



INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Regional Office

**SECOND VIRTUAL MEETING OF UAS/RPAS FOCAL
POINTS OF THE SAM AND SRVSOP STATES**

REPORT

Online, 26 April 2021

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HISTORY OF THE MEETING

ii-1 PLACE AND DURATION OF THE MEETING

The Second Virtual Meeting of UAS/RPAS Focal Points of the SAM and SRVSOP States was held on the Zoom platform, on 26 April 2021.

ii-2 OPENING CEREMONY AND OTHER MATTERS

Mr. Marcelo Ureña, Regional Safety Officer of the ICAO South American Office greeted the participants and acknowledged the UAS/RPAS focal points for the support provided during the preparation of this Second virtual meeting of UAS/RPAS focal points of the SAM and SRVSOP States and for their contribution to the drafting of the working papers prepared by the rapporteurs of each working team. In this regard, he offered the support of the South American Regional Office on any technical aspect required for the fulfilment of the work by the focal points.

ii-3 SCHEDULE, ORGANISATION, WORK METHODS, OFFICERS AND SECRETARIAT

The meeting agreed to hold its sessions from 08:00 to 11:00 hours, with a 15-minute break between 09:30 and 09:45 hours. The plenary work modality was adopted.

Mr. Marcelo Ureña, Regional Safety Officer of the South American Regional Office, acted as Secretary of the meeting. The Secretariat was supported by Mr. Fernando Hermoza, Regional ATM/SAR Officer of the South American Regional Office.

ii-4 WORKING LANGUAGES

The working language was Spanish. The meeting documentation was presented in Spanish.

ii-5 AGENDA

The agenda was adopted as follows:

Agenda Item 1: Summary of the results of the First virtual meeting of UAS/RPAS focal points

Agenda Item 2: Presentation of the progress made by the working team in charge of developing the operational concept (CONOPS) for unmanned aircraft (UA) and the roadmap for the development of the UAS and RPAS LARs

Agenda Item 3: Presentation of the progress made by the working team in charge of developing the RPAS CONOPS for international IFR operations

Agenda Item 4: Presentation of the progress made by the working team in charge of developing unmanned aircraft systems (UAS) traffic management (UTM)

Agenda Item 5: Presentation of the progress made by the working team in charge of developing the UAS LAR regulatory framework model and the RPAS LAR regulatory framework

Agenda Item 6: Other business

ii-6 **ATTENDANCE**

A total of 28 participants attended the Meeting: 22 participants from the following eleven (11) States of the SAM Region: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Panama, Paraguay, Peru and Venezuela, 4 members of the SRVSOP Technical Committee and 2 ICAO Officers. The list of participants is shown on Page iii-1.

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Agenda Item 1: Summary of the results of the First Virtual Meeting of UAS/RPAS Focal Points

2.1 Under this agenda item, the secretary of the Meeting presented a summary of the report of the First Virtual Meeting of UAS/RPAS Focal Points of the SAM and SRVSOP States, held on 26 February 2021.

Agenda Item 2: Presentation of the progress made by the working team in charge of developing the operational concept (CONOPS) for unmanned aircraft (UA) and the roadmap for the development of the UAS and RPAS LARs

2.1 Under this agenda item, WP/02 - *Progress made by the working team in charge of developing the CONOPS for Unmanned Aircraft (UA) and the roadmap for the development of the UAS LAR and RPAS LAR* was presented.

2.2 The Meeting took note that the objective of the working group was to analyse the CONOPS for unmanned aircraft (UA) in a global manner, taking into account the current scenario in the Region, the guidelines proposed by the International Civil Aviation Organization (ICAO) and, as a close reference, the proposal of the European Aviation Safety Agency (EASA), which is important due to its similarity with the ICAO proposal.

2.3 Likewise, its goal was to address future challenges and to consider what a UA classification proposal would look like, as well as to analyse the concept of operations and how it fit into each classification.

2.4 The issue of the CONOPS has focused on the concept of operations that seeks to describe the operational, personnel and unmanned aircraft environment, to ensure an understanding of the aeronautical community, its challenges and how the subsets that remotely control these aircraft can be accommodated in an operation. Finally, an analysis is made of how to achieve airspace integration for the conduction of international operations under instrument flight rules (IFR).

2.5 Another aspect is the scope of the CONOPS, which ultimately does not consider autonomous aircraft and autonomous flight operations. Furthermore, the concept does not cover visual line-of-sight (VLOS) RPAS operations, operations in very low level (VLL) airspace, and operations at very high altitude (for example, above FL600). Another important aspect is that it does not consider the transport of persons and domestic operations.

2.6 Regarding the ICAO classification of UAs, the Meeting was informed that UAs included unmanned aircraft systems (UAS), remotely piloted station(s) (RPS), a command and control (C2) link, and other required components. UAs include a broad spectrum of aircraft, unmanned free balloons, model aircraft and highly complex equipment operated by professionals. In this regard, ICAO has defined the following subsets:

- Remotely piloted aircraft (RPA) as a subset of UAs;
- Small UAs, weighing less than 24 kg; and
- Non-power driven, unmanned free balloons.

2.7 The Meeting then discussed the approach proposed by EASA, which is risk-based and whose regulations are suggested to be done in a risk-proportionate manner. This concept suggests the following three categories of operations:

- Open: does not require authorisation by the aviation authority of the State
- Specific: will require a risk assessment, with specific limitations
- Certified: Higher associated risk, is addressed at a national level, integration into unsegregated airspace, development of the UTM/ANS concept of operations.

2.8 With regard to the “specific” category, it was suggested that the Meeting consider standard scenarios to facilitate risk analysis in this category.

2.9 Based on the analysis performed, the following conclusions were reached:

- Establish common pathways to be used by States in international operations.
- Technical expertise is required to integrate remotely piloted aircraft systems (RPAS) into the aviation system.
- Develop an intergovernmental frame of reference.
- Global geographical coverage.
- Cooperation among regulatory bodies and the industry.
- Need for national safety regulations.
- Regulations for drones and sport aeromodelling and their use of airspace.
- Definitions related to UTM/ATC and Annex 11.
- Definitions on the granting of the certificate of airworthiness.
- Local legal aspects.
- Human factors in RPA operations.

2.10 The Meeting was informed that this analysis was the first step in the development of the CONOPS for UAs and that their classification was yet to be defined. In this regard, the Meeting noted that the classification established by ICAO in its documents should be followed, which would assist States in audit activities carried out by such organization.

2.11 Finally, it was suggested that the Meeting discuss and take note of **Appendix A** to this part of the report, which contained an initial approximation to the issues that could be part of the UA CONOPS.

2.12 Taking into account that the working team was unable to participate in the analysis of the WP for various reasons, the Meeting agreed on the following conclusion:

Conclusion RVPF-UAS-RPAS/2-01 Continued development of the unmanned aircraft (UA) CONOPS structure

- a) that the working group continue to develop the unmanned aircraft (UA) CONOPS structure; and
- b) that the draft structure be submitted to the approval of the Third virtual meeting of UAS/RPAS focal points of the SAM and SRVSOP States, with a brief description of the contents of each item and sub-item.

APPENDIX A

MEETING OF THE WORKING TEAM ON THE UNMANNED AIRCRAFT (UA) CONOPS

PROPOSED TOPICS

1. BACKGROUND

Harmonisation of drone rules is a need recognised by all parties. The notion of a CONOPS for UA, and the establishment of a regulatory framework was taken up by ICAO in 2011, thus contributing to global harmonisation. The integration into non-segregated airspace will require for air navigation services and operators:

- minimum navigation, communication and surveillance performance standards;
- infrastructure adequacy;
- new procedures; and
- tailored training.

The ATM or UTM/SLA aspect of the concept of operations will need to be further developed or a separate UTM/SLA will need to be established and with it, a concept of operations that addresses short-, medium- and long-term perspectives.

However, these perspectives shall be based on the development of the drone market and of the technologies. These must be carefully monitored and planning must be adjusted accordingly.

Planning shall reflect the gradual introduction into non-segregated airspace. The development of medium/long-term rules shall be in consultation with stakeholders on the regulatory framework, taking into account discussions based on the relevant elements of this regulatory framework and existing national requirements. These actions shall be considered as priority actions to address the basis for drone regulation and the urgent need to harmonise regulations governing small drone operations. Finally, it will be necessary to develop a communication plan in coordination with member States in the Region to explain and promote the concepts contained in the regulatory framework.

2. ON UA CLASSIFICATION

The ICAO Bulletin considers five (5) classifications, namely:

2.1 UNMANNED AIRCRAFT (UAs):

These aircraft operate as part of an unmanned aircraft (UA) system, which also includes a remote pilot station (RPS), a C2 link for control and management, and other necessary components.

UAs include a broad spectrum of aircraft, from unmanned free balloons and model aircraft to highly complex remote equipment operated by licensed aviation professionals.

2.2 REMOTELY PILOTED AIRCRAFT (RPAs)

RPAs are a subset of UAs. They are expected to be accommodated as an additional subset of RPAs and ultimately be integrated into international airspace operations under instrument flight rules (IFR), which will require full regulatory certification.

2.3 SMALL UAs

Normally, these are considered to be UAs weighing less than 25 kg. This subset of smaller UAs is commonly known as drones.

2.4 UNMANNED FREE BALLOON

This term describes non-power driven, unmanned, lighter-than-air aircraft in free flight.

2.5 MODEL AIRCRAFT

This term describes small unmanned aircraft, which generally represent a scaled-down version of larger aircraft and which are used for recreational purposes in sports and hobbies, primarily in aeromodelling.

Regarding this definition, it is important to note that aeromodelling is an aeronautical sport that is incorporated into an international aeronautical association, known as FAI, which guides its destinies and promotes this activity worldwide. These associations exist in most countries and they also have a relationship with the State bodies that control the sport. Moreover, for aeromodelling clubs, it is very important to belong to the FAI, which has its own rules and defines many categories in the sporting process. Until last year, drones were not recognised by this Association. However, as of 1 January 2021, the FAI has recognised and incorporated drones into its "*FAI Sporting Code*", in Section 12- Unmanned Aerial Vehicles (UAV) and has assigned them to the so-called "*U class*", setting all the rules for the practice of events of this new international sport.

The FAI has defined UAVs as: "An aircraft that does not carry persons and is controlled primarily by means of an on-board flight system". A UAV can be remotely controlled by one or more persons, either by direct view or what is known as "*First Person View*" (FPV), or autonomously controlled by a hardware and/or software system with an on-board UAV system, or both.

It then states: "Section 4 defines model aircraft registration and the difference between model aircraft and UAV registrations:

- The model aircraft registration will always be in the visual line-of-sight (VLOS) of the pilot.
- For model aircraft registrations, on-board flight systems that control the position and attitude of the model aircraft are not allowed, except for auxiliary stabilising devices in the case of model helicopters".

This new aeronautical sport reality must consider this new way in which drones have systems that control the position and attitude of the aircraft, and which have a potential impact on the activities of RPAS or UAVs or drones, whatever you want to call them. The most worrying thing is that they will be active players in the use of airspace, so, how do we regulate the safety of these new players in airspace? This question remains to be answered.

3. CONCEPT OF OPERATIONS FOR EACH UA CLASSIFICATION

Regarding the concept of operations for each UA classification, we can say that: RPAS operations are currently structured around two main concepts: VLOS and BVLOS (beyond visual line-of-sight) operations, which were generally taking place in areas not operational for manned aircraft, *e.g.* in lower or higher altitudes and extreme range environments, which is no longer happening with the volume of operations and requirement for aerial work.

Operations conducted outside VLOS are considered "beyond VLOS" (BVLOS), and where they could operate on international flights under IFR, they fall within the scope of CONOPS. As experience is gained and capacity increases, RPAS will undoubtedly make the transition to all areas of airspace, and this will bring new solutions that will also have to be adopted in conjunction with manned aviation. It is very clear that there will be continuous innovation and thus a reasonable expectation of accessing airspace in a fully safe and efficient manner, causing no disruption to all aircraft operations in a defined airspace.

As we have already seen in the EASA proposal, this European organisation suggests a different classification, *i.e.*: "Considering the wide range of drone operations and types of drones, EASA proposes to establish three categories of operations and their associated regulatory scheme: open, specific and certified.

3.1 OPEN CATEGORY

An open category, for operations that can be monitored through the police, as is currently done with cars, for example, and that does not require any authorisation by aviation authorities. This group of operations would only be subject to a minimal set of aviation regulations, focusing mainly on defining the boundaries of such a category of operations.

The open category is for very-low-risk drone operations, therefore without the involvement of the aviation authority. No approval is anticipated in order to operate at a specific location and there are no approvals or licences for operators and pilots. It is designed to allow for simple operations and to gain experience. Risk to other airspace users is mitigated by separation from manned aviation. The drone shall fly:

- below visual line-of-sight (VLOS): 500 m.
- at an altitude not exceeding 150m above ground or water; and
- outside specified reserved areas (airport, environment, security)

The risk to people on the ground will be mitigated by the use of low-energy aircraft and by establishing minimum distances to people on the ground. Flights over crowds of people will be prohibited, but flying over people bearing no relationship with the operation may be permitted in cities or populated areas with special authorisation. While no airworthiness approval is required, industry standards could apply. There are already drones available on the market today with a number of safety features such as parachutes and/or failure mitigation through redundancy software.

In populated areas, drones shall comply with an acceptable industry standard, requiring safety measures such as technological or human assistance to the drone operator, in order to respect the maximum altitude and/or to stay out of specified reserved areas. In addition, it is wise to consider a maximum mass limit for operations in populated areas. This mass would be defined as a result of consultation with stakeholders and analyses by the aviation authority. The requirement to comply with an industry standard would not apply to toys of less than 500 g designed for use by children under 14 years of age.

3.2 SPECIFIC CATEGORY

As soon as an operation begins to pose more risks for people to be flown over, with the implication of sharing the airspace, the operation must be defined in a specific category. For these activities, each specific aviation risk should be analysed and mitigation measures should be studied by the authorities before starting an operation, requiring a special authorisation.

The specific category shall cover operations that do not meet the characteristics of the open category.

The operator shall conduct a safety risk assessment, identify mitigation measures, which will be reviewed and approved by the aviation authority, and authorisations may be issued for a single event or a series of operations under specific conditions.

The safety risk assessment shall address airworthiness, operating procedures, interference with the environment, and the competence of the personnel involved, as well as airspace usage issues. The airworthiness assessment will be closely related to the environment and operating procedures; for example, an operation near crowds may be acceptable if the vehicle has some additional functionality (for example, automatic loss of link procedures, impact energy limiting devices) and if operating procedures are appropriate.

The competence required of the personnel involved will also be established on the basis of the safety risk assessment.

3.3 CERTIFIED CATEGORY

When the risks rise to a level similar to normal manned aviation, the operation shall be considered in the category of certified operations. The proposed regulatory framework would be quite comparable to that for manned aircraft. The boundary between specific and certified is still to be defined at this stage, but could be based on considerations of kinetic energy, types of operations and the complexity of the drone, especially in terms of range.

Pending the definition of this criterion, EASA has continued to accept applications for drones with an MTOM of more than 150 kg. For each drone, a type certificate would be issued that will also cover environmental certification, an individual certificate of airworthiness and an individual noise certificate. Certification specifications (CS) will be adopted to cover different configurations: fixed wing, helicopter and powered-lift airships. The CS would include the specifications for the command and control station and the C2 control.

A point of discussion could be what the certificate of airworthiness would cover: a combination of aircraft control station or a combination of an aircraft and multiple control stations. The possibility of a separate approval of a control station could be envisaged.

For small drones falling into this category, application of some of the ideas proposed for light general aviation aeroplanes would be considered. The C2 and detect-and-avoid (D&A) functions could receive a separate approval, as one could imagine that the same C2 or D&A system could be installed--of course with modifications--on different types of drones.

Maintenance beyond a predetermined threshold should be performed in approved organisations and maintenance personnel should be licensed or otherwise authorised.

Pilots should hold a licence and the operator should receive approval through a UOC or AOC, granted by the aviation authority. Integration into unrestricted airspace would be subject to a safety assessment by the ATS provider.

4. ON THE DEVELOPMENT OF REGULATIONS AND GUIDANCE MATERIAL FOR EACH TYPE OF OPERATION

As set out in Annex 2, Appendix 4 to the Convention, an RPAS will be approved taking into account the interdependencies of its components, in accordance with national regulations and in a manner consistent with the provisions of the associated Annexes. Furthermore:

- an RPAS shall have a certificate of airworthiness issued in accordance with national regulations and in a manner consistent with the provisions of Annex 8; and
- the associated components of an RPAS specified in the type design will be certified and maintained in accordance with national regulations and in a manner consistent with the provisions of the associated Annexes.

The operator will hold an RPAS operator certificate (AOC or ROC), issued in accordance with national regulations and consistent with the provisions of Annex 6.

Remote pilots will obtain their licences, or have their licences validated, in accordance with national regulations and in a manner consistent with the provisions of Annex 1.

Another important aspect to consider is that the assessment of the RPS (station) will not only be based on its design, but also on operational aspects, especially those related to the facilities where it is located and its signal and power connections for its operation.

ICAO has considered a broader and more generic SARP to be more appropriate to cover the range of possibilities. The aim is to reflect the "types of operation" permitted for the RPS (for example, fixed/mobile, VLOS/BVLOS, IFR, etc.).

The contents have been developed taking into account the special conditions established for the new high-connectivity aircraft, whose system architecture may allow them to be connected to networks and electronic systems.

Another consideration is the proposal of amendment of the SARPs in Annex 8, whereby:

Three new parts have been developed for Annex 8, because of the significant differences between RPAs and traditional manned aircraft, both in terms of their characteristics, their means of control and their airworthiness implications.

In some of the definitions, it has become necessary to add "remote pilot station" to reflect the adjustment of the current text of Annex 8 to acknowledge the RPS.

This proposal includes the addition of three new parts to Annex 8 related to remotely piloted aircraft

- (Part VIII), remotely piloted helicopters

- (Part IX), remote pilot stations
- (Part X), shows the amendment of the current text of Part II of Annex 8 to accommodate RPS and RPAs.

Now, due to the integrated nature of RPAS and RPS, they could be certified as part of the type certificate (TC) to be issued to the holder at the conclusion of the RPA type certification process, which will not prevent the RPS from being approved separately.

The C2 link is another important component of RPAS that conditions their airworthiness, and for this reason it shall be included as a component of the type certificate.

ICAO proposes 28 November 2024 as the effective date for the proposed SARPs.

Based on the time required to develop these SARPs for RPAS, they are expected to be applicable in 2026. However, the regulatory framework is only expected to be available in 2030.

Part IV of Annex 6, currently under development, will contain the specific provisions for international RPAS operations. The RPAS Panel deliberately restricted the scope of SARPs to international operations under instrument flight rules (IFR), which will allow States to have fewer requirements for domestic operations (small drones in low-risk operations, for example), and to develop their own regulations to address local issues, depending on the need for specific regulations.

5. SAFETY MANAGEMENT IN UA OPERATIONS

The safety management assessment for UA operations is well developed in Chapter 7 of the Manual on RPAS, Doc 10019, which defines the safety roles and responsibilities of State organisations and service providers. This subject area is now harmonised with the objectives of Annex 19 and its SARPs, which are aimed at addressing aviation safety risks in general. However, it is important to incorporate the specificities of RPAS operations into this Annex. Similarly, it is necessary to incorporate the modifications into the safety management manual, Doc 9859, which aims to provide additional guidance to the establishment and implementation of the SSP and the safety management system.

Both Doc 10019 and Doc 9859 will require adjustments to keep pace with RPAS operational requirements. One of the objectives of Annex 19 and its associated guidelines is to harmonise the implementation of safety management practices for the States and organisations involved in aeronautical activities. Accordingly, Annex 19 SARPs are intended to assist States in managing aviation safety risks.

It is important to note that the RPAS manual, Doc 10019, should not be considered as a regulation. It is basically a guidance manual that describes some regulatory contexts, but these must be incorporated into the specific regulations and requirements defined by each State.

6. FUTURE CHALLENGES

One of the future challenges will be to design the operational environment and the human factors in RPA operations in such a way as to ensure safe operations, taking into account the limitations of those in charge of their operation, maintenance and monitoring. In other words, a remotely piloted aircraft will be designed in such a way that the remote flight crew can operate it safely, efficiently and with due regard to differences in the skill and physiology of the remote flight crew, within the limits set by the licences.

The workload involved in the operation of a remotely piloted aircraft will give rise to design and ergonomic considerations so that the remote flight crew may reasonably work and rest during all stages of the flight, taking into account both cognitive and physiological factors that may be affected at critical stages and times of the flight.

7. PLANNING AND IMPLEMENTATION

Planning and implementation are far-reaching issues, since they involve legal aspects of each State. The process must start by updating codes, laws, regulations and standards to accommodate RPAS. In this regard, the aeronautical and administrative authorities of the State must work together to develop a plan for development and research aimed at making the most of these technological developments, which will undoubtedly lead to progress not only in aviation, but also in the economic field, and the appropriate use of resources to improve environmental conditions and daily life in the region.

In this regard, the States will be facing several challenges, one of which, and possibly the most relevant, involves legal aspects, which, from what was noted during work meetings, vary in each State. This is not a minor issue. If we want to unify procedures and regulations, international consensus will be required when operations are carried out between States.

Planning and contributions in the different fields will basically have to come from the State and the aeronautical authorities, in order to reap the benefits of this new technology.

8. OTHER ISSUES THAT THE MEETING MAY DEEM NECESSARY TO ADDRESS

On this issue, there were no comments from the participants in the working group.

- END -

Agenda Item 3: Presentation of the progress made by the working team in charge of developing the RPAS CONOPS for international IFR operations

3.1 Under this agenda item, WP/03 - *Progress made by the working team in charge of developing the RPAS CONOPS for international IFR operations* was presented.

3.2 The Meeting was briefed on the context of regional demands and needs in relation to international RPAS operations under IFR rules and on the documents published by ICAO on the subject, in particular Doc 10019 and the RPAS CONOPS, as well as the timeline for the work currently being carried out by the RPAS Panel. The Meeting took note that the basic provisions to support such operations would only be applicable in 2026 and that specific near-term demands could be authorised under Article 8 of the Chicago Convention, which could be facilitated in coordination with the SRVSOP.

3.3 The Meeting noted that the Chicago Convention had established the basic principles enabling international air transport and had led to the creation of the International Civil Aviation Organization (ICAO).

3.3.1 It was explained to the Meeting that the primary function of ICAO was to maintain an administrative and specialised organisation (the ICAO Secretariat), which supported diplomatic interactions among its signatory States, and explored new air transport policy and standardisation innovations as directed and endorsed by the governments through the ICAO Assembly, or by the ICAO Council.

3.3.2 The main document for understanding the current context of ICAO regulatory development for international RPAS operations is Doc 10019, published in 2015.

3.3.3 This document explains the following:

“The goal of ICAO in addressing RPAS is to provide an international regulatory framework through standards and recommended practices (SARPs), with supporting procedures for air navigation services (PANS) and guidance material, to underpin routine operation of RPAS throughout the world in a safe, harmonized and seamless manner comparable to that of manned operations. Most importantly, introduction of remotely piloted aircraft into non-segregated airspace and at aerodromes should in no way increase safety risks to manned aircraft.”

3.3.4 It was also explained that this document provided a common basis for the work of the RPAS Panel in the development of proposed SARPs, PANS and guidelines. In other words, the manual was a guide for this development process, but it was expected that its content would evolve with the future adoption of standards and procedures. In fact, the RPAS Panel had established a specific working group that was already working on updating Doc 10019.

3.3.5 As a complement to Doc 10019, ICAO, through the RPAS Panel, had prepared a CONOPS document, the purpose of which is described below:

“This concept of operations (CONOPS) aims to describe the operational environment of manned and unmanned aircraft thereby ensuring a common understanding of the challenges and how the subset of remotely piloted aircraft can be expected to be accommodated and ultimately integrated into the airspace for international instrument flight rules (IFR) operations.”

3.3.6 It was noted that in order to understand the context of the document, it was also essential to assess its scope:

“This CONOPS describes RPAS operations, systems, operating environments, control methods, and interfaces with ANSPs and other aircraft. The scope is currently limited to certificated RPAS operating internationally within controlled airspace under instrument flight rules (IFR) in non-segregated airspace and at aerodromes in the 2031 onward timeframe.

The scope of the CONOPS does not consider fully autonomous aircraft and operations, visual line-of-sight (VLOS), very low altitude airspace operations (for example, above FL600) or carriage of persons and domestic operations.”

3.3.7 The time aspect of the development of this work is also best understood through the timeline for the delivery of SARPs by the RPAS Panel (Reference #3). Accordingly, the full international regulatory framework will only be available around 2030 and, according to current ICAO planning, the basic provisions are expected to be applicable in 2026.

3.3.8 While recognising the importance of establishing these criteria to meet future demands in the international context, there are other demands of a more immediate nature and beyond the scope of CONOPS that are believed to be of higher priority in the regional context in order to give broad access for South American society to the benefits provided by this technology.

3.3.9 Failure to adopt criteria for international IFR operations does not preclude the development of criteria for other operations (including international operations of a different scope, for example, in segregated airspace) or even if such operations are actually being conducted.

3.3.10 In fact, the Chicago Convention states the following in Article 8:

Pilotless aircraft

“No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such authorization. Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft”.

3.3.11 Therefore, there are clear provisions for the States concerned to issue a special authorisation to enable this type of operation.

3.3.12 The granting of this type of authorisation requires technical and administrative coordination, which could be facilitated through the SRVSOP. This would not only permit the creation of an environment of coordination and technical cooperation for the conduction of these activities, but also the SRVSOP would be aware of the type of demands that exist in the region. This information could be very useful for future developments.

3.4.1 It was reported that ICAO had been working for more than 10 years to make international RPAS operations under IFR rules possible, but according to current planning, the basic provisions would only be applicable in 2026.

3.4.2 The absence of these rules does not preclude the development of other CONOPS and regulatory frameworks, nor does it prevent the performance of such operations that are eligible for authorisation under Article 8 of the Chicago Convention.

3.4.3 Finally, the Meeting considered that a technical and administrative coordination channel, involving the SRVSOP, to be further discussed and developed by the working team, could provide an effective tool to deal with requests for international RPAS operations in the short term and allow for a year of experience for future developments.

3.4.4 Upon analysing the progress made by the working team, the Meeting agreed on the following conclusion:

Conclusion RVPF-UAS-RPAS/2-02 Establishment and implementation of a technical and administrative coordination channel to deal with requests for international RPAS operations

- a) Given that the full international RPAS regulatory framework will only be available around 2030 and that, according to current ICAO planning, the basic provisions are expected to be applicable in 2026; entrust the working team on the RPAS CONOPS for international IFR operations to develop and submit to the approval of the Third meeting of UAS/RPAS focal points, a technical and administrative coordination channel between SAM States and the SRVSOP, to deal with requests for international RPAS operations in the short term, while gaining experience for one year for future developments; and
- b) request the SRVSOP General Coordinator its establishment and implementation through the SRVSOP.

Agenda Item 4: Presentation of the progress made by the working team in charge of developing unmanned aircraft systems (UAS) traffic management (UTM)

4.1 Under this agenda item, WP/04 - *Progress of the working team in charge of developing UAS traffic management (UTM)* was presented.

4.2 The Meeting considered that the ATM system, as conceived, could not fully meet the demand for unmanned aviation, making it necessary to create a new management model, whose main function would be to provide a cooperative environment to allow for an increased number of UAS operations, mainly in uncontrolled airspace and below 400 ft AGL, where most of these operations occurred.

4.3 The UTM system must meet the demand and expectations of a wide range of operations, with a high degree of complexity and risk. The system will cover all the necessary infrastructure for operations, procedures and services to ensure management of UAS activities in very low level (VLL) airspace.

4.4 To achieve operational UTM, a regulatory structure must be established, and new operational rules and performance requirements commensurate with the demands of the operation must be developed.

4.5 There are currently three documents which, given the peculiarities of the South American Region, can serve as a basis for the establishment of an equivalent document that meets the needs of the States participating in this working group: the 3rd edition of the ICAO UTM Framework (published in September 2020); the second version of FAA UTM CONOPS (published in March 2020); and the CORUS CONOPS - Volume 2 of the SESAR Joint Undertaking, published in October 2019.

4.6 While the above documents do not prescribe any solution for the implementation of the UTM system, they can serve as a basis for the design of a solution that meets the needs of the SAM Region, as described below.

4.7 The ICAO UTM framework, currently in its third edition, is intended to provide States with guidance on the implementation of the UAS management system. The document, which has been updated with each edition of DRONE ENABLE, does not prescribe any solutions related to the UTM system architecture, serving only as a guide for States.

4.8 The FAA UTM CONOPS aims to present a vision and describe the associated technical operational requirements for the development and operation of the UTM system. The document does not prescribe any specific solution or implementation method, but simply presents some examples of implementation, describing the essential conceptual and operational elements associated with UTM operations that will serve to support the development of solutions among the various actors and stakeholders involved in UTM implementation.

4.9 The CORUS CONOPS was constructed taking into account conceptual elements based on the needs of the European Union, describing how VLL airspace should be organised and what requirements and regulations should be put in place to enable the safe operation and integration of this new entry with other airspace users, as well as the U-Space services that should be available to ensure safe operations.

4.10 The CONOPS proposed in this WP, once completed, will be aimed at describing the conceptual elements associated with the operation of the system, which will guide the development of

solutions among the various actors involved in its implementation.

4.11 The aim, at this initial stage, is to define the starting point for the drafting of a harmonised document that meets the needs of the SAM Region, developing regulations and identifying common operational concepts. Accordingly, the Appendix to this WP contains a proposal to be analysed by the other participating States as to the applicability of the issues addressed therein.

4.12 Upon receiving the feedback and approval by the Meeting, the group will develop the proposal.

4.13 The scope of this proposal will take into account operations occurring in VLL airspace (up to 400 ft above ground level - AGL), in controlled and uncontrolled airspace, for VLOS and BVLOS flights.

4.14 The integration of this new entry, mainly in VLL airspace, where the ATM system, as conceived, cannot handle the volume and complexity of these operations, poses a major challenge for authorities worldwide, the biggest being the gap between technological evolution and the development of the regulatory framework.

4.15 The emerging unmanned aircraft sector offers many opportunities, but to be fully integrated into airspace, unmanned aircraft will need to co-exist with aviation systems already in place.

4.16 One way to overcome this obstacle to the integration of this new aviation segment in a highly conservative environment, with more than seven decades of history, is constant cooperation between industry and regulatory authorities in the search for solutions to ensure on-demand assistance, without, however, sacrificing the safety of other airspace users, persons and property on the ground.

4.17 Taking into account continued technological evolution, as well as the maturity of the sector, the CONOPS will be updated as needed to reflect the current state of the system.

4.18 There are no established regulatory frameworks for the implementation of UTM, which does not preclude the development and updating of the work as needed.

4.19 Finally, it was proposed that the task be distributed among the participating States, to which end a meeting would be held among the members of the working team.

4.20 Work on the task would start from the simplest to the most complex, listing possible case studies, based on the common realities of the States, such as:

- a) Environments: rural and urban;
- b) Internet connectivity: yes/no;
- c) Flights: VLOS / BVLOS;
- d) High/low air traffic density at the desired location.

4.21 Based on the foregoing, the Meeting agreed on the following conclusion:

Conclusion RVPF-UAS-RPAS/2-03 Acceptance of the structure and development of the document on unmanned aircraft systems traffic management (UTM)

- a) accept the structure of the document on unmanned aircraft systems traffic management (UTM);

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- b) divide the task among the focal points of the States participating in the working team;
and
 - c) prepare and present a progress report on the unmanned aircraft systems traffic management (UTM) project at the Third virtual meeting of focal points of the SAM and SRVSOP States.

APPENDIX A

ICAO SAM - UTM CONOPS PROPOSED DOCUMENT STRUCTURE

1. INTRODUCTION

- ICAO documents and references for the formulation of the UTM CONOPS;
- Explain the characteristics of the document issued by ICAO "UTM - A common framework with core principles for global harmonization (3 ed.)", highlighting that this document could still evolve in future editions;
- Outline the content of the plan of the FAA and NASA research transition team (RTT);
- Definitions and abbreviations;
- Consider other sources of research, such as UTM CONOPS 2.0 (FAA), U-space Concept of Operations (CORUS), etc.

1.1 Need for UTM:

- A brief explanation of why we need to implement UTM to allow for an increased number of UAS operations;
- The explanation would focus on the limitations of the ATM system to cater for this new entry, with such specific needs that cannot be met by the ATM system, as conceived.

1.2 Evolution of UTM:

- How Latin American countries have dealt with domestic demands, from the first requests for access to airspace to the present day;
- How processes have changed over time, based on lessons learned;
- "Trends": in terms of technological developments that will permit a better coexistence with the ATM system and integration with manned aircraft operations.

1.3 Scope of the CONOPS:

- Define the scope of operations to be covered by the CONOPS, such as:
 - Operations below 400 ft;
 - Operations in uncontrolled and controlled airspace;
 - VLOS/BVLOS operations.

1.4 UTM principles:

- What principles should we consider to guide our actions?
- Do the principles described in the UTM framework meet the needs of all States? Example:
 - Responsibility of the regulator for overseeing service provision (ATM or UTM);
 - Existing aircraft prioritisation policies;
 - Fair access to airspace;
 - Among others described in the reference document.

1.5 Objectives of the CONOPS:

- What do we want out of this document?
 - Describe the types of services required for UTM implementation, in order to identify the main actors involved in the process;
 - Define the roles and responsibilities of the different actors and entities that interact with the UTM environment;
 - Describe the operational requirements associated with developing and operating in the UTM environment, in order to assist in the development of solutions among the various actors and stakeholders involved in UTM implementation.

2. UTM CONCEPT OF OPERATIONS

2.1 General information:

- Describe the general expectations from UTM implementation.

Consider, *inter alia*, aspects such as:

- interaction among industry, operators and regulatory bodies;
- availability of UAS service providers;
- exchange of information among all stakeholders;
- resolution of contingencies;
- civil-military coordination;
- among others to be defined by the Group.

2.2 Benefits:

- What are the expected benefits of UTM implementation?
 - For the State;
 - For the industry;
 - For UAS users;
 - For airspace users;
 - For others, to be defined by the Group.

2.3 Architecture:

- Describe the roles and responsibilities of the different actors involved in the process and how they will interact with each other, considering the different types of scenarios and their respective complexities:
 - regulatory body;
 - user;
 - RPIC;
 - public security;
 - ANSP;
 - others, to be defined by the Group.

- Graphically illustrate the interaction among these stakeholders.

2.4 **Operations:**

- Describe what is expected in terms of participation by the different types of possible operators (VLOS UAS, BVLOS UAS, manned aviation, etc.), especially with regard to separation rules that may apply between airspace users, as well as what kind of stance we should expect from manned aviation pilots.
- Consider the various possible scenarios:
 - high/low population density;
 - high/low air traffic density;
 - (existing or non-existent) Internet coverage;
 - availability of means of communication;
 - available CNS coverage;
 - “non-cooperative” user; and
 - combinations arising from the above scenarios, as well as any other factors to be considered by the Group;
- Automatic clearance criteria (based on ATM analysis requirement) to grant flight clearance;
- Types of services to be provided, aimed at ensuring safe and efficient UA operations, such as:
 - airspace access authorisation;
 - UA registration;
 - mapping (real-time information on obstacles that might interfere with the flight of unmanned aircraft, mainly in urban environments);
 - flight planning;
 - etc.
- How is flight planning information expected to be shared, as well as non-planning information that may affect the intended flight, such as: information on other traffic in the planned area, weather conditions that may affect the flight, unexpected obstacles, bird concentration, etc.

2.5 **Assignment of responsibilities:**

- Define the roles and responsibilities of the various actors in a UTM operation: remote pilot (UAS operator), UAS service provider (USS/USP), regulating agency.

2.6 **Remote identification:**

- Define whether or not there is an obligation to require "electronic identification";
- In case it is mandatory:
 - define what information is to be processed electronically;
 - what would this process look like?
 - define layered access to information (access privileges).

2.7 **Airspace management:**

- Use conflict management, taking into account the three stages set forth in ICAO Doc 9854 (GATMOC), in order to maintain the safety of all users intending to use the UTM environment;
- Consider using the "time" factor (using 4D) as a tool to optimise the use of airspace;
- Define what UAS information must be shared;
- Define the policy for interacting with the UTM system:
 - manned aviation: must or should?
 - VLOS operation - should or should?
 - who should be obliged and who should be encouraged to share flight intentions in the UTM environment;
- Define criteria for:
 - real-time transmission of data on flight restrictions;
 - exchange of information among the regulatory agency, users and/or remote pilots and UAS service providers (USS/USP), considering the possibility of new services;
 - exchange of information of interest among operators (weather phenomena, other traffic and/or any other information to be considered by the Group).
 - dealing with contingency situations:
 - what situations must be regarded as contingencies?
 - how to share this information with other users (both the declaration and termination of the contingency);
 - assurance of fair access by the regulatory body;
 - at what level of scenario complexity should the regulatory agency intervene to ensure the safe use of airspace?
- Define which scenarios require more stringent rules with respect to UA CNS requirements (for example, aircraft mix, classes of controlled airspace and/or any other to be considered by the Group).
- Define the rules for priority access to the UTM environment in case of an incident (for example, public security, rescue/rescue teams, etc.)
- Encourage discussion on data protection and security challenges, taking into account the possibility of cyber-attacks and incidents (threats to system security and unintentional or malicious degradation of UA performance):
 - command and control link infrastructure, mobile communications, GCS security, and global positioning system signal vulnerabilities create a potential for misuse (intentional and unintentional) and malicious interference (for example, hackers, hostile takeovers) of UAS technologies.

3. **OPERATIONAL SCENARIOS**

3.1 **General overview:**

- Present the criteria for the definition of scenarios with different levels of complexity.

3.2 Narrative scenarios (case studies):

- Clarify each of the scenarios described above, highlighting the interactions among actors in the UTM environment (for example, commercial UAS operators, UAS service providers - USS / USP, regulatory agency, public security entities, general public, etc.), and analysing them in order to establish expected behaviours.

4. UTM IMPLEMENTATION

4.1 Considerations:

- Define a strategy for harmonised UTM implementation:
- Suggestion for discussion: start with less complex environments and increase the complexity based on the maturity of the previous steps.
- What metrics will be used to define development stages?
 - Does it fully or partially comply with the FAA proposal?
 - i. Number of persons and number of properties on the ground;
 - ii. Number of manned aircraft in the proximity of UAS operations; and
 - iii. Density of UAS operations.
- Identify the main gaps, issues and challenges to be faced in the future (according to the UTM framework).

- END -

Agenda Item 5: Presentation of the progress made by the working team in charge of developing the UAS LAR regulatory framework model and the RPAS LAR regulatory framework

5.1 Under this agenda item, the following working papers were presented: WP/05 - *Progress of the working team in charge of developing the UAS LAR regulatory framework model* and WP/06 - *Progress of the working team in charge of developing the RPAS LAR regulatory framework*.

Progress made in the development of the UAS LAR regulatory framework

5.2 The Meeting agreed that the *ICAO UAS model regulations* and the associated advisory circulars (AC) provided guidance for member States to implement or supplement their existing UAS regulations. According to the ICAO definition, these regulations were intended to be living documents that would evolve as the industry matured, providing States with internationally harmonised material based on the latest developments. In other words, they were documents to be analysed and tailored to the needs of each Region/State.

5.3 Basically, the regulations addressed the following topics:

- a) **Regulation 101:** All unmanned aircraft must be registered; aircraft weighing 25 kg or less and operating under visual conditions up to 400 ft do not require additional operational review; however, if the aircraft weighs more than 15 kg it must be inspected and approved.
- b) **Regulation 102:** Addresses all operations of aircraft weighing more than 25 kg or those weighing 25 kg or less but that do not meet the operating conditions of Part 101.
- c) **Regulation 149:** Establishes an approved aviation organisation to be authorised by the CAA to perform specific tasks. Once the organisation has been certified, the authorised tasks (issuance of remote pilot licence, aircraft inspection, aircraft approval, etc.) can allow for faster processing and reduce the workload of CAA inspectors.

5.4 Based on the idea that the regulations should be a model to be studied, the group first tried to understand the differences among the States of the Region and what each had already established in its territory, as well as the existence or absence of manufacturers and the most recurrent requests, and asked States to present their regulatory frameworks developed during the work meetings.

5.5 During the discussions, it was also possible to briefly analyse the ICAO model regulations (Regulations 101, 102 and 149). Regarding these regulations, two proposals were agreed, which appear in item 4 of the WP.

5.6 The working group met twice (31 March and 7 April) with the purpose of exchanging needs and experiences. Some examples of discussion topics are listed below:

- regulations and requirements issued by the participating States;
- whether any type of certificate or authorisation had already been issued for such type of aircraft;
- how does each State classify these aircraft (categories and limitations);
- regulatory difficulties and problems, etc.

In this regard, there was a broad exchange of information among the participants.

5.7 The objective was to better understand the needs of each State and of the Region, and how LARs could help States. Although LARs do not have the power to change the laws of States, they can weigh and give support to move in the best possible direction, seeking regional harmonisation.

5.8 Argentina, Brazil, Chile, Colombia, Peru, Uruguay and Venezuela, all of which participate in this working team, presented their points of view in order to exchange experiences on how they have dealt with the issue.

5.9 States differed slightly in their approach to the issue, but in all cases, categories had been defined. All States had an initial, simpler category, with easier and more affordable operating rules, which was called the "open category". This would clearly be the first category of access for unmanned aircraft.

5.10 States have set a very similar maximum weight limit for this category, although not agreed by consensus: 25 kg seems to be what most States are using.

5.11 There was also much discussion on operating rules, limitations, whether there was a need for a pilot licence, VLOS/BVLOS operations, operator certification, usage, aircraft registration, etc.

5.12 A very interesting discussion was raised by Chile regarding the treatment of model aircraft. It is a concern of the region to know and understand how to differentiate this type of aircraft and not compromise the sport. In Brazil these aircraft were defined as all unmanned aircraft used for recreational purposes. All unmanned aircraft up to 250g were exempt from registration in Brazil; however, above that weight, all aircraft (including model aircraft) must be registered in the ANAC web system, called SISANT.

5.13 Other things that were noted were that no State allowed fully autonomous operations and no State allowed (at present) unmanned aircraft to enter its airspace unless authorised by the State. Likewise, for the most part, States allowed requests for exemption from compliance with general requirements, thus showing flexibility, which is normal in regulatory development.

5.14 The relevant points made by States in their presentations are described in more detail below:

Argentina noted that there were some legal issues in its aeronautical code, like, for instance, which aircraft must take off or land at aerodromes and that all aircraft must have a pilot on board. Therefore, Argentina now calls them "aerial vehicles" and regulations have been published in this regard (Resolution 880/2019). All vehicles must be registered (with the exception of recreational Class A) and there is a web registry for some classes (similar to Brazil). They do not issue design approvals and they do issue an authorisation for the operator. Concern was raised regarding airworthiness certificates, the ensuing obligation with continuing airworthiness and how to work with the maintenance organisations.

Brazil presented the legal competencies of ANAC and DECEA. ANAC presented the 2014 to 2017 development timeline for RBAC E94 and the applicable advisory circulars. The classification of RPAs in Brazil (Class 1, 2 and 3) and the certificates of airworthiness that are issued (experimental and special) were also explained. Likewise, the Brazilian registration system (SISANT) and some approvals already issued for BVLOS operations were presented. ANAC was currently developing a process to improve and update its regulations.

Chile stated that there were two regulatory contexts for unmanned aircraft, DAN 151 and DAN 91. It was noted that under DAN 151, aircraft weighing up to 9 kg were now allowed to operate over populated areas (public interest) and were required to be registered, but self-made RPAS were not allowed for this type of operations, as maintenance had to be carried out in accordance with the manufacturer's instructions (a kind

of continuing airworthiness). Likewise, air operator certificates (AOC) were issued in accordance with DAN 119. At present, there were requests for, and some companies already held, AOCs for agricultural operations, high-voltage power line monitoring, TV filming, public security, etc. For any aircraft not operating in accordance with DAN 151, the analysis was made on a case-by-case basis according to DAN 91, through risk analysis and clearance from the Operations Subdepartment of the Safety Division. There were already companies with AOCs for agricultural and other aerial work operations, which also had to comply with the operating rules established in DAN 137 on aerial work. They were also working on a new regulation (DAN 102) for 2 areas of commercial aviation that lacked regulations, namely, "Standard for free and/or captive balloon and manned airship operations" and 2 areas of non-commercial (sport) aviation, covering "Operations with model aircraft (aeromodelling) and model RPAS (model drones)", as well as on an update of the regulation in a new DAN 151 "RPAS operations", exclusively covering commercial operations of RPAS or remotely piloted aircraft and introducing rules on paid work.

Colombia described its basic rules (regulatory circular (2015) N° 002 - and Appendix 13 to RAC 91). Classification according to the risk of the operation and mandatory registration for all classes. For intermediate-class aircraft, a course at an approved training centre was required, but there were no rules for the issuance of drone pilot licences at the moment. There were no procedures on BVLOS. A significant number of drones had already been authorised based on a risk analysis, similar to what is done for the intermediate class. Operators registered with UAEAC must have an insurance policy, operational risk analysis, company registration and pilot registration. There was no certification as such.

Peru presented its regulatory system, which was already in place. In Peru, slightly different from what was done in most South American countries, a law (30740), rather than a CAA regulation, had been passed to regulate the use and operations of remotely piloted aircraft systems. This law did not cover RPAS smaller than 2 kg and/or for recreational use. All aircraft that did not fall into this category had to be registered and the operator be accredited as an RPAS operator. It was not possible to operate RPAS over 25 kg and the operating rules were very restrictive and detailed. Aircraft over 25 kg were treated like other conventional aircraft.

Uruguay stated that it had had legal issues with the term unmanned "aircraft", as did Argentina. The simplest category was up to 25 kg; for the intermediate category, the rules for light aircraft (less than 260 kg) were applied. The idea was to modify the regulations so that criteria could be adopted based on risk and not on the weight of the aircraft. An operator's permit issued by the CAA was required for any commercial operation. The State was working to implement a web-based system for authorising unmanned aircraft. Like in other States, there were legal problems for defining "populated areas" and "crowds". No certificates of airworthiness were issued.

Venezuela noted that it had amended its already published regulations, and had no special/specific regulation for unmanned aircraft. The initial category was also up to 25 kg and allowed for recreational or personal use. A recurring problem was how to deal with irregular activities of non-compliant operators. There were 4 categories, starting with Class 1 from 0.5 kg to 3 kg, Class 2 up to 25 kg (recreational use up to that weight did not require CAA authorisation), Class 3 up to 150 kg and a final category (4) for the rest. The use of any of these aircraft for aerial work required a pilot's licence. For recreational use, a course at a specific aviation centre approved by the CAA was required. A medical certificate classification had been created exclusively for RPAs. (Class 4).

5.15 It was noted that the States had clearly established a second category after the open category, with an intermediate rule to deal with slightly more complex aircraft and operations (for example, BVLOS) that did not fit into the open category.

5.16 In general, there were one or more complex categories after the intermediate category

(more formal and requiring certification), which were currently of little or no interest to manufacturers and operators.

5.17 The rapporteur of this group also voluntarily participated in some of the meetings of the other working groups created by the First Virtual Meeting of UAS/RPAS Focal Points (RVPF-UAS-RPAS/1) that were held in parallel. This was important because there is a connection with the definitions being addressed in the other groups, especially with regard to the UAS CONOPS.

5.18 This WP was presented to the group for comments and, after some discussion, it was approved by the group for submission at the 2nd meeting of UAS/RPAS focal points.

5.19 Given the complexity of this topic in the Region and the need to broaden the discussion on the categories, the working group concluded that it was better to split the draft UAS regulatory framework into two parts: the first part would establish a common definition and rules for the simplest category, also known as open. The characteristics of this category (or class) would be defined in conjunction with the UA CONOPS working group.

5.20 One of the requests of the group to the Secretariat will involve having more time to work on Part two, dealing with the proposed regulatory framework for the more complex categories. However, the group understands that there is an urgent need to start drafting regulations for the initial category (which we call open category) to seek early harmonisation in the Region, as set forth in Action 1 of Item 4 of the WP.

5.21 It was noted that several States, despite sharing many similar characteristics, were adopting different rules for authorisations, licences, operators, end use, etc. Ideally, LARs should try to address this issue by addressing the peculiarities of each State, but helping them follow ICAO guidelines and seeking harmonisation in the Region.

5.22 Not only the operational part of UAs needs to be discussed at greater length, but also the more general issues such as whether or not insurance is needed for these aircraft and for which categories.

5.23 The ICAO model regulations do not sufficiently describe the requirements for unmanned aircraft pilots; it is up to each authority to decide how best to do this. This could be further explored in LAR 102 in the future and it would also be very interesting for the Region if these regulations facilitated the acceptance of designs approved by other States of the Region.

5.24 In view of the above, the Meeting agreed on the following actions:

- 1) **Action 1:** Divide the regulatory framework project into two parts. For Part I, support is requested from the SRVSOP for the development of LAR 101 and CA 101-1, using Part 101 and ICAO CA 101-1 as model documents and starting points;
 - a) These proposals should take into account the limitations and characteristics of the open/simple category defined by the UA-CONOPS working group. The LAR 101 and CA 101-1 proposals will be developed once the working group defines the meaning of the Open category;
 - b) The SRVSOP will deliver the final proposals so that the working team in charge of developing the UAS regulatory framework may review the LAR 101 and AC 101-1 proposals and submit them to the approval of the focal points, before the LAR 101 is sent for approval by the SRVSOP General Board (JG) and the AC 101-1 is sent for approval by the SRVSOP General Coordinator.

- c) Requirement 101.21 - "*Approved person or organisation (AAO)*", and all references to the "certificate of operation" will be left as "reserved", taking into account that the use of the operator certificate among States is not yet harmonised and will therefore be better addressed in Part 2 of the draft regulatory framework.
- 2) **Action 2:** Request more time from the Secretariat for the development of Part 2 of the draft UAS regulatory framework, taking into account the comments made at the meetings where it was agreed that a more detailed discussion was needed on the requirements of the SAM Region in relation to aircraft falling outside the open/simple category. Part 2 will contain the guidelines for the development of LAR 102 and other regulations that may be proposed, as appropriate.
- a) This discussion must take into account Part 102 of the ICAO model regulations as a starting point and must include the actual needs of the Region, design requirements, licensing, further information on certificates of airworthiness and also on UAS operator certification.
- b) The working team understands that it is not yet time to work on the delegation of powers to other entities, as provided for in Part 149. It is proposed that at this early stage the regulation be left as "reserved" until completing discussions on Part 2.

Progress in the development of the RPAS LAR regulatory framework

5.25 The Meeting then noted that the First virtual meeting of the UAS/RPAS focal points of the SAM and SRVSOP States had requested the focal points to develop a proposal for a regulatory framework for RPAS intending to operate in the international IFR environment, so that States can have a regulatory structure in place, in line with the amendments to the standards and recommended practices (SARPs) of the related Annexes to the Convention on International Civil Aviation. This working group analysed the status and the reality of the States of the regional system in order to propose a regulatory framework for the South American Region.

5.26 The main document for understanding the current ICAO regulatory development context for international RPAS operations is Doc 10019, published by ICAO in 2015.

5.27 It is also important to note that this document provides the RPAS Panel with a common basis for the development of proposals for SARPs, PANS and guidelines. In other words, the manual serves as a guide for this ICAO development process, but with the future adoption of standards and procedures, it is expected that its contents will evolve.

5.28 The initial task of the working group was to develop an RPAS regulatory framework, seeking the incorporation of the SARPs into the LARs developed by the SRVSOP and listed in the table below:

Table 1 – Regulatory framework for the RPAS LAR

RPAS LAR	References
PEL LAR set	Annexes 1, 19 / ICAO Doc/Other regulations/Other ACs
OPS LAR set	Annexes 2, 6, 18, 19 / ICAO Doc/Other regulations /Other ACs

AIR LAR set	Annexes 6, 7, 8, 16, 19 /ICAO Doc/Other regulations/Other ACs
ANS LAR set	Annexes 2, 3, 4, 10, 11, 12, 15, 19 /ICAO Doc/Other regulations and ACs
AGA LAR set	Annexes 14, 19 /ICAO Doc/Other regulations/Other ACs
AIG	Annex 13

5.29 The working group met twice, on 31 March and 7 April 2021, with the aim of sharing needs and experiences. Some examples of discussion topics are: Regulations and requirements already issued by the participating States, issuance of some kind of certificate or authorisation for these aircraft, classification of unmanned aircraft (categories and limitations) in each State, difficulties, regulatory issues, etc.

5.30 It was noted that several States, while sharing many similar characteristics, were adopting different rules for aircraft that fell outside the international instrument flight rules (IFR).

5.31 Taking into account what is happening with the regulations being established in the Region for unmanned aircraft that fall outside the international flight rules, it is important that the LARs for the establishment of international RPAS instrument flight (IFR) requirements try to address this issue taking into account the specificities of each State, but helping them to comply with ICAO provisions contained in the SARPs and seeking harmonisation in the Region.

5.32 The working group noted that it was aware of the latest developments in the work carried out by ICAO, especially that the ICAO Council had adopted new provisions in Annexes 8 and 10 in early March 2021. The new provisions would enter into force on 12 July 2021 and would be applicable on 26 November 2026. The most important ones are related to Annex 8 to the Chicago Convention - *Airworthiness of aircraft*, and covered certification requirements for remotely piloted aeroplanes and helicopters, in addition to the remote pilot stations (RPS) from which they are operated.

5.33 The new SARPs in Annex 8 were supplemented by new provisions adopted by the Council on C2 links--the data links connecting the RPA and the RPS--in Annex 10 to the Convention - *Aeronautical communications*. These standards included Amendment 90 to Volume V, which addresses spectrum assignments that may be used for RPAS C2 links, and the adoption of an entirely new Volume VI, on RPAS C2 communication link systems and procedures.

5.34 It is also important to note that progress on RPAS required minor amendments to Annex 1 to the Chicago Convention - *Personnel Licensing* and Annex 2 - *Rules of the Air*, and would eventually be supported by more substantial changes in Annex 2, which were already under development. The previous Annex 1 standards adopted by the Council in 2018 introduced a regulatory structure for the issuance of remote pilot licences, applicable in November 2022.

5.35 As may be seen, ICAO continues to work on the promulgation of international instrument flight rules (IFR). Even with the adoption of new provisions in Annexes 8 and 10, these amendments are, for the time being, insufficient to enable international RPAS operations.

5.36 The basic standards, including those to be promulgated in Part IV of Annex 6, will be applicable only in 2026, and the rules on type certification in Annex 8, adopted this year 2021, will also apply to new RPAS types, if the type certificate is requested after 2026. A type certification programme takes 3 to 5 years of work to complete, so it is possible that RPAS may only be certified to perform these operations around 2030.

5.37 Unless the industries request States in the Region to certify RPAS based on the new Parts VIII, IX and X of Annex 8, which has not yet happened, the working group recommends that no efforts be made to develop the RPAS regulatory framework before ICAO has promulgated the associated SARPs, in particular the standards of the new Part IV of Annex 6.

5.38 It is of course important to work with the States and prepare them to receive type certificate requests. However, the working group considered that proposing an RPAS regulatory framework at this point in time would be of very little benefit to international instrument flight (IFR) operations, as traditional States of design were still trying first to better understand the practical aspects on a case-by-case basis. Consequently, incorporating Annex 8 SARPs would probably be insufficient to ensure global acceptance at the outset.

5.39 The Meeting then considered the following conclusions:

- The working group is aware of the latest developments in ICAO's work in support of international instrument flight (IFR) operations. But the vast majority of these standards will only be applicable from 2026 onwards.
- As this extensive work continues throughout ICAO, it is estimated that all 19 Annexes to the Chicago Convention will eventually require major or minor amendments to achieve the safe and efficient integration of RPAS into current global aviation frameworks.
- It is understood that the full international regulatory framework will only be available around 2030 and that, according to ICAO's current planning, the basic provisions would be applicable in 2026.
- Failure to adopt criteria for international IFR operations does not preclude the development of criteria for other operations (including international operations with a different scope, for example, in segregated airspace) or even if such operations are actually being conducted. In fact, the Chicago Convention states the following in Article 8:

Pilotless aircraft

"No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such authorization. Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft".

- Therefore, there are clear provisions for the States concerned to issue a special authorisation to allow this type of operation.
- The absence of a regulatory framework for international IFR operations does not preclude the development of other regulatory frameworks, nor does it prevent the conduct of such operations that are eligible for authorisation under Article 8 of the Chicago Convention.
- Given that the applicability dates of the RPAS-related provisions are being aligned to November 2026, it is important that the regional system be attentive to any and all

updates to the SARPs. However, the working group recommends not to make efforts to develop the RPAS regulatory framework before ICAO has promulgated the associated SARPs, in particular the standards of the new Part IV of Annex 6.

- Finally, the working group recognises the importance of establishing criteria to meet future demands in the international context. There are however other demands of a more immediate nature that are deemed to be of higher priority in the regional context, such as the UAS regulatory framework for domestic operations.

5.40 Regarding the proposals presented, the representative of Chile noted that the open category would need to be defined, since the development of LAR 101 sought to consider the limitations and proposals of this category as defined by the UAS CONOPS working group. In this regard, there was an interesting exchange of ideas, and the SRVSOP was requested to issue the necessary guidelines in view of the variables that may exist in this category.

5.41 Having analysed the progress made in the development of the UAS/RPAS regulatory frameworks, the Meeting agreed on the following conclusions:

Conclusion RVPF-UAS-RPAS/2-04 Acceptance of the development of the UAS regulatory framework in parts

First part

- a) accept the development of LAR 101 and CA 101-1 as a first part of the project, taking into account the actions agreed to in paragraphs 5.24 1) a), b) and c);
- b) request the support of the SRVSOP Coordinator General for the development of LAR 101 and CA 101-1, through the SRVSOP Technical Committee; and
- c) submit proposals on LAR 101 and CA 101-1 for acceptance by the Third meeting of UAS/RPAS focal points of the SAM and SRVSOP States, prior to submitting LAR 101 for approval by the SRVSOP JG and submission of CA 101-1 for approval by the SRVSOP Coordinator General.

Second part

- d) defer development of the draft LAR 102 and other regulations that may be proposed, until the working team has discussed in more detail the needs of the SAM Region in relation to aircraft outside the open/simple category;
- e) present a status report of the discussions on the draft LAR 102 and other regulations that may be proposed, at the Third virtual meeting of UAS/RPAS focal points of the SAM and SRVSOP States; and
- f) leave Part 149 as reserved, pending discussions on part two of the draft.

Conclusion RVPF-UAS-RPAS/2-05 Postponement of the development of the RPAS regulatory framework

- a) defer the development of the RPAS regulatory framework until ICAO promulgates the basic standards in the associated Annexes to the Convention, in particular the standards of the new Part IV of Annex 6.

Agenda Item 6: Other business

6.1 Under this agenda item, it was agreed that the Third virtual meeting of UAS/RPAS focal points of the SAM and SRVSOP States would be held on ***26 July 2021***.