduce bird/wildlife strike hazard by applying new methods and technologies*

Bird/wildlife strike hazards pose a persistent threat to aviation safety. While Annex 14 Vol I contains high-level SARPs and Doc 9137 ASM Part 3 provides guidance, there is a need to evaluate emerging technologies (such as avian radar), conduct in-depth specialist analysis of bird/wildlife strike data and develop further material, eg. bird/wildlife strike hazard reduction toolkit, to strengthen the effort on a global basis.

ADOP 018 *Use of LED technology in visual aids*

With the introduction of LEDs in large quantities on aerodromes worldwide, issues related to transitioning of existing incandescent lights to LED at aerodromes and associated problems; perceived intensity – brightness of LED lights, in comparison to incandescent lights and associated problems; and low heat signature of LEDs (compared to incandescent) and its impact on the use of EVS/NVS/HUD and associated problems, are becoming an ever-increasing challenge.

ADOP 020 *Assessing and monitoring runway surface characteristics at part of an appropriate maintenance program*

The degradation over time of surface characteristics of a runway pavement has been identified as a contributing factor to runway safety events and the concept of monitoring such degradation is not sufficiently addressed for a global and uniform application to ensure appropriate maintenance program.

ADOP 021 *Improved operational safety through enhanced visual aids to denote construction works at aerodrome*

Many fatal accidents had occurred worldwide due, in part, to inadequate and/or unclear visual aids for denoting restricted areas of use, in particular, during construction works on the movement areas. Certain of these safety events could have been prevented by better visual information. Works in progress on the movement areas of aerodromes have been identified as a contributing factor in several fatal accidents. There is a need to review the existing specifications for visual aids in Annex 14, Volume I, Chapter 7 with a view to develop appropriate visual aids to be used when construction works are in progress at an operational aerodrome.

ADOP 022 *Design and operations of Runway Starter Extension (RSE)*

Runway starter extension (RSE) is a term used for an area located prior to the normal start of the runway which, under certain circumstances, provides aircraft with additional length for take-off only. RSE is already in use in some States based on provisions developed at national levels. There are substantial differences in characteristics and operational requirements for RSE among States. Current situation can create confusion and lead to a safety issue for operators. The scope of work includes a review of available national regulations and material for RSE and evaluate possible impact of different provisions for design and operation of RSE. These include the design characteristics and operational requirements of RSE length, strip, width, lights and markings and its relation to declared distances. If further harmonization at international level is justified, proposals will be developed in Annex 14, Vol I and documents.

RPASP AERODROME 2021 *Integration of RPAS at aerodromes*

The projected growth of RPAS operations is expected to generate increasing demand for RPAS operators to be able to operate at aerodromes, including heliports. Although existing provisions of the Chicago Convention apply, they cannot be implemented as written for manned aviation, due to the absence of the pilot on board the aircraft and the predominant reliance on visual cues in particular during ground operations. In order to facilitate international RPAS operations and meet the objective of integration of RPA into aerodrome and heliport operations, provisions need to be developed. In this context, consideration must be given to how RPA will interact with aerodrome users, the use of existing infrastructure, facilities, services (such as visual aids, RFF, wildlife, obstacles et al) and the remote pilot's ability to respond to the dynamic environment. The impact of any unusual RPAS performance capabilities or unplanned operations, such as emergency or contingency situations, should also be considered and taken into account. States, industry and operators need SARPs, PANS and related guidance material on how to safely and efficiently address RPAS at aerodromes. Initial SARPs and related guidance are expected for applicability in 2026.

— END —