



**SAM ATSRO/4**

**INTERNATIONAL CIVIL AVIATION ORGANIZATION  
South American Regional Office**

**Regional Project RLA/06/901**

**FINAL REPORT**

**FOURTH SAM WORKSHOP/MEETING ON ATS ROUTES NETWORK  
OPTIMISATION**

**(SAM ATSRO/4)**

**(Lima, Peru, 2 to 6 July 2012)**

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**INDEX**

i -	Index .....	i-1
ii -	History of the Meeting.....	ii-1
	Place and duration of the Meeting.....	ii-1
	Opening ceremony and other matters.....	ii-1
	Schedule, Organization, Working Methods, Officers and Secretariat .....	ii-1
	Working languages.....	ii-1
	Agenda.....	ii-1
	Attendance.....	ii-2
iii -	List of participants.....	iii-1
	<b>Report on Agenda Item 1:</b> .....	1-1
	Review of the South American Region ATS routes network Optimisation Programme	
	<b>Agenda Item 2:</b> .....	2-1
	Analysis of Version 02 of the SAM ATS routes network	
	<b>Report on Agenda Item 3:</b> .....	3-1
	Other business	

## **HISTORY OF THE MEETING**

### **ii-1 PLACE AND DURATION OF THE MEETING**

The Fourth SAM Workshop on ATS routes network optimisation (SAM ATSRO/4) was held at the ICAO SAM Regional Office premises in Lima, Peru, from 2 to 6 July 2012, with the support of Regional Project RLA/06/901.

### **ii-2 OPENING CEREMONY AND OTHER MATTERS**

Mr. Oscar Quesada, Deputy Director of the ICAO South American Office, greeted the participants, and highlighted the importance of the issues to be dealt with. He also thanked the participants and aeronautical authorities and international organisations for the participation in this important event and highlighted the success obtained with the implementation of Version 01 of the ATS routes network in March 2011. Further, he inaugurated the meeting.

### **ii-3 SCHEDULE, ORGANIZATION, WORKING METHODS, OFFICERS AND SECRETARIAT**

The Meeting agreed to hold its sessions from 0900 to 1530 hours, with appropriate breaks. The work was done with the Meeting as a Single Committee, contemplating the creation of Ad-Hoc Groups to deal with some items of the agenda, if deemed appropriate.

Mr. Ricardo Deville, from the Delegation of Panama, was unanimously elected as President of the Meeting, and Mr. Tomás Yentzch, from Paraguay, was elected as Vice-Chairman of the Meeting. Mr. Celso Figueiredo, RO/ATM/SAR acted as Secretary, being assisted by Messrs. Onofrio Smarrelli, RO/CNS and Roberto Arca, RO/AIM/SAR/ATM, from the SAM Regional Office. In addition, Mr. Jorge Fernández Demarco, ATM Adviser, and Mr. Tomás Yentzch supported the work of the meeting, in view that they carried out preliminary studies for the implementation of Phase 3, Version 02 of the ATS routes network. Also, Ms. Maribel Jenny Choque (FUA), Ms. Carolina Maciel, and Messrs. Fernando Hermoza, Luciano Perez Unzueta (routes), and David Guerrero (FPL) from the delegations of Bolivia, Paraguay, Peru and IATA, respectively, moderated the Ad-Hoc Groups related with the different agenda items.

### **ii-4 WORKING LANGUAGES**

The working language of the Meeting was Spanish, with simultaneous interpretation in English, and its relevant documentation was presented in Spanish and English.

### **ii-5 AGENDA**

The following agenda was adopted:

Agenda Item 1: Review of the South American Region ATS routes network Optimisation Programme

Agenda Item 2: Analysis of Version 02 of the SAM ATS routes network

Agenda Item 3:           Other matters

ii-6                   **ATTENDANCE**

The meeting was attended by 11 States of the SAM Region, Argentina, Bolivia, Brazil, Chile, Ecuador, Panama, Paraguay, Perú, Suriname, Uruguay and Venezuela; one International Organisation, IATA, making a total of 26 participants. The list of participants is shown in page iii-1.

**SAM ATSRO/4**  
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7. José Tristão Mariano

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10. Ricardo Deville

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24. Luis Vera Flores
25. David Guerrero
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**Agenda Item 1:           Review of the action plan of the SAM ATS route network optimisation programme**

1.1           According to the work methodology applied at previous ATS/RO meetings, the action plan of the SAM ATS Optimisation Programme is updated when necessary in light of route improvements agreed upon, and adjusted according to the new tasks to be carried out by States.

1.2           The Meeting, when analysing the action plan modified by the SAM/IG/9 meeting, which appears in **Appendix A** to this part of the report, considered that it was not necessary to amend the action plan for Phase 3, Version 2, taking into account that the risk analysis would provide more information to make the necessary adjustments.

**APPENDIX A (REVISED 16/05/12)****PROGRAMME FOR OPTIMISING THE ATS ROUTE NETWORK IN THE SOUTH AMERICAN REGION  
(GPIs 1, 5, 7, 8, 10, 11)**

<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Responsible party</b>	<b>Observations</b>
<b>1. Phase One – RNAV-5 Implementation</b>				
1.1. RNAV-5 implementation in the SAM Region	<b>Apr 2008</b>	<b>Oct 2011</b>	<b>Regional Project RLA/06/901</b>	<b>Completed</b> Implemented on 20 October 2011
<b>2. Phase Two – Implementation of Version 1 of the SAM ATS Route Network</b>				
<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Responsible party</b>	<b>Observations</b>
<b>2.1. Conduct a Feasibility Study for Optimising the SAM Route Network</b>	March 2009	Apr 2009	Regional Project RLA/06/901	<b>Completed</b>
<b>2.2. Airspace Concept</b>				
2.2.1 Collect traffic data to understand air traffic flows	June 2008	SAM/IG/4	SAM/PBN/IG (Project RLA/06/901) States	<b>Completed</b> Secretariat sent request to States for data collection through letter LT 2/3A.13-LN 3/24.6.1-SA364 dated 8 June 2009. Deadline reply: 9 September 2009. Except for French Guyana and Panama all SAM States sent data collection.
2.2.2 Analyse the fleet navigation capacity	June 2008	SAM/IG/4	SAM/PBN/IG (Projects RLA/06/901 and RLA/99/901)	<b>Completed</b> Task 1.3 of the RNAV-5 Implementation Project

			States IATA	
2.2.3	Determine the gateways of the main TMAs in the SAM Region	SAM/IG/3	SAM/IG/4	States  <b>Completed</b> Argentina, Bolivia, Brazil, Chile, Colombia, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela.
2.2.4	Determine and obtain the necessary tools to make the study mentioned in item 2.2.5 ( aeronautical charts, specific software)	SAM/IG/3	SAM/IG/4	SAM/PBN/IG (Project RLA/06/901)  <b>Completed</b> Flight Star.(Verify if the acquisition of another software is necessary)
2.2.5	<p>Make a detailed study of the SAM ATS route network, with a view to preparing version 1 of the route network, including the following:</p> <ul style="list-style-type: none"> <li>• Indicate the domestic and international ATS routes that should be eliminated, in accordance with their use;</li> <li>• Propose the volume of exclusionary airspace for RNAV-5 application</li> <li>• Indicate the “conventional” RNAV routes that should be eliminated or replaced by RNAV routes in the exclusionary RNAV-5 airspace.</li> <li>• Indicate the RNAV routes that should be realigned, in accordance with the gateways of the main SAM TMAs (see 2.2.3).</li> <li>• Describe in detail the proposed new SAM route network, based on the analysis of the aforementioned items.</li> <li>• Describe in detail the interface between the SAM route network and the CAR route network.</li> <li>• Propose the initial draft Proposal of Amendment to the CAR/SAM ANP</li> </ul>	SAM/IG/4	March 2010	SAM/PBN/IG (Project RLA/06/901)  <b>Completed</b> Three persons for a period of 3 weeks in order to carry out study. This requirement will be presented to the RLA/06/901 RCC meeting.  3 persons for a 3 week period.  IATA and operators would be invited to select one person to assist in the development of this task.

2.2.6 Prepare safety assessment required, applying a qualitative methodology through the use of SMS	April 2010	May 2010	Project RLA/06/901	<p><b>Completed</b></p> <p>This task requires the hiring of 1 expert in order to carry out required assessment applying SMS.</p> <p>This requirement will be presented to the RLA/06/901 RCC meeting.</p> <p>One person two weeks</p>
2.2.7 Hold the Workshop of Experts from the SAM States to review and validate the study made under item 2.2.5.	SAM/IG/5	June 2010	SAM/PBN/IG (Project RLA/06/901) States	<p><b>Completed</b></p> <p>This task requires the approval of the RCC meeting, in order to be able to count with RLA/06/901 support.</p> <p>Further to SAM/IG/5</p>
<b>2.3 Implementation of Version 1 of the SAM ATS Route Network</b>				
2.3.1 Process the proposal of amendment to the CAR/SAM Air Navigation Plan	TBD	TBD	SAM Regional Office	<p><b>Completed</b></p> <p>Shall depend on the decisions to be adopted by the routes workshop of 2.2.6</p>
2.3.2 Publish version 1 of the SAM ATS Route Network	TBD	TBD	States	<p><b>Completed</b></p> <p>Shall depend on the decisions adopted in the routes workshop of 2.2.6.</p>
2.3.3 Entry into effect of version 1 of the SAM ATS Route Network	TBD	TBD	TBD	<p><b>Completed</b></p>

<b>3. Phase Three – Implementation of Version 2 of the SAM ATS Route Network</b>				
<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Responsible party</b>	<b>Observations</b>
<b>3.1. Flexible Use of Airspace</b>				
3.1.1. Develop guidance material for the application of the Flexible Use of Airspace concept, including: <ul style="list-style-type: none"> <li>• Model for FUA LOA</li> <li>• Model for using non-permanent routes similar to that applied in EUROCONTROL (Conditional Routes – CDR).</li> <li>• Criterion for defining scenarios in which non-permanent routes are applied</li> <li>• Criterion for categorising non-permanent routes</li> <li>• Harmonised publication of non-permanent routes</li> <li>• Representation of non-permanent routes in aeronautical charts</li> </ul>	SAM/ATSRO/3	SAM/IG/9	SAM/PBN/IG (Project RLA/06/901)	<b>Completed</b>
3.1.2. Establish the Civil-Military Coordination Committee to evaluate application of the Flexible Use of Airspace concept mentioned in 3.1.1.	SAM/IG/7	SAM/IG/9	States	The Civil/Military Committees should be implemented in those States which have not done so. Civil/Military Meeting/Workshop carried out in Lima from 16 to 19 August 2011.
3.1.3. Develop proposals for route implementation and/or realignment, in keeping with the utilisation of FUA	SAM/IG/7	SAM/IG/10	States	See 3.1.2
<b>3.2. Airspace Concept</b>				
3.2.1. Collect traffic data to understand air traffic flows	SAM/IG/7	Sept. 2011	SAM/PBN/IG (Project RLA/06/901) States	Secretariat sent a letter to States. Reply date September 2012.



3.2.2. Analyse the fleet navigation capacity	SAM/IG/7	SAM/IG/9	SAM/PBN/IG (Projects RLA/06/901 and RLA/99/901) States IATA	<b>Completed</b> The information on RNAV5 approval was sent to CARSAMMA. The navigation capacity data base will be completed as provided in SAM/IG/2 and SAM/IG/4 (Conclusion SAM/IG/4-3).
3.2.3. Determine the gateways of the main TMAs in the SAM Region	SAM/IG/7	SAM/IG/10	States	
3.2.4. Prepare updating of letters of agreement and contingency with adjacent States		SAM/IG/10	States	
3.2.5. Make a detailed study of the SAM ATS route network with a view to developing version 2 of the route network, including: <ul style="list-style-type: none"> <li>• Determine necessary tools for the holding of the study mentioned in item 3.2.5 (Aeronautical Charts, specific software).</li> <li>• Definition of scenarios for the SAM airspace structure, including ATS routes, control sectors, TMA interface, for assessment using airspace modelling and fast-time ATC simulation tools.</li> <li>• Indicate the ATS routes that should be eliminated in accordance with their utilisation;</li> <li>• Propose, if necessary, the extent of exclusionary airspace volume for RNAV-5 application</li> <li>• Indicate, as necessary, the “conventional” ATS routes that should be eliminated or replaced by RNAV routes in accordance with the possible extension of the exclusive RNAV-5 airspace volume.</li> <li>• Indicate the RNAV routes that should be</li> </ul>	SAM/IG/7	SAM/IG/11	SAM/PBN/IG (Project RLA/06/901)	Hiring of two experts is programmed for a three-week period during second half of February 2012.  The First draft for the analysis of States and operators was developed, support was requested to the Project, to continue with the study of Optimisation, through hiring of a 3-week period and 2 experts before March 2013, with the new air traffic data, to be collected on August 2012, and feasibility studies together with TMA modified to be presented in the Region.

<p>realigned in keeping with possible modifications to the gateways of the main TMAs in the SAM Region.</p> <ul style="list-style-type: none"> <li>• Detail possible scenarios for version 2 of the SAM route network and of control sectors, based on the analysis of the previous items</li> <li>• Detail the interface between the SAM route network and the CAR route network</li> <li>• Propose the initial draft Proposal of Amendment to the CAR/SAM ANP.</li> <li>• Define the required safety assessment (qualitative or quantitative).</li> <li>• With the air traffic data, consider the possibility to implement RNAV5 parallel routes with adequate separation.</li> <li>• Prepare optimisation plan for restricted, prohibited, dangerous and reserved use in the SAM Region.</li> <li>• Application of CDO techniques.</li> </ul>				
<p>3.2.6. Carry out a Seminar/Workshop/Meeting on Airspace Planning</p>	<p>ATSRO/3</p>	<p>September 2012</p>	<p>Regional Project RLA/06/901</p>	<p>Request support of Regional Project RLA/06/901 and DECEA (Brazil). The ICAO Secretariat should send a letter to DECEA to request two instructors. The objective is to prepare airspace planning from States of the Region for the second half of September in Lima.</p>
<p>3.2.7. Carry out the Fourth ATS Routes Network Optimisation Workshop/Meeting for the SAM Region (SAM ATSRO/04)</p>		<p>July 2012</p>	<p>Regional Project RLA/06/901</p>	<p><b>Completed</b></p>

3.2.8.	Make Airspace Modelling and Fast-Time Simulation studies to assess the scenarios developed in 3.2.5	August 2012	SAM/IG/11	Regional Project RLA/06/901	Ask on the use of the tool available in Brazil. If its use is feasible, procure, through Regional Project RLA/06/901, the participation of two Experts from States of the Region.
3.2.9.	Prepare safety assessment required, applying a quantitative methodology through the use of SMS	31/07/12	SAM/IG/10	Regional Project RLA/06/901	The hiring of an expert for a two-week period is required to carry out this work. States should carry out a safety analysis for the changes in terminal areas.
3.2.10.	Hold the Fifth Workshop/Meeting for the ATS routes network optimisation of the SAM Region (SAM ATSRO/05), s to review and validate the studies made in items 3.2.5, and 3.2.8.	SAM/IG/10	July 2013	Project RLA/06/901 States	
3.2.11.	Carry out the Third Workshop/Seminar/Meeting on risk analysis of Version 02 of the ATS routes network for the SAM Region. Validation of the study of 3.2.9.	<sup>4th</sup> week of March or 1 <sup>st</sup> week of April 2013	SAM/IG/11	Regional Project RLA/06/901	
3.3.	<b>Implementation of Version 2 of the SAM ATS Route Network</b>				
3.3.1.	Process the proposal of amendment to the CAR/SAM Air Navigation Plan	August 2013		SAM Regional Office	
3.3.2.	Publish version 1 of the SAM ATS Route Network	22 August 2013		States	
3.3.3.	Entry into effect of version 2 of the SAM ATS Route Network	17 October 2013			

**Agenda Item 2: Analysis of Version 2 of the SAM ATS route network**

2.1 As expressed in the introduction to the ATS route network optimisation programme, at the request of the States and International Organisations, the ICAO regular programme, among other implementation programmes, had focused its attention on the optimisation of the ATS route network of the SAM Region.

2.2 The SAM/IG/8 meeting, with a view to preparing Version 2 of the route network, had agreed to hire two experts for a three-week period to develop guidance material for the application of the flexible use of airspace concept and to perform a thorough study of the SAM ATS route network.

2.3 Messrs. Jorge Fernández and Tomás Yentz, the experts hired through Regional Project RLA/06/901, prepared a preliminary draft for the optimisation of the SAM ATS Route Network, Phase 3, Version 2.

2.4 In a preliminary analysis of the study conducted by the experts, the SAM/IG/9 meeting noted that the estimated savings resulting from this optimisation were quite promising, although such estimates only considered point-to-point, terminal-to-terminal paths, not taking into account paths within the terminal areas of the States and their standard arrivals and departures.

2.5 Upon analysing the preliminary report of the analysis of the SAM ATS Route Network Optimisation, Phase 3, Version 2, shown in **Appendix A** to this part of the report, the Meeting:

- a) eliminated the routes that users considered unnecessary for the time being based on savings, traffic, and airline business plans.
- b) requested airline operators flying these routes to review the routes proposed, taking into account flight time over the mountain range, flight time with a single engine in operation, meteorological and volcanic conditions, etc. that might affect them.
- c) requested the Secretariat to send a letter to Colombia asking for its opinion on the routes of interest to its airspace, since that State did not attend the Meeting.

2.6 The Meeting also emphasised the need for States to focus on completing the aforementioned tasks before 31 July 2012 and submitting them to the ICAO South American Office, and to conduct the analyses required so as to begin the corresponding risk analysis pursuant to the action plan.

2.7 Upon analysing the optimisation of ATS routes proposed for phase 3, Version 2, the Meeting made the necessary adjustments and included the requests made by Bolivia, Brazil, Paraguay, Uruguay, and IATA concerning some additional routes that users had deemed necessary in order to complete phase 3, Version 2 of the route optimisation programme.

#### **Route UM402 CARRASCO-PIARCO**

2.8 The *ad-hoc* group composed by Argentina, Brazil, Paraguay, Uruguay, and IATA, analysed the request of Uruguay to modify the coordination loop involving Brazil, Uruguay, and Argentina for traffic handover on route UM 402.

2.9 This modification was aimed at reducing handover to a single communication at reporting point SEKLO. The order proposed for handover was: Montevideo-Curitiba and Curitiba-Resistencia and, in the opposite direction, Resistencia-Curitiba and Curitiba-Montevideo, respectively.

2.10 Handover communications would take place not less than 10 minutes in advance.

2.11 Based on the above, the parties undertook to coordinate this proposal via e-mail and to present the results at the SAM/IG/10 meeting.

#### **Flexible Use of Airspace in the SAM Region**

2.12 As part of the airspace optimisation programme, the development of guidelines for the implementation of the flexible use of airspace concept in the ICAO South American Region (SAM/FUA guidelines) was entrusted to two experts from the Region.

2.13 In developing the guidelines, consideration has been given to the recommendations of the International Civil Aviation Organization, the Global Air Navigation Plan (Doc 9850), and the guidelines contained in the Performance-Based Air Navigation System Implementation Plan for the SAM Region (SAM-PBIP), which specify that strategic coordination and dynamic interaction will expedite the optimum, balanced, and equitable use of airspace by civil and military users, thus enabling optimum flight paths while reducing operating costs for airspace users and protecting the environment.

2.14 The Meeting analysed the FUA guidance manual (**Appendix B**) and encouraged States to follow the recommendations contained therein, taking into account that it contains sufficient elements so that each State may have guidance in its application, in order to obtain quick operational benefits from the Flexible Use of Airspace (FUA).

2.15 Likewise, the Meeting deemed advisable if ICAO carries out a follow-up through to requirement of focal points in the Coordination Committee of each State, on the recommendations contained in the guidance material for the implementation of the Flexible Use of the Airspace Concept in the SAM Region, in order that its application be made in a short term.

2.16 Finally, the meeting suggested that, ICAO Regional Office, in the planning of meetings or seminars, should consider the participation of civil and military authorities, with decision-taking authority, to enable dissemination of implementation of optimum flight trajectories to protect environment.

## Apéndice / Appendix A

## Planilla de Rutas analizadas en la Región SAM / Table of SAM Region routes analysed

01	Buenos Aires /Sao Paulo (Unidireccional)	
Ruta actual /Current route (FliteStar)	UA 305 UN857 UM671 RONUT	Notas/Notes
Distancia actual Current distance	898 NM	
*Número de vuelos mensuales *Number of monthly flights	722	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, A330, B735, B737, B738, B744, B763, MD88, LJ45	
Trayectoria propuesta Trajectory proposed	Desde/From WPA1 S34.38.54.59/W57.43.23.69 a/to <a href="#">ASONO-RONUT</a>	Desde un nuevo punto a 20 NM Sur de PAPIX WPA1 (S34 38.54.59 / W57.43.23, 69) <del>o a partir de DORVO a</del> <a href="#">ASONO-RONUT</a> (TMA Sao Paulo) From a new point <del>at</del> 20NM South of PAPIX WPA1 S34 38.54.59 / W57.43.23, 69) <del>or as of DORVO to</del> <a href="#">ASONO-RONUT</a> (Sao Paulo TMA). <del>Argentina revisará la propuesta y lo</del> <del>confirmará ...</del> <del>Uruguay acepta el punto WPA1 porque</del> <del>el mismo se solicita en la práctica</del> <del>diaria en el ATC</del> <del>Argentina shall will review proposal</del> <del>and shall will confirm.</del>  <del>Uruguay accepts point WPA1 because</del> <del>the same is requested in daily practice at</del> <del>the ATC.</del>
Distancia de trayectoria propuesta Distance of proposed trajectory	837 NM	
Millas reducidas Reduced miles	<a href="#">61 REVISAR</a> <a href="#">AHORRO/review savings</a>	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-249600/787987,2	
Estados involucrados States involved	Argentina, Brazil, Uruguay	
Observaciones Remarks	Esta ruta se corresponde con la solicitada por LAN/This route corresponds to the route requested by LAN/This route corresponds to the route requested by LAN	
*De acuerdo a información disponible/As per available information		

Esta ruta atiende un flujo importante de operaciones entre Buenos Aires y Sao Paulo, por lo que sería interesante implantar una paralela saliendo de un punto a 20 NM Sur de PAPIX, denominado WPA1 en la siguiente coordenada (S34 38.54.59 / W57.43.23,69) o en otra variante a partir de la posición DORVO a ASONO en TMA Sao Paulo

This route serves an important flow of operations between Buenos Aires and Sao Paulo; therefore it would be interesting to implement a parallel leaving a point at 20NM South from PAPIX, named WPA1 in the following coordinate (S34 38.54.59 / W57.43.23,69) or in another variation as of DORVO to ASONO in Sao Paulo TMA

02	<p style="text-align: center;"><b>Sao Paulo/Buenos Aires (Unidireccional)</b></p> <p style="text-align: center;"><b><u>APROBADA CON LAS OBSERVACIONES Y REALIZAR CHEQUEO DE DISTANCIAS REDUCIDAS Y AHORRO</u></b></p> <p style="text-align: center;"><b><u>APPROVED WITH REMARKS. CHECK REDUCED DISTANCES AND SAVINGS</u></b></p>	
Ruta actual /Current route (FliteStar)	UM788, UN741	Notas/Notes
Distancia actual Current distance	930	
*Número de vuelos mensuales *Number of monthly flights	777	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, A330, A332, B735, B737, B738, B744, B763, MD88, LJ45	
Trayectoria propuesta Trajectory proposed	<u>CURSE TMA SAO PAULO A PAPIX TMA SAEZBAIRESCGO/PAPIX/EZE</u>	
Distancia de trayectoria propuesta Distance of proposed trajectory	914	<b>CGO/EZE</b>
Millas reducidas Reduced miles	16 <u>Verificar/check</u>	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-65500/ 206783,5	
Estados involucrados States involved	Argentina, Brazil, Uruguay	
Observaciones Remarks	Esta ruta se corresponde con la solicitada por LAN/This route corresponds to the route requested by LAN	
*De acuerdo a información disponible/As per available information		
<p>Como ruta paralela de llegada desde Sao Paulo a Buenos Aires, el ahorro de milla no es muy preponderante como la ruta de salida anteriormente propuesta pero en definitiva contribuye en el ahorro, el trayecto propuesto es de <u>posición_VOR_CURSE_CGO</u> en la TMA SAO PAULO directo a PAPIX punto de ingreso a la TMA <u>SAEZ BAIRES</u></p>		
<p>As parallel route for arrival from Sao Paulo to Buenos Aires, the saving of miles is not so predominant as the exit route previously proposed, but definitely contributes in the savings, the segment proposed is position <u>CURSE</u> in Sao Paulo TMA direct to PAPIX, entry point to <u>SAEZ-BAIRES</u> TMA.</p>		



03	<u>Buenos Aires/Rio Rio/Buenos Aires</u> <u>Unidireccional/Uni-directional</u>	
Ruta actual /Current route (FliteStar)	UN857, <del>UM534</del> , UN741	<del>Notas/Notes Ruta bidireccional hasta SBPA, luego unidireccional a Rio</del> <u>Realignamiento de la UN857</u> <b>Realignment of UN857</b>
Distancia actual Current distance	1090	
*Número de vuelos mensuales *Number of monthly flights	572	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, A319, A318, B735, B738, CR9	
Trayectoria propuesta Trajectory proposed	EZE/DORVO/ <u>POR</u> /BITAK <del>EFS</del>	
Distancia de trayectoria propuesta Distance of proposed trajectory	1083	
Millas reducidas Reduced miles	7 <u>Revisar/review</u>	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-49100/ 155008,7	
Estados involucrados States involved	Brazil, Uruguay, Argentina	
Observaciones Remarks		
*De acuerdo a información disponible/As per available information		
<p><del>Esta ruta es bidireccional hasta Porto Alegre. Luego unidireccional de sur a norte. La pregunta es ¿Cómo se planifican los vuelos de Rio a BsAs?</del></p> <p>Por tanto una opción aplicable sería: saliendo de Bs As a la posición DORVO y directo a BITAK punto de ingreso para Rio en el sector, podría servir también como ruta alterna de Carrasco a Rio. El flujo de tránsito es relativamente alto y el ahorro en millas es representativo comparado con el número de operaciones.</p> <p>This route is bi-directional up to Porto Alegre. Then Uni-directional from South to North. The question is: how are flights planned from Rio de Janeiro to Buenos Aires?</p> <p>Therefore, an option to be applied would be: leaving Buenos Aires to position DORVO and direct to BITAK entry point for Rio de Janeiro in the sector, could serve also as alternate route from Carrasco to Rio. The traffic flow is relatively high and the savings in miles is representative compared to the number of ooperations.</p>		

Nota: Los operadores deberán efectuar un estudio analizando esta propuesta en contraposición con los beneficios de mayor fluidez en el tráfico usando la Ruta establecida UM 661 y Brasil deberá analizar la factibilidad de instrumentar Salidas y Entradas standarizadas para la Ruta UM 661 a los Principales Aeropuertos laterales a esta Ruta.

Note: operators should carry out a study analysing this proposal against benefits of greater air traffic flow using the route established UM661 and Brazil whould analyse the feasibility of implementing standard entriesarrivals and exitsdepartures for rute UM661 to the main lateral airports of this route.

No fueron presentados estudios por parte de los operadores. Uruguay solicita sea utilizado el punto de salida propuesto como WPA1 para aquellos vuelos que sobrevolaran la FIR Uruguay.

No studies were presented by operators. Uruguay requests to use the exit point proposed as WPA1 for those flights overflying Uruguay FIR.

04	<b>Montevideo/ Sao Paulo (Unidireccional)</b>	
Ruta actual /Current route (FliteStar)	UM540, UM671,	Notas/Notes
Distancia actual Current distance	852	
*Número de vuelos mensuales *Number of monthly flights	224	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, B744, CRJ9	
Trayectoria propuesta Trajectory proposed	<del>CRR/AKPODKILUM/WPU 2/POR/ANISE/ANISE/RDE/ CGO</del>	<del>Realign/realign UM661 a/to WPU1 (33°50'34.51"S 54°37'5.03"W) unidireccional Sur/Norte a ANISE uni- directional South/North to ANISE. Realign UM540 posterior POR</del>  <b>Realign UM540 POR</b>
Distancia de trayectoria propuesta Distance of proposed trajectory	843	
Millas reducidas Reduced miles	<b>9</b> <del>Verificar ahorro/check savings</del>	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-16900/ 53353,3	
Estados involucrados States involved	Uruguay, Brazil	
Observaciones Remarks	Ruta paralela 20 NM, a la opción 04-B / Parallel route 20 NM to option 04-B.	
*De acuerdo a información disponible/As per available information		
<p><del>Alternativa "B": eliminar UM 540 y establecer una nueva Ruta con la siguiente trayectoria: UM661 hasta coordenadas 33.49.5S/54.36.9W (WPU2) de allí Unidireccional SUR/NORTE directo a ANISE. Ventaja: esta nueva ruta es paralela (20 NM lateral) a la ruta de llegada en el tramo NEROK/ TELAK (Distancia 784 NM CRR a ANISE)</del></p> <p><del>Alternative "B": eliminate UM540 and establish a new route with the following trajectory: UM661 up to coordinates 33.49.5S/54.36.9W (WPU2) from there on, uni-directional South/Nort direct to ANISE. Advantage: this new route is parallel (20 NM lateral) to the arrival route in segment NEROK/TELAK (Distance 784 NM CRR to ANISE).</del></p>		

06	Sao Paulo/ Santiago (Unidireccional)	
Ruta actual /Current route (FliteStar)	UL310, UM400, UA307, UA306	Notas/Notes
Distancia actual Current distance	1419	
*Número de vuelos mensuales *Number of monthly flights	332	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, A320, B738, B763, B773	
Trayectoria propuesta Trajectory proposed	Ruta Unidireccional, sentido <del>CGO</del> <del>DORMI</del> a <del>UMN</del> KAL/ Uni-directional route, direction <del>CGO</del> <del>DORMI</del> to <del>UMN</del> KAL	<a href="#">ESTA TRAYECTORIA ES DESDE RIO A SANTIAGO BITAK/PAKOV/PUNTO DE CRUCE AWY SCL/SAO/NEDOK</a> <a href="#">This trajectory is from Rio to Santiago BITAK/PAKOV/Crossing point AWY SCL/SAO/NEDOK.</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	1402	
Millas reducidas Reduced miles	17	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-70500/ 222568,5	
Estados involucrados States involved	Brazil, <a href="#">Uruguay</a> , Argentina, Chile	<a href="#">Argentina estudiará la propuesta, Brasil y Chile están de acuerdo.</a> <a href="#">Argentina will study proposal, Brazil and Chile agree.</a>
Observaciones Remarks	Propuesta basada en pedido de Brazil para disponer de rutas paralelas de TMA Sao Paulo/Rio y al pedido de LAN en esos tramos Proposal based on request from Brazil to have parallel routes from Sao Paulo/Rio TMA and request of LAN in these segments.	
*De acuerdo a información disponible/As per available information		
Nueva Ruta Unidireccional, sentido Sao Paulo a Santiago entre <del>posición DORMI CGO</del> a <del>UNKAL</del> UMKAL, sirviendo de salida de la TMA San Paulo o Rio, además tanto Brazil como LAN han solicitado el trayecto en cuestión, puede apreciarse de hecho un ahorro 17 NM del trayecto actualmente utilizado y la RNAV propuesta New uni-directional route, direction Sao Paulo to Santiago between <del>position DORMI CGO</del> to <del>UNKAL</del> UMKAL, serving as exit to Sao Paulo or Rio TMA, in addition both Brazil and LAN have requested the referred segment, there is in fact a saving of 17 NM of segment currently used and the RNAV proposed.		

[Nota- PROPUESTA RUTA 6/](#)

[Sao Paulo/Santiago](#)

[Trayectoria propuesta VOR CGO-UMKAL UNIDIRECCIONAL](#)

[Note- ROUTE 6 PROPOSED](#)

[Sao Paulo/Santiago](#)

[Nota.- PROPUESTA RUTA 6A](#)

[Rio de Janeiro / Santiago](#)

[Trajectory proposed Unidirectional VOR CGO-UMKAL](#)

[Trayectoria propuesta BITAK-PAKOV-XXXX1-NEDOK-UMKAL](#)

[BIDIRECCIONAL BITAK-PAKOV-XXXX1](#)

UNIDIRECCIONAL XXXX1-NEDOK-UMKAL

Trajectory proposed BITAK-PAKOV-XXXX1-NEDOK-UMKAL

Bidirectional BITAK-PAKOV-XXXX1

Unidirectional XXXX1-NEDOK-UMKAL.

07	Santiago/ Sao Paulo (Unidireccional)	
Ruta actual /Current route (FliteStar)	UA307, UM400, UW6, UM548, UW47	Notas/Notes
Distancia actual Current distance	1441	
*Número de vuelos mensuales *Number of monthly flights	344	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, A320, B735, B765, B773	
Trayectoria propuesta Trajectory proposed	Ruta Unidireccional, de <del>NEBEG</del> ALBAL/CTB/NEGUS/RDE <del>a ASONO/REKIR/UM400</del> DESDE CRUCE <u>AEROVÍA RIO</u> <u>SANTIAGO INICIA EL TRAMO</u> <u>PARA RIO DE JANEIRO</u> <u>PAKOV/BITAK</u> Uni-directional route from <u>ALBAL/CTB/NEGUS/RDE THE</u> <u>SEGMENT TO RIO</u> <u>PAKOV/BITAK STARTS AT THE</u> <u>RIO SANTIAGO AWY</u> <u>CROSSING</u> <del>NEBEG to ASONO.</del>	<u>Considerer <del>ALBAL</del>NEBEG para</u> <u>otros tipos de aeronaves /</u>  <u>Consider <del>ALBAL</del>NEBEG for other</u> <u>types of aircraft.</u>
Distancia de trayectoria propuesta Distance of proposed trajectory	1422	
Millas reducidas Reduced miles	19	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-81600/ 257611,2	
Estados involucrados States involved	Brazil, <u>Uruguay</u> , Argentina, Chile	<u>Brasil y Chile están de acuerdo,</u> <u>Argentina lo estudiara/Brazil and</u> <u>Chile agree. Argentina will analyse</u> <u>it.</u>
Observaciones Remarks	Propuesta basada en pedido de Brazil para disponer de rutas paralelas de TMA Sao Paulo/Rio y al pedido de LAN en esos tramos Proposal based <del>don</del> request from Brazil to have parallel routes from Sao Paulo/Rio TMA and upon request of LAN in these segments.	
*De acuerdo a información disponible/As per available information		
<u>Se eliminaría UM400 en el tramo CBA-PAKOV y se realinearía desde PAKOV hasta NEDOK</u> <u>UM400 would be eliminated in the segment CBA-PAKOV and it would realign from PAKOV up to NEDOK</u>		

Nota: .- PROPUESTA RUTA 7

Santiago / Sao Paulo

Trayectoria propuesta NEBEG/ALBAL - CTB- NEGUS  
UNIDRECCIONAL

Nota:.- PROPUESTA RUTA 7A

**Santiago/Rio de Janeiro**

Trajectory propuesta NEBEG/ALBAL - XXXX1- PAKOV - BITAK  
BIDIRECCIONAL XXXX1 – PAKOV – BITAK  
UNIDIRECCIONAL NEBEG/ALBAL - XXXX1

Note: PROPOSAL ROUTE 7

**Santiago-Sao Paulo**

Trajectory proposed NEBEG/ALBAL - CTB- NEGUS  
UNIDIRECTIONAL

Note:.- PROPOSED ROUTE 7A

**Santiago/Rio de Janeiro**

Trajectory proposed NEBEG/ALBAL - XXXX1- PAKOV - BITAK  
BIDIRECTIONAL XXXX1 – PAKOV – BITAK  
UNIDIRECTIONAL NEBEG/ALBAL - XXXX1

08	<u>Montevideo/Buenos Aires/Santiago</u>	
Ruta actual /Current route (FliteStar)	UA306,	Notas/Notes
Distancia actual Current distance	637	
*Número de vuelos mensuales *Number of monthly flights	773	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, A320, B738, B763, B773	
Trayectoria propuesta Trajectory proposed	Trayectoria directa de <u>NUXIM-TOSOR</u> a UMKAL/ <u>Direct trajectory from TOSOR to UMKAL</u>	
Distancia de trayectoria propuesta Distance of proposed trajectory	635	
Millas reducidas Reduced miles	2	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-19100/ 60298,7	
Estados involucrados States involved	Argentina, Chile, Uruguay	<u>Argentina no cambia trayectoria.</u> <u>Argentina does not change trajectory.</u>
Observaciones Remarks		
*De acuerdo a información disponible/As per available information		
Esta ruta será de utilidad tanto para las salidas de BsAs como de Carrasco. Saliendo de Carrasco por la UA306 hasta posición <u>NUXIM-TOSOR</u> , luego la ruta propuesta hasta UMKAL.  This route will be useful <u>both</u> for <u>exits-departures</u> from <u>both</u> Bs. As. <u>as in-and</u> Carrasco. Leaving Carrasco through UA306 up to position <u>NUXIM-TOSOR</u> , then the route proposed up to UMKAL.		

Nota: .- PROPUESTA RUTA 8

Montevideo/Buenos Aires/Santiago

Trayectoria directa TOSOR/UMKAL

Quedando pendiente la viabilidad de la propuesta por la Administración Argentina.

Note: PROPOSED ROUTE 8

Montevideo/Buenos Aires/Santiago

Direct Trajectory TOSOR/UMKAL

Pending feasibility approval of the proposal from by the Argentinean Administration.

<b>Sao Paulo/Bogotá</b>		
<b>12</b>	<b><u>SOLICITAR A COLOMBIA PARECER RESPECTO A ESTA PROPUESTA Y ARRIMAR LA RESPUESTA ANTES DEL 31 DE JULIO/REQUEST OPINION OF COLOMBIA ON THIS PROPOSAL AND EXPECT AN ANSWER BEFORE 31 JULY</u></b>	
Ruta actual /Current route (FliteStar)	UM782, UL655	Notas/Notes
Distancia actual Current distance	2368	
*Número de vuelos mensuales *Number of monthly flights	230	
*Tipo de aeronave más utilizada *Type of most used aircraft	B767	
Trayectoria propuesta Trajectory proposed	Reorganizar flujo de <del>transito</del> -tránsito utilizando rutas existentes <u>Reorganise air traffic flow using existing routes.</u>	UM782, UL655
Distancia de trayectoria propuesta Distance of proposed trajectory	NO HAY REDUCCIÓN	
Millas reducidas Reduced miles		
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	0/0	
Estados involucrados States involved	Brazil, Colombia	
Observaciones Remarks	Modificar la dirección de la UM782 desde PARDO hacia el Norte como bidireccional, ya lo es en FIR Bogotá/ Modify direction of UM782 from PARDO to the North as Bi-directional, it already is in Bogota FIR.	
*De acuerdo a información disponible/As per available information		
<p>Parecería que no es necesaria una ruta paralela a las rutas mencionadas ya que existen varias rutas RNAV que podrían utilizarse. Se propone reorganizar el flujo y utilizar las rutas existentes. Se sugiere estudiar la posibilidad de modificar la dirección de la UM 782 desde PARDO hacia el norte como bidireccional. (ya es bidireccional en la FIR Bogotá) Haciendo la reorganización se obtendrá una reducción de entre 10 y 18 NM. Las UM 782 y UL 655 son dos rutas que SALEN de TMA Sao Paulo y van a Centroamérica y Cali respectivamente (sigue hacia Centroamérica).</p> <p>A parallel route to those mentioned would not seem to be necessary, since there are several RNAV routes that could be used. It is proposed to reorganize the flow and use existing routes. It is suggested to study the possibility to modify direction UM782 from PARDO to the north as bi-directional (it is bi-directional already in the Bogota FIR). A reduction of 10 to 18NM will be obtained through the reorganization. UM782 and UL655 are two routes leaving Sao Paulo TMA and go to Central America and Cali respectively (follows to Central America).</p>		



13	Sao Paulo/ Caracas	
Ruta actual /Current route (FliteStar)	UL304, UW27, UM417	Notas/Notes
Distancia actual Current distance	2408	
*Número de vuelos mensuales *Number of monthly flights	49	
*Tipo de aeronave más utilizada *Type of most used aircraft	B738	
Trayectoria propuesta Trajectory proposed	UM417 MIQ, TUY, BRU	Realignar MIQ, TUY, Baurú. Realign MIQ, TUY, Baurú
Distancia de trayectoria propuesta Distance of proposed trajectory	2388	
Millas reducidas Reduced miles	20	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-12000/ 37884	
Estados involucrados States involved	Brazil, Venezuela	<a href="#">Brasil propone realinear la UL304 desde RPR hasta CBC en sentido Sao Paulo/Caracas, esta trayectoria será analizada por Venezuela y confirmará a.</a> <a href="#">Referente a la UM417 Venezuela y Brasil aprueban la realineación en ambos sentidos en la FIR Maiquetia y de solo llegada a Sao Paulo</a> <a href="#">Brazil proposes to realign UL304 from RPR to CBC in direction Sao Paulo/Caracas, this trajectory will be analysed by Venezuela and shall will confirm.</a> <a href="#">With regard to UM417, Venezuela and Brazil approve realignment in two directions in Maiquetía FIR and only arrival to Sao Paulo.</a>
Observaciones Remarks		
*De acuerdo a información disponible/As per available information		
<p><a href="#">Será interesante analizar la posibilidad de realinear y extender la UM417 de modo a obtener mayor y mejor aprovechamiento del tramo existente, así mismo observar el sentido de circulación del tránsito para optimizar los resultados.</a> <a href="#">It will be interesting to analyze the possibility to realign and extend UM417 so as to obtain greater and better advantage of the existing segment, and also to observe the air traffic circulation direction to optimize the results.</a></p>		

[NOTA: Brasil estudiará la posibilidad de la Salida a utilizar.](#)

[Note: Brazil shall study feasibility of exit point to be used.](#)

14	Asunción/Bs As	
Ruta actual /Current route (FliteStar)	UA556, UW64, UW65, UW11	Notas/Notes
Distancia actual Current distance	587	
*Número de vuelos mensuales *Number of monthly flights	400	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, B727, B738, F900	
Trayectoria propuesta Trajectory proposed	<a href="#">WPY1 (26° 4'18"S 057°35'54"W) a/to VOR GUA ASU VAS/PADAS</a>	<a href="#">Bidireccional/ Bi-directional Paraguay expresa su acuerdo con esta trayectoria</a> <a href="#">Argentina queda pendiente la viabilidad de la propuesta</a> <a href="#">Se considera la eliminación de la UA556</a> <a href="#">Paraguay expresses agreement with this trajectory.</a>  <a href="#">Argentina pending feasibility approval of proposal.</a> <a href="#">Elimination of UA556 is considered.</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	577	
Millas reducidas Reduced miles	10	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-49100/ 155008,7	
Estados involucrados States involved	Argentina, Paraguay	
Observaciones Remarks	<a href="#">Analizar la posibilidad de eliminar la UA556 con un periodo de evaluación de tres meses/</a> <a href="#">Analyse the possibility to eliminate UA556 with a three month period assessment.</a>	
*De acuerdo a información disponible/As per available information		
Con vistas a mejorar las trayectorias y atendiendo la cantidad de operaciones en este tramo, considerar la opción de eliminar la UA556 o realinearla y convertirla en RNAV.  <a href="#">With a view</a> <a href="#">In order</a> to improve <a href="#">e</a> -trajectories and <a href="#">attending in view of</a> the <a href="#">amount number</a> of operations in this segment, consider the possibility <a href="#">to of</a> <a href="#">eliminating</a> UA556 or <a href="#">realigning it</a> and <a href="#">converting</a> it into RNAV.		

Nota: .- PROPUESTA RUTA 14  
Asunción/Bs As UA556, UW64, UW65, UW11

Con vistas a mejorar las trayectorias y atendiendo la cantidad de operaciones en este tramo, considerar la opción de eliminar la UA556

Paraguay estaría de acuerdo con la trayectoria ~~ASU~~ VAS – PADAS quedando pendiente la viabilidad de la propuesta por la Administración Argentina.

Uruguay estaría de acuerdo con la eliminación de la UA556

Note: .- PROPOSED ROUTE 14

Asunción/Bs As UA556, UW64, UW65, UW11

~~With a view~~In order to improve trajectories and ~~attending~~in view of the ~~amoun~~number of operations in this segment, the possibility ~~for~~ of eliminating UA556 should be considered.

Paraguay would agree with trajectory VAS – PADAS pending ~~feasibility~~approval of proposal by the Argentinean Administration.

Uruguay would agree with the elimination of route UA556.

15	Lima/Montevidéo	
Ruta actual /Current route (FliteStar)	UL550, UW7, UA558, UW8, UB555	Notas/Notes
Distancia actual Current distance	1823	
*Número de vuelos mensuales *Number of monthly flights	54	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, A320	
Trajectoria propuesta Trajectory proposed	UL550/VOR TUC/ VOR ERE/ NIMBO	Bidireccional/ Bi-directional
Distancia de trayectoria propuesta Distance of proposed trajectory	1790	
Millas reducidas Reduced miles	33	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-25100/ 79240,7	
Estados involucrados States involved	Perú, Chile, Argentina, Uruguay	
Observaciones Remarks		
*De acuerdo a información disponible/As per available information.		
<p>En esta trayectoria propuesta <del>se ...</del> <a href="#">Uruguay propone la eliminación de la UB555 en el tramo CRR/GUA. Asi mismo Uruguay realizará la consulta a los usuarios sobre la eliminación de la UB555 y elevará la respuesta a la oficina antes del 31 de julio de 2012</a></p> <p><del>In this trajectory proposed ...</del> <a href="#">e implantar el tramo considerado ERE/PADAS/UGLAP/UM402/VUKAS Argentina expresa que revisaran la propuesta quedando pendiente la respuesta TACA expresa que realizará aún el análisis de la propuesta en consideración al consumo de combustible y emisión de CO2</a></p> <p><del>Uruguay proposes elimination of UB555 in the segment CRR/GUA. Also, Uruguay will ask users on about the elimination of UB555 and will submit the response to the SAM Office before 31 July 2012 and implement the segment considered ERE/PADAS/UGLAP/UM402/VUKAS. Argentina expressed said it would review the proposal, leaving the answer pending. that TACA said it they will would carry out the analysis of analyse the proposal in consideration to the based on fuel consumption and CO2 emissions.</del></p>		

Nota: El Grupo AD Hoc propone una realineación **de la UL550** que está condicionada por la zona militar SCR 32 en FIR Antofagasta (se activa por NOTAM GND / FL450) y además la necesidad de mantener el extremo de la ruta en SCO VOR, por la función de las rutas STAR al sur de Lima, como se muestra:

**LOA VOR - PATA1 (19 55 08.44 S + 071 22 57.75) – LIMIT (18 21 00S + 072 38 59.05 W) - TACA2 (17 25 08.16 S + 073 23 21.61 W) – SCO VOR.**

Ahorro de NM voladas LOA – SCO: 672 NM antes y con la realineación se reduce a 671 NM. Por ende, existiría un ahorro de 1 NM en el segmento descrito.

Se enfatiza que, la ruta realineada y el punto TACA2 será la base de un nuevo segmento de ruta TOY VOR – TACA2 que beneficia el flujo Santiago - Lima de aeronaves sin RNP10 y se presenta como solución, más adelante, para la **Propuesta 22 Santiago - Bogotá.**

Adicionalmente, Perú debe otorgar especificación de navegación RNAV 5 para la **UL 550**, de forma que se homologa con lo publicado en AIP CHILE.

Nota .- PROPUESTA RUTA 15

**Lima/Monteideo UL550, UW7, UA558, UW8, UB555**

Ref. UB555 CARRASCO LIMA

Propuesta Uruguay: cancelar el tramo GUA CRR de la UB555 (tramo BIDIRECCIONAL)

Encaminar el transito origen/destino LIMA vía ERE/PADAS/OGLAP/UM402/VUKAS

Con esto se mitigaría el riesgo operacional de la ruta actual.

Encaminar los tránsitos con destino a:

Córdoba y Rosario VIA UA306 SARGO – PTA – FDO – UW5 – ROS – UBREL – ASISA

Córdoba y Rosario destino Carrasco UTRAX - MJZ – UW24 – SNT - DORVO

Nota: Propuesta IATA TACA: mantener la UB555 en su trayectoria pero convertirla en UNIDIRECCIONAL hacia el Sur y así utilizarlas en descenso. Utilizarían UA556 hasta DUR y luego GUA para salidas con ascensos sin restricción. Solicitaron hacer prueba de la propuesta en vuelo real, previa coordinación con ACC vía Plan de vuelo.

Pendiente consulta a demás usuarios IATA

Quedando pendiente la viabilidad de la propuesta por la Administración Argentina.

Note: The Ad-Hoc Group proposes realignment of UL550, conditioned by the military área SCR 32 in Antofagasta FIR (activated by NOTAM GND / FL450) and also the need to maintain the end of route in SCO VOR, in view of the function of STAR routes at the southern area of Lima, as shown:

**LOA VOR - PATA1 (19 55 08.44 S + 071 22 57.75) – LIMIT (18 21 00S + 072 38 59.05 W) - TACA2 (17 25 08.16 S + 073 23 21.61 W) – SCO VOR.**

Savings of NM flown LOA – SCO; 672 NM before and with realignment, is reduced to 671 NM. Therefore, a savings of 1 NM would exist in the segment described

It is emphasized that the route realigned and point TACA2 will be the basis of a new route segment TOY VOR – TACA2 beneficial to the air traffic flow Santiago - Lima of non-RNP10 aircraft, and is presented below as a solution later, for **Proposal 22 Santiago - Bogotá.**

In addition, Peru must provide RNAV5 specification for UL550, so as to standardise with publication in CHILE AIP.

Note: PROPOSED ROUTE 15

**Lima/Monteideo UL550, UW7, UA558, UW8, UB555**

Ref. UB555 CARRASCO LIMA

Proposal from Uruguay: to cancel the segment GUA CRR of UB555 (bidirectional segment)

Route from to traffic from/to LIMA via ERE/PADAS/OGLAP/UM402/VUKAS

With this This would mitigate the operational risk of the current route would be mitigated.

Route air traffic with destination:

Córdoba and Rosario VIA UA306 SARGO – PTA – FDO – UW5 – ROS – UBREL – ASISA

Córdoba and Rosario destination Carrasco UTRAX - MJZ – UW24 – SNT - DORVO

Note: Proposal from IATA TACA: maintain UB555 in its trajectory, but convert it in unidirectional to the south, and use them in descent in order to use it for descent. UA556 up to DUR would be used and then GUA for exits/departures with unrestricted ascents/climbs. A real flight trial was requested, prior subject to te coordination with ACC via flight plan.

Pending request/consultation to with the rest of IATA users.

Pending feasibility approval of the proposal by the Argentinean Administration.

17	Lima/ <u>Asuncion</u> /Foz Iguacu	
Ruta actual /Current route (FliteStar)	UA320, UM548	Notas/Notes
Distancia actual Current distance	<del>1553</del> <a href="#">CHK</a>	
*Número de vuelos mensuales *Number of monthly flights	<del>62</del> <a href="#">124</a>	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, DC10	
Trayectoria propuesta Trajectory proposed	<del>VOR ASIA/VAMUT/</del> <del>BITURASIA/EQU/ORALO/PILCO/VAS</del> <del>Extension UM548</del>	Bidireccional/Bi-directional
Distancia de trayectoria propuesta Distance of proposed trajectory	<del>1528</del> <a href="#">1370</a>	
Millas reducidas Reduced miles	<del>2517</del>	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>		
Estados involucrados States involved	Perú, Bolivia, Paraguay, Brazil	
Observaciones Remarks	<p>*Al tiempo de la toma de muestra, no existían vuelos regulares, actualmente se registran vuelos de carga entre SPIM/SGES y de pasajeros entre SPIM/SBFI. Igualmente esta ruta puede servir a Asunción, Cataratas y Guaraní.</p> <p>* When the sample was obtained, no regular flights existed, currently there are freight flights between SPIM/SGES and passengers from SPIM/SBFI. Likewise this route may serve Asunción, Cataratas and Guaraní.</p>	
*De acuerdo a información disponible/As per available information.		

[NOTA: HAY UN INCREMENTO DE VUELOS EN LOS TRAMOS LIMA ASUNCION Y LIMA FOZ DE IGUAZU](#)  
[ADEMAS SE PROPONE ELIMINAR LA UA320 EN EL TRAMO ASUNCION/LA PAZ](#)  
[SE AGUARDA LOS COMENTARIOS DE TACA EN REFERENCIA A LA CAPACIDAD DE LA FLOTA QUE UTILIZAN ESTA TRAYECTORIA](#)

- PROPUESTA RUTA 17

Lima/ASU/Foz Iguacu UA320, UM548

Paraguay y Perú coinciden en trayectoria: ASIA/EQU/ORALO/PILCO/VAS/~~COSTA BIDIRECCIONAL~~  
Queda pendiente la viabilidad de la propuesta por la Administración Argentina.

NOTE: There is an increase of flights in the segments LIMA ASUNCION and LIMA FOZ DE IGUAZU  
In addition, the elimination of UA320 in the segment ASUNCION/LA PAZ is proposed.  
Comments from TACA are expected with regard the capacity of the fleet capacity used by using this trajectory

ROUTE PROPOSED 17Lima/ASU/Foz Iguacu UA320, UM548Paraguay and Perú agree in the trajectory: ASIA/EQU/ORALO PILCO/VAS/approvalthe

19	Lima/Buenos Aires	
	<u>CARGAR COMENTARIOS DEL GRUPO DE TRABAJO/LOAD COMMENTS FROM THE WORK GROUP</u>	
Ruta actual /Current route (FliteStar)	UL550, UA558, UW24	Notas/Notes
Distancia actual Current distance	1715	
*Número de vuelos mensuales *Number of monthly flights	570	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, A320, B738, B763, B773	
Trayectoria propuesta Trajectory proposed	UL550/ VOR CALAMA/ <del>VOR</del> <u>ASIAYAMUT</u>	
Distancia de trayectoria propuesta Distance of proposed trajectory	1707	
Millas reducidas Reduced miles	8	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-56000/ 176792	
Estados involucrados States involved	Perú, Chile, Argentina	
Observaciones Remarks	También se sugiere analizar el realineamiento de la UL550, VOR Calama a ASIA, en el descenso, afectaría a Zona Restringida San Juan de Marcona. It is also suggested to analyse the realignment of UL550, Calama VOR to ASIS in the descent, it would affect the restricted area of San Juan de Marcona.	
*De acuerdo a información disponible/As per available information.		

Nota: - PROPUESTA RUTA 19 Lima/Buenos Aires UL550

Perú define que el tramo correspondiente LOA - ASI se ha analizado en el contexto de la propuesta 15. Argentina continuará el análisis de la trayectoria Calama – Rosario.

Note: ROUTE PROPOSED 19 Lima/Buenos Aires UL550

Peru defined stated that the corresponding segment LOA – ASI has been analysed within the context of under proposal 15. Argentina will continue analysis of trajectory Calama-Rosario.



20	Buenos Aires/Bogotá	
Ruta actual /Current route (FliteStar)	UB689, UA301, UL417, UW8,	Notas/Notes
Distancia actual Current distance	2551	
*Número de vuelos mensuales *Number of monthly flights	44	
*Tipo de aeronave más utilizada *Type of most used aircraft	A332, A342, B763, MD11	
Trayectoria propuesta Trajectory proposed	VOR ROSARIO/Posición MORRO <u>(no figura en la base de datos 5LCN)</u> <u>ROSARIO VOR/Position MORRO (does not appear in the 5LCN database)</u>	<u>ARGENTINA CONFIRMARA PARECER DE LA PROPUESTA GIRAR NOTA A COLOMBIA SOLICITANDO PARECER</u> <u>Bolivia propone mantener la ruta UL417 o la UR550 ambos salida RBC</u> <u>Brasil no tendría inconvenientes en esta trayectoria y coordinará con Perú el punto de salida de la FIR Amazonica</u> <u>Perú acepta la propuesta ajustando la salida de la FIR Peru por la posición ARPEN</u> <u>IATA propone reanalizar esta trayectoria en vista a las futuras demandas en el par de ciudades</u> <u>Argentina shall will confirm feasibility of proposal. Send note to Colombia requesting opinion.</u> <u>Bolivia proposes to maintain route UL417 or UR550 both exiting RBC.</u> <u>Brazil would not have inconveniences no problem with in this trajectory and shall will coordinate with Peru the exit point of Amazonica FIR.</u> <u>Peru accepts proposal, adjusting exit of FIR Peru by through position ARPEN</u> <u>IATA proposes to re-analyse revisit this trajectory in view to of future demands in the city pairs.</u>
Distancia de trayectoria propuesta Distance of proposed trajectory	2549	
Millas reducidas Reduced miles	2	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-2200/ 6945,4	
Estados involucrados States involved	Argentina, Bolivia, Brazil, <u>Peru</u> , Colombia	
Observaciones Remarks		

\*De acuerdo a información disponible/As per available information.

NOTA:

.- PROPUESTA RUTA 20 **Buenos Aires/Bogotá UB689, UA301, UL417, UW8**  
Girar parecer a Colombia.  
Bolivia reclama carta de acuerdo mantener UL417 RBC(Rio Branco)  
Queda pendiente la viabilidad de la propuesta por la Administración Argentina.

Note:

PROPOSAL ROUTE 20 **Buenos Aires/Bogota UB689, UA301, UL417, UW8**  
Request opinión to of Colombia  
Bolivia claims letter of agreement to maintain UL417 RBC (Rio Branco)  
Pending feasibility approval of proposal by Argentinean Administration.

<b>Buenos Aires/GUAYAQUIL/Quito</b>			
<b><u>ESTA PROPUESTA QUEDA PENDIENTE, SERA TRATADA PARA OTRAS VERSIONES/PROPOSAL LEFT PENDING FOR DISCUSSION IN SUBSEQUENT VERSIONS</u></b>			
21	<b>Ruta actual /Current route (FliteStar)</b>	<b>UW5, UL550, UG436, UL780</b>	<b>Notas/Notes</b>
	Distancia actual Current distance	2337	
	*Número de vuelos mensuales *Number of monthly flights	22	
	*Tipo de aeronave más utilizada *Type of most used aircraft	B737	
	Trayectoria propuesta Trajectory proposed	VOR ROSARIO/ Posición CANOA	Realineamiento/ Realignment <a href="#">REVISAR PUNTO CANOA POR AREA PROHIBIDA</a> <a href="#">Review CANOA bydue to RESTRICTEDPROHIBITED AREA.</a>
	Distancia de trayectoria propuesta Distance of proposed trajectory	2300	
	Millas reducidas Reduced miles	37	
	Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-10000/ 31570	
	Estados involucrados States involved	Argentina, Chile, Perú, Ecuador	
	Observaciones Remarks		
	*De acuerdo a información disponible/As per available information		

**- PROPUESTA RUTA 21 Buenos Aires/GUAYAQUIL/Quito UW5, UL550, UG436, UL780**  
Peru: Postergar el análisis de la propuesta para la próxima ATSRO una vez estabilizado su espacio aéreo por cambios, previsto para 2013.  
Argentina: Queda pendiente la viabilidad de la propuesta

[ECUADOR RECOMIENDA REVISAR LA TRAYECTORIA PUES LA ACTUAL POR CANOA AFECTA A UN AREA PROHIBIDA](#)  
[EN RESUMEN SE RECOMIENDA NO ELIMINAR DEL TODO ESTA PROPUESTA PERO SI REPLANTAEARLA](#)

**PROPOSAL ROUTE 21 Buenos Aires/GUAYAQUIL/Quito UW5, UL550, UG436, UL780**  
Peru: Postpone analysis of proposal foruntil SAM ATRSO/5, once its airspace is stabilised due to changes foreseen for 2013.  
Pending feasibilityapproval of proposal by Argentinean Administration.

[ECUADOR RECOMMENDS TO REVIEW TRAJECTORY, SINCE THE ~~CURRENT~~EXISTING ONE ~~BY~~THROUGH CANOA AFFECTS A PROHIBITED AREA](#)  
[IN SUMMARY, IT IS NOT RECOMMENDED TO ELIMINATE THIS PROPOSAL IN FULL, BUT TO RE-CONSIDER IT.](#)

22	SANTIAGO/BOGOTÁ	
Ruta actual /Current route (FliteStar)	UG551, UL300	Notas/Notes
Distancia actual Current distance	2339	
*Número de vuelos mensuales *Number of monthly flights	140	
*Tipo de aeronave más utilizada *Type of most used aircraft	A332, A342, B763, MD11	
Trayectoria propuesta Trajectory proposed	<p><a href="#">VOR TABON/ Posición MORRO</a></p> <p><a href="#">TOY/IQUITOS</a></p>	<p><a href="#">Chile propone eliminar la ruta UL300 en el tramo TOY/ARICA pasándola para ruta domestica</a>  <a href="#">Se propone además un nuevo tramo desde el VOR TOY a un punto entre la FIR LIMA/SANTIAGO</a>  <a href="#">Peru se elimina la UL300 tramo ARI/IQT para ser reemplazado por una nueva ruta en la siguiente trayectoria LIMIT/TACA2/SIGOB/BRAPE/IQT</a>  <a href="#">Posterior a Iquitos la trayectoria de la UL300 sigue igual</a></p> <p><a href="#">Brasil PROPONE LA RE-ALINEACION DE LA UL300 Y NO ELIMINARLA, necesitara conocer los puntos de entrada y salida en la Fir Amazonica</a>  <a href="#">IATA REALIZARA LA INVESTIGACION DE LA DEMANDA DE ESTA TRAYECTORIA</a></p> <p><a href="#">Chile proposes to eliminate route UL300 in the segment TOY/ARICA, converting it into a domestic route.</a>  <a href="#">In addition it is proposed a new segment from VOR TOY to a point between LIMA/SANTIAGO FIR</a>  <a href="#">Peru eliminates UL300 segment ARI/IQT to be replaced by a new route in the following trajectory: LIMIT/TACA2/SIGOB/BRAPE/IQT.</a>  <a href="#">After Iquitos the trajectory of UL300 is maintained.</a></p> <p><a href="#">Brazil proposes the re-alignment of route UL300 and NOT TO ELIMINATE IT, will required the entry and exit points in the Amazonica FIR.</a>  <a href="#">IATA will study shall carry out investigation of the demand in this trajectory.</a></p>

Distancia de trayectoria propuesta Distance of proposed trajectory	2296	
Millas reducidas Reduced miles	43	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-73800/ 232986,6	
Estados involucrados States involved	Chile, Perú, Brazil, Colombia	
Observaciones Remarks		
*De acuerdo a información disponible/As per available information.		

NOTA: Los Estados involucrados y los operadores deberán estudiar la factibilidad de la Ruta y además se deberá verificar la distancia de la misma.

Note: States involved and operators shall study feasibility of the route and also the distance of the same must be studied.

Nota: Esta Ruta se analizó entre CHILE – PERU – BRASIL - TACA – LAN.

Perú propone y el grupo aprueba un **reemplazo de la UL300**, en el tramo ARI VOR – IQT VOR para beneficiar el flujo Santiago - Bogotá.

Previamente Perú informó que debe completar su reconfiguración de espacio aéreo y capacitación que está asociado a su actual proyecto de radarización (avanzado un 70%). Asimismo, Perú requiere mejorar tecnología en el control de Cusco APP / TWR, que será equipado con display para vigilancia ATS y por ello, se estima un plazo **NO MENOR al 1 SETIEMBRE del 2013** para implantar esta nueva ruta.

Se requiere consulta expresa a IATA respecto a la eliminación de ruta UL 300, desde ARI VOR hasta IQT VOR.

La trayectoria de la nueva ruta sería:

**TOY VOR – CHIPER (new 18 21 00 s + 073 15 36.83 w) - TACA2 – AND VOR – SIGOB (fir Amazónico) – BRAPE (new 06 35 59 s + 073 19 52 w) – IQT VOR. Después la ruta sigue a BOGOTA por el tramo actual UL300 al norte de IQT.**

Ahorro: El actual tramo TOY VOR a IQT VOR representa 1606 NM. La nueva Ruta integrando TOY VOR – TACA2 – SIGOB – BRAPE – IQT totaliza 1589 NM, por ende, tenemos 17 NM de ahorro.

Note: this route was analysed among by CHILE – PERU – BRAZIL - TACA – LAN.

Peru proposed and the group approves a replacement of to replace route UL300, in the segment ARI VOR– IQT VOR in order to benefitto favour air traffic flowthe Santiago – Bogotá air traffic flow.

Previously Peru informed that they mustit had to complete theirits airspace re-configuration and training associated to radarisation pProject (70% in progress). Also, Peru also requires improvement in technologyneeds to improve in its control technology ofin Cusco APP/TWR, towhich will be equipped with ATS surveillance display. Therefore, it is estimated that this route would be implemented not before and therefore a deadline not less tan-1 SEPTEMBER 2013 is estimated to implement such route

Specific consultation to IATA required with regard to elimination of route UL 300, from ARI VOR up to IQT VOR.

Trajectory *The trajectory of the new route would be: ~~de la nueva ruta sería:~~*  
TOY VOR – CHIPER (new 18 21 00 s + 073 15 36.83 w) - TACA2 – AND VOR – SIGOB (fir Amazónico) – BRAPE (new 06 35 59 s + 073 19 52 w) – IQT VOR. Después la ruta sigue a BOGOTA por el tramo actual UL300 al norte de IQT./Then the route continues to BOGOTA via the current segment UL300 north of IQT.

Ahorro: El actual tramo TOY VOR a IQT VOR representa 1606 NM. La nueva Ruta integrando TOY VOR – TACA2 – SIGOB – BRAPE – IQT totaliza 1589 NM, por ende, tenemos 17 NM de ahorro./Savings: the current segment TOY VOR to IQT VOR has 1606 NM. The new route TOY VOR – TACA2 – SIGOB – BRAPE – IQT has 1589 NM, saving 17 NM.

<b>SAO PAULO/ QUITO</b>		
<b><u>TRAYECTORIA MIXTA BI Y UNI-DIRECCIONAL/BI-DIRECTIONAL AND UNI-DIRECTIONAL MIXED TRAJECTORY</u></b>		
<b>Ruta actual /Current route (FliteStar)</b>	<b>UM776, UA321, UB554, UZ8, UL201,</b>	<b>Notas/Notes</b>
Distancia actual Current distance	2377	
*Número de vuelos mensuales *Number of monthly flights	70	Solo se registran vuelos de carga/ Only freight flights are registered
*Tipo de aeronave más utilizada *Type of most used aircraft	B744, B763, MD11	
Trayectoria propuesta Trajectory proposed	<a href="#">QUITO/BAURÚ/IQT/ Doble sentido en el punto VULTO (S21 15.6 W50 55.2 ) a IQT/Bi-directional in point VULTO (S21 15.6 W50 55.2 ) to IQT</a>	<a href="#">Ecuador suministrara el punto de entrada/salida al Area Terminal de Quito además que la propuesta sea bidireccional Ruta</a> <a href="#">Ecuador will provide the entry/exit point to the Quito terminal area, in addition to the proposal being bi- directional. Bidireccional/ Bi-directional route</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	2332	
Millas reducidas Reduced miles	45	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-38600/ 121860,2	
Estados involucrados States involved	Ecuador, Perú, Brazil, Bolivia	
Observaciones Remarks	<a href="#">Esta ruta es casi paralela con la ruta SAO PAULO /BAURU/ GUAYAQUIL</a> <a href="#">Considerar eliminación o extensión de la UL776, QUITO/ IQTOS.</a> <a href="#">This route is almost parallel to route SAO PAULO /BAURU/ GUAYAQUIL.</a> <a href="#">Consider elimination or extension of route UL776, QUITO/ IQTOS.</a>	
*De acuerdo a información disponible/As per available information.		

[BNOTA: Brasil analizará la llegada y salida en BAURU.](#)

[Note: Brazil shall analyse entry and exit in BAURU.](#)

24	LIMA/CARACAS	
Ruta actual /Current route (FliteStar)	UM414, UG427, TOSAL	Notas/Notes
Distancia actual Current distance	1502	
*Número de vuelos mensuales *Number of monthly flights	272	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, A320, A321, A343, B733, B762, B763	
Trayectoria propuesta Trajectory proposed	UM414/ <a href="#">AMBEXIQT</a> / DAVEX/ UL216	<del>Realineamiento de la UM414 o la creación de una nueva RNAV/</del> <a href="#">Realignment of route UM414 or creation of a new RNAV route</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	1486	
Millas reducidas Reduced miles	16	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-53400/ 168583,8	
Estados involucrados States involved	Perú, Colombia, Venezuela	<a href="#">Venezuela informa que esta ruta afecta a espacio aéreo de uso militar por lo que están aguardando la respuesta de las autoridades militares para su confirmación en la trayectoria propuesta/Venezuela reports that this route affects military airspace and thus is awaiting the response from the military authorities before confirming the proposed trajectory.</a> <a href="#">GIRAR CONSULTA ESCRITA A COLOMBIA PARA RESPONDER ANTES DEL 31 DE JULIO/SEND A WRITTEN REQUEST TO COLOMBIA, TO RESPOND BEFORE 31 JULY.</a>
Observaciones Remarks	Implantar nueva ruta RNAV o realinear la UM414, desde posición <a href="#">AMBEX-IQT</a> a DAVEX/ Implement new RNAV route or realign UM414 from <a href="#">AMBEX-IQT</a> to DAVEX.	
*De acuerdo a información disponible/As per available information.		

[NOTA: Venezuela estudiará esta Ruta con la opción de Puerto Cabello.](#)

[Note: Venezuela shall study this route with the option of Puerto Cabello.](#)



26	ASUNCIÓN/SANTA CRUZ	
Ruta actual /Current route (FliteStar)	UA321	Notas/Notes
Distancia actual Current distance	559	
*Número de vuelos mensuales *Number of monthly flights	80	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, B732	
Trayectoria propuesta Trajectory proposed	<del>VOR-VAS/VOR</del> <del>VIRUKELA/WPYBO (S19</del> <del>37 52,16 W61 42</del> <del>40.05)/VIR PORGO</del>	<a href="#">Eliminar la UA321 en el tramo</a> <a href="#">VAS/VIR/Eliminate UA321 in the</a> <a href="#">VAS/VIR segment</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	<del>553</del> 503	
Millas reducidas Reduced miles	<del>656</del>	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>		
Estados involucrados States involved		
Observaciones Remarks		
*De acuerdo a información disponible/As per available information.		

29	LIMA/BOGOTÁ	
Ruta actual /Current route (FliteStar)	UL305, W16	Notas/Notes
Distancia actual Current distance	1036	
*Número de vuelos mensuales *Number of monthly flights	<del>662390</del>	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, A320, B732, B735, B752, B762, B763. MD11	
Trayectoria propuesta Trajectory proposed	<del>AMVBEX/MORRO</del> <del>AMVEX/NDB TGM(TINGO</del> <del>MARIA)/PTO</del> <del>LEGUIZAMO(PLG)/MORRO</del> <del>(VERIFICAR EN BASE DE</del> <del>DATOS 5CLN)/(CHECK</del> <del>WITH 5CLN DATABASE)</del>	
Distancia de trayectoria propuesta Distance of proposed trajectory	1014	
Millas reducidas Reduced miles	22	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	<del>-178600/563840,2</del> <del>Recalcular/Recalculate</del>	<del>Recalcular</del>
Estados involucrados States involved	<del>Perú, Colombia</del>	
Observaciones Remarks		
*De acuerdo a información disponible/As per available information.		

30	<b>BOGOTÁ/QUITO/GUAYAQUIL</b> <b><u>ST BY a confirmación de ambos estados/pending confirmation by both States</u></b>	
Ruta actual /Current route (FliteStar)	UQ104, UA550, UG438	Notas/Notes
Distancia actual Current distance	394	
*Número de vuelos mensuales *Number of monthly flights	309	NILL
*Tipo de aeronave más utilizada *Type of most used aircraft	NILL	
Trayectoria propuesta Trajectory proposed	COLTA/MORRO Chequear en 5LNC MORRO	<a href="#">Ecuador confirmara esta trayectoria una vez terminada la re-estructuracion del espacio aéreo y solicitari concretar el punto de entrada/salida a la FIR Ecuador y suministrara punto sustitutivo de COLTA/Ecuador will confirm this trajectory after completing airspace restructuring. Request definition of the point of entry/exit to the Ecuador FIR. Ecuador will provide a point to replace COLTA.</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	388	
Millas reducidas Reduced miles	6	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-53400/ 168583,8	
Estados involucrados States involved	Colombia, Ecuador	<a href="#">Analizar la factibilidad. Analyse feasibility.</a>
Observaciones Remarks	Analizar la posibilidad de transformar la UA550 en RNAV/ Analyse the possibility to convert US550 into RNAV.	
*De acuerdo a información disponible/As per available information.		

<b>PANAMÁ/LIMA</b>		
<b>31</b>	<b>No formara parte de la propuesta, la ruta existe y no puede ser mejorada/Will not be part of the proposal, the route already exists and cannot be improved</b>	
<b>Ruta actual /Current route (FliteStar)</b>	<b>UM674</b>	<b>Notas/Notes</b>
<b>Distancia actual Current distance</b>	<b>1285</b>	
<b>*Número de vuelos mensuales *Number of monthly flights</b>	<b>353</b>	
<b>*Tipo de aeronave más utilizada *Type of most used aircraft</b>		
<b>Traectoria propuesta Trajectory proposed</b>	<b>Mantener ruta Maintain route</b>	
<b>Distancia de trayectoria propuesta Distance of proposed trajectory</b>		
<b>Millas reducidas Reduced miles</b>		
<b>Reducción de Combustible/ CO<sub>2</sub> aproximado Fuel Savings / approximate CO<sub>2</sub></b>	<b>0/0</b>	
<b>Estados involucrados States involved</b>		
<b>Observaciones Remarks</b>	<b>No sería necesario modificar la ruta actual/Unnecessary to modify existing route It would nt be necessary to modify current route. / Unnecessary to modify existing route</b>	
<b>*De acuerdo a información disponible/As per available information.</b>		

32	<b>PANAMÁ/BOGOTÁ/<u>BRASILIA</u></b>	
<b>Ruta actual /Current route (FliteStar)</b>	<b>UA317</b>	<b>Notas/Notes</b>
Distancia actual Current distance	410	
*Número de vuelos mensuales *Number of monthly flights	NILL	
*Tipo de aeronave más utilizada *Type of most used aircraft	NILL	
Trayectoria propuesta Trajectory proposed	NILL	
Distancia de trayectoria propuesta Distance of proposed trajectory		<a href="#">Panama manifiesta que es factible migrar para ruta RNAV la UA317</a> <a href="#">Brasil propone que la misma sea RNAV hasta el VOR BSI/Panama states that it is possible to convert UA317 to an RNAV route.</a> <a href="#">Brazil proposes conversion to RNAV route up to the BSI VOR.</a>
Millas reducidas Reduced miles		
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	0/0	
Estados involucrados States involved	<a href="#">Panamá, <del>Venezuela,</del></a> <a href="#">Colombia, Brasil</a>	<a href="#">Colombia analizar factibilidad</a> <a href="#">Colombia shall analyse feasibility.</a>
Observaciones Remarks	<del>Evaluar si será pertinente convertir la UA317 en RNAV, no habría ventaja en reducción de millas/</del> <del>Evaluate if it would be pertinent to convert UA317 into RNAV, no advantage in miles reduction would exist.</del>	
*De acuerdo a información disponible/As per available information.		

33	PANAMÁ/CARACAS	
Ruta actual /Current route (FliteStar)	UA553	Notas/Notes
Distancia actual Current distance	750	
*Número de vuelos mensuales *Number of monthly flights	229	
*Tipo de aeronave más utilizada *Type of most used aircraft	B722, B727, B732, B737, B738	
Trayectoria propuesta Trajectory proposed	MUBAR/PUERTO CABELLO (PBL)	<a href="#">Panama propone la trayectoria ESEDA, limite de FIR Barranquilla/Panama a PBL/Panama proposes the trajectory ESEDA, Barranquilla FIR boundary/Panama to PBL</a> <a href="#">Venezuela expresa su acuerdo con esta trayectoria completa y la misma sea RNAV/Venezuela agrees with this trajectory in full and to convert it to RNAV.</a> <a href="#">Queda pendiente el punto se salida y entrada en la FIR Colombia/The point of entry/exit to the Colombia FIR is still pending.</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	745	
Millas reducidas Reduced miles	5	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-26900/ 84923,3	
Estados involucrados States involved	<a href="#">Panamá, Venezuela y Colombia</a>	<a href="#">Venezuela y Colombia analizar factibilidad. Colombia and Venezuela analyse feasibility.</a>
Observaciones Remarks		
*De acuerdo a información disponible/As per available information		

34	PANAMÁ/SAO PAULO	
Ruta actual /Current route (FliteStar)	UA317, UL201	Notas/Notes
Distancia actual Current distance	2756	
*Número de vuelos mensuales *Number of monthly flights	<del>NHLL60</del>	
*Tipo de aeronave más utilizada *Type of most used aircraft	NILL	
Trayectoria propuesta Trajectory proposed	Se sugiere analizar extender la UL201 de MITU a ITAGO/ <u>It is suggested that an extension of UL201 from MITU to ITAGO be considered</u>	<u>Panama expresa que en la trayectoria MITU a DAKMO no habría inconvenientes/Panama has no problem with the trajectory MITU to DAKMO.</u> <u>Brasil por su parte concuerda con la extensión siempre que permanezca la ruta MITU a PIR/Brazil agrees with the extension provided the route MITU to PIR is maintained.</u>
Distancia de trayectoria propuesta Distance of proposed trajectory	2742	
Millas reducidas Reduced miles	14	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-37800/ 119334,6	
Estados involucrados States involved	<u>Panamá, Brasil y Colombia</u>	<u>Colombia analizar factibilidad</u> <u>Colombia analyse feasibility.</u>
Observaciones Remarks	Se sugiere analizar la Extensión de la UL201 de MITU hasta <del>ITAGO</del> <u>ISAKU</u> , Reducción de millas no es significativa/ <u>It is suggested that the extension of UL201 from MITU to ISAKU be analysed. Mile reduction not significant.</u>	
*De acuerdo a información disponible/As per available information		

<b>PANAMÁ/SANTIAGO</b>		
<b><u>MANTENERLA EN ST BY PARA UNA IMPLEMENTACION EN FUTURAS VERSIONES/KEEP IN ST BY FOR IMPLEMENTATION IN FUTURE VERSIONS</u></b>		
<b>35</b>	<b>Ruta actual /Current route (FliteStar)</b>	<b>Notas/Notes</b>
	<b><u>UM674, UL302, UL 780</u></b>	
	Distancia actual Current distance	2618
	*Número de vuelos mensuales *Number of monthly flights	<b><u>59170</u></b>
	*Tipo de aeronave más utilizada *Type of most used aircraft	B737, B738 ,B744
	Trayectoria propuesta Trajectory proposed	REPAL/TABON
	Distancia de trayectoria propuesta Distance of proposed trajectory	2590
	Millas reducidas Reduced miles	28
	Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	<b><u>-69400/ 219095,8</u></b>
	Estados involucrados States involved	Panamá, Colombia, Ecuador, Perú, Chile
	Observaciones Remarks	<b><u>Panama concuerda co la propuesta/Panama agrees with proposal Ecuador concuerda y revisara los puntos de entrada y salida en la FIR Ecuador/Ecuador agrees and will review the points of entry/exit to the Ecuador FIR Chile</u></b>
*De acuerdo a información disponible/As per available information		

Nota los expertos deben tomar en consideración replantear la trayectoria de esta ruta y reconsiderar una trayectoria considerando el alto flujo de transito que registra y sus efectos en la ruta UL302 y espacio RNP10.

Note: the experts must consider reformulating the trajectory of this route in view of its intense traffic and its impact on route UL302 and RNP10 airspace.



<b>PANAMÁ/BS AS</b>		
<b><u>FERNANDO HERMOSA COORDINARA CON LOS ESTADOS AFECTADOS PARA CONCRETAR LA PROPUESTA/FERNANDO HERMOSA WILL COORDINATE A PROPOSAL WITH THE STATES AFFECTED</u></b>		
36	<b>Ruta actual /Current route (FliteStar)</b>	<b>Notas/Notes</b>
	<b>UA558, UW8(CHK AWY)</b>	
Distancia actual Current distance	2894	
*Número de vuelos mensuales *Number of monthly flights	109	
*Tipo de aeronave más utilizada *Type of most used aircraft	B737, B738	
Trayectoria propuesta Trajectory proposed	REPAL(CHK POINT)/VOR PAR	
Distancia de trayectoria propuesta Distance of proposed trajectory	2858	
Millas reducidas Reduced miles	36	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	-116500/ 367790,5	<a href="#">BOLIVIA propone el tramo RAXUN/PAZ/OROKO y mantener la UA558, se analizara la conversión a RNAV la UA558 Brasil/BOLIVIA proposes the RAXUN/PAZ/OROKO segment and to maintain UA558. The conversion of UA558 to RNAV will be analysed.</a>
Estados involucrados States involved	Panamá, Colombia, Ecuador, Perú, Brazil, Bolivia, Argentina	<a href="#">Panamá está de acuerdo. Demás Estados involucrados analizar factibilidad./ Panama is in agreement. The rest of States should analyse feasibility.</a>
Observaciones Remarks	<a href="#">Esta ruta serviría también a para Montevideo, insertando un punto en la intersección con la UM400, a 47 NM sur de CERES En una segunda opción analizar la UB555 (ver Mdeo/Lima) si se mantiene esta la ruta Panamá/Mdeo, puede interceptar Paraná y luego UB555 a Mdeo. This route would also serve for Montevideo, inserting a point in the intersection with UM400, 47NM South from CERES. In a second option, analyse UB555 (see Mdeo/Lima) if this route Panama/Mdeo is maintained, it may intercept Paraná and then UB555 to Mdeo.</a>	
*De acuerdo a información disponible/As per available information.		

**Nota: - PROPUESTA RUTA 36 PANAMÁ/BS AS UA558, UW8**  
**Queda pendiente la viabilidad de la propuesta por la Administración Argentina.**  
**Note: PROPOSED ROUTE 36 PANAMÁ/BS AS UA558, UW8**  
**Pending approval of the proposal by the Argentinean Administration.**

41	CARACAS/BSAS	
Ruta actual /Current route (FliteStar)	UL793	Notas/Notes
Distancia actual Current distance	2784	
*Número de vuelos mensuales *Number of monthly flights	86	
*Tipo de aeronave más utilizada *Type of most used aircraft	A319, B735	
Trayectoria propuesta Trajectory proposed	DAVEX/PAR	<a href="#">Venezuela acepta la propuesta/Venezuela agrees with the proposal.</a> <a href="#">Bolivia propone en su FIR el tramo DAVEX/VIR/PILCO/Bolivia proposes the DAVEX/VIR/PILCO segment in its FIR.</a> <a href="#">Argentina realizara el estudio pertinente e informara a la oficina/Argentina will do the analysis and inform the Office.</a> <a href="#">Paraguay no tendría inconveniente/Paraguay has no problem.</a> <a href="#">Brasil solicita los puntos de entrada y salida a la FIR Amazonica/Brazil requests the points of entry/exit to the Amazonica FIR</a>
Distancia de trayectoria propuesta Distance of proposed trajectory	2637	
Millas reducidas Reduced miles		
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	155000/ 489335	
Estados involucrados States involved	Venezuela, Brazil, Bolivia, Paraguay, Argentina	
Observaciones Remarks	Actualmente no hay ruta directa/Currently there is no direct route.	
*De acuerdo a información disponible/As per available information.		

**Nota: .- PROPUESTA RUTA 41 CARACAS/BSAS UL793**

Queda pendiente la viabilidad de la propuesta por la Administración Argentina.

**Note: PROPOSED ROUTE 41 CARACAS/BSAS UL793**

Pending approval of the proposal by the Argentinean Administration

42	GUAYAQUIL/MADRID	
Ruta actual /Current route (FliteStar)	UA550	Notas/Notes
Distancia actual Current distance	1369NM	Hasta limite/Up to boundary FIR Maiquetía/Piarco/
*Número de vuelos mensuales *Number of monthly flights	62	
*Tipo de aeronave más utilizada *Type of most used aircraft	B763	
Trayectoria propuesta Trajectory proposed	CARTE/ o BIVAN to DAREK  Ecuador confirmará	<u>Venezuela expresa que luego de las coordinaciones con las autoridades militares de Venezuela, no habrá inconveniente en el tramo propuesto/Venezuela states that after coordinating with its military authorities, there would be no problem with the proposed segment. Ecuador expresa su acuerdo con la propuesta/Ecuador agrees with the proposal. Colombia en reuniones anteriores expreso que no tendría inconveniente, sin embargo queda pendiente la confirmacion /In previous meetings, Colombia stated that it had no problem. However, it is pending confirmation.</u>
Distancia de trayectoria propuesta Distance of proposed trajectory	1345	
Millas reducidas Reduced miles	24	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>		
Estados involucrados States involved	Ecuador, Colombia, Venezuela,	
Observaciones Remarks	Actualmente no hay ruta directa/Currently there is no direct route.	
*De acuerdo a información disponible/As per available information.		

43	<p style="text-align: center;"><b>SAO PAULO/GUAYAQUIL</b>  <u><b>FERNANDO HERMOSA COORDINARA CON ECUADOR BRASIL Y PERU,IATA/FERNANDO HERMOSA WILL COORDINATE WITH ECUADOR, BRAZIL, PERU, AND IATA</b></u></p>	
Ruta actual /Current route (FliteStar)	UM656, UM655, UB554, UA321, UM665	Notas/Notes
Distancia actual Current distance	2392	
*Número de vuelos mensuales *Number of monthly flights	NIL	
*Tipo de aeronave más utilizada *Type of most used aircraft	NIL <del>VOR-NDB</del> BAURÚ/ CANOA	<p><u>Brasil tramo unidireccional desde Sao paulo a cruce con la UZ22 punto denominado VULTO y desde este punto a Guayaquil bidireccional/Brazil uni-directional segment from Sao Paulo to crossing with UZ22 point VULTO and from there to Guayaquil bi-directional</u>  <u>Bolivia propone el tramo de Rio Branco a VAROM/ NDB BRU/Bolivia proposes segment Rio Branco to VAROM/ NDB BRU</u>  <u>Peru solicita tiempo para evaluación/Peru requests time for doing the assessment</u>  <u>Ecuador calculara el punto al cual llegara esta trayectoria/Ecuador will calculate the end point of the trajectory.</u></p>
Trayectoria propuesta Trajectory proposed	2329	
Distancia de trayectoria propuesta Distance of proposed trajectory	<del>63</del> <del>Nnnn/Tons///nnnn/Tons.</del>	
Millas reducidas Reduced miles	<del>Brazil, Bolivia, Perú, Ecuador</del> <del>63</del>	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>		
Estados involucrados States involved	<u>BRASIL. BOLIVIA.</u> <u>ECUADOR</u>	
Observaciones Remarks		<p><u>Equipo de expertos volver a analizar la Ruta. Experts team analyse again the route.</u></p>
*De acuerdo a información disponible/As per available information.		

**45 BOLIVIA PROPONE LA CREACION DEL TRAMO PAZ/PILCO/VAS en consecuencia se eliminaría la UA320 en el tramo VAS/PAZ**

**45 BOLIVIA PROPOSES THE CREATION OF THE PAZ/PILCO/VAS SEGMENT, thus eliminating UA320 in the VAS/PAZ segment**

46	<b>Córdoba/Lima (Bidireccional/bi-directional)</b>	
Ruta actual /Current route (FliteStar)	NUEVA RUTA	Notas/Notes
Distancia actual Current distance	1393 NM	
*Número de vuelos mensuales *Number of monthly flights	60 vuelos LAN	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, A330, B735, B737, B738, B744, B763, MD88, LJ45	
Trayectoria propuesta Trajectory proposed	VOR CBA-VOR PISCO	Argentina informa que realizarán el análisis pertinente a confirmar el siguiente tramo desde CBA/LOA como primera opción y la segunda opción sería LITOR/CAT/LOA/Argentina will do the analysis and confirm the subsequent segment CBA/LOA as first option. The second option would be LITOR/CAT/LOA Chile concuerda y engancharía este tramo con la revisada de la UL550/Chile agrees and would connect this segment with the revised UL550.
Distancia de trayectoria propuesta Distance of proposed trajectory	1357 NM	
Millas reducidas Reduced miles	36 NM	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	<b>-311210/1120357</b>	
Estados involucrados States involved	Argentina, Chile, Perú	
Observaciones Remarks	Esta ruta se corresponde con la solicitada por LAN/This route corresponds to the route requested by LAN/This route corresponds to the route requested by LAN	
*De acuerdo a información disponible/As per available information		
Esta ruta atiende un flujo importante de operaciones entre Buenos Aires y Lima, por lo que sería importante implantar una ruta directa./This route serves an important flow of operations between Buenos Aires and Lima. Thus, it would be important to implement a direct route. Solo se consideran los vuelos de LAN./Only LAN flights are considered.		

47	<b>Santiago/Lima</b> <b>(Bidireccional – Unidireccional desde <u>Bi-directional - Uni-directional from</u> )</b>	
<b>Ruta actual /Current route</b> <b>(FliteStar)</b>	<b>UL302</b>	<b>Notas/Notes</b>
Distancia actual Current distance	1349 NM	
*Número de vuelos mensuales *Number of monthly flights	210 vuelos LAN/ <u>210 LAN flights</u>	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, A330, B735, B737, B738, B744, B763, MD88, LJ45	
Trayectoria propuesta Trajectory proposed	VOR VTN-DCT ATEDA y UL302	Ruta de empalme a la UL302/ <u>Connecting route to UL302</u>
Distancia de trayectoria propuesta Distance of proposed trajectory	1342 NM	
Millas reducidas Reduced miles	7 NM	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	<b>-229950/827820</b>	
Estados involucrados States involved	Chile, Perú	
Observaciones Remarks	Esta ruta se corresponde con la solicitada por LAN/This route corresponds to the route requested by LAN/This route corresponds to the route requested by LAN	
*De acuerdo a información disponible/As per available information		
<p>Esta ruta atiende un flujo importante de operaciones entre Santiago y Lima, por lo que sería importante implantar una ruta directa./<u>This route serves an important flow between Santiago and Lima. Thus, it would be important to implement a direct route.</u></p> <p>Esta modificación descongestionaría el VOR TOY, quedando solo para llegadas./<u>This modification would decongest the TOY VOR, which would be only for arrivals.</u></p> <p>Solo se consideran los vuelos de LAN./<u>Only LAN flights are considered.</u></p>		

48	Puerto Montt/Punta Arenas (Bidireccional/ <u>Bi-directional</u> )	
Ruta actual /Current route (FliteStar)	UT100/UT102	Notas/Notes
Distancia actual Current distance	730 NM	
*Número de vuelos mensuales *Number of monthly flights	360 vuelos LAN	
*Tipo de aeronave más utilizada *Type of most used aircraft	A320, A330, B735, B737, B738, B744, B763, MD88, LJ45	
Trayectoria propuesta Trajectory proposed	VOR MON-VOR PNT- VOR NAS	Chile no tiene inconvenientes/ <u>Chile has no problem</u> Argentina evaluará la solicitud/ <u>Argentina will assess the request</u>
Distancia de trayectoria propuesta Distance of proposed trajectory	704 NM	
Millas reducidas Reduced miles	26 NM	
Reducción de Combustible/ CO <sub>2</sub> aproximado Fuel Savings / approximate CO <sub>2</sub>	<b>-615567,56/2216043,2</b>	
Estados involucrados States involved	Chile, Argentina	
Observaciones Remarks	Esta ruta se corresponde con la solicitada por LAN/This route corresponds to the route requested by LAN/This route corresponds to the route requested by LAN	
*De acuerdo a información disponible/As per available information		
Esta ruta atiende un flujo importante de operaciones entre Santiago y Punta Arenas, por lo que sería importante implantar una ruta directa./ <u>This route serves an important flow of operations from Santiago to Punta Arenas. Thus, it would be important to implement a direct route.</u> Es necesaria una reunión bilateral entre Chile-Argentina./ <u>A bilateral meeting between Chile and Argentina is required.</u> Se consideran solo los vuelos de LAN./ <u>Only LAN flights are considered.</u>		



**APÉNDICE / APPENDIX B**



Project RLA 06/901  
Assistance for the implementation of a regional ATM system based on  
the ATM operational concept and the corresponding  
technological support for communications, navigation,  
and surveillance (CNS)

**GUIDANCE FOR THE IMPLEMENTATION OF FLEXIBLE  
USE OF AIRSPACE (FUA) CONCEPT IN THE SOUTH  
AMERICAN REGION**

First Edition  
April 2012

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# Guidance for the Implementation of Flexible Use of Airspace (Fua) Concept in the South American Region

## TABLE OF CONTENTS

### Contents

Preface .....	4
Record of amendments and corrigenda .....	5
Acronyms and abbreviations .....	6
Definitions .....	8
Preamble .....	11
Objective .....	11
Scope .....	11
Global background .....	11
Regional background .....	13
Rationale .....	15
Basic guiding principles in civil-military coordination and cooperation .....	16
General guidelines for the implementation of the FUA concept .....	17
National policies for the implementation of the FUA concept .....	18
Analysis of the use and management of Restricted, Prohibited, Hazardous and Special use areas .....	19
Establishment of the Civil / Military Coordination and Cooperation Committee .....	20
Letters of Operational Agreement between civil and military ATS units .....	21
Airspace management within the scope of FUA .....	22
Strategic Airspace management (Level 1) .....	22
Pre-tactical Airspace management (Level 2) .....	24
Tactical Airspace management (Level 3) .....	24
Airspace flexible and adaptable structures and procedures .....	24
Safety assessment .....	27
Information management .....	27
Seminars/meetings .....	28
Collaborative Decision Making (CDM) .....	28
Action Plan for the implementation of the FUA concept .....	29
Appendix A - GPI- Flexible use of airspace .....	33
Appendix B – Resolution of Assembly A 37-15 .....	35
Appendix C - Conclusion RAAC/12-1 Performance-Based Implementation Plan for the SAM Region (SAM PBIP) .....	39
Appendix D – Regional Performance Objective: SAM/ATM 04 Flexible use of airspace .....	41
Appendix E - Example of a national standard for the implementation of flexible use of airspace .....	43
Appendix F - Restricted, Prohibited and Danger areas in the SAM region .....	47
Appendix G – Form template for the use and management of restricted, prohibited and danger areas and special use airspace in the SAM region .....	49
Appendix H - Operational agreement sample letter for the joint use of restricted areas .....	51
Appendix I – Applicable procedures in Europe on the flexible use of airspace .....	55
Appendix J - Action plan model for the implementation of flexible use of airspace (FUA) .....	59
Reference documents .....	69

## PREFACE

The Guidance for the Implementation of the Flexible Use of Airspace (FUA) Concept at ICAO South American Region (Guidance FUA / SAM) is published by the ICAO's South American Regional Office on behalf of ICAO's South American Regional Implementation Group (SAMIG). It considers the different aspects that States should take into account for the coordination and cooperation between civil and military air traffic, recognizing that the airspace is a common resource of civil and military aviation, that allows to achieve safety, consistency and efficiency of civil aviation and to meet military air traffic requirements through the implementation of dynamic airspace.

The Regional Office, on behalf of SAMIG shall publish revised versions of the SAM/FUA Guidance needed to keep a duly updated document.

You can request copies of the SAM/FUA Guidance at:

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This edition (*Version 0.0*) includes all other revisions and amendments as of April 2011. Subsequent amendments and corrigenda shall appear in the Amendment and Corrigenda Record Table, pursuant to the procedure set forth below.



## ACRONYMS AND ABBREVIATIONS

ACC	Area Control Centre
AD	Aerodrome
ADIZ	Air Defence Identification Zone
AIP	Aeronautical Information Publication
AMC	Airspace Management Cell (AMC)
ANSP	Air Navigation Service Provider
ASM	Airspace Management
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATS	Air Traffic Services
AUP	Airspace Utilization Plan
CADF	Centralised Airspace Data Function
CBA	Cross Border Area
CBP	Customs and Border Protection
CDM	Collaborative Decision Making
CDR	Conditional Route
CFMU	Central Flow Management Unit
CNS/ATM	Communication, Navigation and Surveillance/Air Traffic Management
CRAM	Conditional Route Availability Message
ENR	En route
EUROCONTROL	European Organisation for the Safety of Air Navigation
FAA	Federal Aviation Administration
FAUP	Forecast Airspace Utilization Plan
FIR	Flight Information Region
FMU/FMP	Flow Management Unit/Flow Management Position
FUA	Flexible Use of Airspace
FUUP	Forecast Update of the Utilization Plan
GAT	General Air Traffic
GEN	General
GNSS	Global Navigation Satellite System
GPI	Global Plan Initiatives
LOA	Letter of Agreement
MOA	Military Operation Area
MOU	Memorandum of Agreement
MSL	Mean Sea Level
NextGen	Next Generation
NOTAM	Notice to Airmen
PANS	Procedures for Air Navigation Services
PBN	Performance-Based Navigation
PIRG	Planning and Implementation Regional Group
PFF	Performance Framework Form
RPA	Remotely Piloted Aircraft
RPAS	Remotely Piloted Aircraft System
RPS	Remotely Piloted Station
SAR	Search and Rescue
SARPS	Standards and Recommended Practices

SAM-PBIP	Performance-Based Implementation Plan for SAM Region
SESAR	Single European Sky ATM Research
SMS	Safety Management Systems
SUA	Special Use Airspace
SUPPS	Regional Supplementary Procedures
TRA	Temporary Reserved Areas
TSA	Temporary Segregated Areas
UAS	Unmanned Aircraft System
UIR	Upper Flight Information Region



## APPLICABLE DEFINITIONS IN THIS SAM/FUA GUIDANCE

**Remotely Piloted Aircraft.** Aircraft whose pilot is not on board.

**Temporary Reserved Area (TRA).** Airspace temporarily reserved and allocated for the specific use of a particular user during a determined period of time, through which other flights may pass with permission from air traffic control (ATC).

**Temporary Segregated Area (TSA).** Airspace temporarily reserved and allocated for the exclusive use of a specific user during a determined period of time, through which no other flights may pass.

**Cross Border Area (CBA).** Reserved or segregated airspace established for specific operational requirements on international borders.

**Air traffic service unit.** A generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.

**Segregated Airspace.** Airspace of specific dimensions allocated for the exclusive use of a user or users.

**Remote Pilot Station (RPS).** A station from which the pilot remotely operates the flight of an unmanned aircraft.

**Air Traffic Flow Management (ATFM).** A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that AT capacity is utilised to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.

**Airspace Management (ASM).** Process whereby airspace options are selected and applied in order to meet the airspace users' needs.

**Air Traffic Management (ATM).** The dynamic, integrated management of air traffic and airspace (including air traffic services, airspace management and air traffic flow management) under safe, cost-effective, and efficient conditions by providing facilities and seamless services in collaboration with all stakeholders and incorporating ground and on-board features.

**Global Plan Initiatives (GPI).** They are designed to support the planning and implementation of performance objectives in ICAO Regions.

**Performance-Based Navigation (PBN).** Performance-based area navigation requirements applicable to aircraft operating along an ATS route, on an instrument approach procedure, or in a designated airspace.

**Standards and Recommended Practices (SARPS).** The Council adopts standards and recommended practices pursuant to Articles 54, 37 and 90 of the Convention on International Civil Aviation and are defined as follows:

*Standard.* A standard is a specification of physical characteristics, configuration, material, performance, personnel or procedure, whose uniform application is recognized as necessary for the safety or regularity of international air navigation which contracting States shall comply pursuant to the Convention; in case

compliance is not possible, notification to the Council is mandatory, as set forth in Article 38 of the Convention.

*Recommended practice.* A recommended practice is a specification of physical characteristics, configuration, material, performance, personnel or procedure, whose uniform application is deemed convenient for safety, regularity or efficiency of international air navigation which contracting States shall comply pursuant to the Convention.

**Remote pilot.** Person remotely operating the flight controls of a remotely piloted aircraft during flight.

**Procedures for Air Navigation Services (PANS).** Procedures adopted by the Council, including general operational procedures that are not considered mature enough to be adopted as international standards and recommended practices, or more permanent texts that are inappropriate or too detailed to be included in an Annex.

**Regional Supplementary Procedures (SUPPS).** Operational procedures that supplement the Annexes and PANS developed largely through ICAO's regional air navigation meetings to meet the needs of a specific ICAO region. It addresses issues related to safety and consistency of international air navigation. They are published in a single document for all regions. ICAO's Regional Supplementary Procedures (SUPPS) are part of the air navigation plan prepared by the Regional Air Navigation Conferences (ANC) to meet those needs in certain areas not covered by global provisions. They complement the requirement exhibition for facilities and services contained in the air navigation plan publications.

**Collaborative Decision-Making (CDM).** A process whereby all ATM decisions, except for ATC tactical decisions that are based on the exchange of all relevant information for transit operations between civilian and military parties.

**Flight Information Region (FIR).** An airspace of defined dimensions within which flight information service and alerting service are provided.

**Conditional Route (CDR).** A non-permanent ATS route or part of it that can be planned and used under special conditions.

**ATM security.** Contribution of the ATM system to the protection of civil aviation, safety, and national defence, law enforcement and protection of the ATM system against security threats and vulnerabilities.

**Air Traffic Services (ATS).** A generic term meaning variously, flight information, alerting, air traffic advisory, air traffic control services (area control, approach control or aerodrome control services).

**Customs and Border Protection Services (CBP).** Protect the State by preventing illegal entry of persons and goods while facilitating legitimate travelling and trade.

**Unmanned Aircraft System (UAS).** Aircraft and its associated elements operated without a pilot on board.

**Remotely Piloted Aircraft System (RPAS).** Configurable set of elements consisting of a remotely piloted aircraft, its remote pilot station(s), the mandatory command and control links, and any other system element required at some point during the flight operation.

**Air Traffic Management.** A system that provides ATM through the integration of human resources, information technology, and facilities, in collaboration with the support of ground-, air-, and/or space-based communications, navigation and surveillance.

**Global Navigation Satellite System (GNSS).** A worldwide position and time determination system that includes one or more satellite constellations, aircraft receivers and system integrity monitoring, augmented as necessary to support the required navigation performance for the intended operation.

**Flexible Use of Airspace (FUA).** Concept of airspace management based on the principle that airspace should not be designated as exclusively military or civilian, but as a continuous space that meets the requirements of all users to the extent possible.

**Danger area.** An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

**Prohibited area.** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

**Restricted area.** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

## 1 Preamble

### 1.1 Objective

1.1.1 The Guidance for the Implementation of the Flexible Use of Airspace in ICAO's South American Region (SAM/FUA Guidance) has been designed to help ensure that the States of the Region have the applicable regional procedures, in harmonic fashion.

1.1.2 The development of the guidance has been taken into consideration the recommendations of the International Civil Aviation Organization in this regard, the Global Air Navigation Plan (Doc 9850) and the guidelines set forth in the Performance-Based Implementation Plan for the SAM Region (SAM-PBIP) which states that the optimal, balanced and equitable use of airspace by civil and military users, shall be facilitated through both strategic coordination and dynamic interaction, thus allowing the implementation of optimal flight paths, reducing operating costs of airspace users while protecting the environment.

### 1.2 Scope

1.2.1 The SAM/FUA Guidance has been developed to be used by SAM States in the FIRs under their jurisdiction, taking into account the operational improvements and airspace optimization initiatives in the short and medium term, and particularly in accordance with ATS route network optimization in the SAM Region.

## 2 Global background

2.1 Annex 2 - *Rules of the Air*, contains rules concerning flight and aircraft manoeuvring within the scope of Article 12 of the Convention, and provisions for coordination with military authorities for reasons of integrity and territorial sovereignty of a State, whereas Annex 11 - *Air Traffic Services*, contains provisions concerning the need to coordinate with military authorities or units, mainly to the extent that State aircraft activities may affect civilian operations and *vice versa*.

2.2 In addition, the *Procedures for Air Navigation Services - Air Traffic Management* (PANS-ATM, Doc. 4444) contain procedures applicable to other in-flight contingencies, such as lost or unidentified aircraft, that require coordination with military authorities, and describe procedures for the implementation of special military operations.

2.3 Information on coordination requirements between military units and air traffic services can also be found in the *Manual concerning safety measures relating to military activities potentially hazardous to civil aircraft operations* (Doc 9554) and in the *Air traffic services planning manual* (Doc 9426).

2.4 Likewise, the *Global Air Navigation Plan* (Doc 9750) proposes 23 initiatives (GPI) oriented to the implementation of the ATM operational concept. GPI 1 refers precisely to the "*Flexible use of airspace*" (**APPENDIX B**)

*Note: In light of the new aviation system block upgrade (ASBU) methodology fostered by ICAO, the Global Air Navigation Plan shall be updated and the current global plan initiatives (GPI) shall be inserted in the different modules of each block proposed in this methodology.*

2.5 The *ICAO Global Air Traffic Management Operational Concept* (Doc 9854) describes the services required to operate the global air traffic system in the near future and beyond, and lists the requirements to provide more flexibility for users, maximize efficiency, and increase system capacity, while improving safety. Integral parts of these elements are interoperability and military system operations.

2.6 *Appendix O of Assembly Resolution A 37-15: Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation* (**APPENDIX B**)

2.7 The resolution states, among other things, that the joint use of airspace and some facilities by civil and military aviation will be provided in such a way so as to attain safety, regularity and efficiency of civil aviation and to meet the requirements of military air traffic, and promotes the dissemination of best practices and the adoption of follow-up action building upon the success of the *Global air traffic management forum on civil-military cooperation* (2009) with the support of the civil and military stakeholders.

2.8 The Forum recognized that most ICAO Regions had made great progress in airspace management and military-civilian cooperation; however, it recognized the need to further improve cooperation between authorities and with air navigation service suppliers. It was suggested that, in order to promote cooperation, military representatives should participate at ICAO meetings, seminars and other relevant events as part of State delegations.

2.9 Upon summarizing the results of the Forum, the following was stated:

- a) Peace and stability are essential conditions for social and economic development;
- b) Trust and mutual understanding are key requirements for collaboration between civil and military authorities;
- c) The safety, security and efficiency are common civil and military values;
- d) For civil aviation, efficiency means greater capacity, less delays, and a reduction in costs, fuel consumption and emissions;
- e) For military aviation, efficiency means mission efficacy (in times of peace and crisis) and realistic training, together with greater capacity, less delays and a reduction in costs, fuel consumption and emissions;
- f) Cooperation and coordination require communication;
- g) Civil-military cooperation is essential at national, regional and international level;
- h) Airspace is a continuum and a limited common resource for all civil and military users;
- i) Better knowledge and application of flexible use of airspace principles are a good basis for civil-military coordination of ATM;
- j) Civil-military interaction is essential to optimize the safe and efficient use of airspace for all users, and the global aviation community must properly resolve gaps;
- k) The integration of UAS is a challenge as well as an opportunity for the growth of the aviation system;
- l) Civil-military cooperation and coordination are essential, both in times of peace and crisis;
- m) A global civil-military approach to security and incident management is needed, taking into account positive experiences that can help improve the system;
- n) Greater efforts are needed, not only within the context of flexible use of airspace, but also in terms of standards and compatible procedures and global interoperability of ATM systems; and
- o) Good collaboration requires communication, education, good relationships and trust.

2.10 Finally, in response to the agreements reached at the 2009 Global air traffic management forum on civil-military cooperation, ICAO and civil and military experts developed Circular 330-AN/189, which contains examples of good practices in civil-military cooperation and recognizes that growing civil air traffic and military air missions would benefit significantly from a more flexible use of airspace, and recommends and provides guidance on best practices in civil-military cooperation that could be adopted by States.

### 3 Regional background

3.1 Civil-military cooperation and coordination in the South American Region have traditionally been based on a dialogue between civilian and military authorities with the view to making better use of airspace for both and improving cooperation for the use and integration, where possible, of their respective air traffic control facilities.

3.2 The States of the South American Region, taking into account the provisions of the Global Air Navigation Plan, the ATM operational concept and the conclusions of the Caribbean and South American Regional Planning and Implementation Group (GREPECAS), developed the Performance-Based Air Navigation System Implementation Plan for the SAM Region (SAM-PBIP), a plan that was approved for regional implementation through *Conclusion RAAC/12-1 Performance-Based Air Navigation System Implementation Plan for the SAM Region (SAM PBIP)* of the Twelfth Meeting of Directors of Civil Aviation (RAAC/12) of the SAM Region held in October 2011 (**APPENDIX C**)

3.3 The main gap identified in the current system is the lack of a policy and procedures for the flexible use of airspace, which hampers airspace design and management by not allowing the application of an optimal airspace structure and the use of optimum flight paths. The limitations that have been identified include the existence of permanently reserved airspace, primarily for military purposes, and inadequate airspace planning, which prevents direct flights between airports of origin - destination and/or city pairs.

3.4 The period considered by the SAM PB ANIP runs from 2012 to 2018 and the expected evolution is based on the Global Plan Initiatives that apply to en-route operations, TMA operations, and air operations in general.

3.5 ATM planning has been based on seven global aspects, for which the respective performance framework forms (PFF) have been developed. One of these aspects is the Flexible Use of Airspace, which has been identified as (PFF SAM/ATM 04 **APPENDIX D**). This activity identified the following benefits for the ATM community, which should be attained through operational and technical activities aligned with this performance objective:

- a) Improved civil/military coordination and cooperation strengthens airspace safety;
- b) It allows for a more efficient ATS route structure, reducing miles flown and fuel consumption and, consequently, CO<sup>2</sup> emissions into the atmosphere;
- c) It increases airspace capacity; and
- d) Increased availability of reserved airspace at times when there is no activity by the users of such airspace.

Note: In light of the new aviation system block upgrade (ASBU) methodology fostered by ICAO, the SAM Region will have to update the SAM PB ANIP, as well as the PFFs that will be replaced by the air navigation report forms (ANRF).

3.6 As part of regional activities and in order to improve civil/military coordination and cooperation and in response to Assembly Resolution A 37-15, ICAO organized the Seminar on Civil/Military Coordination and

Cooperation and flexible use of airspace in the NAM, CAR and SAM Regions, which was held on 16-19 August 2011, in Lima, Peru.

3.7 This seminar was attended by civil and military authorities, that had the opportunity to exchange views, receive valuable information on activities being carried out worldwide. As a result of the discussions, they issued a series of recommendations that should be implemented by the States and ICAO as appropriate:

- a) Support to the holding of an event as a follow-up to the Global Civil-Military Cooperation Forum (2009);
- b) The seminar requested ICAO to coordinate the drafting of regional guidelines on civil-military cooperation for the CAR/SAM regions;
- c) The seminar recommended to make arrangements for civil-military work at regional level;
- d) States are encouraged to apply the Flexible Use of Airspace (FUA) principles (Annex 11 - Air Traffic Services, Procedures for Air Navigation Services - Air Traffic Management (PANS-ATM, Doc 4444) and Circular 330-An/189 Civil-Military Cooperation in Air Traffic Management);
- e) ICAO is requested to develop guidance material on the Flexible Use of Airspace (FUA);
- f) The participation of military authorities at ICAO meetings is recommended (Resolution A37-15, Appendix O: Coordination and Cooperation of Civil and Military Air Traffic);
- g) The ICAO NACC and SAM Regional Offices are requested to organize a workshop on ATM crisis management; and
- h) CAR/SAM States, whenever possible, should establish a liaison office for civil-military coordination within their Civil Aviation Department in order to facilitate coordination between civil and military sectors.

## 4 **Rationale**

4.1 As world economies grow, demand for air travel multiplies; thus, airspace and airport capacity must increase to meet this demand. Traditional methods of increasing capacity have reached the end of their possibilities, so new, improved methods and concepts will be needed to maximize existing capacity and increase it where possible.

4.2 In the context of the ATM Operational Concept, airspace management (ASM) is the process whereby options for the use of airspace are selected and applied to meet user needs. The objective of ASM is to achieve a more efficient use of airspace, taking into account actual needs and, whenever possible, to avoid permanent segregation of airspace.

4.3 There are several and sometimes conflicting interests regarding the use of airspace, so ASM is a complex exercise. Additionally, there are also activities that require the reservation of a certain volume of airspace for its exclusive or special use (SUA) for defined periods of time due to the characteristics of its flight profile, the importance of its operations or the risks involved by the operations to be performed in said space and the need to separate them effectively and safely from other types of aeronautical activities.

4.4 Airspace management should be based on the following principles and strategies:

- a) all available airspace should be managed in a flexible manner;
- b) airspace management processes should incorporate dynamic flight paths and provide optimal operational solutions;
- c) when conditions require segregation, based on different types of operations and/or aircraft, the size, shape and time zones of said airspace should be determined to minimize impact on operations;
- d) the use of airspace should be coordinated and monitored to meet the different requirements of all users and minimize operational limitations;
- e) Airspace reservation should be planned in advance, making dynamic changes where possible. The system must also be able to meet unexpected last minute requirements; and
- f) The complexity of operations may limit the degree of flexibility.
- g) According to the guidelines established in the SAM PBIP, the optimal, balanced, and equitable use of airspace by civil and military users shall be facilitated through both strategic coordination and dynamic interaction, allowing for the establishment of optimal flight paths while reducing operating costs for airspace users.

4.5 The flexible use of airspace must also include airspace over high seas within the jurisdiction of the FIR, considered without detriment to the rights and obligations of Member States under the Convention on International Civil Aviation (Chicago Convention) of 7 December 1944 and its Annexes.

## 5 **Basic guiding principles of civil-military coordination and cooperation**

5.1 The concept of flexible use of space should basically consider the following guiding principles:

- a) coordination and cooperation between civil and military authorities shall be organized at strategic, pre-tactical and tactical management level by establishing letters of operational agreement and/or special procedures for a given activity, aimed at increasing airspace safety and capacity and improving the efficiency and flexibility of air operations;
- b) consistency among airspace management, air traffic management, air traffic flow and management, and air traffic service functions must be established and maintained to ensure efficient planning, distribution and use by all users at the three airspace management levels (strategic, tactical and pre-tactical);
- c) airspace reservation for exclusive or specific use of certain user categories shall be temporarily applied only during limited periods of time depending on actual use and it shall be disregarded as the activity that motivated it ceases to be, and it shall follow the procedures set forth in ICAO documents and Annexes as well as those prescribed in the Letters of Operational Agreement and/or special procedures.
- d) air traffic service units and users will make the best possible use of available airspace,
- e) coordination and collaborative decision-making by ATS, ATFM units, and effective application of the flexible use of airspace concept must be consistent and permanent during the strategic, pre-tactical and tactical phases of airspace management; and
- f) Adequate resources should be allocated for an effective implementation of the flexible use of airspace concept, taking into account both civil and military needs.



## 6 **General guidelines for the implementation of the FUA concept**

6.1 SAM States should establish policies on the use of temporarily or permanently reserved airspace in order to avoid the adoption of airspace restrictions as much as possible.

6.2 The process of implementing the Flexible Use of Airspace should start with an assessment of restricted, prohibited and danger airspace that affect or could affect air traffic. To this end, this paper provides an initial analysis from a regional perspective.

6.3 If they have not done it yet, States should implement the Civil/Military Coordination and Cooperation Committees or a similar body, aimed at assessing the various of airspace management and air traffic control issues that somehow affect civil and military activities.

6.4 The relevant aviation authority should encourage the development of the necessary letters of operational agreement between ATS and military units or other users for the dynamic and flexible use of airspace, avoiding restrictions on the use of airspace, thus meeting the needs of all users.

6.5 In cases where airspace restriction is inevitable, the letters of agreement should specify that the activation of airspace reservation should not extend beyond the time required. This will require the development of paths that permit the dynamic re-routing of aircraft to avoid such airspaces.

6.6 The aforementioned paths should be published in the AIP in order to alert users of the need to consider said possible deviations in flight planning.

6.7 Appropriate measures should be taken to improve the effectiveness of air traffic flow management in order to assist existing operational units ensure efficient flight operations.

6.8 The implementation of the FUA requires convincing the users of reserved airspace, mainly the military authorities of the States involved, that their needs will be met, regardless of the application of airspace restrictions. Thus, seminars/meetings with the authorities will be essential to demonstrate the importance of optimized use of airspace.

## 7 **National policies for the implementation of the FUA concept**

7.1 FUA is an airspace management concept based on the principle that airspace should not be designated as exclusively military or civilian, but as a continuum that meets the maximum possible requirements of all users.

7.2 The effective and harmonized implementation of the flexible use of airspace in the volume of airspace under consideration requires precise civil-military coordination rules and dynamics, taking into account the needs of all users and the nature of their various activities, avoiding permanent reservation inasmuch as possible and optimizing its flexible use, without detriment to the privileges and defense responsibilities of Member States.

7.3 In order to accomplish that stated above, the effectiveness of civil-military coordination procedures must be based on rules and procedures for the efficient use of airspace by all users, which should be reflected in the Letters of Operational Agreement between the military authorities and Air Traffic Services (ATS), and on some basic guiding principles.

7.4 The objective of establishing common policies for SAM States responds to the need to ensure a uniform and harmonized implementation of the provisions on the adoption of the flexible use of airspace concept.

7.5 The States should, if they have not done it yet, insert the text on the application of the flexible use of airspace concept in their national legislation. The purpose of regulating FUA is to support the concept of an operating airspace that is increasingly integrated into the framework of the common transport policy and to establish common design, planning and management procedures to ensure an efficient and safe air traffic management.

7.6 The legislation should reinforce the need for coordination and cooperation between civil and military authorities, especially for the allocation and efficient use of airspace for military purposes, including the criteria and principles that should govern said allocation and use, particularly its opening to civilian flights.

7.7 National legislation should include a safeguard clause enabling States to suspend the application of the standard if so required for national military purposes. **APPENDIX E** contains a sample of a national standard, as reference.

## 8 **Analysis of the use and management of Restricted, Prohibited, Danger and Special use areas**

8.1 In order to achieve a comprehensive ATS route network that serves the interests of all users, including commercial, military, general, sports aviation, and unmanned aircraft systems (UAS), it will be necessary to analyze all restricted, prohibited and danger areas that have been implemented in each State in order to apply the flexible use of airspace concept.

8.2 This work is not intended to eliminate or arbitrarily reduce the special use airspace assigned, but rather, through the implementation of collaborative decision making (CDM), find the best options that may satisfy all airspace users and ensure that the needs identified are met, regardless of the application of airspace restrictions.

8.3 The States should analyze the different cases in which, for safety reasons, it would be necessary to establish procedures or letters of agreement to avoid tactical airspace management, as this implies the adoption of real-time decisions by the control service. While tactical management should be included in every action plan, this should be the tool of last resort, as it is not possible to apply the most appropriate solution when time is scarce and data to consider are varied.

8.4 Note was taken of the existence of permanently reserved airspace, primarily for military purposes, in a way that could prevent proper airspace planning, not allowing direct flights between airports of origin - destination and/or city pairs, as well as operations at inappropriate flight levels and/or speeds that prevented aircraft from maintaining optimum flight profiles, and major ground and/or en-route system delays.

8.5 SAM States should establish policies on the use of temporarily or permanently reserved airspace, to avoid, as much as possible, the adoption of airspace restrictions, and to consider and integrate the unmanned aircraft systems (UAS) into its air navigation system, which adds a new component to the aviation system that should start being considered.

8.6 There is a high percentage of special use airspace that should be analyzed within the context of civil/military cooperation in each particular State. There are 124 published prohibited areas, 421 restricted areas, 41 danger areas and 83 special areas in the Region, including volcanic areas and other special areas for aerial sports and recreational activities (**APPENDIX F**).

8.7 In order to proceed to assess the Restricted, Prohibited, Hazardous and Special use areas, the States could use as a model the form in **APPENDIX G**.

8.8 The purpose of the form is to identify the type of area or special use airspace, the lateral dimension in square kilometers and the vertical dimension with upper and lower limits, the period of use, the nature of the activity, the body or entity responsible for activating the area, the impact on the current design of airspace and finally, if planning could be potentially affected by the area.

## 9 **Establishment of the Civil/Military Coordination and Cooperation Committee**

9.1 ICAO Standards and Recommended Practices (SARPs), the recommendations and conclusions of different events on Civil/Military coordination and cooperation that have been approved for regional application aim at mutual cooperation between civil and military authorities; however, not every State has a formal civil/military coordination and cooperation committee.

9.2 In order to ensure FUA implementation, each State should establish a civil/military coordination and cooperation committee or similar body to assess opportunities for implementing Special Use Airspace (SUA). It is noteworthy that success of this initiative depends on the committee having the power to ensure the use of airspace by all users according to their specific needs, while avoiding, inasmuch as possible, the permanent reservation of airspace that would lead to a limited use of airspace when not being used.

9.3 These civil/military coordination and cooperation committees ensure coordination of decisions on civil and military airspace management and air traffic control issues at all levels, and are essential for the implementation of an ATS route network that meets the current requirements of airspace users.

9.4 Civil/military coordination and cooperation committees should include representatives of civil and military aviation and other airspace users as needed.

9.5 For these civil/military coordination and cooperation committees to be established, civil aviation administrations must propose terms of reference or objectives for that committee and then agree on a work program based on those terms of reference. States may consider the following aspects, *inter alia*:

- a) Achieve civil-military coordination and optimum joint use of airspace with the highest degree of safety, regularity and efficiency of international civil air traffic;
- b) Develop national policies regarding flexible use of airspace (FUA);
- c) Review and provide the necessary links between civil ATS units and the relevant air defense military units to ensure day-to-day integration or segregation of civil/military air traffic operating in the same airspace segments;
- d) Review the existing ICAO provisions on cooperation and civil/military coordination;
- e) Consider the special use of airspace in order to validate the actual use and reach agreement on the joint use of airspace;
- f) Establish procedures for joint and flexible use of airspace;
- g) Develop and implement security measures related to military activities potentially hazardous for civil aircraft operations;
- h) Prepare and sign letters of operational agreement between civil and military ATS units for air traffic management in the airspace concerned;
- i) If prohibited, restricted and danger areas need to be maintained, make sure that they conform to Annexes 2 and 15 and that the following principles are applied:
  - i) Pay due attention to the need of not hampering the safe and economical operation of civil aircraft operations;
  - ii) Provide appropriate intermediate areas within the designated area, based on the time and size of the activities to be conducted;
  - iii) Use of standard ICAO terminology to define the areas;

- j) Analyse and determine at regular intervals if it is still necessary to keep prohibited, restricted and danger zones;
- k) Develop appropriate arrangements and procedures for establishing a temporary reservation of airspace, and
- l) Other aspects that civil and military authorities consider should be analyzed in the context of the civil/military coordination and cooperation committee or body they deem most appropriate.

9.6 Based on the flexible use of airspace achieved through the civil/military coordination and cooperation committee, airspace planners in the States should develop proposals for the implementation, realignment or elimination of routes that would significantly influence the development of the ATS route network, taking into account the possibility of offering better flight profile to users and a possible reduction in airspace complexity.

9.7 The establishment of a civil/military cooperation and coordination committee to manage the application of the flexible use of airspace concept is absolutely necessary and it must be managed taking into account all users, applying guiding principles aligned with the flexible use of airspace concept.

## 10 Letters of Operational Agreement between civil and military ATS units

10.1 As provided in the PANS/ATM (Doc 4444), the Letters of Operational Agreement between civil and military ATS units may define agreements and procedures for the flexible use of airspace, and should specify, *inter alia*, the following points:

- a) The horizontal and vertical boundaries of the airspace concerned;
- b) The classification of airspace available for use by civil air traffic;
- c) The units or authorities responsible for airspace handover;
- d) Airspace handover conditions to the ATC unit concerned;
- e) Airspace handover conditions from the ATC unit concerned;
- f) Airspace availability periods;
- g) Any limitations on the use of the airspace in question; and
- h) Any other relevant procedures or information.

10.2 A sample Letter of Operational Agreement between civil and military authorities is shown in **APPENDIX H**

## 11 Airspace management within the scope of FUA

11.1 The flexible use of airspace is an airspace management concept based on the principle of accommodating all the users of that space to the extent possible, considering effective communication, cooperation and the necessary coordination to ensure the security, safety, efficiency and environmental sustainability.

11.2 This concept includes strategic (Level 1), pre-tactical (Level 2), and tactical (Level 3) self-management functions that are independent but closely linked, and that are to be carried out in a coordinated manner to ensure an efficient use of airspace.

11.3 When several aviation activities with different requirements take place in the same airspace, coordination must be aimed at the safe conduct of flights and the optimum use of available airspace.

11.4 The systematic application of this concept should be taken into account for the optimization of the route network, especially for the definition of scenarios with non-permanent or conditional routes.

11.5 In addition, some SAR activities, exercises or military operations may require coordination and cooperation with more than one State at a given moment, and the establishment of civil/military cooperation and coordination committees in every State acquires greater importance in these cases.

11.6 The support of traffic flow management (ATFM) units to air operations is crucial to provide the necessary conditions for mitigating possible adverse effects on civil aviation.

### 11.7 **Strategic Management of Airspace (Level 1)**

11.7.1 To ensure the strategic management of airspace within the scope of FUA, civil and military air traffic service providers should perform at least the following functions:

- a) Ensure the implementation of flexible use of airspace at the strategic, tactical and pre-tactical levels;
- b) Review the needs of users on a regular basis;
- c) Review and approve the activities that require reservation or restriction of airspace;
- d) Define temporary airspace structures and procedures to offer multiple reservation options and routes;
- e) Establish criteria and procedures for the creation and use of adjustable lateral and vertical boundaries of the airspace needed to accept variations in flight paths and short-term changes in flights;
- f) Assess national airspace structures and the route network in order to plan flexible airspace structures and procedures;
- g) Determine the conditions under which the responsibility for separating civil and military flights will rest on civil and military ATS units or on the controlling military units;
- h) Establish and provide users with airspace structures in close cooperation and coordination with neighboring member States when the corresponding airspace structures have major repercussions on cross-border traffic or on the boundaries of flight information regions, with a view to ensuring an optimum use of airspace for all users;
- i) Establish mechanisms for consultation between persons or agencies and all interested parties and organizations, in order to properly meet user needs;
- j) Include the corresponding air traffic flow management (ATFM) units in the planning and implementation of the FUA concept from the beginning;
- k) Develop, assess and periodically review the procedures, coordination and performance of operations within the flexible use of airspace concept;
- l) Establish mechanisms for storing data about the requests, allocation and actual use of airspace for subsequent analysis and planning of activities;
- m) Make sure that the areas designated for training, recreation, ATC sectors, route network, arrival and departure procedures are implemented and published on a timely basis, in coordination with the requirements of all airspace users, taking into account ICAO strategic objectives.

## 11.8 **Pre-tactical Management of Airspace (Level 2)**

11.8.1 The civil and military units should ensure the introduction of appropriate support systems, preferably automated, that will allow timely communication of airspace availability to all users involved, special airspace management units, if any, air traffic service providers, and all the corresponding parties and organizations by airspace managers.

11.8.2 Military control units and air traffic service units should inform each other of any change in the planned activation of airspace in a timely and efficient manner, and inform all the users involved about the actual status of airspace.

## 11.9 **Tactical Management of Airspace (Level 3)**

11.9.1 Tactical ASM should take place at the level of ATS and military control units. Safety procedures for coordination and cooperation between these agencies should be established to allow direct, real-time communication of relevant information in order to resolve specific traffic situations in the same volume of airspace and in adjacent airspaces to where civil and military controllers provide services.

11.9.2 Information should be available to civil and military controllers and military control units through a quick exchange of flight data, including aircraft position and flight intention, particularly when required for security reasons.

11.9.3 When civil and military controllers are providing services in the same airspace, there should be highly reliable direct communications between civil and military ATS units to resolve specific traffic situations. If minimum levels of safety are required, ATC civil units and military control units shall exchange flight data, including aircraft position and flight intention.

### **Post-operation analysis (Level 4)**

11.9.4 The SAM region deemed it advisable to add a level of post-operation analysis to this process in order to assess the operations performed, communications, and possible safety gaps that may have been identified so as to ensure continuous improvement of civil-military coordination and cooperation.

11.9.5 A report registry can be created at this level to help the different stakeholders and the training section to focus on activities that will improve operations.

## 12 **Flexible and adjustable airspace structures and procedures**

12.1 Circular 330 -AN 189, in addressing this issue, states that the FUA concept may be based on the potential offered by flexible and adjustable structures and procedures, which are especially suitable for the assignment and temporary use of conditional routes, temporary reserved areas (TRA), temporary segregated areas (TSA) and cross border areas (CBA).

12.2 The FUA concept thus complements organizing airspace with a series of flexible structures as defined below:

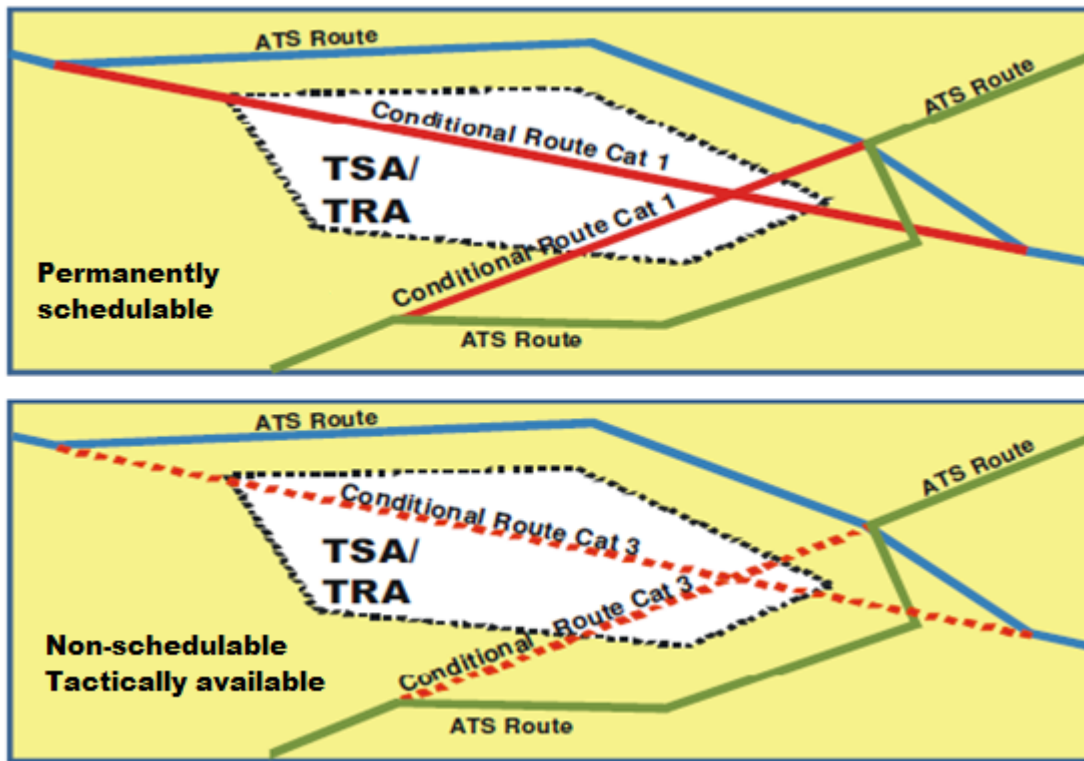
12.2.1 Conditional Route (CDR): Non-permanent ATS route (see Figure 1) or portion thereof that can be planned and used under specified conditions. According to their foreseen availability and flight planning possibilities, and the level of activity expected from the associated TSA, conditional routes can be divided into the following categories:

- a) Category one (CDR1): permanently schedulable;
- b) Category two (CDR2): non-permanently schedulable; and
- c) Category three (CDR3): not schedulable.

12.2.2 Temporary reserved area (TRA): A TRA (see Figure 1) is airspace temporarily reserved and allocated for the exclusive use of a user during a determined a period of time, through which other flights can operate with ATC permission.

12.2.3 Temporary segregated area (TSA): A TSA (see Figure 1) is airspace temporarily reserved and allocated for the exclusive use of a specific user during a determined period of time, through which no other flight traffic is allowed.

12.2.4 Cross border area (CBA): A CBA (see Figure 2) is a reserved or segregated airspace established on international borders to meet specific operational requirements. CBAs are established for purposes of instruction and military training and for other flights operating on both sides of a border. Since CBAs are not bound to national borders, they can be defined so as to benefit both civil and military aviation. CBAs in combination with conditional routes crossing them improve airspace structure in border areas and help improve the ATS route network. Before establishing CBAs, political, legal, technical, and operational agreements between the States concerned are required. Formal agreements for the establishment and use of CBAs should take into account sovereignty, defense, law, operations, the environment, and search and rescue.



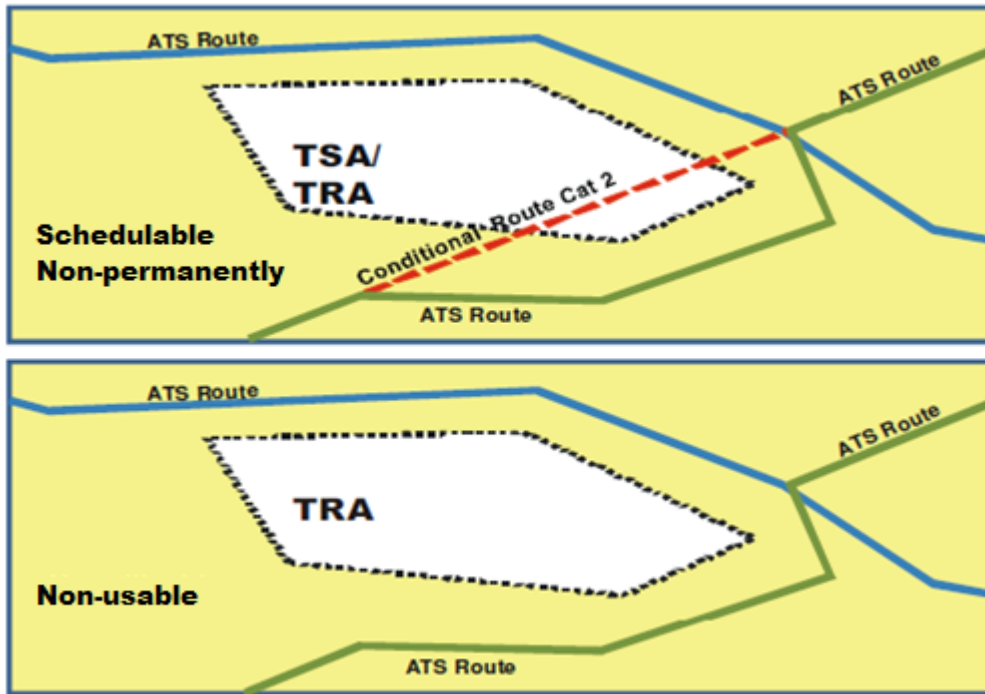


Figure 1

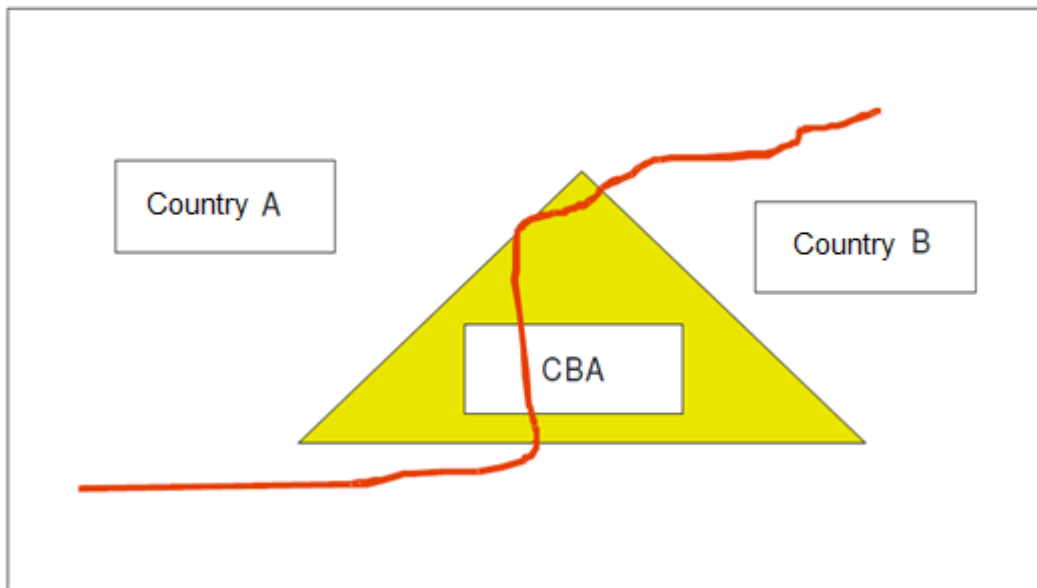


Figure 2

12.2.5 Airspace management cell (AMC): A national joint civil/military unit responsible for managing on a day-to-day basis or upon request (pre-tactical phase) the allocation of airspace in accordance with requests from users (ACC, FMU / FMP, management units and other military zones and accredited agencies).



12.2.6 There is no experience in the South American Region with this type of conditional routes. Therefore, the establishment of modes of employment of non-permanent routes should be assessed in light of experiences elsewhere in the world. The Region should take action on this issue and establish criteria for defining the scenarios where non-permanent routes are to be applied.

12.2.7 It would be interesting for States to begin implementation by adopting some procedures used in other Regions. To this end, **APPENDIX I** contains concepts and procedures of the European Region.

### 13 **Safety assessment**

13.1 During the safety management process and before introducing any change in the implementation of FUA, it is important to conduct a safety assessment that includes hazard identification and risk assessment and mitigation in accordance with SMS procedures.

13.2 In a stage following the operational phase, an assessment will be made of issues identified, inspection and audit findings, SMS analyses, which may produce important information that should be used for continuous airspace optimization.

13.3 Therefore, the reports of joint actions in the flexible use of airspace as well as the analysis by a multidisciplinary group of experts are of great importance for the analysis of lessons learned, with a view to improving the procedures and rules applied to optimize safety and the flexible use of airspace.

### 14 **Information management**

14.1 Good information management is critical to the successful implementation of the FUA concept; thus the critical importance of timely distribution and accuracy of information transmitted to civil and military controllers concerning airspace status and specific air traffic conditions that directly affect safety, efficacy and efficiency of operations.

14.2 In relation to the above, timely access to updated information on airspace status is vital for all parties wishing to use the available airspace structures for preparing or modifying their flight plan.

14.3 In accordance with the provisions of the AIS Manual (Doc 8126), the AIP is divided into three parts, Part 1 - General (GEN), consisting of administrative and explanatory information that is not of such importance or significance that requires the issuance of a NOTAM, Part 2 - En route (ENR), containing information on the airspace and its utilization, and Part 3 - Aerodromes (AD), with information on aerodromes / heliports and their utilization.

14.4 In light of the above, all aspects of the flexible use of airspace should be included in Part 2 ENR.

14.5 Section 3 - ATS routes, in Part 2, ENR includes detailed lists of all ATS routes established within the territory covered by the AIP, whether they are part of ICAO regional air navigation agreements or used only for domestic traffic. Where applicable, a description of the routes or portions thereof where special procedures are required to eliminate or reduce the need for interceptions should be included. The relevant special procedures should also be included. Particularly in ENR 3.5, *Other routes*, a description of other specifically designated routes that are mandatory within specified areas is required.

14.6 In order to comply with the provisions of Doc 8126, conditional routes (CDR) will be published in ENR 3.5.

14.7 Furthermore, in accordance with the AIS Manual, Section ENR 5.2 *Military exercise and training areas and air defense identification zone (ADIZ)*, there shall be a description, as appropriate, of the areas established for the military exercise and training taking place at regular intervals and of the ADIZ zone.

14.8 In view of the above, this Section will contain temporary segregated areas, with the geographical coordinates of boundaries, upper and lower limits, and the system and the means established to announce the initiation of activities, together with all relevant information on civil flights.

## 15 **Seminars/meetings**

15.1 State administrations, working with air navigation service providers (ANSPs) and with the military authorities, should take steps to create the political will, establish institutional arrangements, bringing together civil and military authorities nationwide, set goals, apply practical and operational measures, and finally, make the necessary changes to make all this possible.

15.2 The seminars, meetings, and other similar events will raise awareness among all stakeholders about the need to achieve these common objectives for the benefit of international civil aviation.

## 16 **Collaborative Decision Making (CDM)**

16.1 Decision-making (CDM) is the process whereby all ATM decisions, except for ATC tactical decisions, are based on the exchange of all relevant information for traffic operations between civil and military parties. States and service providers should adopt CDM principles, with the participation of military planners as a means to support ASM.

16.2 CDM brings together airlines, civil aviation and military authorities and airports, in an effort to improve ATM through the exchange of information and data, and improved automated decision-support tools.

16.3 The collaboration philosophy may become an aviation standard. CDM allows the exchange of information and facilitates decision-making processes to ensure that stakeholders receive timely and accurate information essential to plan their operations, whether civil or military.

16.4 For example, accurate estimates of arrival or departure times can improve the processing of aircraft, apron services, the allocation of stands and exit gates, ATC and ATFM. The involvement of military airspace users and planners in national or regional airspace planning ensures proper planning, both in time and size, which not only benefits military aviation but also minimizes conflicts with civil traffic.

16.5 With decisions based on the sharing of accurate information, CDM improves predictability in case of unforeseen problems or events. If properly implemented, CDM also leads to an optimum use of airspace, with benefits for all participants in the system.

16.6 For CDM implementation, the use of the Manual on collaborative decision making that was approved for regional implementation by the SAMIG/6 Meeting, Conclusion SAMIG/6/7 is suggested. The *CDM Manual for South America (SAM)* is posted at the following address of the ICAO South American Regional Office: <http://www.lima.icao.int/eDocuments/ATM/ATFM/4CDM%20Manual%20Spa.pdf>

16.7 The CDM Manual describes methods and procedures to manage the Collaborative Decision Making process to be applied in the SAM Region. The purpose of this paper has been to provide assistance to SAM States in reaching a common understanding of the collaborative Decision Making (CDM) process with a view to the application of this methodology, which seeks the participation of all parties involved in ATFM in the implementation of equitable measures among ATM system users.

## 17 **Action Plan for the implementation of the FUA concept**

17.1 As a reference and to assist SAM States in the implementation of the FUA concept, a model action plan has been developed, as shown in **APPENDIX J**. This action plan has been developed taking into account ICAO indications as well as the activities of the PFF SAM/ATM 04 of the SAM PB ANIP.

17.2 The action plan identifies some of the tasks to be executed by SAM States, starting with the establishment of a policy for developing standards related to the FUA concept, if it has not been done yet. It also encourages States to establish a high-level national civil-military coordination body, to conduct a uniform and collaborative national airspace planning process, taking into account the needs of all users as well as national security, defense and police requirements. It also invites States to establish rules and procedures of communication, negotiation and setting of priorities for civil-military coordination.

17.3 Furthermore, it encourages States to start assessing their special use airspace as soon as possible to verify the suitability and possibility of an early dynamic use or modification of such airspace for its use by civil aviation. It also defines some tasks for the establishment and publication of procedures for activities that require airspace reservation and restriction, and for the establishment of frame agreements or letters of operational agreement, as applicable, between civil and military authorities to facilitate coordination.

17.4 Finally, it includes tasks related to the need of establishing a system for periodically reviewing airspace requirements, organization and management, and conducting a timely risk assessment by applying the SMS methodology to ensure that changes in the system maintain and/or improve the agreed safety levels.

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## **APPENDICES**

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## APPENDIX A

### GPI - Flexible Use of Airspace

**Scope: Optimized, balanced and equitable use of airspace by civil and military users, facilitated by strategic coordination and dynamic interaction**

#### **Components associated to the operational concept: AOM and AUO**

##### Strategy description

Airspace use could be optimized through dynamic interaction of civil and military air traffic, including real-time coordination among civil and military controllers. This needs system support, operational procedures, and appropriate information on the position and intentions of civil traffic.

The flexible use of airspace concept (FUA) is based on the principle that the airspace should not be designated as purely civil or military, but, instead, it should be a continuous space in which the requirements of all users are met inasmuch as possible. The flexible use of airspace should translate into the elimination of extended temporarily or permanently restricted airspace segments or special use airspace.

In those cases in which it is still necessary to reserve airspace for specific individual uses, thus blocking airspace of a given size, an attempt should be done to do it on a temporary basis. Airspace should be cleared immediately after the operations that gave rise to such restrictions have been completed.

Greater benefits associated to FUA implementation can be achieved through cooperation among States, which may require regional and sub-regional agreements since reserved airspace is frequently established along critical flight paths along national borders.

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## **APPENDIX B**

### **Assembly Resolution A 37-15**

#### **A37-15: Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation**

*Whereas* in Resolution A15-9 the Assembly resolved to adopt in each session for which a Technical Commission is established a consolidated statement of continuing policies related specifically to air navigation up to date as at the end of that session;

*Whereas* a statement of continuing policies and associated practices related specifically to air navigation as they existed at the end of the 36th Session of the Assembly was adopted by the Assembly in Resolution A36-131, Appendices A to W inclusive;

*Whereas* the Assembly has reviewed proposals by the Council for the amendment of the statement of continuing policies and associated practices in Resolution A36-13, Appendices A to W inclusive, and has amended the statement to reflect the decisions taken during the 37th Session; and

*Whereas* the statement of continuing policies in Resolution A36-13 is hereby superseded:

*The Assembly:*

1. *Resolves* that:

- a) the Appendices attached to this resolution constitute the consolidated statement of continuing air navigation policies and associated practices of the Organization as they exist at the close of the 37th Session of the Assembly; and
- b) the practices associated with the individual policies in the appendices constitute guidance intended to facilitate and ensure implementation of the respective policies; and

2. *Declares* that this resolution supersedes Resolution A36-13 with its Appendices A to W inclusive.

## **APPENDIX O TO ASSEMBLY RESOLUTION A 37-15**

### **Coordination and cooperation of civil and military air traffic**

*Whereas* the airspace is a resource common to both civil and military aviation and given that many air navigation facilities and services are provided and used by both civil and military aviation;

*Whereas* the Preamble of the *Convention on International Civil Aviation* stipulates that signatories thereto had “agreed on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically”;



*Whereas* Article 3 a) of the Convention states that “the Convention shall be applicable only to civil aircraft, and shall not be applicable to state aircraft” and Article 3 d) requires that “contracting States undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft”;

*Recognizing* that growing civil air traffic and mission-oriented military air traffic would benefit greatly from a more flexible use of airspace used for military purposes and that satisfactory solutions to the problem of cooperative access to airspace have not evolved in all areas;

*Whereas* the flexible use of airspace by both civil and military air traffic may be regarded as the ultimate goal, improvement in civil/military coordination and cooperation, offers an immediate approach towards more effective airspace management; and

*Recalling* that the ICAO Global ATM Operational Concept states that all airspace should be a usable resource, any restriction on the use of any particular volume of airspace should be considered transitory, and all airspace should be managed flexibly:

*The Assembly resolves that:*

1. the common use by civil and military aviation of airspace and of certain facilities and services shall be arranged so as to ensure the safety, regularity and efficiency of civil aviation as well as to ensure the requirements of military air traffic are met;
2. the regulations and procedures established by Contracting States to govern the operation of their state aircraft over the high seas shall ensure that these operations do not compromise the safety, regularity and efficiency of international civil air traffic and that, to the extent practicable, these operations comply with the rules of the air in Annex 2;
3. the Secretary General shall provide guidance on best practices for civil/military coordination and cooperation;
4. Contracting States may include, when appropriate, representatives of military authorities in their delegations to ICAO meetings; and
5. ICAO serves as an international forum that plays a role in facilitating improved civil/military cooperation, collaboration and the sharing of best practices, and to provide the necessary follow-up activities that build on the success of the Global Air Traffic Management Forum on Civil/Military Cooperation (2009) with the support of civil/military partners.

### **Associated practices**

1. Contracting States should as necessary initiate or improve the coordination and cooperation between their civil and military air traffic services to implement the policy in Resolving Clause 1 above.
2. When establishing the regulations and procedures mentioned in Resolving Clause 2, the State concerned should coordinate the matter with all States responsible for the provision of air traffic services over the high seas in the area in question.
3. The Council should ensure that the matter of civil and military coordination and cooperation in the use of airspace is included, when appropriate, in the agenda of divisional and regional meetings, in accordance with Resolving Clauses 3, 4 and 5 above.

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## APPENDIX C

### Conclusion RAAC/12-1 Performance-based Air Navigation Implementation Plan for the SAM Region (SAM PBIP)

The States of the ICAO South American Region and the international organisations involved:

- a) approve the Performance-based Air Navigation Implementation Plan for the SAM Region shown in **Appendix A** (*i.e. RAAC 12 Report*), for its implementation at regional level;
- b) encourage those States that have not done so to prepare their national performance-based air navigation plan in accordance with the guidelines contained in the cited implementation plan; and
- c) request the ICAO South American Regional Office to review Project RLA 06/901 in order to align it with the performance objectives established in the cited implementation plan.

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**APPENDIX D**

<b>REGIONAL PERFORMANCE OBJECTIVE: <u>SAM/ATM 04</u></b>				
<b>FLEXIBLE USE OF AIRSPACE</b>				
<b>Benefits</b>				
<b>Safety</b>	<ul style="list-style-type: none"> <li>Enhanced civil/military coordination and cooperation reinforces airspace safety</li> </ul>			
<b>Environment protection and sustainable development of air transport</b>	<ul style="list-style-type: none"> <li>Permits a more efficient ATS route structure, reducing miles flown and fuel consumption, and thus CO2 emissions into the atmosphere.</li> <li>Increases airspace capacity.</li> <li>Increased availability of reserved airspace when there is no activity by airspace users.</li> </ul>			
<b>Metrics</b>				
<ul style="list-style-type: none"> <li>Percentage of implemented civil/military coordination committees or similar organisations</li> <li>Number of implemented civil/military cooperation and coordination agreements</li> <li>Reduction in the number of permanently reserved airspaces</li> </ul>				
<i>Strategy 2012 – 2018</i>				
<b>OC ATM COMPONENTS</b>	<b>TASKS</b>	<b>START-END</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>
<b>AOM AUO CM</b>	a) prepare guidance material on civil/military coordination and cooperation for the establishment of policies, procedures and national regulations	(*) - 2012	Regional Project States	In progress
	b) evaluate the number and size of reserved airspaces	(*) – 2012	States	In progress
	c) establish civil/military coordination committees or similar organisations	(*) - 2012	States	In progress
	d) make arrangements for permanent linkage and close cooperation between civil ATS units and the appropriate military units, as well as with reserved airspace users	(*) - 2012	States	In progress
	e) establish, when required by ANSPs, procedures for coordinating temporary reserved airspace through the issuance of NOTAMs or specific real-time reservation activation/deactivation procedures	(*) – 2013	States	Valid
	f) develop a strategy and work programme for the implementation of flexible use of airspace, through a stage-based approach, starting with a more dynamic sharing of reserved airspace	2012 - 2018	Regional Project States	Valid
	g) track progress during implementation	(*) – 2013	GREPECAS	In progress
<b>Link to GPI</b>	GPI/1: Flexible use of airspace; GPI/18: Aeronautical information. (*). Indicates that this task was started before the the scheduled date.			

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## APPENDIX E

### Example of national regulation for the implementation of flexible use of airspace

#### Preamble

Appendix O to Assembly Resolution A 37-15: *Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation* refers specifically to coordination and cooperation between civil and military air traffic. Hence, it recognizes that airspace is a common resource for civil aviation and military aviation and that a large number of air navigation facilities are available to, and used by, both civil and military aviation.

This resolution also states, among other aspects, that the shared use of airspace and certain facilities by both civil and military aviation will be arranged in such a way as to achieve safety, regularity and efficiency of civil aviation and meet the requirements of military air traffic.

Taking into account the organization of military aspects under its responsibility, XXX (*Name of State*) shall guarantee the sound application of the flexible use of airspace concept described by ICAO within the airspace under its responsibility to facilitate airspace and air traffic management.

#### Objective

The purpose of this standard is to define guidelines for the application of the flexible use of airspace (FUA) concept within Flight Information Regions (FIR) XXXX, XXXX (*name of FIR(s)*) to facilitate its use and harmonize its application within the context of airspace management (ASM) and air traffic management (ATM).

#### Background

The flexible use of airspace is a concept developed by the International Civil Aviation Organization (ICAO) that is being developed by the SAM Implementation Group (SAMIG) of the ICAO South American Region. FUA is an airspace management concept based on the principle that airspace should not be used exclusively for military or civil purposes but rather should be a continuous space in which the requirements of users are met as far as possible.

Likewise, it is recognized that the shared use of airspace and certain facilities by both civil and military aviation will be such that it will be possible to achieve safety, regularity and efficiency of civil aviation and meet the requirements of military air traffic, and encourages the dissemination of best practices.

#### Scope

These regulations establish a number of parameters to ensure better cooperation and coordination among civil and military entities responsible for managing the airspace under the responsibility of XXX (*name of State*).

## **FUA Principles**

An FUA concept should be based on the following principles:

Coordination among civil and military authorities shall be articulated at a strategic, pre-tactical and tactical level in order to increase safety and airspace capacity, and improve the efficiency of air operations.

Consistency should be established and maintained between ASM, air traffic flow management (ATFM), and ATS at the three ASM levels.

Airspace reservation should be temporary, applied only during limited periods of time, and based on actual use of the airspace.

Wherever possible, the FUA concept should be applied beyond national borders or flight information region (FIR) boundaries.

## **Strategic Airspace Management**

In order to ensure full application of the FUA concept at the ASM strategic level, it is necessary to establish airspace structures, develop coordination and airspace management procedures, and establish cross-border coordination and separation standards for civil and military flights.

Strategic airspace management is known as FUA Level 1.

## **Pre-tactical Airspace Management**

An ASM entity should be established for the allocation of airspace in accordance with the conditions and procedures agreed at the strategic level.

In XXX (*State*), civil and military authorities are jointly responsible for airspace management. Therefore, the ASM entity shall be a joint civil-military unit. If necessary, the unit can also be established by two or more States. XXX (*name of State*) shall provide entities with the appropriate ASM support systems to ensure a timely and efficient process.

Pre-tactical airspace management is known as FUA Level 2.

## **Tactical Airspace Management**

Tactical ASM should be carried out at the level of ATS units and military control units. Through special coordination and communication procedures, airspace data can be exchanged on a timely basis so that the airspace allocated to the pre-tactical level may be activated, deactivated or reassigned in real time. Updated airspace status should be communicated to all affected users.

When civil and military controllers provide services in the same airspace, direct and highly reliable communications should be available between civil and military ATS units in order to resolve specific traffic issues. If minimum safety levels are required, civil ATCs and military control units can exchange flight data, including aircraft position and flight intention data.

Tactical airspace management is known as FUA Level 3.



#### **Post-operation analysis (Level 4)**

At this level, an assessment shall be made of the mechanisms and processes used for management, creating a registry of reports on aspects that could be improved and lessons learned. This analysis will help to improve FUA processes and management, and material will be available to train all parties with a view to improving operations.

#### **Safety Assessment**

Within the safety management processes, and before introducing any change to the implementation of flexible use of airspace, it is necessary to perform a safety assessment for hazard identification and risk analysis and mitigation in accordance with SMS procedures.

#### **Temporary Suspension**

When the application of the FUA concept generates major operational difficulties, XXX (*Name of State*) may temporarily suspend such application provided the ATM community is immediately informed thereof.

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## APPENDIX F

### Prohibited, restricted and danger areas in the SAM Region

Country	PA	RA	DA	Others	Remarks
Argentina	15	50	1	N/A	
Bolivia	1	23	NIL	N/A	
Brazil	44	228	11	N/A	
Chile	12	32	9	78 areas of volcanic activity	Chile has defined climb areas for weather balloons (5) as prohibited areas.
Colombia	5	11	NIL		
Ecuador	2	11	1	N/A	Ecuador has designated SANGAY volcano area as a danger area.
French Guiana	1	4	9		
Guyana	1	NIL	NIL		
Panama	4	2	4	4 and 1 ADIZ	Panama has designated other areas for air sports and recreational activities
Paraguay	2	9	3	N/A	
Peru	14	22	NIL	N/A	
Suriname	2	1	NIL	N/A	
Uruguay	19	4	2	N/A	
Venezuela	6	36	2	N/A	
<b>TOTAL</b>	<b>126</b>	<b>432</b>	<b>42</b>	<b>83</b>	

PA: Prohibited Area

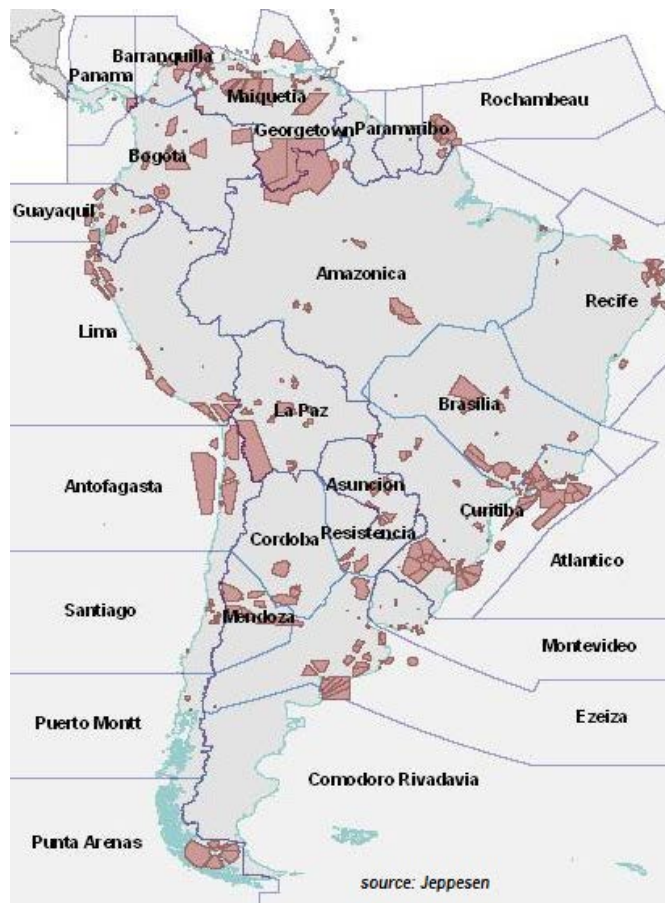
RA: Restricted Area

DA: Danger Area

N/A: Not applicable

NIL: Nothing

## Prohibited, restricted and danger areas in the SAM Region



In the South American Region, there are 26 FIRs covering 38'565,578 km<sup>2</sup>.

Prohibited, restricted and danger areas in the ICAO South American Region

- 628 special use airspaces
- 683 in total, including special areas, such as volcanic, training and others areas
- 2'121,753 km<sup>2</sup> in total, defined as special use areas

**11.9% of the continental area**

## APPENDIX G

### Sample Form on the use and management of restricted, forbidden and danger areas and special use airspace in the SAM Region

**Country:** \_\_\_\_\_

**FIR:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Type of area or special use airspace (1)	Size (2)		Period of use (3)	Nature of the Activity (4)	Managed by (5)	Does it affect current operation? (6)	Does it affect ANSP planning? (7)	Remarks (8)
	Lateral in Km <sup>2</sup>	Vertical limit						

Instructions to complete the form:

1. Type of area or special use aircraft: insert prohibited, restricted, danger area or special use area (recreational, farming activities, etc.).
2. Size: Insert lateral dimension in square kilometers, and vertical dimension indicating upper and lower limits
3. Period of use: Insert the area activation schedule or period, if applicable.
4. Nature of the activity: Insert detailed information of the activity carried out in the area (parachuting, training, etc.).
5. Managed by: Insert the name of the organization or person responsible for area activation.
6. Does it affect current operation? Insert information regarding the impact on the current design of the area.
7. Does it affect ANSP planning? Indicate if ANSP planning may be potentially affected by the area
8. Remarks: Insert additional information that the State should take into account.

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## APPENDIX H

### Sample of Letter of operational agreement for joint use of restricted areas

(ref. ICAO Circular 330 and Doc 9433)

SUBJECT: Procedures for drawing up the letter of operational agreement for joint use of restricted areas (identify the area or areas related to the LoA)

EFFECTIVE DATE: (insert date).

In accordance with ICAO regulations and procedures and national regulations (insert national reference), the procedures for the use of restricted areas (identify the list of Restricted/Danger Areas on which the LoA is based) are hereby established by (identify civil ATS units) and (identify military units)

Airspace under (identify civil or military units responsible, as required) jurisdiction is exhibited in Annex 1 to this LoA.

*At least the following shall be included in Annex 1:*

- a) Horizontal and vertical limits of the corresponding airspace;*
- b) Classification of airspace available for civil air traffic;*
- c) Units or authorities responsible for airspace handover;*
- d) Conditions for airspace handover to the corresponding ATC unit;*
- e) Conditions for airspace handover from the corresponding ATC unit;*
- f) Airspace availability periods;*
- g) Any limitations on the use of the corresponding airspace; and*
- h) Any other appropriate procedures or information.*

This letter revokes or supersedes the Letter of operational agreement (if any) for joint use of restricted areas (insert previous agreements) dated (insert date).

1. Personnel of (identify the coordinating unit) shall act as liaison between the user and the control body.

2. The user shall:
  - 2.1. Coordinate activation/release periods of (identify the area or areas related to the LoA) with (identify ATC units to coordinate with)
  - 2.2. Notify (identify unit) at least 30 minutes prior to the activation of airspace above (identify flight level or altitude expressed in feet, as appropriate) in area (identify the area(s) related to the LoA)
  - 2.3. Notify (identify unit) at least 2 hours prior to the activation of airspace during periods other than those published in the (identify the area(s) related to the LoA) AIP
  - 2.4. Notify (identify unit) at least 30 minutes prior to the activation of airspace (identify flight level or altitude expressed in feet, as appropriate) in area (identify the area(s) related to the LoA)
  - 2.5. Notify (identify unit) at least 48 hours prior to the activation of airspace in (identify the area(s) related to the LoA).
  - 2.6. Release the (identify the area(s) related to the LoA), as appropriate, above (identify flight level or altitude expressed in feet, as appropriate) to (identify unit) when the area is not being used for the designated purpose.
  - 2.7. Release the (identify the area(s) related to LoA), as may be appropriate, at maximum required altitudes above (identify flight level or altitude expressed in feet, as appropriate) to (identify unit) due to a traffic emergency situation. The release of airspace to (identify unit) shall be done within 30 minutes after the request is transmitted.
3. The control body shall:
  - 3.1. Exhaust all possible traffic management procedures before requesting user to release the airspace, as specified in paragraph 2 g.
  - 3.2. Return (identify the area(s) related to the LoA) promptly to the user once the traffic emergency situation has been resolved.
  - 3.3. Be responsible for issuing the appropriate NOTAMs for the airspace being use above (identify flight level or altitude expressed in feet, as appropriate)
  - 3.4. Notify (identify unit) of airspace release periods of (identify the area(s) related to the LoA).
  - 3.5. Submit in writing, upon written requested from the user, the reasons for requesting the recovery of airspace in restricted areas.
4. The (identify unit) shall be responsible for issuing the appropriate NOTAMs for the airspace being used (identify flight level or altitude expressed in feet, as appropriate)
5. During periods in which airspace is released to the control body, (the user) shall authorize traffic under instrument flight rules (IFR), visual flight rules (VFR) in and throughout the (identify the area(s) related to the LoA)
6. The decision to recover airspace from a restricted area shall be made by supervisory staff of the control body.

Note: Non-supervisory staff of (identify unit) may act as liaison with the user for the release/recovery of (identify the area(s) related to the LoA)



7. Communication between (the user) and (the control body)

7.1. In order to enable effective coordination between the units concerned regarding the procedures established in this LoA, the means of communication described in Appendix 2 will be used and/or implemented.

7.2. These means of communication shall enable communication within (insert time as necessary) seconds and shall have an automatic recording system.

8. Revisions

8.1. This LoA will be revised when the procedures contained therein or in its appendices are affected by amendments to ICAO SARPS, regional supplementary procedures or regional plans, or when the corresponding ATS units implement new communication facilities.

8.2. The body implementing new communication systems is responsible for initiating coordination with the counterpart body.

8.3. If the amendment only affects part of the Appendices, the new amendment may be inserted without modifying the LoA upon agreement between the parties. The effective date of the amendment shall be agreed between the parties.

(ORIGINAL DOCUMENT SIGNED BY) User Representative

(ORIGINAL DOCUMENT SIGNED BY) Control Body Representative

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## APPENDIX I

### Procedures applicable in Europe for the Flexible Use of Airspace (Ref. Spain AIP)

#### INTRODUCTION

The flexible use of airspace (FUA) concept is based on that airspace no longer being considered as military or civil airspace but rather as one single continuum that is used flexibly in accordance with day-to-day needs. Consequently, any necessary airspace segregation shall be only temporary.

There are three levels of airspace management:

- Level 1 - Strategic: where long-term planning of the national airspace and airspace structure management policy is defined through a joint civil/military process.
- Level 2 – Pre-tactical: where management is done on a day-to-day basis, on the day before operations, and temporary allocation of airspace is done through the Airspace Management Cell (AMC), which collects and analyses all airspace requests and decides airspace allocation on a daily basis.
- Level 3 - Tactical: where airspace use is managed in real time.

#### FLEXIBLE AIRSPACE STRUCTURES

The FUA concept complements airspace organization into a series of flexible structures as defined below:

- Temporary Segregated Areas (TSA): airspace of predefined dimensions established in response to civil and military needs that may require temporary reservation of airspace. TSAs are described in ENR 5.2. The AMC manages TSAs at the pre-tactical level the day before operations. They are activated during the period published in the AUP.
- Manageable Danger and Restricted Areas: military areas that, while maintaining their D or R concept, can be managed and allocated by the AMC in the same way as TSAs during the periods of time published in section ENR 5.1.
- Conditional Routes (CDR): non-permanent ATS routes or portions thereof that can only be planned and used under certain specific conditions within the periods of time published in the description of the Conditional Route. Each CDR published in section ENR 3.5 is associated to an alternative route.

CDRs are divided into three categories according to their possible use in the flight plans:

CDR 1 - they are established at the strategic phase (Level 1). They are available most of the time, so they can be permanently included in the flight plans (RPL and FPL). Every day, the AUP and CRAM are distributed with the CDR1 routes that are being closed. The RPLs affected by temporarily closed routes shall be cancelled and a new FPL containing item 15, the published alternate route corresponding to each unavailable CDR1, will be filed. If it is known sufficiently in advance that it will be closed, then it will also be included in the FAUP (AUP forecast issued 30 days in advance of the day of operation). If a CDR1 must be closed to traffic on a short notice, ATC will instruct flights to use alternate routes in the tactical phase.

CDR 2 – they are managed at the pre-tactical phase (Level 2). They cannot be permanently planned. CDR2s may only be included in the FPL, according to the conditions published daily, on the day before operations, though the Conditional Route Availability Message (CRAM). The AMC will issue an AUP forecast (FAUP).

CDR 3 they are managed at the tactical phase (Level 3). They cannot be planned in flight plan. They can only be used subject to ATC clearance, following civil-military coordination. CDRs cross Temporary Segregated Areas (TSA) or Manageable Danger and Restricted Areas. The periods of time during which such routes or route segments are classified as CDR 2 or CDR 3 must coincide with the activity periods of the areas crossed. One same ATS route segment may be conditional 1, 2, or 3 in different periods of times. In Spain, the ATS route is used normally outside of the periods of time and vertical limits published as CDR.

## **AIRSPACE MANAGEMENT UNITS**

### **Airspace Management Cell (AMC)**

It is a national joint civil/military unit responsible for day-to-day management (pre-tactical phase) and temporary allocation of airspace according to the requirements of airspace users (ACC, FMP, military area managing units and other approved agencies). It prepares the Forecast Airspace Use Plan (FAUP) 30 days before the operation. The day before the operation, it prepares the Airspace Use Plan (AUP). In exceptional circumstances, between day D-30 and day D-1, authorized agencies can make modifications to the FAUP, which shall be reflected in the corresponding AUP message.

### **Centralized Airspace Data Function (CADF)**

CADF is a EUROCONTROL unit that collects, analyzes and consolidates all information related to CDRs, as provided by national AMCs through the "Airspace Use Plan" (AUP). The day before operations, the CADF prepares and issues a list of available CDRs through the Conditional Route Availability Message (CRAM)"

## **PUBLICATION OF INFORMATION ON THE AVAILABILITY OF FLEXIBLE STRUCTURES**

### **Forecast Airspace Use Plan (FAUP)**

Every day, the AMC prepares a "Forecast Airspace Use Plan" (FAUP) 30 days before the day of operations. This information will be disseminated through the CFMU, the NOP website and Aena's air navigation website, or through the most effective means available at any time. It is prepared before 1400 hours UTC and is valid for 24 hours starting at 0600 hours UTC of the day of operation. Any exceptional changes that may be introduced will be included in the corresponding AUP.

### **Update of the Forecast Airspace Use Plan (FUUP)**

The AMC may issue and "Update to the Forecast Airspace Use Plan" (FUUP) to amend the FAUP. It will have the same means of distribution as the FAUP. The FUUP will be disseminated before 0900 UTC of day D-29, and will have the same validity period as the original FAUP to which it refers.

### **Airspace Use Plan (AUP)**

The AMC sends the "Airspace Use Plan (AUP)" through the CIAM (CFMU Interface for airspace managers) to the CFMU/CADF before 1400 UTC of the day before the operation, with a validity period of 24 hours starting at 0600 UTC of the next day. The AUP may contain variations to the FAUP. The AUP has the following sections:

A) – List of available CDR 2s.

- B) - List of permanent ATS routes and temporarily closed CDR1s.
- C) – List of active TSAs and manageable R and D areas.

Example of AUP:

LECBUIR					
No.	Route-Portion	FL Block	Validity Period	Remarks	
1	UG850: VLC-RESTU	F350-F460	14:30 - 15:30	---	
2	UH300: ADX-CLS	F250-F460	12:30 - 14:30	---	

LECMUIR					
No.	Route-Portion	FL Block	Validity Period	Remarks	
1	UA31: CJN-ASTRO	F250-F460	12:30 - 15:00	----	
2	UA31: CJN-ASTRO	F250-F460	22:00 - 22:59	----	
3	UA31: CJN-ASTRO	F250-F460	05:00 - 06:00	----	

B) Closed ATS routes and Category 1 CDR.

LECMUIR					
No.	Route-Portion	FL Block	Validity Period	Remarks	
1	UG25: STG-KORET	F245-F300	09:00 - 11:30	----	

C) Active TSA and AMC Manageable R & D Areas.

LECMUIR					
No.	Route-Portion	FL Block	Validity Period	Remarks	Resp. Unit
1	TSA 28 STG	F245-F300	09:00 - 11:30	---	LECMZAMC

### Updated Airspace Use Plan (UUP)

The AMC issues the “Updated Airspace Use Plan (UUP)”, which amends the AUP. It has the same format and addressees as the AUP. It makes reference to the number of the AUP it is updating and includes any changes that may occur on the day of operations. It is issued before 0900 UTC on the same day of operations. It has a validity period of 18 hours from 1200 UTC of that day to 0600 UTC of the following day.

### Conditional Route Availability Message (CRAM)

The “Conditional Route Availability Message (CRAM)” is issued by the CADF to aircraft operators, ARO, ACC/FMP, AMC of the ECAC area and to the CFMU at 1500 UTC of the previous day of operations and is valid for 24 hours starting at 0600 UTC of the next day. The CRAM is transmitted through the AFTN or SITA and is available on CFMU terminals. It contains the list of airway segments classified as CDR2 that will be available for the period indicated in the message. For security reasons, information published by the AIS on the CDR1s and permanent ATS routes that are closed for specific periods is repeated in the CRAM.

Example of CRAM:

GG LEANZDZX  
041524 EUCHZMTA  
PART 001 OF 006  
CRAM VALID FROM 05/01/1998 06:00 TO: 06/01/1998 06:00 RELEASED: 04:15

A) CDR TYPE 2 AVAILABILITY:

1	UA10	TRA	RESIA (LSAZUIR)
		F200-590	0700-1230
2	UA23	ELVAR	BEJ (LPPCUIR)
		F245-255	0600-0600
3	UA31	CJN	ASTRO (LECMUIR)
		F250-460	0600-0730
4		F250-460	1330-2359
5	UA41	SRN	FRANE (LSAGUIR)
		F200-590	0600-0730
-----			
93	UZ917	KRH	ADENU (EDUUUIR)
		F250-290	0600-0600

B) ATS ROUTE AND CDR TYPE 1 CLOSURE:

1	UG15	TRT	VIBER (EDBBUIR)
		F310-350	0730-0930
2		F310-350	1100-1230
3		F310-350	1345-1600
4	UG102	HAM	FLD (EDBBUIR)
		F310-350	0730-0930
5		F310-350	1100-1230
6		F310-350	1345-1600

## APPENDIX J

### Model of Action plan for the flexible use of airspace (FUA)

<b>NATIONAL PERFORMANCE OBJECTIVE XXX</b>				
<b>Flexible use of airspace (FUA)</b>				
<b>Benefits</b>				
<b>Safety</b>	<ul style="list-style-type: none"> <li>• Improved civil/military coordination and cooperation reinforces airspace safety.</li> </ul> <p><i>Note: include other benefits as necessary)</i></p>			
<b>Environmental protection and sustainable development of air transport</b>	<ul style="list-style-type: none"> <li>• Allows for a more efficient ATS route structure, reducing miles flown and fuel consumption, and thus CO2 emissions into the atmosphere.</li> <li>• Increases airspace capacity</li> <li>• Greater availability of reserved airspace at times where there is no activity by the users of this airspace.</li> </ul> <p><i>Note: include other benefits as necessary)</i></p>			
<b>Metrics</b>				
<ul style="list-style-type: none"> <li>• Percentage of special use areas (SUA) coordinated for the application of the FUA concept</li> <li>• Number of letters of operational agreements on civil/military coordination and cooperation</li> <li>• Permanent reduction of the amount of reserved airspace.</li> <li>• <i>Note: include other metrics as necessary)</i></li> </ul>				
<i>Strategy</i> <b>2012 – 2018</b>				
<b>*Activity</b>	<b>Start</b>	<b>End</b>	<b>Responsible party</b>	<b>Remarks</b>
1. Establish policies and develop standards on FUA (subtasks)				
2. Establish a national high-level committee for civil-Military cooperation and coordination (subtasks)				
3. Sign a memorandum of understanding (MOU) between civil and military authorities (subtasks)				
4. Hold seminars/meetings with civil and military authorities and reserved airspace users to show the importance to airspace use optimization (subtasks)				
5. Evaluate, in an early stage, all restricted, prohibited and danger areas that affect or could affect air flow in order to reduce them as much as possible (subtasks)				
6. Develop a medium-term uniform and collaborative national airspace planning process, taking into account				

all user needs and national security, defense and police requirements (see subtasks)				
7. Implement an airspace management cell (AMC) to conduct an effective coordination in real time (subtasks)				
8. Adopt adequate measures to improve the efficacy of traffic flow management, by developing conditional routes (CDR) that allow dynamic rerouting of aircrafts to avoid special use airspace (subtasks)				
9. establish regulations and procedures to communicate, negotiate and determine priorities for civil-military coordination (subtasks)				
<b>10.</b> Establish, when required by ANSPs, <b>procedures to coordinate temporary reserved airspace</b> through the issuance of NOTAMs or specific real-time reservation activation/deactivation procedures (subtasks)				
11. Draft the necessary letters of operational agreement between ATS units and military units or other users for the activation of restricted airspace when necessary (subtasks)				
12. Manage information in order to establish and publish in the AIP the CDR routes and the procedures for activities requiring airspace reservation and restriction (subtasks)				
13. Carry out the safety assessment and risk analysis when FUA measures are introduced (subtasks)				
14. Establish a system to periodically revise airspace requirements, organization and management (subtasks)				
15. Assess training requirements for FUA application and provide the courses that are deemed necessary (subtasks)				
16. Track progress during FUA implementation (subtask)				
<p>* Activity: Indicates the activities required for achieving the performance objective.  * End: Insert the date when the task ends.  * Responsible party: Insert the name of the unit/person responsible for carrying out the task.  * Remarks: Insert any remarks that may help understand the purpose of the task.</p>				



## **LIST OF SUBTASKS TO ACHIEVE THE FUA PERFORMANCE OBJECTIVE**

*Note: Tasks included here are for reference only, and are not exhaustive.*

### **1 - Subtasks to establish policies and draw up FUA-related regulations**

1. Analyze national documentation and verify if there are any regulations or policies related to the flexible use of airspace.
2. If there are no regulations, revise global and regional documentation as reference material
3. Draft the corresponding standard.
4. Submit the standard to the consideration of the corresponding authorities to check compliance with current legislation.
5. Review remarks that may have been identified in the previous item.
6. Finish the document
7. Submit the document to the aeronautical authority for approval.
8. Take all corresponding action for its inclusion in the national legislation, if applicable.

### **2- Subtasks to establish a High-Level Committee for Civil-Military Cooperation and Coordination**

1. Select the person or group of persons in charge of developing the task and the Committee Secretariat.
2. Evaluate ICAO current provisions related to civil-military cooperation and coordination.
3. Analyze national regulations and status concerning civil-military coordination and cooperation.
4. Draft the terms of reference and committee objectives.
5. Develop a work program
6. Evaluate who is eligible to participate in the National Committee (civil/military aviation representatives, and/or other airspace users, where necessary)
7. Send invitations for the first Meeting of the Civil/Military Coordination and Cooperation Committee
8. Hold the first Meeting of the Committee
9. Submit the terms of reference and work program to the Committee for its consideration.
10. Approve the terms of reference and work program.
11. Set meeting schedule based on the work program.

### **3- Subtasks to draft the Memorandum of Understanding (MOU)**

1. Review national regulations related to Civil-military coordination.
2. Evaluate previous global and national experiences
3. Draft the MOU
4. Submit the MOU for consideration by national authorities for review.
5. Review all observations made to the document, if applicable.
6. Submit MOU to the consideration of the high level Committee for civil-military cooperation and coordination.
7. Approve the MOU
8. Take appropriate actions for MOU to come into effect.

### **4 – Subtasks to hold seminars and meetings with civil and military authorities, and reserved airspace users**

1. Evaluate the need for seminars related to FUA
2. Evaluate the need to hold meetings with the parties involved in the FUA concept.
3. Prepare a plan of activities regarding seminars and/or meetings.

4. Prepare material for seminars on FUA
5. Prepare material and documentation for holding meetings on FUA.
6. Coordinate the development of activities with all the parties involved.
7. Send invitations for scheduled activities.
8. Carry out the activity
9. Prepare a report with the results of the activities
10. Submit the results of the activities, as established.
11. If necessary, track results and their implementation in terms of time and form.

**5- Subtasks to evaluate, in an early stage, all restricted, prohibited, and danger areas that affect or could affect circulation**

1. Review national regulations related to the implementation of prohibited, restricted, and danger areas.
2. Analyze all restricted, prohibited, and danger areas that have been implemented in each State, using the sample form for the use and management of restricted, prohibited, and danger areas and special use airspace in the SAM Region contained in Appendix F.
3. Consider in the analysis the unmanned aircraft systems (UAS)
4. Verify if it is possible to reduce, eliminate or modify SUA structure
5. Identify those SUAs that may be used dynamically by applying the FUA concept.
6. Analyze different scenarios in order to apply strategic airspace management.
7. Analyze different scenarios in which, due to safety, it may be necessary to establish procedures or conventions to avoid tactical airspace management.
8. Establish guidelines, in an early stage, to allow timely and foreseeable access to restricted or reserved airspace, in order to maximize benefits.
9. Take appropriate action in order to authorize dynamic use of special use areas.

**6- Subtasks to develop a uniform and collaborative national airspace planning process regarding FUA**

1. Analyze ICAO regulations regarding CDM.
2. Evaluate national regulations on CDM, and if there are none, establish the criteria for their application (See CDM SAM).
3. Identify the areas that will participate in airspace planning.
4. Verify that FMUs and/or FMPs are represented.
5. Analyze airspace structure taking into account user needs, especially national security, defense and police requirements.
6. Identify special use airspace at national level that may prevent flexible use of airspace.
7. Create national plans to optimize airspace structure taking into account the application of the FUA and CDO concepts.
8. Review national plans to optimize airspace structure in accordance with FUA and CDO, where applicable.
9. Propose to the corresponding planning area the adjustments necessary to accommodate national, defense and police requirements.
10. Verify that all proposals are incorporated into the national air navigation plan of the State.

**7- Subtasks to implement the airspace management cell (AMC)**

1. Analyze the need to establish an AMC for the management of special use airspace in the pre-tactical and tactical phase.
2. Define activities that AMC will carry out when coordinating civil/military/police operations including the following:
  - a) Granting of authorizations for aircraft overflights
  - b) Coordination of unusual military traffic in airspace

- c) Real-time coordination of SUA activation/release periods with ATC units
  - d) Application of the FUA concept in daily operations
  - e) Management of conditional routes (CDR) in close cooperation with ATC units.
  - f) Drafting of the Forecast Airspace Use Plan (FAUP)
  - g) Drafting of the Airspace Use Plan (AUP).
3. Establish agreements between ATC and AMC units.
  4. Develop applicable procedures.

## **8 - Subtasks to adopt suitable measures to improve the efficiency of traffic flow management**

1. Evaluate the application of conditional routes at global and regional level
2. Review national special use airspace planning that may affect the efficiency of civil operations.
3. Identify the SUAs that may be appropriate for implementing the CDRs.
4. In coordination with parties involved in CDM, develop conditional routes (CDR) for dynamic rerouting of aircraft to avoid special use airspace.
5. Training ATC staff on the application of CDR routes and procedures for coordination and cooperation with the areas involved.
6. Publish CDR routes in the AIP
7. Insert CDR routes and all associated procedures in the operational manuals.
8. Set the date(s) for CDR implementation.
9. Perform risk management before CDR implementation
10. Track CDR application

## **9- Subtasks to establish regulations and procedures to communicate, negotiate, and determine priorities for civil-military coordination**

1. Evaluate existing State regulations and procedures.
2. Analyze means of communication between ATC and military units.
3. Establish means of communication
4. Develop applicable procedures.
5. Define the criteria to be used for determining civil-military coordination priorities
6. Submit these criteria to the consideration of involved parties for approval.
7. Include primary and secondary means of communication in letters of operational agreement.
8. Include applicable procedures in the letters of operational agreement.
9. Train ATC and military personnel on the use of applicable means and procedures.
10. If necessary, publish all corresponding procedures in the AIP
11. Implement the means of communication and procedures.
12. Periodically check the operation of the means of communication.
13. Periodically check if procedures meet airspace user requirements, and if civil-military coordination is being carried out effectively.

## **10 – Subtasks to establish procedures to coordinate temporary reserved airspace (TRA)**

1. Verify TRA coordination procedures at national level.
2. If there are no procedures, define such procedures, including real-time activation/release.
3. Check if temporary reservation is done through NOTAM or through real-time specific reservation activation/deactivation procedures.
4. Submit procedures to the consideration of the parties involved.
5. Following their approval, include TRA coordination procedures in the letters of operational agreement between ATC and military units.
6. Train ATC and military staff on the implementation of TRA coordination procedures.
7. If necessary, publish all corresponding procedures in the AIP

8. Implement procedures
9. Periodically check if procedures meet TRA coordination requirements and if coordination is carried out effectively.

#### **11 – Subtasks to draft Letters of Operational Agreement between ATS units and military units or other users**

1. Assess current procedures for the activation of restricted airspace when so required
2. Agreements and procedures for flexible use of airspace may be established in the Letters of Operational Agreement, which shall include the following items:
  - a) horizontal and vertical limits of the airspace concerned;
  - b) the classification of the airspace available for use by civil air traffic;
  - c) units or authorities responsible for airspace handover;
  - d) conditions for airspace handover to the ATC unit concerned;
  - e) conditions for airspace handover from the ATC unit concerned;
  - f) airspace availability periods
  - g) any limitations on the use of the airspace concerned; and
  - h) any other relevant procedures or information.
3. Train ATC and military personnel on the use of the LoA.
4. If necessary, publish all corresponding procedures in the AIP
5. Implement the LoA
6. Periodically review the LoA to verify that it effectively meets civil-military coordination requirements.

#### **12- Subtasks for managing information in order to establish and publish CDR routes in the AIP, and procedures for activities requiring reserved and restricted airspace**

1. Negotiate with the corresponding AIS office.
2. Check the time required for the relevant information to be duly published
3. Coordinate with the AIS office the establishment of a publication timetable and the dates in which information must be available in the AIS
4. Check information before publication to ensure its accuracy.
5. Check that information is being published in accordance with national regulations.
6. Verify that publication dates are effectively met

#### **13- Subtasks to carry out the safety assessment and the risk analysis when FUA measures are introduced**

1. Contact the local safety office
2. Verify the time required to perform the safety assessment of FUA procedures and measures to be implemented.
3. Coordinate with the local safety office who will perform the risk analysis
4. Supply all the information needed by the safety office
5. Participate as an observer during risk analysis sessions.
6. Verify that the outcome meets the level of safety agreed by the State.
7. Communicate the outcome to the corresponding State authorities
8. Verify that risk mitigation actions are executed before FUA measures and/or procedures become effective.
9. Track FUA measures and procedures implemented to ensure that safety is not affected.

#### **14- Subtasks to establish a system to periodically review airspace requirements, organization and management**

1. Create a strategy to periodically review airspace requirements, organization, and management.

2. Submit this strategy to the Civil- Military Cooperation and Coordination Committee.
3. Approve the strategy
4. Implement appropriate action to comply with the strategy approved.
5. Verify compliance with the objective established in the strategy.

**15- Subtasks to assess training requirements for the application of FUA and to provide the necessary courses**

1. Evaluate national regulations and other documentation related to personnel training.
2. Verify if current documentation contains adequate material for FUA to be successfully implemented.
3. Analyze the topics that shall be included in the courses concerning FUA
4. Coordinate with the corresponding Civil Aviation Training Centre (CATC) the inclusion in the curriculum of topics related to FUA.
5. Coordinate with CATC the specific training and seminars that would be required for FUA implementation.
6. Assist the CATC in all matters related to FUA.
7. Verify that training related to FUA is being provided effectively.

**16- Subtasks to track progress during the implementation of FUA**

1. Strictly monitor progress in the implementation of FUA in the State.
2. Verify the results of all processes related to FUA.
3. Inform the Civil-Military Cooperation and Coordination Committee of all aspects that might prevent the effective implementation of the FUA
4. Take appropriate measures to overcome obstacles for the implementation of the FUA.
5. Verify that measures taken will overcome the difficulties encountered.

**REFERENCE DOCUMENTS**

- Convention on International Civil Aviation (The Chicago Convention)
- Annex 2, - *Rules of the air*,
- Annex 11 –*Air Traffic Services*,
- PANS-ATM, Doc. 4444 - *Procedures for Air Navigation Services — Air Traffic Management*
- Doc. 9554 -*Manual concerning Safety Measures Related to Military Activities Potentially Hazardous to Civil Aircraft Operations*
- Doc. 9426 –*Air Traffic Services Planning Manual*
- Doc. 9750 –*Global Air Navigation Plan*
- Doc. 9854 – *ICAO Global Air Traffic Management Operational Concept*
- Doc. 8126 – *AIS Manual*
- Assembly Resolution A 37-15 - Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation.
- Reports of Air Navigation Regional Meetings for the CAR/SAM Regions (CAR/SAM RAN)
- Global Air Traffic Management Forum on Civil/Military Cooperation (2009)
- Circular 330-AN/189 – *Civil-Military Cooperation in Air Traffic Management*
- GREPECAS meetings– Caribbean and South American Regional Planning and Implementation Group
- Performance-Based Air Navigation System Implementation Plan for the South American Region (SAM-PBIP)
- CDM Manual for the SAM Region
- ATFM Manual for the CAR/SAM Regions
- SAMIG Meeting Reports
- RAAC Meeting Reports - Meeting of Civil Aviation Directors
- Report of the Seminar on Civil/Military Coordination and Cooperation and flexible use of airspace for the NAM, CAR, and SAM Regions (2011)

- Spain AIP
- Regulation 2150/2005 - Common Rules for the Flexible Use of Airspace European Commission
- Single European Sky -European Organization for the Safety of Air Navigation (EUROCONTROL)
- NextGen –Federal Aviation Administration (FAA)

**Agenda Item 3: Other matters****Implementation of the new flight plan format**

3.1 The Meeting took note that Amendment 1 to the 15th Edition of the PANS/ATM – Doc 4444 was published on 25 June 2008 through ICAO State Letter AN13/2.1-08/50. The amendment, which appears in **Appendix A** to this part of the report, made significant modifications in boxes 10 and 18 with respect to the CURRENT flight plan format.

3.2 Likewise, the Meeting was informed that Amendment 1 to the PANS-ATM basically sought to update the ICAO flight plan format to meet the needs of aircraft with advanced capabilities and the requirements of automated air traffic management (ATM) systems.

3.3 The Meeting recalled that, although Amendment 1 had been published, Document 4444 showed all flight plan format information unchanged until the NEW format became effective on 15 November 2012.

3.4 Considering the above, the Meeting recalled that the implementation of the NEW format warranted a modification of the systems involved in flight plan processing, as well as a transition period to allow both the NEW and the CURRENT flight plan to operate until the NEW flight plan alone was used.

3.5 The Meeting noted that, pursuant to GREPECAS Conclusion 15/35 and taking into account ICAO guidelines, the SAM Region had developed a strategy for the implementation of Amendment 1 to the 15<sup>th</sup> Edition of Doc 4444, which had been reviewed and approved by the SAM/IG/4 meeting.

3.6 The Meeting recalled that, in order to begin the process of implementation of the NEW format, the SAM/IG/4 meeting had formulated Conclusion SAM/IG/4-11 - *Action Plan for the Implementation of Amendment 1 to Doc. 4444*, so that SAM States could prepare their action plans for the implementation of the amendment.

3.7 The Meeting also noted that ICAO had developed a Flight Plan Implementation Tracking System (FITS) website and, through ICAO letter AN 13/2-10/31 of 29 March 2010, States had been urged to interact with, and make extensive use of, the FITS, available at: <http://www2.icao.int/en/FITS/Pages/home.aspx>. This website contained information on the focal points of all ICAO States and on the progress made in the implementation.

*FAA Requirements for flights to and from USA*

3.8 The Meeting was informed by users on some differences that could exist with FAA USA who, as of 12 November 2012 (ICAO: 12Nov2012) would only accept the NEW Flight Plan format, which would occur exactly three days before the implementation.

3.9 Also, FAA would not receive flight plans with more than 24 hours prior to the flight take-off, while ICAO permits up to 120 hours.

3.10 Also, FAA would continue using designators NAV/RNVD132A1 until early 2013 (as per latest reporting from FAA <<https://webmail.taca.com/owa/FAA%20ICAO%202012%20-%20Mayo%202012.pdf>>) together with PBN information.

3.11 The Meeting took note of the concern by TACA and LAN users so that States and ICAO is informed of these requirements of the FAA for all flights to and from USA, to avoid rejection of these flight plans, causing delays to operators.

3.12 In the issue regarding designator B1 for RNAV5, and from experiences of users in trials carried out with COCESNA, it is deemed pertinent to use only B1 when it is possible to operate all sensors even though there is no operation with LORAN C, in order to avoid placing all designations (B2, B3, B4, B5 etc.) and exceed available characters in the pertinent box

3.13 TACA Airlines expressed interest to all different States and ICAO to coordinate NFPL trials with the different ANSP's and in this connection, it was requested to contact Messrs. David Guerrero and Enrique Estrada, responsible for the NFPL implementation project, TACA airline for pertinent coordination.

Note: Attached are information links of FAA with regard the new Flight Plan Format:

[http://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/enroute/flight\\_plan\\_filing/General/ICAO\\_2012/presentations/](http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/flight_plan_filing/General/ICAO_2012/presentations/)

[http://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/enroute/flight\\_plan\\_filing/general/icao\\_2012/](http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/flight_plan_filing/general/icao_2012/)

#### *List of focal points*

3.14 The Meeting highlighted the importance of consulting the updated list of focal points shown in **Appendix B** to this part of the report to coordinate activities for the implementation of the NEW flight plan. Considering that focal points had the important task of supporting regional and interregional coordination during the transition period (1 July 2012 – 14 November 2012) in which both the NEW and CURRENT flight formats would operate, the Meeting invited the participants to use the list of focal points to plan their training and coordination activities for the implementation of the NEW flight plan format.

#### *Status of implementation of the changes to FDP and AMHS systems*

3.15 As a follow-up to the changes to FDP and AMHS equipment, it was noted that most States of the Region that had installed such equipment had taken action to implement the changes, although, to date, very few States had completed such changes. There were States that would not be able to make the changes in the automated systems by 15 November 201, since such implementation required more time, but were taking the necessary contingency measures.



3.16 It was noted that no changes to FDP and AMHS processing systems should be made in the flight plans filed by operators before the date foreseen for the implementation of the NEW format, 15 November 2012.

3.17 The Meeting was informed that ICAO, in due time, would communicate the process for the identification, consolidation, and proper completion of equipment capabilities and indications in the FPL (field 10 and field 18 PBN/).

**APPENDIX A**



International  
Civil Aviation  
Organization

Organisation  
de l'aviation civile  
internationale

Organización  
de Aviación Civil  
Internacional

Международная  
организация  
гражданской  
авиации

منظمة الطيران  
المدني الدولي

国际民用  
航空组织

Tel.: +1 (514) 954-6711

25 June 2008

Ref.: AN 13/2.1-08/50

**Subject:** Approval of Amendment 1 to the PANS-ATM

**Action required:** a) Implementation of the amendment on 15 November 2012; b) Publication of any differences as of 15 November 2012

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission, acting under delegated authority, at the first and second meetings of its 177th Session, on 22 and 24 January 2008, approved Amendment 1 to the *Procedures for Air Navigation Services — Air Traffic Management*, Fifteenth Edition (PANS-ATM, Doc 4444) for applicability on 15 November 2012. The amendment was approved on 27 May 2008 by the President of the Council on behalf of the Council in accordance with established procedure.

2. Amendment 1 stems from the work of the Flight Plan Study Group (FPLSG). The nature and scope of the amendment is to update the ICAO model flight plan form in order to meet the needs of aircraft with advanced capabilities and the evolving requirements of automated air traffic management (ATM) systems, while taking into account compatibility with existing systems, human factors, training, cost and transition aspects.

3. Copies of the interim edition of the amendment are available as attachments to the electronic version of this State letter on the ICAO-NET ([www.icao.int/icao.net](http://www.icao.int/icao.net)). The interim edition contains the text as it was approved by the Council and provided to you pending the issue of the replacement pages for the PANS-ATM in which the amendment will be incorporated. Please note that the attached amendment consists solely of a change to the ICAO model flight plan form, related ATS messages and procedures and has an applicability date of 15 November 2012. As the existing ICAO flight plan will remain in use during the interim period it is deemed premature for ICAO to distribute the blue cover State letter containing the replacement pages associated with the amendment. Therefore, the replacement pages will be distributed in October 2012. In the meantime, you may wish to use the amendment contained in this letter to begin updating your flight data processing systems to meet the new requirements which will be applicable in 2012.

4. In accordance with the decision of the 26th Session of the Assembly, I would like to bring to your attention the Organization's long-standing practice of providing documentation to States upon request. In this regard, I wish to refer you to the ICAO-NET website ([www.icao.int/icaonet](http://www.icao.int/icaonet)) where you can access all relevant documentation. The practice of dispatching printed copies of such documentation has now been discontinued.

5. Your Government is invited by the Council to implement the provisions of PANS-ATM as amended. In this connection, I draw your attention to the decision taken by the Council, on 1 October 1973, to discontinue the publication of differences in Supplements to the PANS documents and, instead, to request States to publish up-to-date lists of significant differences from PANS documents in their Aeronautical Information Publications.

6. May I, therefore, invite your Government to publish in your Aeronautical Information Publication a list of any significant differences which will exist on 15 November 2012 between the amended provisions of PANS-ATM and your national regulations and practices.

Accept, Sir/Madam, the assurances of my highest consideration.

Taïeb Chérif  
Secretary General

**Enclosure:**

Amendment to the Foreword of the PANS-ATM

ATTACHMENT to State letter AN 13/2.1-08/50

AMENDMENT TO THE FOREWORD OF THE PANS-ATM, FIFTEENTH EDITION

Add the following at the end of Table A:

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Approved Applicable</i>
1	Flight Plan Study Group (FPLSG)	Update the ICAO model flight plan form.	27 May 2008 15 November 2012

— END —

**AMENDMENT NO. 1**  
**TO THE**  
**PROCEDURES**  
**FOR**  
**AIR NAVIGATION SERVICES**

**AIR TRAFFIC MANAGEMENT**

**(Doc 4444)**

**INTERIM EDITION**

The text of Amendment No. 1 to the PANS-ATM (Doc 4444) was approved by the President of the Council of ICAO on behalf of the Council on **27 May 2008** for applicability on **15 November 2012**. This interim edition is distributed to facilitate implementation of the amendment by States. Replacement pages incorporating Amendment No. 1 are expected to be distributed in October 2012. (State letter AN 13/2.1-08/50 refers.)

**MAY 2008**

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**PROPOSED AMENDMENT TO THE *PROCEDURES FOR AIR  
NAVIGATION SERVICES — AIR TRAFFIC MANAGEMENT*  
(PANS-ATM, DOC 4444)**

**NOTES ON THE PRESENTATION OF THE PROPOSED AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ **followed**  
by the replacement text which is highlighted with grey  
shading. new text to replace existing text

**PROCEDURES FOR AIR NAVIGATION SERVICES — AIR  
TRAFFIC MANAGEMENT (PANS-ATM, DOC 4444)**

...

**CHAPTER 4. GENERAL PROVISIONS FOR AIR TRAFFIC SERVICES**

...

**4.4 FLIGHT PLAN**

**4.4.1 Flight plan form**

*Note.*— *Procedures for the use of repetitive flight plans are contained in Chapter 16, Section 16.4.*

...

4.4.1.3 Operators and air traffic services units should comply with:

- a) the instructions for completion of the flight plan form and the repetitive flight plan listing form given in Appendix 2; and
- b) any constraints identified in relevant Aeronautical Information Publications (AIPs).

*Note 1.*— *Failure to adhere to the provisions of Appendix 2 or any constraint identified in relevant AIPs may result in data being rejected, processed incorrectly or lost.*

*Note 2.*— *The instructions for completing the flight plan form given in Appendix 2 may be conveniently printed on the inside cover of flight plan form pads, or posted in briefing rooms.*

...

**4.4.2 Submission of a flight plan**

4.4.2.1 PRIOR TO DEPARTURE

4.4.2.1.1 Flight plans shall not be submitted more than 120 hours before the estimated off-block time of a flight.

4.4.2.1.1.2 Except when other arrangements have been made for submission of repetitive flight plans, a flight plan submitted prior to departure should be submitted to the air traffic services reporting office at the departure aerodrome. If no such unit exists at the departure aerodrome, the flight plan should be submitted to the unit serving or designated to serve the departure aerodrome.

4.4.2.1.1.3 In the event of a delay of 30 minutes in excess of the estimated off-block time for a controlled flight or a delay of one hour for an uncontrolled flight for which a flight plan has been submitted, the flight plan should be amended or a new flight plan submitted and the old flight plan cancelled, whichever is applicable.



## CHAPTER 11. AIR TRAFFIC SERVICES MESSAGES

...

### 11.4 MESSAGE TYPES AND THEIR APPLICATION

...

#### 11.4.2 Movement and control messages

...

##### 11.4.2.2 MOVEMENT MESSAGES

...

##### 11.4.2.2.2 FILED FLIGHT PLAN (FPL) MESSAGES

*Note.— Instructions for the transmission of an FPL message are contained in Appendix 2.*

...

11.4.2.2.2.5 FPL messages ~~shall normally~~ **should** be transmitted immediately after the filing of the flight plan. ~~However, if a flight plan is filed more than 24 hours in advance of the estimated off-block time of the flight to which it refers, that flight plan shall be held in abeyance until at most 24 hours before the flight begins so as to avoid the need for the insertion of a date group into that~~ **the date of the flight departure shall be inserted in Item 18 of the flight plan. In addition, if a flight plan is filed early and the provisions of 11.4.2.2.2.2 b) or e) or 11.4.2.2.2.3 apply, transmission of the FPL message may be withheld until one hour before the estimated off block time, provided that this will permit each air traffic services unit concerned to receive the information at least 30 minutes before the time at which the aircraft is estimated to enter its area of responsibility.**

...

##### 11.4.2.2.4 MODIFICATION (CHG) MESSAGES

A CHG message shall be transmitted when any change is to be made to basic flight plan data contained in previously transmitted FPL or RPL data. The CHG message shall be sent to those recipients of basic flight plan data which are affected by the change. **Relevant revised basic flight plan data shall be provided to such affected entities not previously having received this.**

*Note.— See 11.4.2.3.4 concerning notification of a change to coordination data contained in a previously transmitted current flight plan or estimate message.*

...

## APPENDIX 2. FLIGHT PLAN

...

### 2. Instructions for the completion of the flight plan form

...

#### 2.2 Instructions for insertion of ATS data

Complete Items 7 to 18 as indicated hereunder.

Complete also Item 19 as indicated hereunder, when so required by the appropriate ATS authority or when otherwise deemed necessary.

*Note 1.*— Item numbers on the form are not consecutive, as they correspond to Field Type numbers in ATS messages.

*Note 2.*— Air traffic services data systems may impose communications or processing constraints on information in filed flight plans. Possible constraints may, for example, be limits with regard to item length, number of elements in the route item or total flight plan length. Significant constraints are documented in the relevant Aeronautical Information Publication.

<b>ITEM 7: AIRCRAFT IDENTIFICATION (MAXIMUM 7 CHARACTERS)</b>
---

INSERT one of the following aircraft identifications, not exceeding 7 alphanumeric characters and without hyphens or symbols:

a) the nationality or common mark and registration marking of the aircraft (e.g. EIAKO, 4XBCD, N2567GA), when:

- 1) in radiotelephony the call sign to be used by the aircraft will consist of this identification alone (e.g. OOTEKCGAJS), or preceded by the ICAO telephony designator for the aircraft operating agency (e.g. SABENA-OOTEKBLIZZARD CGAJS);
- 2) the aircraft is not equipped with radio;

OR b) the ICAO designator for the aircraft operating agency followed by the flight identification (e.g. KLM511, NGA213, JTR25) when in radiotelephony the call sign to be used by the aircraft will consist of the ICAO telephony designator for the operating agency followed by the flight identification (e.g. KLM511, NIGERIA 213, HERBIEJESTER 25);

*Note 1.*— Standards for nationality, common and registration marks to be used are contained in Annex 7, Chapter 2.

*Note 2.*— Provisions for the use of radiotelephony call signs are contained in Annex 10, Volume II, Chapter 5. ICAO designators and telephony designators for aircraft operating agencies are contained in Doc 8585 — Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.

**ITEM 8: FLIGHT RULES AND TYPE OF FLIGHT (ONE OR TWO CHARACTERS)**

Flight rules

*INSERT* one of the following letters to denote the category of flight rules with which the pilot intends to comply:

- I if it is intended that the entire flight will be operated under the IFR
- V if it is intended that the entire flight will be operated under the VFR
- Y if the flight initially will be operated under the IFR (first) and specify in Item 15 the point, followed by one or more subsequent changes of flight rules or
- Z if the flight initially will be operated under the VFR (first), followed by one or more subsequent changes of flight rules

Specify in Item 15 the point or points at which a change of flight rules is planned.

Type of flight

*INSERT* one of the following letters to denote the type of flight when so required by the appropriate ATS authority:

- S if scheduled air service
- N if non-scheduled air transport operation
- G if general aviation
- M if military
- X if other than any of the defined categories above.

Specify status of a flight following the indicator STS in Item 18, or when necessary to denote other reasons for specific handling by ATS, indicate the reason following the indicator RMK in Item 18.

...

**ITEM 10: EQUIPMENT AND CAPABILITIES**

Capabilities comprise the following elements:

- a) presence of relevant serviceable equipment on board the aircraft;
- b) equipment and capabilities commensurate with flight crew qualifications; and
- c) where applicable, authorization from the appropriate authority.

Radio communication, navigation and approach aid equipment and capabilities
---

*INSERT* one letter as follows:

N if no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable,

*OR* S if standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1),

AND/OR

*INSERT* one or more of the following letters to indicate the serviceable COM/NAV/approach aid equipment and capabilities available and serviceable:

A	<del>(Not allocated)</del> GBAS landing system	J7	CPDLC FANS 1/A SATCOM (Iridium)
B	<del>(Not allocated)</del> LPV (APV with SBAS)	K	<del>(MLS)</del>
C	LORAN C	L	ILS
D	DME	M1	<del>Omega</del> ATC RTF SATCOM (INMARSAT)
E1	<del>(Not allocated)</del> FMC WPR ACARS	M2	ATC RTF (MTSAT)
E2	D-FIS ACARS	M3	ATC RTF (Iridium)
E3	PDC ACARS	O	VOR
F	ADF	<del>P1-P9</del>	<del>(Not allocated)</del> Reserved for RCP
G	<del>(GNSS)</del> (See Note 2)	Q	<del>(Not allocated)</del>
H	HF RTF	R	<del>RNP type certification</del> PBN approved (see Note 54)
I	Inertial Navigation	T	TACAN
J1	<del>(Data Link)</del> CPDLC ATN VDL Mode 2 (See Note 3)	U	UHF RTF
J2	CPDLC FANS 1/A HF DL	V	VHF RTF
J3	CPDLC FANS 1/A VDL Mode A	W	RVSM approved
J4	CPDLC FANS 1/A VDL Mode 2	X	MNPS approved
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	Y	<del>when prescribed by ATIS</del> VHF with 8.33 kHz channel spacing capability
J6	CPDLC FANS 1/A SATCOM (MTSAT)	Z	Other equipment carried or other capabilities (see Note 25)

Any alphanumeric characters not indicated above are reserved.

Note 1.— If the letter S is used, standard equipment is considered to be VHF RTF, ADF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.

Note 2.— If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ and separated by a space.

Note 3.— If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/ and/or, NAV/ and/or DAT, as appropriate.

Note 4.— If the letter J is used, specify in Item 18 the equipment carried, preceded by DAT/ followed by one or more letters as appropriate. See RTCA/EUROCAE Interoperability Requirements Standard For ATN Baseline 1 (ATN B1 INTEROP Standard – DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.

Note 5.— Information on navigation capability is provided to ATC for clearance and routing purposes.

Note 6.— Inclusion of the letter R is used, the performance based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance based navigation to a specific route segment(s), route(s) and/or area concerned is contained in the Performance-Based Navigation Manual (Doc 9613).

Surveillance equipment and capabilities
--

INSERT N if no surveillance equipment for the route to be flown is carried, or the equipment is unserviceable,

OR

INSERT one or two more of the following letters/descriptors, to a maximum of 20 characters, to describe the serviceable surveillance equipment carried and/or capabilities on board:

~~SSR equipment~~ SSR Modes A and C

— N — Nil

A Transponder — Mode A (4 digits — 4 096 codes)

C Transponder — Mode A (4 digits — 4 096 codes) and Mode C

SSR Mode S

— X — Transponder — Mode S without both aircraft identification and pressure-altitude transmission

E Transponder — Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability

H Transponder — Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability

I Transponder — Mode S, including aircraft identification, but no pressure-altitude capability

L Transponder — Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability

P Transponder — Mode S, including pressure-altitude, but no aircraft identification

- ~~I~~ ~~Transponder — Mode S, including aircraft identification transmission, but no pressure altitude transmission~~  
 S Transponder — Mode S, including both pressure altitude and aircraft identification transmission capability  
 X Transponder — Mode S with neither aircraft identification nor pressure-altitude capability

*Note.— Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a Mode S transponder.*

#### ADS-B

- B1 ADS-B with dedicated 1090 MHz ADS-B “out” capability  
 B2 ADS-B with dedicated 1090 MHz ADS-B “out” and “in” capability  
 U1 ADS-B “out” capability using UAT  
 U2 ADS-B “out” and “in” capability using UAT  
 V1 ADS-B “out” capability using VDL Mode 4  
 V2 ADS-B “out” and “in” capability using VDL Mode 4

#### ADS-C

- D1 ADS-C with FANS 1/A capabilities  
 G1 ADS-C with ATN capabilities

#### ADS equipment

- ~~D~~ ADS capability

Alphanumeric characters not indicated above are reserved.

Example: ADE3RV/HB2U2V2G1

*Note.— Additional surveillance application should be listed in Item 18 following the indicator SUR/ .*

<b>ITEM 13: DEPARTURE AERODROME AND TIME (8 CHARACTERS)</b>
---

*INSERT* the ICAO four-letter location indicator of the departure aerodrome as specified in Doc 7910, *Location Indicators*,

*OR*, if no location indicator has been assigned,

*INSERT* ZZZZ and *SPECIFY*, in Item 18, the name and location of the aerodrome preceded by DEP/ ,

*OR*, the first point of the route or the marker radio beacon preceded by DEP/..., if the aircraft has not taken off from the aerodrome,

*OR*, if the flight plan is received from an aircraft in flight,

*INSERT* AFIL, and *SPECIFY*, in Item 18, the ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, preceded by DEP/ .

*THEN, WITHOUT A SPACE,*

*INSERT* for a flight plan submitted before departure, the estimated off-block time **(EOBT)**,

*OR,* for a flight plan received from an aircraft in flight, the actual or estimated time over the first point of the route to which the flight plan applies.

<b>ITEM 15: ROUTE</b>
-----------------------

*INSERT* the *first cruising speed* as in (a) and the *first cruising level* as in (b), without a space between them.

*THEN,* following the arrow, *INSERT* the route description as in (c).

(a) Cruising speed (maximum 5 characters)
---

*INSERT* the *True Air Speed* for the first or the whole cruising portion of the flight, in terms of:

*Kilometres per hour*, expressed as K followed by 4 figures (e.g. K0830), *or*

*Knots*, expressed as N followed by 4 figures (e.g. N0485), *or*

*True Mach number*, when so prescribed by the appropriate ATS authority, to the nearest hundredth of unit Mach, expressed as M followed by 3 figures (e.g. M082).

(b) Cruising level (maximum 5 characters)
---

*INSERT* the planned cruising level for the first or the whole portion of the route to be flown, in terms of:

*Flight level*, expressed as F followed by 3 figures (e.g. F085; F330), *or*

*\*Standard Metric Level in tens of metres*, expressed as S followed by 4 figures (e.g. S1130), *or*

*Altitude in hundreds of feet*, expressed as A followed by 3 figures (e.g. A045; A100), *or*

*Altitude in tens of metres*, expressed as M followed by 4 figures (e.g. M0840), *or*

*for uncontrolled VFR flights, the letters VFR.*

\*When so prescribed by the appropriate ATS authorities.

(c) Route (including changes of speed, level and/or flight rules)
--

*Flights along designated ATS routes*

*INSERT,* if the departure aerodrome is located on or connected to the ATS route, the designator of the first ATS route,

*OR*, if the departure aerodrome is not on or connected to the ATS route, the letters DCT followed by the point of joining the first ATS route, followed by the designator of the ATS route.

**THEN**

*INSERT* each point at which either a change of speed and/or level is planned to commence, or a change of ATS route, and/or a change of flight rules is planned,

*Note.— When a transition is planned between a lower and upper ATS route and the routes are oriented in the same direction, the point of transition need not be inserted.*

**FOLLOWED IN EACH CASE**

by the designator of the next ATS route segment, even if the same as the previous one,  
*OR* by DCT, if the flight to the next point will be outside a designated route, unless both points are defined by geographical coordinates.

*Flights outside designated ATS routes*

*INSERT* points normally not more than 30 minutes flying time or 370 km (200 NM) apart, including each point at which a change of speed or level, a change of track, or a change of flight rules is planned.

*OR*, when required by appropriate ATS authority(ies),

*DEFINE* the track of flights operating predominantly in an east-west direction between 70°N and 70°S by reference to significant points formed by the intersections of half or whole degrees of latitude with meridians spaced at intervals of 10 degrees of longitude. For flights operating in areas outside those latitudes the tracks shall be defined by significant points formed by the intersection of parallels of latitude with meridians normally spaced at 20 degrees of longitude. The distance between significant points shall, as far as possible, not exceed one hour's flight time. Additional significant points shall be established as deemed necessary.

For flights operating predominantly in a north-south direction, define tracks by reference to significant points formed by the intersection of whole degrees of longitude with specified parallels of latitude which are spaced at 5 degrees.

*INSERT* DCT between successive points unless both points are defined by geographical coordinates or by bearing and distance.

*USE ONLY* the conventions in (1) to (5) below and *SEPARATE* each sub-item by a space.

(1) 

ATS route (2 to 7 characters)
-------------------------------

The coded designator assigned to the route or route segment including, where appropriate, the coded designator assigned to the standard departure or arrival route (e.g. BCN1, BI, R14, UB10, KODAP2A).

*Note.— Provisions for the application of route designators are contained in Annex 11, Appendix 1; whilst guidance material on the application of an RNP type to a specific route segment(s), route(s) or area is contained in the Manual on Required Navigation Performance (RNP) (Doc 9613).*



## (2) Significant point (2 to 11 characters)

The coded designator (2 to 5 characters) assigned to the point (e.g. LN, MAY, HADDY), or, if no coded designator has been assigned, one of the following ways:

## — Degrees only (7 characters):

2 figures describing latitude in degrees, followed by “N” (North) or “S” (South), followed by 3 figures describing longitude in degrees, followed by “E” (East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 46N078W.

## — Degrees and minutes (11 characters):

4 figures describing latitude in degrees and tens and units of minutes followed by “N” (North) or “S” (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by “E” (East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W.

## — Bearing and distance from a navigation aid significant point:

The identification of the navigation aid (normally a VOR) significant point, in the form of 2 or 3 characters, THEN followed by the bearing from the aid point in the form of 3 figures giving degrees magnetic, THEN followed by the distance from the aid point in the form of 3 figures expressing nautical miles. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros — e.g. a point 180° magnetic at a distance of 40 nautical miles from VOR “DUB” should be expressed as DUB180040.

(3) Change of speed or level  
(maximum 21 characters)

The point at which a change of speed (5% TAS or 0.01 Mach or more) or a change of level is planned to commence, expressed exactly as in (2) above, followed by an oblique stroke and both the cruising speed and the cruising level, expressed exactly as in (a) and (b) above, without a space between them, even when only one of these quantities will be changed.

Examples: LN/N0284A045  
MAY/N0305F180  
HADDY/N0420F330  
4602N07805W/N0500F350  
46N078W/M082F330  
DUB180040/N0350M0840

(4) Change of flight rules  
(maximum 3 characters)

The point at which the change of flight rules is planned, expressed exactly as in (2) or (3) above as appropriate, followed by a space and one of the following:

VFR if from IFR to VFR

IFR if from VFR to IFR

Examples: LN VFR

LN/N0284A050 IFR

(5) Cruise climb (maximum 28 characters)

*The letter C followed by an oblique stroke; THEN the point at which cruise climb is planned to start, expressed exactly as in (2) above, followed by an oblique stroke; THEN the speed to be maintained during cruise climb, expressed exactly as in (a) above, followed by the two levels defining the layer to be occupied during cruise climb, each level expressed exactly as in (b) above, or the level above which cruise climb is planned followed by the letters PLUS, without a space between them.*

Examples: C/48N050W/M082F290F350

C/48N050W/M082F290PLUS

C/52N050W/M220F580F620.

**ITEM 16: DESTINATION AERODROME AND  
TOTAL ESTIMATED ELAPSED TIME,  
DESTINATION ALTERNATE AERODROME(S)**

Destination aerodrome and total  
estimated elapsed time (8 characters)

*INSERT* the ICAO four-letter location indicator of the destination aerodrome ~~followed, without a space, by the total estimated elapsed time~~ as specified in Doc 7910, *Location Indicators*,

*OR* , if no location indicator has been assigned,

*INSERT* ZZZZ ~~followed, without a space, by the total estimated elapsed time~~, and *SPECIFY* in Item 18 the name and location of the aerodrome, preceded by DEST/ .

***THEN WITHOUT A SPACE***

*INSERT* the total estimated elapsed time.

*Note.— For a flight plan received from an aircraft in flight, the total estimated elapsed time is the estimated time from the first point of the route to which the flight plan applies to the termination point of the flight plan.*

Destination ~~and~~ Alternate aerodrome(s) (4 characters)

*INSERT* the ICAO four-letter location indicator(s) of not more than two destination alternate aerodromes, as specified in Doc 7910, *Location Indicators*, separated by a space,

*OR*, if no location indicator has been assigned to the destination alternate aerodrome(s),

*INSERT* ZZZZ and *SPECIFY* in Item 18 the name and location of the destination alternate aerodrome(s), preceded by ALTN/ .

<b>ITEM 18: OTHER INFORMATION</b>
-----------------------------------

*Note.— Use of indicators not included under this item may result in data being rejected, processed incorrectly or lost.*

Hyphens or oblique strokes should only be used as prescribed below.

*INSERT* 0 (zero) if no other information,

*OR*, any other necessary information in the preferred sequence shown hereunder, in the form of the appropriate indicator selected from those defined hereunder followed by an oblique stroke and the information to be recorded:

*STS/* Reason for special handling by ATS, e.g. a search and rescue mission, as follows:

ALTRV: for a flight operated in accordance with an altitude reservation;

ATFMX: for a flight approved for exemption from ATFM measures by the appropriate ATS authority;

FFR: fire-fighting;

FLTCK: flight check for calibration of nav aids;

HAZMAT: for a flight carrying hazardous material;

HEAD: a flight with Head of State status;

HOSP: for a medical flight declared by medical authorities;

HUM: for a flight operating on a humanitarian mission;

MARSA: for a flight for which a military entity assumes responsibility for separation of military aircraft;

MEDEVAC: for a life critical medical emergency evacuation;

NONRVSM: for a non-RVSM capable flight intending to operate in RVSM airspace;

SAR: for a flight engaged in a search and rescue mission; and

STATE: for a flight engaged in military, customs or police services.

Other reasons for special handling by ATS shall be denoted under the designator RMK/.

*PBN/* Indication of RNAV and/or RNP capabilities. Include as many of the descriptors below, as apply to the flight, up to a maximum of 8 entries, i.e. a total of not more than 16 characters.

	<b>RNAV SPECIFICATIONS</b>
A1	RNAV 10 (RNP 10)
B1	RNAV 5 all permitted sensors
B2	RNAV 5 GNSS
B3	RNAV 5 DME/DME
B4	RNAV 5 VOR/DME
B5	RNAV 5 INS or IRS
B6	RNAV 5 LORANC
C1	RNAV 2 all permitted sensors
C2	RNAV 2 GNSS

C3	RNAV 2 DME/DME
C4	RNAV 2 DME/DME/IRU
D1	RNAV 1 all permitted sensors
D2	RNAV 1 GNSS
D3	RNAV 1 DME/DME
D4	RNAV 1 DME/DME/IRU
	<b>RNP SPECIFICATIONS</b>
L1	RNP 4
O1	Basic RNP 1 all permitted sensors
O2	Basic RNP 1 GNSS
O3	Basic RNP 1 DME/DME
O4	Basic RNP 1 DME/DME/IRU
S1	RNP APCH
S2	RNP APCH with BARO-VNAV
T1	RNP AR APCH with RF (special authorization required)
T2	RNP AR APCH without RF (special authorization required)

Combinations of alphanumeric characters not indicated above are reserved.

~~EET/~~ Significant points or FIR boundary designators and accumulated estimated elapsed times to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.

~~Examples: EET/CAP0745 XYZ0830  
EET/EINN0204~~

~~RIF/~~ The route details to the revised destination aerodrome, followed by the ICAO four letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.

~~Examples: RIF/DTA HEC KLAX  
RIF/ESP G94 CLA YPPH  
RIF/LEMD~~

~~REG/~~ The registration markings of the aircraft, if different from the aircraft identification in Item 7.

~~SEL/~~ SELCAL Code, if so prescribed by the appropriate ATS authority.

~~OPR/~~ Name of the operator, if not obvious from the aircraft identification in Item 7.

~~STS/~~ Reason for special handling by ATS, e.g. hospital aircraft, one engine inoperative, e.g. STS/HOSP, STS/ONE ENG INOP.

~~TYP/~~ Type(s) of aircraft, preceded if necessary by number(s) of aircraft, if ZZZZ is inserted in Item 9.

~~PER/~~ Aircraft performance data, if so prescribed by the appropriate ATS authority.

~~COM/ Significant data related to communication equipment as required by the appropriate ATS authority, e.g. COM/UHF only.~~

~~DAT/ Significant data related to data link capability, using one or more of the letters S, H, V and M, e.g. DAT/S for satellite data link, DAT/H for HF data link, DAT/V for VHF data link, DAT/M for SSR Mode S data link.~~

NAV/ Significant data related to navigation equipment, other than specified in PBN/, as required by the appropriate ATS authority. Indicate GNSS augmentation under this indicator, with a space between two or more methods of augmentation, e.g. NAV/GBAS SBAS.

COM/ Indicate communications applications or capabilities not specified in Item 10a.

DAT/ Indicate data applications or capabilities not specified in 10a.

SUR/ Include surveillance applications or capabilities not specified in Item 10b.

DEP/ Name and location of departure aerodrome, if ZZZZ is inserted in Item 13, or the ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, if AFIL is inserted in Item 13. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location as follows:

With 4 figures describing latitude in degrees and tens and units of minutes followed by “N” (North) or “S” (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by “E” (East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W (11 characters).

OR, Bearing and distance from the nearest significant point, as follows:

The identification of the significant point followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros, e.g. a point of 180° magnetic at a distance of 40 nautical miles from VOR “DUB” should be expressed as DUB180040.

OR, The first point of the route (name or LAT/LONG) or the marker radio beacon, if the aircraft has not taken off from an aerodrome.

DEST/ Name and location of destination aerodrome, if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described under DEP/ above.

DOF/ The date of flight departure in a six figure format (YYMMDD, where YY equals the year, MM equals the month and DD equals the day).

REG/ The nationality or common mark and registration mark of the aircraft, if different from the aircraft identification in Item 7.

EET/ Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.

Examples: EET/CAP0745 XYZ0830  
EET/EINN0204

SEL/ SELCAL Code, for aircraft so equipped.

TYP/ Type(s) of aircraft, preceded if necessary without a space by number(s) of aircraft and separated by one space, if ZZZZ is inserted in Item 9.

Example: TYP/2F15 5F5 3B2

~~ALTN/ Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16.~~

~~RALT/ Name of en-route alternate aerodrome(s).~~

CODE/ Aircraft address (expressed in the form of an alphanumeric code of six hexadecimal characters) when required by the appropriate ATS authority. Example: "F00001" is the lowest aircraft address contained in the specific block administered by ICAO.

DLE/ Enroute delay or holding, insert the significant point(s) on the route where a delay is planned to occur, followed by the length of delay using four figure time in hours and minutes (hhmm).

Example: DLE/MDG0030

OPR/ ICAO designator or name of the aircraft operating agency, if different from the aircraft identification in item 7.

ORGN/ The originator's 8 letter AFTN address or other appropriate contact details, in cases where the originator of the flight plan may not be readily identified, as required by the appropriate ATS authority.

*Note.— In some areas, flight plan reception centres may insert the ORGN/ identifier and originator's AFTN address automatically.*

PER/ Aircraft performance data, indicated by a single letter as specified in the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS, Doc 8168), *Volume I — Flight Procedures*, if so prescribed by the appropriate ATS authority.

~~ALTN/ Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.~~

~~RALT/ ICAO four letter indicator(s) for en-route alternate(s), as specified in Doc 7910, *Location Indicators*, or name(s) of en-route alternate aerodrome(s), if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.~~

~~TALT/ ICAO four letter indicator(s) for take-off alternate, as specified in Doc 7910, *Location Indicators*, or name of take-off alternate aerodrome, if no indicator is allocated. For aerodromes~~

not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.

RIF/ The route details to the revised destination aerodrome, following by the ICAO four-letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.

Examples: RIF/DTA HEC KLAX  
RIF/ESP G94 CLA YPPH

RMK/ Any other plain language remarks when required by the appropriate ATS authority or deemed necessary.

<b>ITEM 19: SUPPLEMENTARY INFORMATION</b>
---

...

#### 4. Instructions for the transmission of a supplementary flight plan (SPL) message

##### *Items to be transmitted*

Transmit items as indicated hereunder, unless otherwise prescribed:

- a) AFTN Priority Indicator, Addressee Indicators <<≡, Filing Time, Originator Indicator <<≡ and, if necessary, specific identification of addressees and/or originator;
- b) commencing with <<≡ (SPL:

all symbols and data in the unshaded areas of boxes 7, 13, 16 and 18, except that the ‘)’ at the end of box 18 is *not* to be transmitted, and then the symbols in the unshaded area of box 19 down to and including the )<<≡ of box 19,

additional alignment functions as necessary to prevent the inclusion of more than 69 characters in any line of Items 18 and 19. The alignment function is to be inserted only in lieu of a space, so as not to break up a group of data,

letter shifts and figure shifts (not pre-printed on the form) as necessary;

- c) the AFTN Ending, as described below:

End-of-Text Signal

- a) one LETTER SHIFT
- b) two CARRIAGE RETURNS, one LINE FEED

Page-feed Sequence

Seven LINE FEEDS

End-of-Message Signal

Four of the letter N.

...

**7. Instructions for the completion of  
the repetitive flight plan (RPL) listing form**

...

7.4 Instructions for insertion of RPL data

...

<b>ITEM G: SUPPLEMENTARY DATA AT</b>
--------------------------------------

*INSERT* name and appropriate contact details of contact entity where information normally provided under Item 19 of the FPL is kept readily available and can be supplied without delay.

...



### APPENDIX 3. AIR TRAFFIC SERVICES MESSAGES

#### 1. Message contents, formats and data conventions

...

##### 1.2 The standard types of field

...

The standard fields of data permitted in ATS messages are as shown in the following table. The numbers in column 1 correspond with those in the reference table on page A3-30.

<i>Field type</i>	<i>Data</i>
3	Message type, number and reference data
5	Description of emergency
7	Aircraft identification and SSR Mode and Code
8	Flight rules and type of flight
9	Number and type of aircraft and wake turbulence category
10	Equipment and capabilities
13	Departure aerodrome and time
14	Estimate data
15	Route
16	Destination aerodrome and total estimated elapsed time, destination alternate aerodrome(s)
17	Arrival aerodrome and time
18	Other information
19	Supplementary information
20	Alerting search and rescue information
21	Radio failure information
22	Amendment

...

##### 1.6 Data conventions

...

###### 1.6.3 *The expression of position or route*

The following alternative data conventions shall be used for the expression of position or route:

- a) from 2 to 7 characters, being the coded designator assigned to an ATS route to be flown;
- b) from 2 to 5 characters, being the coded designator assigned to an en-route point;

- c) 4 numerics describing latitude in degrees and tens and units of minutes, followed by “N” (meaning “North”) or “S” (South), followed by 5 numerics describing longitude in degrees and tens and units of minutes, followed by “E” (East) or “W” (West). The correct number of numerics is to be made up, where necessary, by the insertion of zeros, e.g. “4620N07805W”;
- d) 2 numerics describing latitude in degrees, followed by “N” (North) or “S” (South), followed by 3 numerics describing longitude in degrees, followed by “E” (East) or “W” (West). Again, the correct number of numerics is to be made up, where necessary, by the insertion of zeros, e.g. “46N078W”;
- e) 2 or 3 to 5 characters being the coded identification of a navigation aid (normally a VOR) significant point, followed by 3 decimal numerics giving the bearing from the point in degrees magnetic followed by 3 decimal numerics giving the distance from the point in nautical miles. The correct number of numerics is to be made up, where necessary, by the insertion of zeros, e.g. a point at 180° magnetic at a distance of 40 nautical miles from VOR “FOJ” would be expressed as “FOJ180040”.

...

*Field Type 8 — Flight rules and type of flight*

Format:— <sup>\*</sup>  

a	b
---	---

SINGLE HYPHEN

<p>(a) <i>Flight Rules</i>  1 LETTER as follows:  I if IFR it is intended that the entire flight will be operated under the IFR  V if VFR it is intended that the entire flight will be operated under the VFR  Y if IFR first the flight initially will be operated under the IFR, followed by one or more subsequent changes of flight rules  Z if VFR first the flight initially will be operated under the VFR, followed by one or more subsequent changes of flight rules  <i>Note.— If the letter Y or Z is used, the point or points at which a change of flight rules is planned is to be shown as indicated in Field Type 15.</i></p>
--

\* This field shall be terminated here unless indication of the type of flight is required by the appropriate ATS authority.

...

*Field Type 10 — Equipment and Capabilities*

Format:— 

a
---

 / 

b
---

## SINGLE HYPHEN

(a) Radio Communication, Navigation and Approach Aid Equipment and Capabilities	
	1 LETTER as follows:
N	no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable
OR	S Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable ( <i>See Note 1</i> )
AND/OR	ONE OR MORE OF THE FOLLOWING LETTERS to indicate the serviceable COM/NAV/approach aid equipment serviceable and capabilities
A	(Not allocated) GBAS landing system J7 CPDLC FANS 1/A SATCOM (Iridium)
B	(Not allocated) LPV (APV with SBAS) K (MLS)
C	LORAN C L ILS
D	DME M1 Omega ATC RTF SATCOM (INMARSAT)
E1	(Not allocated) FMC WPR ACARS M2 ATC RTF (MTSAT)
E2	D-FIS ACARS M3 ATC RTF (Iridium)
E3	PDC ACARS O VOR
F	ADF P1-P9 (Not allocated) Reserved for RCP
G	(GNSS) ( <i>See Note 2</i> ) Q
H	HF RTF R (Not allocated)
I	Inertial Navigation RNP type certification PBN approved ( <i>see Note 54</i> )
J1	(Data link) CPDLC ATN VDL Mode 2 ( <i>see Note 3</i> ) T TACAN
J2	CPDLC FANS 1/A HF DL U UHF RTF
J3	CPDLC FANS 1/A VDL Mode A W RVSM approved
J4	CPDLC FANS 1/A VDL Mode 2 X MNPS approved
J5	CPDLC FANS 1/A SATCOM Z when prescribed by ATS VHF with 8.33 kHz channel spacing capability
J6	CPDLC FANS 1/A SATCOM (MTSAT) Other equipment carried or other capabilities ( <i>see Note 25</i> )
<p><i>Note 1.</i>— If the letter S is used, standard equipment is considered to be VHF RTF, ADF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.</p> <p><i>Note 2.</i>— If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ separated by a space.</p> <p><i>Note 25.</i>— If the letter Z is used, specify in Item 18 the other the equipment carried or other capabilities is to be specified in Item 18, preceded by COM/ , and/or NAV/ and/or DAT, as appropriate.</p> <p><i>Note 3.</i>— If the letter J is used, specify in Item 18 the equipment carried, preceded by DAT/ followed by one or more letters as appropriate. See RTCA/EUROCAE Interoperability Requirements Standard For ATN Baseline 1 (ATN B1 INTEROP Standard – DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.</p>	

~~Note 46.~~— Information on navigation capability is provided to ATC for clearance and routing purposes.

~~Note 54.~~— ~~Inclusion of~~ If the letter R is used, the performance based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific ~~indicates that an aircraft meets the RNP type prescribed for the route segment(s), route(s) and/or area concerned is contained in the Performance-Based Navigation Manual (Doc 9613).~~

## OBLIQUE STROKE

### (b) *Surveillance Equipment and capabilities*

ONE OR TWO LETTERS MORE of the following descriptors, to a maximum of 20 characters, to describe the serviceable surveillance equipment carried and/or capabilities on board:

SSR equipment Modes A and C

~~N Nil~~

A Transponder — Mode A (4 digits — 4 096 codes)

C Transponder — Mode A (4 digits — 4 096 codes) and Mode C

### *SSR Mode S*

~~X Transponder — Mode S without both aircraft identification and pressure-altitude transmission~~

E Transponder — Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability

H Transponder — Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability

I Transponder — Mode S, including aircraft identification, but no pressure-altitude capability

L Transponder — Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability

P Transponder — Mode S, including pressure-altitude, but no aircraft identification transmission capability

~~I Transponder — Mode S, including aircraft identification transmission, but no pressure-altitude transmission~~

S Transponder — Mode S, including both pressure altitude and aircraft identification transmission capability

X Transponder — Mode S with neither aircraft identification nor pressure-altitude capability

*Note.— Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a Mode S transponder.*

### *ADS-B*

B1 ADS-B with dedicated 1090 MHz ADS-B “out” capability

B2 ADS-B with dedicated 1090 MHz ADS-B “out” and “in” capability

U1 ADS-B “out” capability using UAT  
 U2 ADS-“out” and “in” capability using UAT  
 V1 ADS-B “out” capability using VDL Mode 4  
 V2 ADS-B “out” and “in” capability using VDL Mode 4

#### ADS-C

D1 ADS-C with FANS 1/A capabilities  
 G1 ADS-C with ATN capabilities

#### ADS equipment

D ADS capability

Alphanumeric characters not indicated above are reserved.

*Note.— Additional surveillance application should be listed in Item 18 following the indicator SUR/ .*

Examples: –S/A

–SCHJ/CDB1  
 –SAFJR/SDV1

...

*Field Type 13 — Departure aerodrome and time*

Format:–

*
a           b

#### SINGLE HYPHEN

(a) *Departure Aerodrome*

4 LETTERS, being

the ICAO four-letter location indicator allocated to the departure aerodrome as specified in Doc 7910, *Location Indicators*, or

ZZZZ if no ICAO location indicator has been allocated (*see Note 1*) or if the departure aerodrome is not known, or

AFIL if the flight plan has been filed in the air (*see Note 2*).

*Note 1.— If ZZZZ is used, the name and location of the departure aerodrome is to be shown in the Other Information Field (see Field Type 18) if this Field Type is contained in the message.*

*Note 2.— If AFIL is used, the ATS unit from which supplementary flight data can be obtained is to be shown in the Other Information Field (Field Type 18).*

- \* This field shall be terminated here in message types ~~CHG, CNL, ARR, CPL, EST, CDN, and ACP and RQS~~. It shall be terminated here in message type RQP if the estimated off-block time is not known.

(b) *Time*

4 NUMERICS giving

the estimated off-block time (EOBT) at the aerodrome in (a) in FPL, ARR, CHG, CNL, ~~and DLA~~ and RQS messages transmitted before departure and in RQP message, if known, or

the actual time of departure from the aerodrome in (a) in ALR, DEP and SPL messages, or

the actual or estimated time of departure from the first point shown in the Route Field (see Field Type 15) in FPL messages derived from flight plans filed in the air, as shown by the letters AFIL in (a).

Examples: -EHAM0730  
-AFIL1625

...

*Field Type 14 — Estimate data*

Format:— 

a	/	b	c	d	e
---	---	---	---	---	---

\*

SINGLE HYPHEN

(a) *Boundary Point (see Note 1)*

The BOUNDARY POINT expressed either by a designator consisting of 2 to 5 characters, in Geographical Coordinates, in Abbreviated Geographical Coordinates, or by bearing and distance from a ~~designated significant point (e.g. a VOR)~~.

*Note 1.— This point may be an agreed point located close to, rather than on, the FIR boundary.*

*Note 2.— See 1.6 for data conventions.*

...







*Field Type 18 — Other information*

*Note.— Use of indicators not included under this item may result in data being rejected, processed incorrectly or lost.*

Hyphens or oblique strokes should only be used as prescribed below.

Format:— a

$$- \begin{array}{|c|} \hline \text{ } \\ \hline \end{array} \begin{array}{c} \textit{or} \\ \text{(sp)} \end{array} \begin{array}{|c|} \hline \text{ } \\ \hline \end{array} \begin{array}{c} \text{(sp) * (sp)} \\ \text{ } \end{array} \begin{array}{|c|} \hline \text{ } \\ \hline \end{array}$$
  
 (\* additional elements as necessary)

SINGLE HYPHEN

(a) 0 (zero) if no other information,

*OR,*

Any other necessary information in the ~~preferred~~ sequence shown hereunder, in the form of the appropriate indicator selected from those defined hereunder followed by an oblique stroke and the information to be recorded:

**STS/** Reason for special handling by ATS, e.g. a search and rescue mission, as follows:

ALTRV: for a flight operated in accordance with an altitude reservation;

ATFMX: for a flight approved for exemption from ATFM measures by the appropriate ATS authority;

FFR: fire-fighting;

FLTCK: flight check for calibration of nav aids;

HAZMAT: for a flight carrying hazardous material;

HEAD: a flight with Head of State status;

HOSP: for a medical flight declared by medical authorities;

HUM: for a flight operating on a humanitarian mission;

MARSA: for a flight for which a military entity assumes responsibility for separation of military aircraft;

MEDEVAC: for a life critical medical emergency evacuation;

NONRVSM: for a non-RVSM capable flight intending to operate in RVSM airspace;

SAR: for a flight engaged in a search and rescue mission; and

STATE: for a flight engaged in military, customs or police services.

Other reasons for special handling by ATS shall be denoted under the designator **RMK/**.

**PBN/** Indication of RNAV and/or RNP capabilities. Include as many of the descriptors below, as apply to the flight, up to a maximum of 8 entries, i.e. a total of not more than 16 characters.

<b>RNAV SPECIFICATIONS</b>	
A1	RNAV10 (RNP 10)
B1	RNAV 5 all permitted sensors
B2	RNAV 5 GNSS
B3	RNAV 5 DME/DME
B4	RNAV 5 VOR/DME
B5	RNAV 5 INS or IRS
B6	RNAV 5 LORANC
C1	RNAV 2 all permitted sensors
C2	RNAV 2 GNSS
C3	RNAV 2 DME/DME
C4	RNAV 2 DME/DME/IRU
D1	RNAV 1 all permitted sensors
D2	RNAV 1 GNSS
D3	RNAV 1 DME/DME
D4	RNAV 1 DME/DME/IRU
<b>RNP SPECIFICATIONS</b>	
L1	RNP 4
O1	Basic RNP 1 all permitted sensors
O2	Basic RNP 1 GNSS
O3	Basic RNP 1 DME/DME
O4	Basic RNP 1 DME/DME/IRU
S1	RNP APCH
S2	RNP APCH with BAR-VNAV
T1	RNP AR APCH with RF (special authorization required)
T2	RNP AR APCH without RF (special authorization required)

Combinations of alphanumeric characters not indicated above are reserved.

~~EET/~~ — Significant points or FIR boundary designators and accumulated estimated elapsed times to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.

~~Examples: EET/CAP0745 XYZ0830  
 \_\_\_\_\_ EET/EINN0204~~

~~RIF/~~ — The route details to the revised destination aerodrome, followed by the ICAO four letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.

~~\_\_\_\_\_ Examples: RIF/DTA HEC KLAX  
 \_\_\_\_\_ Examples: RIF/ESP G94 CLA YPPH  
 \_\_\_\_\_ Examples: RIF/LEMD~~

- ~~REG/~~ — The registration markings of the aircraft, if different from the aircraft identification in Item 7.
- ~~SEL/~~ — SELCAL Code, if so prescribed by the appropriate ATS authority.
- ~~OPR/~~ — Name of the operator, if not obvious from the aircraft identification in Item 7.
- ~~STS/~~ — Reason for special handling by ATS, e.g. hospital aircraft, one engine inoperative, e.g. STS/HOSP, STS/ONE ENG INOP.
- ~~TYP/~~ — Type(s) of aircraft, preceded if necessary by number(s) of aircraft, if ZZZZ is inserted in Item 9.
- ~~PER/~~ — Aircraft performance data, if so prescribed by the appropriate ATS authority.
- ~~COM/~~ — Significant data related to communication equipment as required by the appropriate ATS authority, e.g. COM/UHF only.
- ~~DAT/~~ — Significant data related to data link capability, using one or more of the letters S, H, V and M, e.g. DAT/S for satellite data link, DAT/H for HF data link, DAT/V for VHF data link, DAT/M for SSR Mode S data link.
- NAV/ Significant data related to navigation equipment, other than specified in PBN/, as required by the appropriate ATS authority. Indicate GNSS augmentation under this indicator, with a space between two or more methods of augmentation, e.g. NAV/GBAS SBAS.
- COM/ Indicate communications applications or capabilities not specified in Item 10a.
- DAT/ Indicate data applications or capabilities not specified in Item 10a.
- SUR/ Include surveillance applications or capabilities not specified in Item 10b.
- DEP/ Name and location of departure aerodrome, if ZZZZ is inserted in Item 13, or the ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, if AFIL is inserted in Item 13. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location as follows:
- With 4 figures describing latitude in degrees and tens and units of minutes followed by “N” (North) or “S” (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by “E” (East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W (11 characters).
- OR Bearing and distance from the nearest significant point, as follows:
- The identification of the significant point followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros, e.g. a point of 180° magnetic at a distance of 40 nautical miles from VOR “DUB” should be expressed as DUB180040.

**OR** The first point of the route (name or LAT/LONG) or the marker radio beacon, if the aircraft has not taken off from an aerodrome.

**DEST/** Name and location of destination aerodrome, if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described under DEP/ above.

**DOF/** The date of flight departure in a six figure format (YYMMDD, where YY equals the year, MM equals the month and DD equals the day).

**REG/** The nationality or common mark and registration mark of the aircraft, if different from the aircraft identification in Item 7.

**EET/** Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.

Examples: EET/CAP0745 XYZ0830  
EET/EINN0204

**SEL/** SELCAL Code, for aircraft so equipped.

**TYP/** Type(s) of aircraft, preceded if necessary without a space by number(s) of aircraft and separated by one space, if ZZZZ is inserted in Item 9.

Example: -TYP/2F15, 5F5, 3B2

~~ALTN/~~ ~~Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16.~~

~~RALT/~~ ~~Name of en route alternate aerodrome(s).~~

**CODE/** Aircraft address (expressed in the form of an alphanumerical code of six hexadecimal characters) when required by the appropriate ATS authority. Example: "F00001" is the lowest aircraft address contained in the specific block administered by ICAO.

**DLE/** Enroute delay or holding, insert the significant point(s) on the route where a delay is planned to occur, followed by the length of delay using four figure time in hours and minutes (hhmm).

Example: -DLE/MDG0030

**OPR/** ICAO designator or name of the aircraft operating agency, if different from the aircraft identification in item 7.

**ORGN/** The originator's 8 letter AFTN address or other appropriate contact details, in cases where the originator of the flight plan may not be readily identified, as required by the appropriate ATS authority.

*Note.— In some areas, flight plan reception centres may insert the ORGN/ identifier and originator's AFTN address automatically.*

**PER/** Aircraft performance data, indicated by a single letter as specified in the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS, Doc 8168), *Volume I — Flight Procedures*, if so prescribed by the appropriate ATS authority.

**ALTN/** Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.

**RALT/** ICAO four letter indicator(s) for en-route alternate(s), as specified in Doc 7910, *Location Indicators*, or name(s) of en-route alternate aerodrome(s), if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.

**TALT/** ICAO four letter indicator(s) for take-off alternate, as specified in Doc 7910, *Location Indicators*, or name of take-off alternate aerodrome, if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.

**RIF/** The route details to the revised destination aerodrome, following by the ICAO four-letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.

Examples:–RIF/DTA HEC KLAX  
–RIF/ESP G94 CLA YPPH

**RMK/** Any other plain language remarks when required by the appropriate ATS authority or deemed necessary.

Examples:–0  
–STS/MEDEVAC  
–EET/015W0315 020W0337 030W0420 040W0502  
–STS/ONE ENG INOP  
–DAT/S

...

*Field Type 22 — Amendment*

<b>FIELD TYPE 22</b>
----------------------

<i>Previous type of field or symbol</i>	<i>This type of field is used in</i>	<i>Next type of field or symbol</i>
4618	CHG	*22 or)
16	CDN	*22 or)

\* Indicates that further fields of this type may be added

...

## RULES FOR THE COMPOSITION OF ATS MESSAGES

(See Sections 1.3 to 1.8 of this Appendix)

...

### STANDARD ATS MESSAGES AND THEIR COMPOSITION

DESIGNATOR	...	...	Other information
MESSAGE TYPE			18
Alerting		ALR	
Radiocommunication failure		RCF	
Filed flight plan		FPL	
Delay		DLA	18
Modification		CHG	18
Flight plan cancellation		CNL	18
Departure		DEP	18
Arrival		ARR	
Current flight plan		CPL	
Estimate		EST	
Coordination		CDN	
Acceptance		ACP	
Logical acknowledgement message		LAM	
Request flight plan		RQP	18
Request supplementary flight plan		RQS	18
Supplementary flight plan		SPL	

...

#### *The expression of position or route*

The following alternative data conventions shall be used for the expression of position or route:

...

- (e) 2 or 3 to 5 characters being the coded identification of a navigation aid (normally a VOR) significant point, followed by 3 decimal numerics giving the bearing from the point in degrees magnetic followed by 3 decimal numerics giving the distance from the point in nautical miles. The correct number of numerics is to be made up, where necessary, by insertion of zeros, e.g. a point at 180° magnetic at a distance of 40 nautical miles from VOR "FOJ" would be expressed as "FOJ180040".

...

## 2. Examples of ATS messages

...

### 2.2 Emergency messages

#### 2.2.1 Alerting (ALR) message

##### 2.2.1.1 Composition

...

9 Type of aircraft and wake turbulence category	–	10 Equipment and capabilities
---	---	----------------------------------

...

16 Destination aerodrome and total estimated elapsed time, destination alternate aerodrome(s)
---

...

##### 2.2.1.2 Example

The following is an example of an alerting message relating to an uncertainty phase, sent by Athens Approach Control to Belgrade Centre and other ATS units, in respect of a flight from Athens to Munich.

```
(ALR-INCERFA/LGGGZAZX/OVERDUE
-FOX236/A360024-IM
-C141/H-S/CD
-LGAT1020
-N0430F220 B9 3910N02230W/N0415F240 B9 IVA/N0415F180 B9
-EDDM0227 EDDF
-REG/A43213 EET/LYBE0020 EDM10133 REG/A43213-OPR/USAF RMK/NO
POSITION REPORT SINCE DEP PLUS 2 MINUTES
-E/0720 P/12 R/UV J/LF D/02 014 C ORANGE A/SILVER C/SIGGAH
-USAF LGGGZAZX 1022 126.7 GN 1022 PILOT REPORT OVER NDB ATS
UNITS ATHENS FIR ALERTED NIL)
```

##### 2.2.1.2.1 Meaning

Alerting message — uncertainty phase declared by Athens due no position reports and no radio contact since two minutes after departure — aircraft identification FOX236 — IFR, military flight — Starlifter, heavy wake turbulence category, equipped with standard communications, navigation and approach aid equipment for the route, SSR transponder with Modes A (4 096 code capability) and C — ADS capability — last assigned Code 3624 — departed Athens 1020 UTC — cruising speed for first portion of route 430 knots, first requested cruising level FL 220 — proceeding on airway Blue 9 to 3910N2230W where TAS would be changed to 415 knots and FL240 would be requested — proceeding on airway Blue 9 to Ivanic Grad VOR where FL 180 would be requested, maintaining TAS of 415 knots and FL240 would be requested — proceeding on airway Blue 9 to Munich, total estimated elapsed time 2 hours and 27 minutes — destination alternate is Frankfurt — aircraft registration A43213 — accumulated estimated elapsed

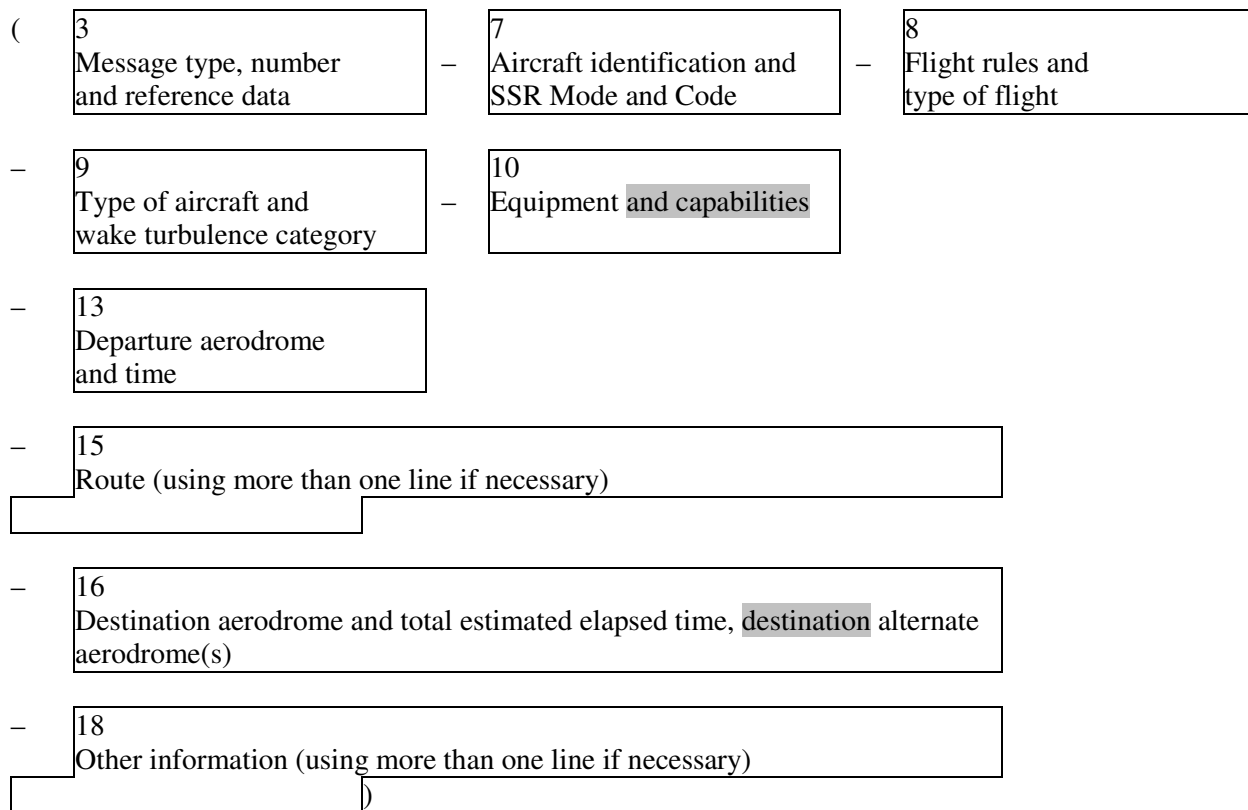
times at the Belgrade and Munich FIR boundaries 20 minutes and 1 hour and 33 minutes respectively — aircraft registration ~~A43213~~ — the aircraft is operated by the USAF — no position report has been received since 2 minutes after departure — endurance 7 hours and 20 minutes after take-off — 12 persons on board — portable radio equipment working on VHF 121.5 MHz and UHF 243 MHz is carried — life jackets fitted with lights and fluorescein are carried — 2 dinghies with orange covers are carried, have a total capacity for 14 persons — aircraft colour is silver — pilot's name is SIGGAH — operator is USAF — Athens approach control was the last unit to make contact at 1022 UTC on 126.7 MHz when pilot reported over GN runway locator beacon — Athens approach control have alerted all ATS units within Athens FIR — no other pertinent information.

...

### 2.3 Filed flight plan and associated update messages

#### 2.3.1 Filed flight plan (FPL) message

##### 2.3.1.1 Composition



##### 2.3.1.2 Example

The following is an example of a filed flight plan message sent by London Airport to Shannon, Shanwick and Gander Centres. The message may also be sent to the London Centre or the data may be passed to that centre by voice.

```

(FPL-TPRACA101-IS
-B707MB773/H-CHOPV/CD
-EGLL1400
-N0450F310 G1-UG1-L9 UL9 STU285036/M082F310 UG1-UL9 52N015W LIMRI
    
```



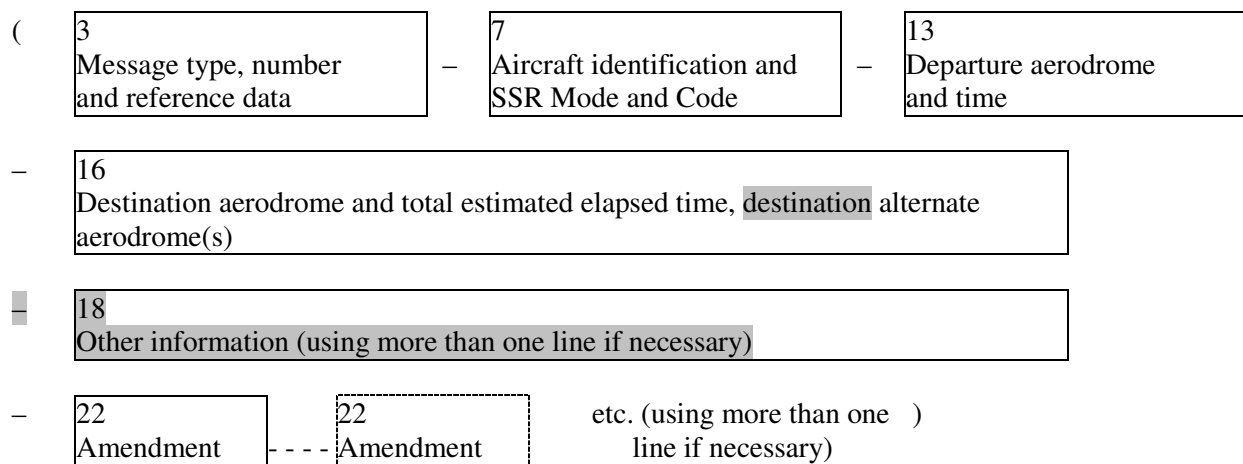
52N020W 52N030W 50N040W 49N050W  
 –CYQX0455 CYYR  
 –EET/EISNN0026 EGGX0111 020W0136 CYQX0228 040W0330 050W0415 SEL/FJEL)

### 2.3.1.2.1 *Meaning*

Filed flight plan message — aircraft identification ~~TPR~~ACA101 — IFR, scheduled flight — a Boeing 707, ~~medium~~777-300, heavy wake turbulence category equipped with Loran C, HF RTF, VOR, ~~Doppler~~, VHF RTF and SSR transponder with Modes A (4 096 code capability) and C — ~~ADS capability~~ — departure aerodrome is London, estimated off-block time 1400 UTC — cruising speed and requested flight level for the first portion of the route are 450 knots and FL 310 — the flight will proceed on Airways ~~Green-1~~Lima 9 and Upper ~~Green-1~~Lima 9 to a point bearing 285 degrees magnetic and 36 NM from the Strumble VOR. From this point the flight will fly at a constant Mach number of .82, proceeding on Upper ~~Green-1~~Lima 9 to 52N15W LIMRI; then to 52N20W; to 52N30W; to 50N40W; to 49N50W; to destination Gander, total estimated elapsed time 4 hours and 55 minutes — ~~destination~~ alternate is Goose Bay — captain has notified accumulated estimated elapsed times at significant points along the route, they are at the Shannon FIR boundary 26 minutes, at the Shanwick Oceanic FIR boundary 1 hour and 11 minutes, at 20W 1 hour and 36 minutes, at the Gander Oceanic FIR boundary 2 hours and 28 minutes, at 40W 3 hours and 30 minutes and at 50W 4 hours and 15 minutes — SELCAL code is FJEL.

### 2.3.2 *Modification (CHG) message*

#### 2.3.2.1 *Composition*



#### 2.3.2.2 *Example*

The following is an example of a modification message sent by Amsterdam Centre to Frankfurt Centre correcting information previously sent to Frankfurt in a filed flight plan message. It is assumed that both centres are computer-equipped.

(CHGA/F016A/F014-GABWE/A2173-EHAM0850-EDDF-DOF/080122-8/I-16/EDDN)

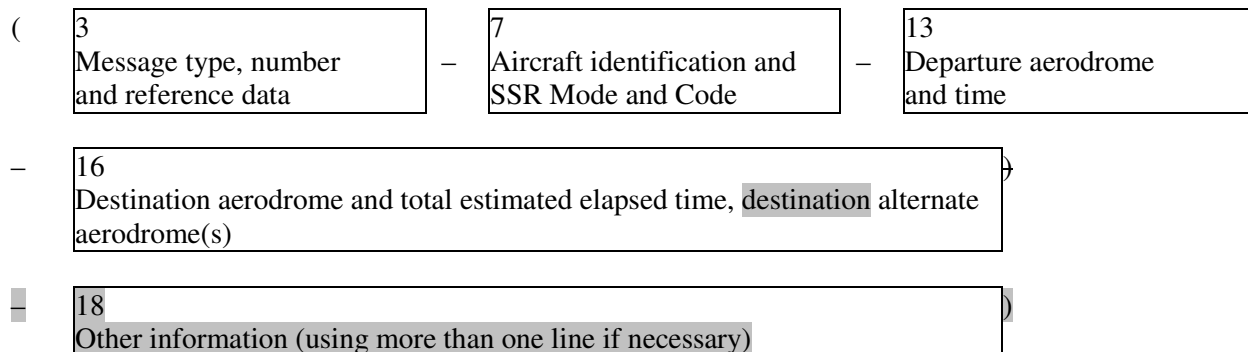
#### 2.3.2.2.1 *Meaning*

Modification message – Amsterdam and Frankfurt computer unit identifiers A and F, followed by serial number (016) of this message sent by Amsterdam, repeat of computer unit identifiers followed by serial number (014) of the related filed flight plan message – aircraft identification GABWE, SSR Code 2173

operating in Mode A, en route from Amsterdam **EOBT0850** to Frankfurt **date of flight 22 Jan 2008** – Field Type 8 of the related filed flight plan message is corrected to IFR – Field Type 16 of the related filed flight plan is corrected, the new destination is Nürnberg.

### 2.3.3 Flight plan cancellation (CNL) message

#### 2.3.3.1 Composition



#### 2.3.3.2 Example 1

The following is an example of a flight plan cancellation message sent by an ATS unit to all addressees of a filed flight plan message previously sent by that unit.

(CNL-DLH522-EDBB**0900**-LFPO-0)

##### 2.3.3.2.1 Meaning

Flight plan cancellation message – cancel the flight plan of aircraft identification DLH522 – flight planned from Berlin **EOBT0900** to Paris – **no other information**.

#### 2.3.3.3 Example 2

The following is an example of a flight plan cancellation message sent by a centre to an adjacent centre. It is assumed that both centres are equipped with ATC computers.

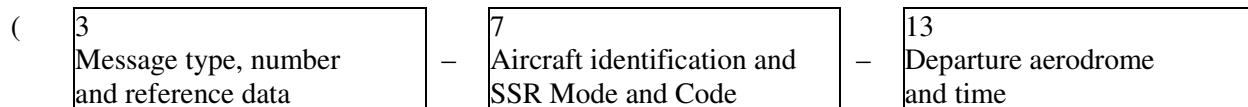
(CNLF/B127F/B055-BAW580-EDDF**1430**-EDDW-0)

##### 2.3.3.3.1 Meaning

Flight plan cancellation message – identifiers of sending and receiving ATC computer units F and B, followed by serial number (127) of this message, repeat of computer unit identifiers followed by serial number (055) of current flight plan message previously transmitted – cancel the flight plan of aircraft identification BAW580 – flight planned from Frankfurt **EOBT1430** to Bremen – **no other information**.

### 2.3.4 Delay (DLA) message

#### 2.3.4.1 Composition



- 16  
Destination aerodrome and total estimated elapsed time, destination alternate aerodrome(s)
- 18  
Other information (using more than one line if necessary)

#### 2.3.4.2 Example

The following is an example of a delay message from a departure aerodrome, or from a parent unit handling communications for a departure aerodrome, to each addressee of a filed flight plan message.

(DLA-KLM671-LIRF0900-LYDU-0)

##### 2.3.4.2.1 Meaning

Delay message – aircraft identification KLM671 – revised estimated off-block time Fiumicino 0900 UTC destination Dubrovnik – no other information.

### 2.3.5 Departure (DEP) message

#### 2.3.5.1 Composition

- ( 3 Message type, number and reference data – 7 Aircraft identification and SSR Mode and Code – 13 Departure aerodrome and time
- 16  
Destination aerodrome and total estimated elapsed time, destination alternate aerodrome(s)
  - 18  
Other information (using more than one line if necessary)

#### 2.3.5.2 Example

The following is an example of a departure message from a departure aerodrome, or from a parent unit handling communications for a departure aerodrome, to each addressee of a filed flight plan message.

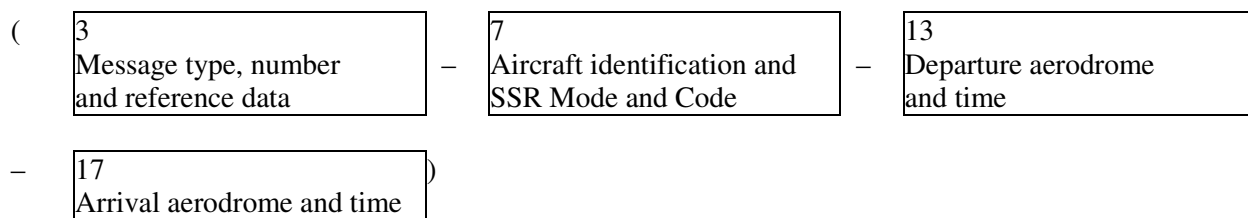
(DEP-CSA4311-EGPD1923-ENZV-0)

##### 2.3.5.2.1 Meaning

Departure message – aircraft identification CSA4311 – departed from Aberdeen at 1923 UTC – destination Stavanger – no other information.

### 2.3.6 Arrival (ARR) message

#### 2.3.6.1 Composition



#### 2.3.6.2 Example 1

The following is an example of an arrival message sent from the arrival aerodrome (= destination) to the departure aerodrome.

(ARR-CSA406-LHBP-LKPR0913)

#### 2.3.6.2.1 Meaning

Arrival message — aircraft identification CSA406 — departed from Budapest/Ferihegy — landed at Prague/Ruzyně Airport at 0913 UTC.

#### 2.3.6.3 Example 2

The following is an example of an arrival message sent for an aircraft which has landed at an aerodrome for which no ICAO location indicator has been allocated. The SSR Code would not be meaningful.

(ARR-~~HELH3~~HHE13-EHAM-1030 DEN HELDER)

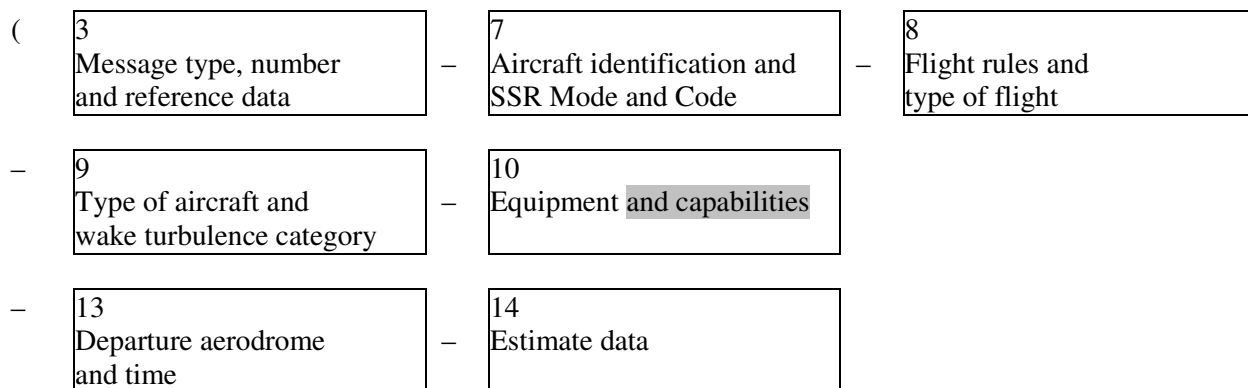
#### 2.3.6.3.1 Meaning

Arrival message aircraft identification ~~HELH3~~HHE13 — departed from Amsterdam — landed at Den Helder heliport at 1030 UTC.

## 2.4 Coordination messages

### 2.4.1 Current flight plan (CPL) message

#### 2.4.1.1 Composition



- 15  
Route (using more than one line if necessary)
- 16  
Destination aerodrome and total estimated elapsed time, **destination** alternate aerodrome(s)
- 18  
Other information (using more than one line if necessary)

#### 2.4.1.2 Example 1

The following is an example of a current flight plan message sent from Boston Centre to New York Centre on a flight which is en route from Boston to La Guardia Airport.

```
(CPL-UAL621/A5120-IS
-DC9A320/M-S/CD
-KBOS-HFD/1341A220A200A
-N0420A220 V3 AGL V445
-KLGA
-0)
```

#### 2.4.1.3 Example 2

The following is an example of the same current flight plan message, but in this case the message is exchanged between ATC computers.

```
(CPLBOS/LGA052-UAL621/A5120-IS
-DC9A320/M-S/CD
-KBOS-HFD/1341A220A200A
-N0420A220 V3 AGL V445
-KLGA
-0)
```

*Note.— The messages in Examples 1 and 2 are identical except that the Message Number of Example 2 does not appear in Example 1.*

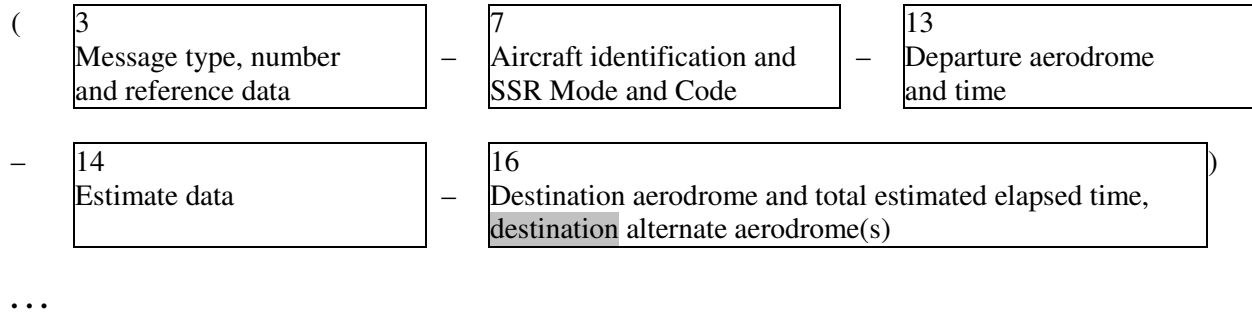
#### 2.4.1.4 Meaning

Current flight plan message [with sending unit identity (BOS) and receiving unit identity (LGA), followed by the serial number of this message (052)] — aircraft identification UAL621, last assigned SSR Code 5120 in Mode A — IFR, scheduled flight — one-~~DC9~~A320, medium wake turbulence category, equipped with standard communications, navigation and approach aid equipment for the route and SSR transponder with Modes A (4 096 code capability) and C — ~~ADS capability~~ — departed Boston — the flight is estimated to cross the Boston/New York “boundary” at point HFD at 1341 UTC, cleared by the Boston Centre at altitude 22 000 feet but to be at or above altitude 20 000 feet at HFD — TAS is 420 knots, requested cruising level is altitude 22 000 feet — the flight will proceed on airway V3 to

reporting point AGL thence on airway V445 — destination is La Guardia Airport — no other information.

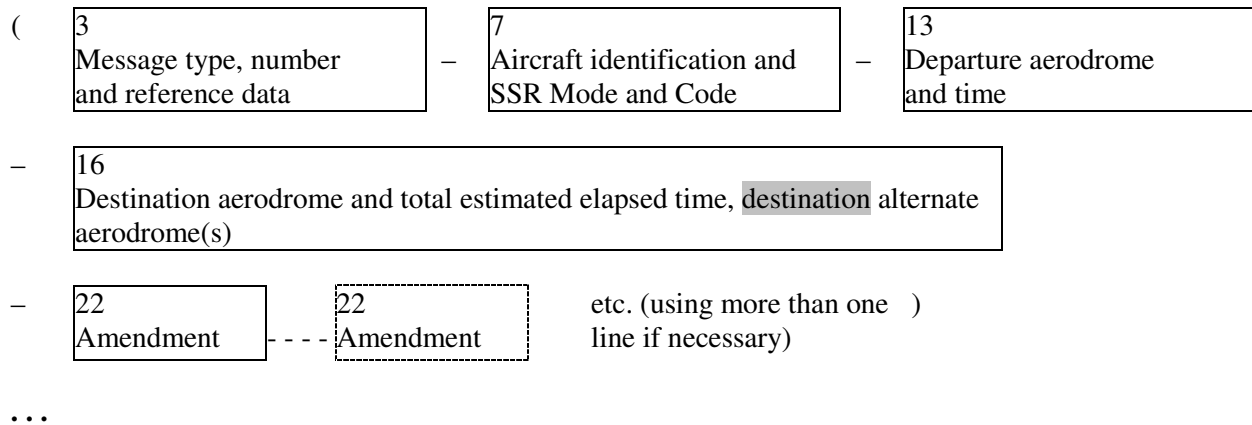
#### 2.4.2 *Estimate (EST) message*

##### 2.4.2.1 *Composition*



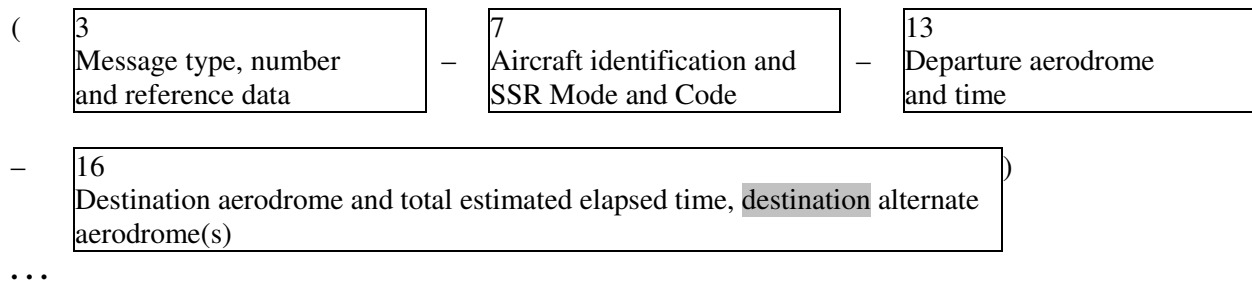
#### 2.4.3 *Coordination (CDN) message*

##### 2.4.3.1 *Composition*



#### 2.4.4 *Acceptance (ACP) message*

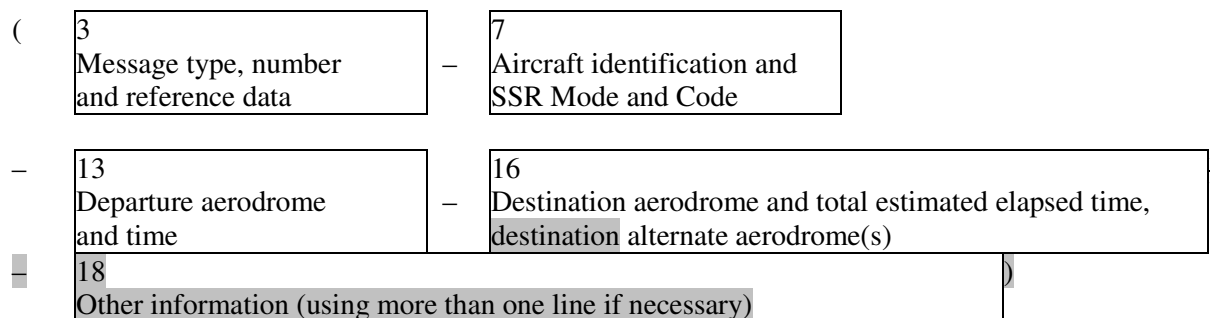
##### 2.4.4.1 *Composition*



## 2.5 Supplementary messages

### 2.5.1 Request flight plan (RQP) message

#### 2.5.1.1 Composition



#### 2.5.1.2 Example

The following is an example of a request flight plan message sent by a centre to an adjacent centre after receipt of an estimate message, for which no corresponding filed flight plan message had been received previously.

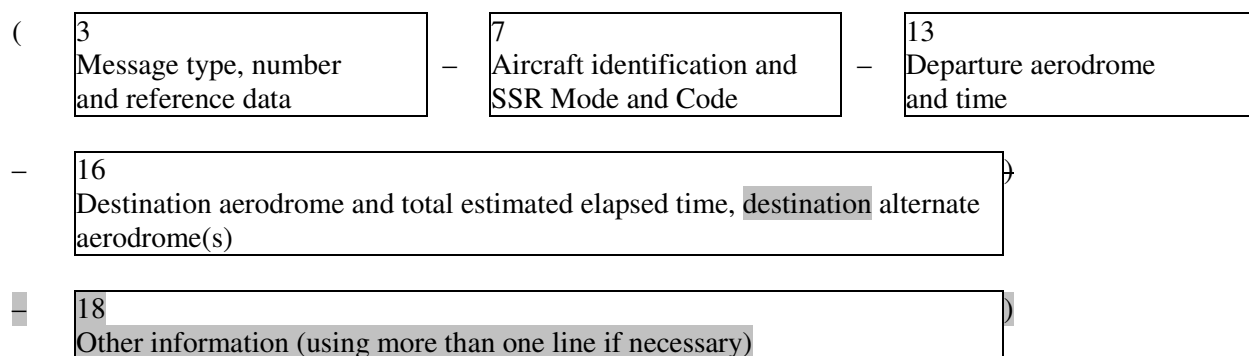
(RQP-PHOEN-EHRD-EDDL-0)

#### 2.5.1.2.1 Meaning

Request flight plan message – aircraft identification PHOEN departed from Rotterdam – destination Düsseldorf – no other information.

### 2.5.2 Request supplementary flight plan (RQS) message

#### 2.5.2.1 Composition



#### 2.5.2.2 Example

The following is an example of a request flight plan message sent by an ATS unit to the ATS unit serving the departure aerodrome requesting information contain in the flight plan form, but not transmitted in the filed or current filed flight plan messages.

(RQS-KLM405/A4046-EHAM-CYMX-0)

### 2.5.2.2.1 *Meaning*

Request supplementary flight plan message – aircraft identification KLM405/SSR Code 4046 operating in Mode A – departure aerodrome is Amsterdam – destination aerodrome is Mirabel – **no other information.**

## 2.5.3 *Supplementary flight plan (SPL) message*

### 2.5.3.1 *Composition*

