

GT FRTO report

2.2 The FRTO GT held its second meeting on August 22 and 23, 2023, in a virtual medium, MS TEAMS. Mr. Julio Pereira is the coordinator of the task force. All material and summaries, including presentations, are available at the following link on the GESEA channel:

[https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG1%20PLANESPA/1.%20GRUPOS%20DE%20TAREA/GT%20FRTO%20\(previous%20GT%20DCT%20FRA\)/Reuniones/FRTO%202?csf=1&web=1&e=HEgskU](https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG1%20PLANESPA/1.%20GRUPOS%20DE%20TAREA/GT%20FRTO%20(previous%20GT%20DCT%20FRA)/Reuniones/FRTO%202?csf=1&web=1&e=HEgskU)

FRTO action plan/Job Card FRTO

2.3 On this agenda item, the meeting reviewed the FRTO Action Plan, developed at SG1-4/GESEA and approved at SAM/IG/29, which is attached as **Appendix A**. The meeting has decided to focus on the items of the action plan that were discussed at the GESEA/SG-1/FRTO-1 meeting, defined as "**Actions**", as will be discussed below.

Status: Digital Airspace System Analysis Tool (DASA)

Action 1: SAM States should report to the FRTO/2 meeting on possible interest in using the DASA tool and the possibility of providing the necessary airspace information.

Action 2: SAM States should inform the FRTO/2 meeting of interest in holding a specific call on the DASA tool to obtain more details about the tool, including other functionalities, in addition to UPRs.

2.4 On this agenda item, Brazil has reported on the status of the DASA tool and its use, among other functionalities, to propose, evaluate and publish UPRs in an automated way. CGNA is developing the regulations on the proposal, evaluation and use of UPRs in Brazil and a draft should be presented at the GESEA/SG1-5 meeting (Virtual – September 25-27), as well as the final version at the SAM/IG/30 meeting (Lima – October 23-27). In this regard, the representatives of Brazil informed that they will have to take a specific course on the DASA tool, both for ANSPs that demonstrate interest in the application of DASA, as well as for airlines that are interested in using it to propose UPRs in Brazil and in the States that implement it.

2.5 It was proposed that the course for airlines be held virtually, taking into account the difficulties of having the presence of users from all parts of the world. In relation to the ANSPs, the convenience of a face-to-face course was indicated, which allows for a more adequate interaction, mainly because the ANSPs will have a more complex process of feasibility analysis of the routes proposed by the airlines.

2.6 In this way, actions 1 and 2 will have to be discussed again after SAM/IG/30, when Brazil will have already presented the UPR regulations and the DASA course proposal.

UPR Implementation Points of Contact

Action 3: SAM States should provide a point of contact and an alternate point of contact for the analysis of UPR route catalog proposals.

2.7 On this agenda item, it was once again indicated the importance of States designating points of contact that can evaluate UPR proposals. Currently, the evaluation of UPRs depends on individual initiatives of some experts from the States, which leads to a significant delay in such analysis. By creating a database of UPR POCs, this process could be streamlined, as well as, for States that intend to implement DASA, the experience of these experts could be counted on in the process of its implementation. The meeting requested States to send their points of contact to the Secretariat.

2.8 At this FRTO/2 meeting, the following points of contact were appointed:

Perú: Luis Ojeda and Tomás Macedo
Venezuela: Carlos Castañeda and Jean Lozano

FRTO Implementation Strategy of Each SAM State - Goal for DTS and FRA Implementation in the Next 5 Years

Action 4: SAM States should present their FRTO implementation strategy, with a view to shaping the regional SAM strategy, as well as setting regional implementation targets.

2.9 The meeting has indicated once again that it is essential for each State to report its FRTO implementation strategy, with a view to enabling the formation of a Regional FRTO implementation plan, which will be incorporated into the FRTO Implementation Guidance Material, as well as, if deemed appropriate, in the CAR/SAM NNA Volume 3. In addition, this strategy will allow for the establishment of regional FRTO implementation targets. In this regard, the meeting has requested that States present their FRTO implementation strategy to the GESEA/SG1-5 meeting.

Aeronautical Publication Model for UPR Implementation

Action 5: SAM States should evaluate the proposed amendment to the AIP (attached as Appendix F to the summary of FRTO/1) and provide their suggested comments to the FRTO/2 meeting.

2.10 The meeting recalled the discussions of the FRTO/1 meeting, in which it was indicated that one of the main problems for the implementation of the proposed UPRs is the lack of an adequate aeronautical *publication* model. By nature, UPRs are flexible and "mainstream" publications, such as AIC, AIP Supplement or AIP Amendment may not be flexible enough to provide a good quality of services to airlines, as well as to assure ANSPs that the routes being flown are exactly what they expect and are prepared for.

2.11 In this sense, the *best* way to provide information to both pilots and ATCOs and, at the same time, grant the necessary flexibility to ANSPs to implement and cancel UPRs without a complicated aeronautical publication process, is to make a generic publication on UPRs in the AIP (possibly in ENR 3.5 – other routes) and include a link to the ANSP webpage where UPRs can be found. If the ANSP does not have a website or if there is no way to publish the UPRs on the ANSP website, a link to a specific Excel

file can be used, as was used, for example, in the Predefined IFR Flight Routes in the FIR Mexico – AIC A08/21 31 MAR 2021).

2.12 To get a complete overview of the entire UPR, mainly those involving several ANSPs, the complete route could be published on the website of the ICAO SAM Office or on the future SAM Portal.

2.13 In this regard, a proposal for a model amendment to the AIP was submitted, which is attached as **Appendix B**. The meeting has once again requested that States make their proposals for changes and comments directly via email to the secretary of GESEA, Fernando Hermoza, or to the coordinator of GADHOC FRTO, Julio Pereira. The meeting was of the opinion that the final draft of the UPR AIP model amendment should be submitted to GESEA/SG1-5 and approved during SAM/IG/30, to be used as a model for SAM States.

2.14 Examples of publications from Central America (CENAMER) and the Dominican Republic were presented, which are attached, respectively, as **Appendix C and Appendix D**. With regard to the draft AIC of Central America, which is still being evaluated by COCESNA for publication, an interesting mix has been observed between FRA and UPRs.

2.15 The need for a standardization of the nomenclature applied to the FRTO has also been observed, taking into account that the FRA concept indicated in the COCESNA AIC seems more similar to the DTS concept. Another important aspect of COCESNA's draft AIC is the concept of more generic UPRs, not necessarily connected to specific city pairs.

2.16 This may be an appropriate form of publication for States that do not yet have the possibility of publishing their UPRs on the ANSP website. In relation to the AIC of the Dominican Republic, the meeting was of the opinion that it is a fairly simple model, which facilitates flight planning, so that it is possible to optimize the trajectory in the Santo Domingo FIR. Once again, the need for a harmonization of the terms applied to the FRTO was identified, since the title of the AIC is Flexible Use of Airspace and should be "Strategic Direct Routing".

Establish the requirements for the implementation of FRTO B0/1 and B1/1 (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)

Action 6: Representatives of Ecuador will make a presentation on the MTCD, Trajectory Conformance and IDDA tools at the FRTO/2 meeting

2.17 The representatives of Ecuador, Christian Ramos and Jorge Zúñiga made presentations respectively on TCM and AIDC. Presentations are available in the GT FRTO/2 summary.

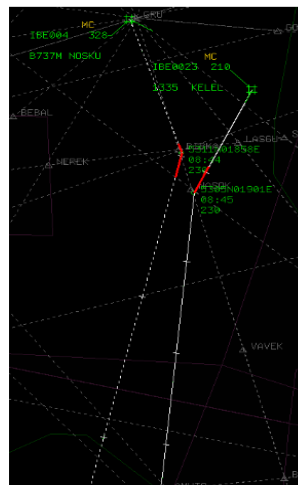
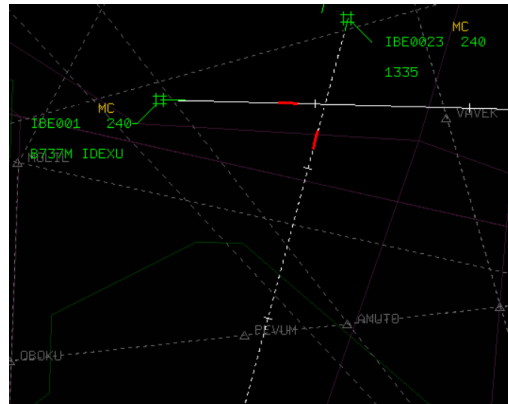
2.18 In relation to the MTCD conflict predictive function in the INDRA system, it was reported that this function involves monitoring the trajectory of all the system's flight plans that are under the control of the Air Traffic Control Center (ATCC). This function alerts the controller to the possible violation of the separation criteria (longitudinal, lateral and vertical).

2.19 This alert is displayed in the "Alarm Indicator" field of the track label by a yellow or red "MC" message, depending on the severity of the conflict. Tracks whose routes will not intersect, but their proximity can also create a conflict, are also detected as MTCD Conflict. A YELLOW "MC" message is displayed when the flight plan level at the predicted conflict point is outside the segment formed by the AFL and CFL values. A RED "MC" message is displayed when the flight plan level at the predicted conflict point is within the segment formed by the AFL and CFL values.

2.20 The ATCO can manually display the MTCDD conflict zone. When multiple tracks are in MTCDD conflict, or one track is in MTCDD conflict with other tracks, only one MTCDD conflict can be displayed at the same time.



2.21 Some examples of alarms are shown below.

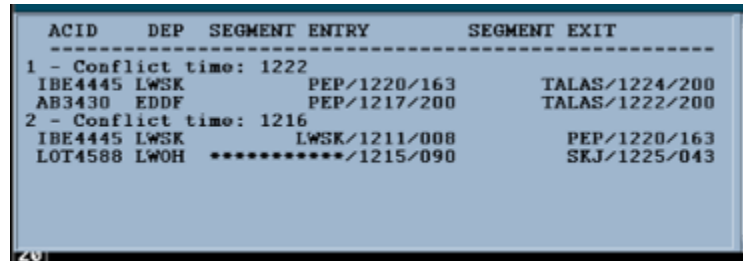


2.22 In the Conflicting Flight Plans (CONFLICT) function, the controller can request the list of pairs of FPLs that are in conflict if the MTCDD (Medium-Term Conflict Detection) function is active in the CMD. This list is presented in the FPL Conflicts Window with a title with the time the conflict was requested. The Conflicting FPL Window is presented when one of the following actions is performed:

- By clicking on the (CONFLICT) option in the [FPL] icon menu. This option displays all current pairs of conflicting FPLs.
- By clicking on the (CONFLICT) option in the [FPL] icon menu when accessing it through the FPL List (Sector List). This option presents the FPLs in conflict with the selected FP.

2.23 The Conflicting FPLs Window has two main sections (areas) and a command area, which are described below:

Elemento	Descripción
ACID	Callsign Indicativo.
DEP	Aeródromo de Salida.
SEGMENT ENTRY	Comienzo del segmento en el cual el vuelo entra en conflicto / ETO / Nivel del fijo de entrada.
SEGMENT EXIT	Final del segmento en el cual el vuelo sale del conflicto / ETO / Nivel del fijo de salida.



2.24 In relation to the Second Section (Graphic Area), the meeting was informed that it is a graphical representation of the conflict called the FP Conflict Graph. It consists of a graph X Y, where X represents the time in minutes that elapses from the one presented in the window title (hour 0 is the time at which the conflict was requested) and Y represents the distance between the conflicting FPLs. Conflicts are displayed on the chart with a symbol along with the conflict identification. The conflict symbol is placed on the graph, where the X coordinate is the time at which the FPLs are at the minimum distance. The Y-coordinate is the minimum distance of the conflict. The beginning of the vector is placed in the conflict symbol and the end is placed in the time of entry of the conflict.

2.25 Conflicts on the chart are displayed in two colors: RED or YELLOW. The submission criterion depends on two adaptive parameters:

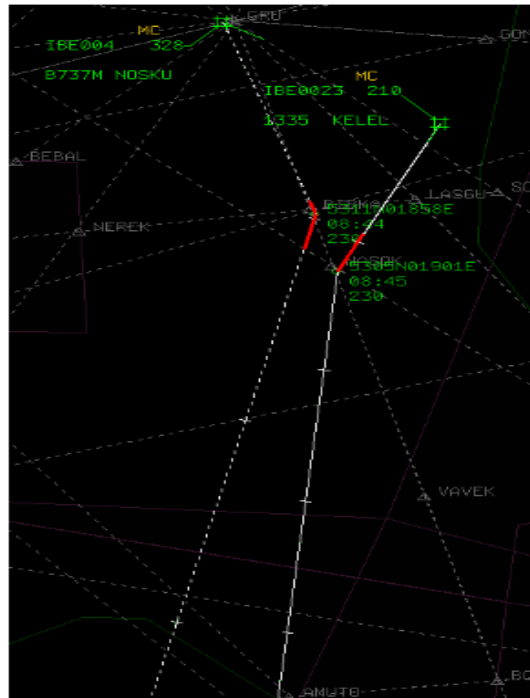
- Minimum Distance Alarm.
- Minimum Time Alarm.

2.26 An imaginary line is plotted on the graph with the following coordinates:

- X = 0, Y = Minimum Distance Alarm
- X = Minimum Time Alarm, Y = 0

2.27 All conflicts to the left of this imaginary line are presented in RED (most dangerous). All conflicts to the right of this imaginary line are displayed in YELLOW (least dangerous).

C/S	ADEP	SEGMENT ENTRY	SEGMENT EXIT
1 - Conflict time: 0843			
IBE0023	LLLL	5416N01958E/0822/230	5305N01901E/0845/230
IBE004	SSDD	5331N01846E/0840/230	5311N01858E/0844/230



2.28 The values represented in the graphs are configurable from the database according to the airspace in which the route is approved, these values can be Time or Distance.

2.29 They will be located according to the needs of the control center. The activation of the MTCD can be at the request of the ATC, from the presentation of the SDD situation.



2.30 Regarding the MTCD, the meeting agreed that the tool is essential for SDR and FRA implementation in environments of high complexity and/or with significant air traffic volume. In this regard, the meeting decided to request States to report whether their ATC systems have the MTCD tool, as

well as trajectory conformance, which presents the aircraft's trajectory and its compliance with the FPL on the controller's screen.

2.31 With regard to the AIDC, the presentation made by Ecuador has shown the example of the FPLs of a UPR between Atlanta/Lima and Lima/Atlanta, used by Delta Airlines, in which no problem was observed in the processing of messages related to the AIDC (ABI, LAM, EST, ACP, TOC and AOC), both between the Bogota/ACC Guayaquil ACC and between the Guayaquil/Lima ACC ACCs. An FPL example of a UPR between Santiago de Chile/Atlanta, also used by Delta Airlines, was also presented, in which an error was presented because the AKTUK point was not in the database of the ATC system of the ACC Guayaquil. Although this point is external to the Guayaquil FIR, the point is necessary to shape the trajectory that would be used in the AIDC. It is important to note that the point must be in box 15 of the FPL, regardless of the flight being performed on an ATS route in the section immediately after the FIR limit. It was also indicated that points based on geographic coordinates can only be supported by the AIDC functionality, as long as it is located in the system's workspace.

Evaluate the implementation status of the FRTO B0/1 and B1/1 implementation requirements (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)

2.32 The FRTO/1 meeting has requested States to provide the following information, with a view to determining the feasibility of implementing the FRTO and/or optimizing longitudinal separation:

- a) VHF Coverage Map – FL 250
- b) ATS Surveillance Coverage Map – FL 250
- c) Information on the MTCD, Path Conformance and AIDC tools available in your ATC systems.

Action 7: SAM States should provide the information in item 14 (summary of FRTO/1) to FRTO/2.

2.33 In this regard, Colombia and Venezuela have made presentations on the subject. Both presentations are available in the FRTO/2 Meeting folder in the GESEA channel.

2.34 The representative of Colombia indicated that there were sixteen secondary radars distributed in fifteen stations, fourteen of which were monopulse radars. These radars provide complete coverage of Colombian airspace at FL 250, except for an oceanic portion of the Barranquilla FIR. Also available are 26 ADS-B receivers, which in the same way offer full coverage to FL 250.

2.35 The representative of Venezuela had demonstrated the relationship between the ATS/VHF surveillance coverage and the EDE portion of the airspace of the Maiquetia FIR. Due to the lack of ATS surveillance coverage in northern and southern portions of the FIR, it was necessary to limit the application of the DTS in the portion currently used. In this sense, it has been recommended that a mixture of DTS and UPRs be applied in the Maiquetia FIR as a way to optimize flight paths in this airspace. In addition, the implementation of ADS-B stations in the south of the Maiquetia FIR, in places where VHF equipment already exists, should be evaluated as a way to complement the ATS surveillance coverage in this sector and allow the expansion of the EDE, as well as the optimization of longitudinal separation. Such implementation must be based on a cost-benefit analysis, which must also consider the ADS-B capacity of the fleet of aircraft operating in the Maiquetia FIR.

Conclusions of the FRTO GT

2.36 The Meeting instructed the Secretariat to coordinate with the SAM/IG to designate a representative and an alternate for each state to act as an "operational" point of contact with the FRTO GT for testing, testing, information management, flight plan coordination, etc.

2.37 The Meeting highlighted the great importance of requesting the preparation of a feedback document from each MAR State, regarding the course of the activities and trials related to DTS and UPR routes that have been carried out to date in the Region.

2.38 The Secretariat confirmed that between November 20 and December 1, 2023, the preparation of the Guidance Material on the implementation of the FRTO module (FRA, EDE, UPRs) has been scheduled. This activity is supported by RLA/06/901.

Next meeting of the FRTO GT

2.39 The FRTO/3 virtual meeting will be held from December 12 to 13, 2023, from 13:00 to 16:00 UTC (08:00 to 11:00 local time Lima).

GT PLAN/LOA ATS - GADHOC PLAN CONT reports

2.40 The CONT PLAN/LOA ATS Task Force of Subgroup 1 presented the activities carried out by it to date and set out the actions to be taken in the last quarter of the current year and in 2024.

2.41 Reference was also made to the work that had been carried out in the past and that led to the development and implementation of the current Work Plan, namely:

- Framework Plan for Contingencies of the SAM Region (MCATS/SAM), whose preparation and approval was carried out at the Twenty-Fifth Workshop/Meeting of the Implementation Group of the South American Region (SAM/IG 25), in 2020;
- Amendment to Appendix E - TERMS OF REFERENCE OF THE CONTINGENCY COORDINATION TEAM (CCT) - and introduction of Appendix I - HARMONIZATION PROCESSES FOR ATS LEVEL 2 contingency plans - to the MCATS/SAM, in SAM/IG 27, in the year 2022. The latter stipulates mechanisms for updating these Plans in an expeditious manner; and
- Implementation of harmonization actions of ATS LEVEL 2 Contingency Plans through the formation of working groups between two or more adjacent States of the SAM Region, during the year 2022.

2.42 Consequently, in order to meet the strategic objectives agreed in SAM/IG/29 – carried out between 15 and 19 May 2023 – in terms of ATS Contingency Plans and LOA ATS, included in the CONT PLAN/LOA ATS Job Card, attached to the Final Report of said Workshop/Meeting, Two (2) working proposals were made:

1. WORK PROPOSAL N° 1 : develop Guide Material for the preparation and updating of ATS Operational Letters of Agreement (LOA) that involved the performance of the following tasks:

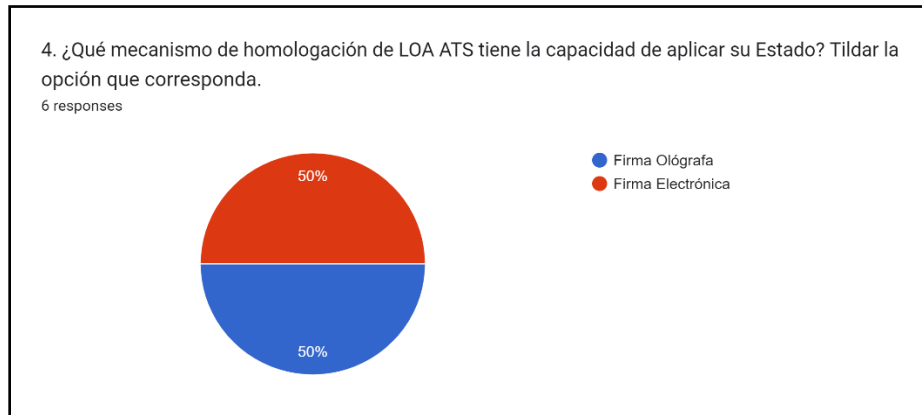
- i. Diagnosis and/or Evaluation of the Processes of Elaboration and Updating of ATS LOAs applied by the MAR States;

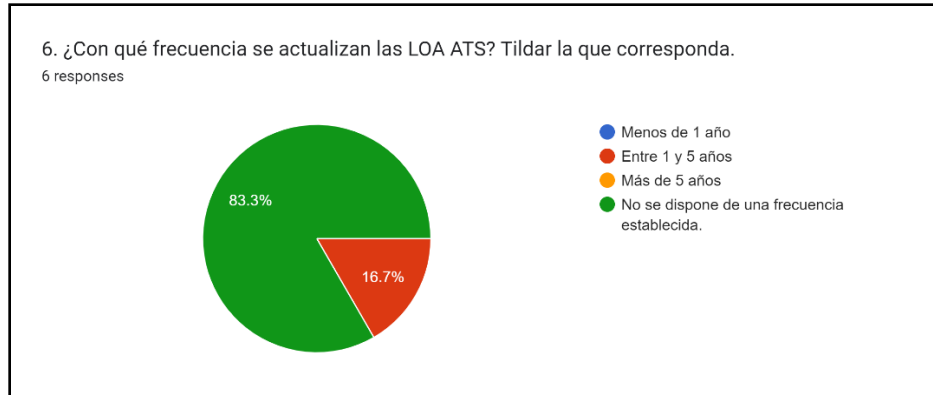
- ii. Identification of needs and opportunities for improvement;
- iii. Analysis of available material in the field and good practices; and
- iv. Preparation of a document that includes the reference guidance material and a standardized ATS LOA template.

2. WORK PROPOSAL N° 2: Develop a Strengthening Plan for ATS Contingency Planning in the SAM Region.

In this regard, two (2) working groups were set up to address each of the aforementioned proposals.

With regard to Work Proposal No. 1, whose working group is led by ANS Specialist Mr. Jean Lozano, from Venezuela, the most significant results of the diagnosis were reported, implemented through a survey of the States that make up the Working Group: Argentina; Bolivia; Paraguay; Peru; Uruguay and Venezuela, which determined the guidelines for the preparation of the document called "Guide for the preparation and updating of ATS Operational Letters of Agreement (CAO)". These results are:





2.43 Next, the aspects addressed in the preparation of the aforementioned document and its content were discussed. It is important to note that, in addition to the results of the referenced survey, the text introduced in Appendix I of the MCATS/SAM has been taken into account (in addition to the results of the referenced survey).

2.44 This document includes mechanisms for the preparation, updating and approval of CAO ATS, and contemplates the use of digital tools and platforms that contribute to making such mechanisms agile and dynamic, considering that these are provisions of a technical-operational nature to be applied by Air Traffic Controllers personnel, so they must be updated in a timely manner and made available to these personnel in an expeditious manner. To that end, it also provides for the simplification of the initialling process and for arrangements as to the language in which the Charters are to be drafted. Finally, a minimum content, structured by annexes, is proposed, as follows:

- a) Definitions and abbreviations;
- b) Airspaces affected;
- c) Flight data exchange;
- d) Coordination procedures;
- e) Control and communication procedures;
- f) Coordination procedures based on ATS Surveillance Systems; and
- g) Supplementary Procedures.

In relation to WORK PROPOSAL No. 2, it contemplates the following Activities:

- a) Monitoring of the degree of progress of each State of the SAM Region with respect to the harmonization of the ATS Level 2 Contingency Plans, based on the aspects of the MCATS/SAM established for this purpose;
- b) Review and Update of the MCATS/SAM;
- c) Tabletop Exercises of ATS Level 2 Contingency Plans between adjacent States of the SAM Region, and between them and the neighboring States of the CAR Region;
- d) A Draft that includes provisions related to actions to be taken in the event of natural disasters and/or catastrophic events for the restoration of the provision of Air Navigation Services and operations at the Airports, in order to articulate the procedures of the MCATS/SAM and those that are introduced in the "Regional Contingency Plan for Natural Disasters and/or Catastrophic Events", which will be developed within the framework of the HADRA (Aviation Humanitarian Assistance and Disaster Response (HADRA) initiative; and,
- e) A Draft of the ATS Level 3 Contingency Plan.

In this regard, a separate paper is presented in SAMIG/30 on the results of the Table Top Exercise held on 7 and 8 September.

Next steps for the GT

On the basis of the above, it was agreed to take the following actions:

- Regarding the guidance material for the development and updating of CAO ATS:
 - 1) Submission of the draft document entitled "Guide for the preparation and updating of CAO ATS" to the States of the SAM Region so that they may make the comments and suggestions they deem pertinent, before October 6;
 - 2) Translation of the cited document into English, in coordination with the RO SAM, whose update date is 2nd to be confirmed"; and
 - 3) Approval of the "Guide" and making it available to the MAR States, the date of which is "to be confirmed".
- In relation to the revision and updating of the MCATS/SAM: work will begin to this end, taking into account the opportunities for improvement identified since its issuance to date; as well as the results of the ATS Level 2 Contingency Plans Desktop Exercise (Tabletop); and provisions for the HADRA initiative.
- Regarding the Desktop Exercises (Tabletop) of ATS Contingency Plans, the Study Note presented separately should be analyzed.

Table top Exercise (TTX) report on ATS contingency plans.

2.45 See the separate paper.

Report on the Airspace Planning Guide Manual of the SAM Region and the Workshops taught.

2.46 See the separate paper.

2024 Work Plan

2.47 The requirements of the Task Forces and the context of GESEA and SAMIG's progress are raised, to define activities for 2024 and manage the support of RLA 06 901. See table below:

Activities	Dates	Objectives / Deliverables
GESEA Plenary Meeting/7	Virtual, 05 to 08 March	<ul style="list-style-type: none"> • Organization of the implementation of efficiency and capacity initiatives. 2023 Subgroup Deliverables • Review and adjustments of the PTA for Subgroups SG1 – SG2 – SG3 and respective Task Groups. • Follow up.
FRTO & SAM Airspace Optimization Webinar	Virtual, March 13-15	<ul style="list-style-type: none"> • Dissemination and studies on the regional guide material on the implementation of the FRTO module, and DTS and UPR concepts.
SAMIG/31 Priorities for the implementation of air navigation considered in GREPICAS programs, vol III Regional ANP and Regional Initiatives	Lima, May 20-24	<ul style="list-style-type: none"> • Follow-up of the implementation and execution and optimization activities under the GESEA studies. • Support to the Management of the Regional Plan ANP CAR-SAM Vol. III.
GESEA SG1 PLANESPA Meeting	Virtual, July 17, 18, 19	<ul style="list-style-type: none"> • Follow-up of studies and activities for the implementation and optimisation of airspace. ATS Contingency Plans,
TTX PLANCONT ATS	Virtual, July 24	SAM ANSP Statement ATS Contingency Plan TBD
TTX PLANCONT ATS	Virtual, October 9	SAM ANSP Statement ATS Contingency Plan TBD
SAMIG/32 Priorities for the implementation of air navigation considered in GREPICAS programs, vol III Regional ANP and Regional Initiatives	Lima, October 21-25	<ul style="list-style-type: none"> • Follow-up of the implementation and execution and optimization activities under the GESEA studies. • Support to the Management of the Regional Plan ANP CAR-SAM Vol. III.

Scheme for synchronizing GESEA Meetings

J PEREIRA	SG1 GT FRTO – 4TH TUESDAY & WEDNESDAY
D KUC	SG1 GTPLAN/LOA ATS – 1ST MONDAY
C CASTAÑEDA	SG2 GT IMPLAN – 2ND THURSDAY
E TAFUR	SG2 GT DOCS PANS OPS – CONVENES ACCORDING TO PROGRESS
A DUARTE	SG3 GT PLAN DCB – LAST MONDAY
J CORNELIO	SG3 GT DOCS ATFM – 2ND MONDAY
L COSTA	SG3 GT DOCS ATFM – CONVENES ACCORDING TO PROGRESS

3. Suggested Actions

3.1 The Meeting is invited to::

- a) analyze the information provided;
- b) provide for the designation of "operational" points of contact with the FRTO GT of SG1 GESEA;
- c) provide for the preparation of feedback from each AM State, regarding the course of the activities and tests related to the DTS and UPR routes; and
- d) validate the 2024 Work Plan.

APPENDIX A
FRTO ACTION PLAN

Activity	Responsible	Start Date	End Date	State	Obs
Track the Implementation Status of UPRs in the SAM Region	GT FRTO	May 23	TBD	In Progress	
Track the Implementation Status of Strategic Direct Routing in the SAM Region	GT FRTO	May 23	TBD	In Progress	Implemented in the Amazon, Guayaquil, Georgetown and Recife FIRs. Implemented in most of the FIR Brasilia, Curitiba and Maiquetía. Implemented in portions of the Lima and Santiago FIRs.
Track FRA Implementation Status in the SAM Region	GT FRTO	May 23	TBD	In Progress	Implemented in a portion of the Cayenne FIR.
Track the Implementation Status of 20 NM Longitudinal Separation (GNSS)	GT FRTO	May 23	TBD	In Progress	
Track the Implementation Status of 10/5 NM Longitudinal Spacing (ATS Surveillance)	GT FRTO	May 23	TBD	In Progress	
Set a goal for DTS and FRA implementation in the next 5 years	SG1/GESEA	May 23	July 23	In Progress	Reference: NE 47 RAAC/17 – IATA
Implement Strategic Direct Routing in airspaces where feasible	States	May 20	Nov 23	In Progress	
Develop aeronautical publication model for UPR implementation	Julio Pereira	May 23	July 23	In Progress	

Activity	Responsible	Start Date	End Date	State	Obs
Develop a safety case based on the new operational scenario with the use of the UPR and DTS	SG1/GESEA	May 23	TBD	In Progress	
Develop a communication plan for FRTO implementation (UPR, EDE and FRA)	SG1/GESEA	May 23	TBD	In Progress	
Update the Operational Agreement Letters for the Implementation of the DTS (Cross Border)	States	May 20	TBD	In Progress	
Establish the requirements for the implementation of FRTO B0/1 and B1/1 (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT FRTO	May 20	TBD	In Progress	
Evaluate the implementation status of the FRTO B0/1 and B1/1 implementation requirements (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT ATM/CNS	May 23	TBD	In Progress	
Establish key performance indicators.	Julio Pereira	May 20	TBD	In Progress	
Develop Implementation Guide Material of the FRTO module (FRA, EDE and UPRs)	GT FRTO	20 November 2023	01 December 2023	In Progress	It will be supported by the RLA 06/901 project
Propose Intra-regional UPRs (SAM Region)	IATA/Airlines	01 April 21	TBD	In Progress	
Evaluate Intra-regional UPRs	States	01 April 21	TBD	In Progress	
Develop an evaluation process for inter-regional UPRs	GT FRTO	01 April 21	TBD	In Progress	
GESEA/SG1-5 Meeting	Julio Pereira Fernando Hermoza	25 to 27 September		In Progress	SAMIG/30 – 23 & 27 OCT 2023
GT FRTO/1 Meeting ATM/CNS Enablers	Julio Pereira Fernando Hermoza	June 20-21 (13:00-16:00 UTC)		In Progress	
GT FRTO/2 Meeting ATM/CNS Enablers	Julio Pereira Fernando	August 22-23 (13:00-16:00 UTC)		In Progress	

	Hermoza				
GT Meeting FRTO/3 ATM/CNS Enablers	Julio Pereira Fernando Hermoza	December 12 and 13 (13:00-16:00 UTC)		In Progress	
Develop a model/guide for Operational Safety Assessment for the Implementation of FRTO B0/1.	Fernando Hermoza	May 20	July 20	Finalized	
Develop an aeronautical publication model for DTS implementation	Julio Pereira Fernando Hermoza	May 20	July 20	Finalized	
Develop an educational brochure to disseminate the DTS concept for CTAs and Pilots, ARO Officers.	New Rosana	May 20	July 20	Finalized	

APPENDIX C

UPR AT FIR CENAMER

FREE ROUTE AIRSPACE AND USER PREFERRED ROUTES (UPRs) IN CENAMER FIR

1 Purpose

1.1 The purpose of this Aeronautical Information Circular (AIC) is to disseminate to all personnel involved in air operations, a trial of Free Route Airspace and a series of User Preferred Routes (UPRs) that may be filed in their flight plan and used by Air Traffic Control in the clearance.

2 DEFINITION

2.1 Free Route Airspace (FRA) is a specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate published significant points, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.

2.2 UPRs are routes requested by the airlines, or proposed by the ANSP, to optimize the flight path between a specific city-pair. UPR trial requests must be approved by all Air Navigation Service Providers (ANSPs), through their Flow Management Units, Area Control Centre managers, or Civil Aviation Authorities, as applicable, in which any segment of the route occurs. Within this airspace, flights remain subject to air traffic control.

2.3 After a requested UPR is approved for a trial, it will be available for a specified period (i.e., trial period) and for use by a specific airline. The purpose of the UPR trial is to determine the operational feasibility of the UPR segments. Once the operational feasibility of the UPR segments have been verified, the States will publish them via AIC/AIP.

2.4 After the States publish the UPR segments within their AIC/AIPs, those segments may be used by all aircraft operators for any city pair until further notice.

2.5 The personnel responsible for the preparation and presentation of flight plans (Aircraft Operators or Pilots) are responsible for complying with the provisions of this AIC.

3 Introduction

3.1 The ICAO Global Air Navigation Plan (GANP) and Aviation System Block Upgrades (ASBU) methodology provide a flexible, global approach for all aviation stakeholders to advance their Air Navigation capacities based on their specific operational requirements. ASBU FRTO Block 0 Element 1 (B0/1, Direct routing (DCT) states that DCTs are established at national and regional levels and can be made available for flight planning within the published conditions of use. DCTs should be considered an early iteration of the FRA (Free Route Airspace) concept of operation that allow airspace users to optimize flight and fuel planning.

3.2 While the implementation of the broader concept of DCT routing is still being developed, it is operationally important to take advantage of opportunities to implement user preferred routes for filing flight plans, which consist of the most optimized routes possible according to the technical/operational capabilities of the involved ANSPs.

3.3 ICAO NACC Airspace Optimization Task Force, ICAO SAM Airspace Study and Implementation Group (GESEA), CANSO (CADENA), and IATA have identified opportunities to achieve fuel savings and reduce CO2 emissions by working collaboratively to help optimize a flight’s end-to-end routing. In today’s environment, after the flight plan has been filed and the aircraft is enroute, pilots will often receive “direct routings” from air traffic controllers. While this can help shorten the route, the aircraft has already been fueled for the longer route and must still carry that extra fuel to destination.

3.4 By working with the Civil Aviation Authorities (CAA), ANSPs, airlines, NACC and SAM ICAO offices, and with the support of CANSO (CADENA) and IATA, it has been possible to facilitate the development of optimized city-pair user preferred routes that can be used by dispatchers for filing flight plans so that fuel savings and CO2 reductions can be achieved.

3.5 Section 5 below contains routes that may be used by aircraft operators in the preparation of optimized IFR Flight Plans (FPL) between origin and destination airports.

3.6 As additional UPRs opportunities are identified and developed by ICAO NACC Airspace Optimization Task Force, the ICAO SAM Airspace Study and Implementation Group (GESEA), CANSO (CADENA), and IATA, and approved for use by the CAAs and ANSPs, this AIC will be updated and published.

4 Aircraft Capabilities

4.1 In order to file and fly the optimized routes, the following minimum aircraft capabilities are required:

Flight Plan Entries	
Communication Requirements	Voice communication –VHF (mandatory), CPDLC (not mandatory), to maintain contact over the entire route to be flown.
PBN Requirements	RNAV-5
PBN in field 18 PBN/	B1/B2

5 FREE ROUTE and UPRs in CENAMER FIR

5.1 Free Route Airspace as defined in section 2 of this circular will be available for aircraft overflying the CENAMER FIR at or above FL300, oceanic airspace is excluded from initial trials.

5.2 Due to the complexity of Central American Airspace, restrictions will apply for departures and arrivals; UPRs will be available in this stage of trials, and must be coordinated between users and COCESNA

5.3 As pertains to the portion of the routes in the CENAMER FIR, the UPR segments below have been coordinated, reviewed, and approved by COCESNA for use by aircraft departing or arriving in Central America.

- a) Overflights from Guayaquil's airspace (SEGU) to Merida's (MMMD) airspace:
 - RADIM DCT AMIDA
 - RADIM DCT SIGMA
 - SETRI DCT NALDA
- b) Overflights from Merida's airspace (MMMD) to Guayaquil's airspace (SEGU):
 - ANIKO DCT RADIM
- c) Traffic departing from MROC:
 - ULAPO DCT BZE
 - ULAPO DCT BTO
 - ULAPO DCT AMIDA
 - ULAPO DCT SIGMA
 - RADON DCT AMUBI
- d) Traffic departing from MRLB:
 - LISPA DCT SELEK
 - LISPA DCT BZE
 - LISPA DCT BTO
- e) Traffic arriving in MROC:
 - PIXEN DCT LIB
 - TUGET DCT LIB
 - ANIKO DCT LIB

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APPENDIX D

EDE AT FIR SANTO DOMINGO

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DIRECCIÓN DE NAVEGACIÓN AÉREA
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USO FLEXIBLE DEL ESPACIO AÉREO
FLEXIBLE USE OF THE AIRSPACE

<p>En apoyo de los operadores de aeronaves, como contribución para ayudar en la reducción del costo operativo, el Instituto Dominicano de Aviación Civil (IDAC) ha decidido implementar el "uso flexible del espacio aéreo" dentro de la FIR Santo Domingo, permitiendo el uso DCT en la Casilla 15 del Plan de Vuelo, sin perjuicio del cumplimiento de los procedimientos de navegación y evitando las áreas Prohibidas, Restringidas y Peligrosas.</p> <p>En tal sentido se podrá proceder de la siguiente manera:</p> <p>Sobrevuelos: Usar los puntos de notificación publicados para ingresar o salir de la FIR.</p> <p>Llegadas: Dentro de la FIR, DCT podría terminar en el punto de notificación donde inicia la STAR.</p> <p>Salidas: El inicio del DCT podría aprobarse a partir del último punto de notificación de la SID.</p>	<p>In support of aircraft operators, such as contribution to help reduce operating costs, the Instituto Dominicano de Aviación Civil (IDAC) has decided to implement the "flexible use of airspace" within the Santo Domingo FIR, allowing the use of DCT in Box 15 of the Flight Plan, without prejudice compliance with navigation procedures and avoiding Prohibited, Restricted and Dangerous areas.</p> <p>In this sense, you can proceed as follows:</p> <p>Overflights: Use published waypoints for entry or exit of the FIR.</p> <p>Arrivals: Within the FIR, the DCT could end at the waypoint where the STAR initiates.</p> <p>Departures: The start of the DCT could be approved as of last reporting point of the SID.</p>
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