



Agenda Item 2: **Based on the ACG/7 meeting results, review of proposals for the
GREPECAS/15 concerning the future treatment of ATM and CNS matters**

**TERMS OF REFERENCE, WORK PROGRAMME AND MEMBERSHIP OF THE
ATM/CNS/SG AND ATM AND CNS COMMITTEES**

(Presented by the Secretariat)

SUMMARY

This working paper presents information on the Terms of Reference, Work Programme and Membership of the ATM/CNS/SG and ATM and CNS Committees as approved by the GREPECAS/14 Meeting.

References:

- GREPECAS/14 Meeting Report
- GREPECAS Procedure Handbook

1. Action suggested

1.1 The Meeting will discuss under Agenda Item 2 the restructuring of the ATM/CNS Sub-Group mechanism. In order to support such discussions, the Meeting is invited to take into account **Appendix A** to this working paper that presents the Terms of Reference, Work Programme and Membership of the ATM/CNS/SG and the ATM and CNS Committees, as approved by GREPECAS/14 Meeting.

APPENDIX A

AIR TRAFFIC MANAGEMENT/COMMUNICATIONS, NAVIGATION AND SURVEILLANCE SUBGROUP (ATM/CNS/SG)

1. Terms of reference

- a) To promote and follow-up the implementation of the CNS/ATM systems required in the CAR/SAM ANP and to place special emphasis on identifying, evaluating and proposing, according to the established procedures, the corresponding corrective actions to the /deficiencies affecting air operations.
- b) To carry out permanent coordination with various GREPECAS Contributory Bodies in order to ensure appropriate integration of all tasks contributing to the implementation of the CAR/SAM ANP.
- c) To develop and harmonize, in the CAR/SAM Regions, action plans to facilitate implementation of CNS/ATM systems, in order to reach a consistent and coordinated implementation, especially in multinational projects of regional/inter-regional nature, taking into account homogeneous areas and main air traffic flows contained in the CAR/SAM FASID.
- d) Taking into consideration the material prepared by the different ICAO groups of experts in the CNS/ATM field, develop guidance material to keep and upgrade the technical and operational quality for the provision of CNS/ATM services.

2. Work programme

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
ATM/CNS/1	Follow up, coordinate and manage the work of the CNS and ATM Committees.	A	Permanent	
ATM/CNS/2	To establish inter- and intra-regional coordination on CNS/ATM systems applications.	A	Permanent	
ATM/CNS/3	To inform on the development of the new air navigation systems, SARPs development, as well as the work of the ICAO CNS/ATM Groups of Experts.	A	Permanent	
ATM/CNS/4	Refer urgent (U) priority deficiencies, with proposed corrective action, to the Aviation Safety Board.	A	Permanent	
ATM/CNS/5	Supervise the work programme of the Automation Task Force	A	Permanent	

3. **Priority**

- A** High priority tasks, on which work should be speeded up.
- B** Medium priority tasks, on which work should commence as soon as possible, but without detriment to priority **A** tasks.
- C** Tasks of lesser priority, on which work should commence as time and resources allow, but without detriment to Priority **A** and **B** tasks.

4. **Composition**

The ATM/CNS Subgroup is composed by the joint membership of the members of the ATM and CNS Committees.

5. **Chairperson**

Chairman	Mr. Claudio Arellano (Mexico)
Vice-Chairman	Mr. Julio Cesar de Souza Pereira (Brazil)

TERMS OF REFERENCE AND WORK PROGRAMME OF THE ATM COMMITTEE

1. Terms of reference

- a) Assist and guide CAR and SAM States/Territories/International Organisations in the implementation of ATS safety management programmes.
- b) Study, analyse, propose, and do the follow-up of projects that allow the optimisation of Airspace Organisation and Management (AOM), Air Traffic Services (ATS), Air Traffic Flow Management (ATFM), and Search and Rescue (SAR) in the CAR/SAM Regions, with a view to comply with ICAO strategic objectives, based on Global Plan Initiatives (GPI).
- c) Be informed and analyse guidance material developed on ATM systems by other ICAO experts group for its possible adoption in the CAR and SAM Regions.

Number	Task description	Priority	Date	
			Start	End
General				
ATM-1	Based on the methodology standardised by the ICAO Council, identify, assess, and report air navigation deficiencies, assigning priorities.	N/A	Permanent	N/A
ATM-2	Monitor the corresponding ATM parts of the CAR/SAM Regional CNS/ATM Implementation Plan, and keep them updated as a working document.	N/A	Permanent	N/A
ATM-3	Analyse and evaluate 300 ft or more large-height deviations (LHD)	A	Permanent	N/A
ATM-4	Identify activities for the implementation of new meteorological services related to both training and the implementation of the new CNS/ATM systems. Note: Joint MET/ATM Task Force (AERMETSG Decision 6/24)	B	2005	2009
Performance-based navigation (PBN) - GPI 5, 7, 8, 10, 11, 12, 20, 21				
ATM-5	Prepare a performance objective for RNAV and RNP implementation, taking into account the ICAO performance-based navigation concept.	A	PHASE 1	
			2005	2010
			PHASE 2	
			2011	2015

Number	Task description	Priority	Date	
			Start	End
Flexible use of airspace - GPI 1				
ATM-6	Prepare a performance objective for the implementation of the flexible use of airspace, based on the Global Air Navigation Plan guidelines.	B	2007	2010
Air traffic flow management (ATFM)- GPI 1, 6, 7				
ATM-7	Prepare a performance objective for the implementation of CAR and SAM harmonized inter-regional air traffic flow management (ATFM), based on the Global Air Navigation Plan guidelines.	A	2006	2015
ATM automation - GPI 6, 7, 9, 17, 18, 19				
ATM-8	Develop a performance objective for the implementation/integration of ATM automated systems, based on Global Air Navigation Plan guidelines	Together with CNSC	2006	2015
Search and rescue				
ATM-9	Develop a quality assurance programme for search and rescue services (SAR), according to the IAM/SAR manual, for its future implementation in the CAR/SAM Regions.	B	August 2003	ATMC/6

3. **A** High priority tasks, on which work should be speeded up.
B Medium priority tasks, on which work should commence as soon as possible, but without detriment to priority **A** tasks.
C Tasks of lesser priority, on which work should commence as time and resources allow, but without detriment to Priority **A** and **B** tasks.

4. **Composition**

Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba**, Dominican Republic, Ecuador, France, Guatemala, Haiti, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, United States, Uruguay*, Venezuela, ARINC, COCESNA, IATA, IFALPA, IFATCA and SITA.

5. *Chairman: Roberto Arca (Uruguay)
**Vice-Chairman: Fidel Ara (Cuba)

IMPLEMENT RNP APPROACHES			
Benefits			
Efficiency	• Improvements in capacity and efficiency at aerodromes.		
Safety	• Improvements in safety at aerodromes.		
Strategy (2008-2015)			
TASK	DESCRIPTION	START- END	STATUS
AOM	<ul style="list-style-type: none"> • development of a regional strategy and work programme for implementation of RNP approaches at aerodromes where aircraft weighing 5700 kg or more are operated, on the basis of the transition plan as follows: Stage 1 – Evaluate existing procedures, determine compatibility of use with RNAV overlay routes Stage 2 – Carry out cost benefit analysis and safety assessments of RNAV procedures Stage 3 – Use existing radar vectoring patterns as the basis for RNAV departure and arrival tracks Stage 4 – Evaluating and simulation of procedures Stage 5 – Design stand-alone RNAV procedures Stage 6 – Training phase Stage 7 – Publish new procedures and introduce into new service, meet AIRAC dates Stage 8 – Operational review Stage 9 – Removal of conventional procedures • monitor implementation progress 		
References	GPI/5: performance-based navigation, GPI/7: dynamic and flexible ATS route management, GPI/8: collaborative airspace design and management, GPI/10: terminal area design and management, GPI/11: RNP and RNAV SIDs and STARs and GPI/12: FMS-based arrival procedures.		

ENHANCE CIVIL/MILITARY COORDINATION AND CO-OPERATION			
Benefits			
Efficiency	<ul style="list-style-type: none"> • increase airspace capacity; 		
Continuity	<ul style="list-style-type: none"> • allow a more efficient ATS route structure • ensure safe and efficient action in the event of unlawful interference; • make available military restricted airspace more hours of the day so that aircraft can fly on their preferred trajectories; and • improve search and rescue services. 		
Strategy (2008-2012)			
TASK	DESCRIPTION	START- END	STATUS
AOM	<ul style="list-style-type: none"> • develop guidance material on civil/military coordination and co-operation to be used by States/Territories to develop national policies, procedures and rules; • establish civil/military coordination bodies; • arrange for permanent liaison and close cooperation between civil ATS units and appropriate air defense units; • conduct a regional review of special use airspace; • develop a regional strategy and work programme for implementation of flexible use of airspace in a phased approach beginning with more dynamic sharing of restricted airspace while working towards full integration of civil and military aviation activities by 2012; and • monitor implementation progress 		
References	GPI/1: flexible use of airspace.		

ALIGN UPPER AIRSPACE CLASSIFICATION			
Benefits			
Efficiency	<ul style="list-style-type: none"> • better utilization of data link communication; • optimize use of flight plan data processing systems; • enhance airspace management coordination, message exchange capabilities and utilization of flexible and dynamic airspace management techniques; 		
Continuity	<ul style="list-style-type: none"> • harmonization of interregional coordination processes; • improvement of airspace interoperability and seamlessness; and • ensure the provision of positive air traffic control services to all aircraft operations. 		
Strategy (Target: 2008)			
TASK	DESCRIPTION	START- END	STATUS
AOM	<ul style="list-style-type: none"> • Develop a regional implementation strategy and work programme for the implementation of ICAO Annex 11 airspace Class A above FL 195. • identify key stakeholders, ATCOs, pilots, and relevant international organisations for coordination and cooperation on changes for new airspace organization, using a CDM process; • develop new national airspace organization in accordance with ICAO provisions, as needed; • Coordinate changes for regional and national documents; <ul style="list-style-type: none"> • Doc 8733, CAR/SAM ANP; • AIP; and, • ATS letters of agreement • Carry out improvements in ground systems to support new airspace organization configurations, as necessary; • Publish national regulatory material for implementation of new rules and procedures to reflect airspace organizational changes; • Train ATCOs and pilots in new procedures, including all civil and military airspace users, as required; • monitor implementation progress. 		
References	GPI/4: align upper airspace classification.		

IMPROVE DEMAND AND CAPACITY BALANCING			
Benefits			
Environment	• reduction in weather- and traffic-induced holding, leading to reduced fuel consumption and emissions;		
Efficiency	• improved and smoother traffic flows; • improved predictability; • improved management of excess demand of service in ATC sectors and aerodromes; • improved operational efficiency; • enhanced airport capacity; • enhanced airspace capacity; and		
Safety	• improved safety management.		
Strategy Near term (2008)			
TASK	DESCRIPTION	START- END	STATUS
ATFM (DCB)	<ul style="list-style-type: none"> • identify key stakeholders (ATC service providers and users, military authorities, airport authorities, aircraft operators and relevant international organisations) for purposes of coordination and cooperation, using a CDM process; • identify and analyse traffic flow problems and develop methods for improving efficiencies on gradual basis, as needed, through enhancements in current: <ul style="list-style-type: none"> ○ airspace organization and management (AOM) and airway structure (unidirectional routes), ○ communication, navigation and surveillance systems, ○ aerodrome capacity, ○ ATS capacity, and ○ ATS letters of agreement; • define common elements of situational awareness between FMUs; <ul style="list-style-type: none"> ○ common traffic displays, ○ common weather displays (Internet), ○ communications (teleconferences, web), and ○ daily teleconference/messages methodology advisories; • develop methods to establish demand/capacity forecasting; • develop a regional strategy and work programme for harmonized implementation of ATFM service; and, 		

Medium term (2010)			
	<ul style="list-style-type: none"> • develop a regional strategy for the implementation of flexible use of airspace (FUA); <ul style="list-style-type: none"> ○ assess use of airspace management processes; ○ improve current national airspace management to adjust dynamic changes in traffic flows in tactical stage; ○ introduce improvements in ground ATS systems and associated procedures for the extension of FUA with dynamic airspace management processes; ○ implement dynamic ATC sectorization in order to provide the best balance between demand and capacity to respond in real-time to changing situations in traffic flows, and to accommodate in short-term the preferred routes of users; • define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between Centralized ATFM units; • develop regional procedures for efficient and optimum use of aerodrome and runway capacity; • develop a regional ATFM procedural manual to manage demand/capacity balancing; • develop a regional strategy and framework for the implementation of Centralized ATFM unit; • develop operational agreements between Centralized ATFM units for interregional demand/capacity balancing; and, • monitor implementation progress. 		
References	GPI/1: flexible use of airspace; GPI/6: air traffic flow management; GPI/7: dynamic and flexible ATS route management; GPI/9: Situational awareness; GPI/13: aerodrome design and management; GPI/14: runway operations; and GPI/16: decision support and alerting systems.		

IMPROVE ATM SITUATIONAL AWARENESS			
Benefits			
Efficiency	<ul style="list-style-type: none"> • enhanced traffic surveillance; • enhanced collaboration between flight crew and the ATM system; • improved collaborative decision-making through sharing electronic aeronautical data information; • reduction of workload for both pilots and controllers; • improved operational efficiency; • enhanced airspace capacity; 		
Safety	<ul style="list-style-type: none"> • improved implementation on a cost-effective basis; • improved available electronic terrain and obstacle data in the cockpit; • reduction of the number of controlled flight into terrain related accidents; and • improved safety management. 		
Strategy Near term (2010)			
TASK	DESCRIPTION	START- END	STATUS
ATS (ATM SDM)	<ul style="list-style-type: none"> • identify parties concerned • identify the automation level required according to the ATM service provided in airspace and international aerodromes, assessing <ul style="list-style-type: none"> ○ operational architecture design, ○ characteristics and attributes for interoperability, ○ data bases and software, and ○ technical requirements; • improve ATS interfacility communication • implement flight plan data processing system and electronic transmission tools • implement radar data sharing programs where benefits can be obtained • develop situational awareness training programmes for pilots and controllers • implement ATM surveillance systems for situational traffic information and associated procedures • implement ATS automated message exchanges, as required <ul style="list-style-type: none"> ○ FPL, CPL, CNL, DLA, etc. • implement automated radar handovers, where able; • implement ground and air electronic warnings, as needed <ul style="list-style-type: none"> ○ Conflict prediction ○ Terrain proximity ○ MSAW ○ DAIW ○ Surveillance system for surface movement • implement data link surveillance technologies and applications: ADS, CPDLC, AIDC, as required 		

Medium term (2015)			
	<ul style="list-style-type: none"> • implement additional/advanced automation support tools to increase sharing of aeronautical information <ul style="list-style-type: none"> ○ ETMS or similar ○ MET information ○ AIS/NOTAM dissemination ○ Surveillance tools to identify airspace sector constraints ○ A-SMGC in specific aerodromes, as required • implement teleconferences with ATM stakeholders • monitor implementation progress 		
References	GPI/1: flexible use of airspace; GPI/6: air traffic flow management; and GPI/7: dynamic and flexible ATS route management; GPI/9: Situational awareness; GPI/13: aerodrome design and management; GPI/14: runway operations; and GPI/16: decision support and alerting systems; GPI/17: implementation of data link applications; GPI/18: aeronautical Information; GPI/19: meteorological systems.		

**COMMUNICATIONS, NAVIGATION AND SURVEILLANCE COMMITTEE
(CNS/COMM)**

1. Terms of Reference

Review, fine-tune and complete the planning of the CNS systems, recommending its incorporation in the CAR/SAM FASID ANP, based on the application of planning principles developed by the CAR/SAM/3 RAN Meeting, in the global Plan of air navigation for the CNS/ATM systems, on the results of the inter-regional planning and co-ordination and on ICAO SARPs and technical guidelines, related with the coordinated implementation and harmonization of CNS/ATM systems. Also, to study, review and propose measures for the implementation of the CNS systems recommended in the ANP CAR/SAM FASID.

2. Work Programme

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
CNS/1	General Matters			
CNS/1-1	Review, identify, evaluate and recommend solutions with the necessary priority assignment on the deficiencies of the CNS systems.	A	Permanent	
CNS/1-4	Examine of the CNS systems in other regions, with the aim of contributing to a coordinated and harmonious interregional development, in accordance with the specified guidelines in the CNS/ATM Global Plan.	B	Permanent	
CNS/1-5	Suggest measures for the protection of the radio frequency spectrum management.	A	Permanent	
CNS/2	Communications Developments			
CNS/2-1.1	Continue the guidance and follow-up to the development of the aeronautical digital communication networks and develop regional guidelines for the inter operability between the communication networks of the CAR and SAM Regions and neighbouring areas.	A	31/05/02	01/04/07
CNS/2-1.2.3	Develop the regional plan for the implementation of VDL and air-ground applications.	B	02/05/05	19/10/07
CNS/2-1.3.2	Review, fine-tune and complete the initial transition plan for the evolutionary development of the ATN and of its applications.	A	07/04/03	29/09/06
CNS/2-1.3.3	Guide the development of the ATN addressing plan in accordance with the ICAO principles and technical provisions.	B	02/02/04	28/11/06
CNS/2-1.3.4	Develop plans for the evolutionary implementation of the ground infrastructure of ATN and the development of ground-ground applications such as AIDC and AMHS.	A	08/07/03	29/09/06

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
CNS/2-1.3.5	Develop recommendations on the initial operational and managerial use of ATN with regard to the implementation of:			
	a) ground-ground applications; and	A	08/07/03	28/11/06
	b) air-ground applications.	B	02/02/04	30/11/056
CNS/2-1.3.6	Review proposals for data communications infrastructure to support ATFM implementation	B	06/03/06	31/10/07
CNS/2-1.5	Develop CAR/SAM regional guidance to provide the communications system required for the migration toward the exchange of aeronautical MET messages (METAR/SPECI and TAF) in BUFR code form.	A	18/04/05	22/11/07
CNS/2-2.1	Development of the VHF and HF voice and data communication. Review, refine and complete the VHF and HF Regional Plan (FASID Table CNS 2A).	A	07/01/01	25/10/06
CNS/3	Navigation Developments			
CNS/3-2.2	Update the regional strategy for the deployment and implementation of the GNSS augmentation systems.	A	10/11/03	30/06/07
CNS/3.2.3.1	Considerations on the feasibility of regional application, technical aspects, operational benefits, related costs, implementation, implications for the on-board equipment and other relevant aspects.	A	02/06/03	22/06/07
CNS/3.2.3.2	To lead studies on regional implementation alternatives of a SBAS/GBAS system, taking into account the evolution of GNSS.	A	14/03/05	22/11/07
CNS/3-3.1	Update the regional strategy for the migration towards GNSS.	A	03/02/04	29/11/07
CNS/3-3.2	Develop a nav aids transition plan and introduce pertinent target dates for the GNSS augmentation systems.	A	07/02/05	29/09/08
CNS/3-3.3	Prepare a Regional Plan for the deactivation of NDB stations	A	02/10/06	30/11/07
CNS/3-3.4	Review, fine-tune and complete the regional navigation plan suggesting the relevant amendments to FASID Table CNS 3.	B	02/10/05	09/05/07
CNS/4	Surveillance Development			
CNS/4-3.2	Studies and recommendations of actions for the SSR in Mode S, ADS-C, ADS-B and other surveillance systems, sub regional/regional implementation.	B	01/07/05	30/11/07
CNS/4-5	Update and follow-up of the regional plan on surveillance systems. Update FASID Table CNS 4A.	B	01/02/04	30/03/08

3.

Priority

- A** High priority tasks, on which work should be speeded up.
B Medium priority tasks, on which work should commence as soon as possible, but without detriment to Priority **A** tasks.

- C** Tasks of lesser priority, on which work should commence as time and resources allow, but without detriment to Priority **A** and **B** tasks.

4. **Composition**

Antigua, Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Cuba, Dominican Republic, Ecuador, France, Haiti, Jamaica, Mexico, Panama, Paraguay, Peru, Spain, Trinidad and Tobago, United States, Uruguay, Venezuela, ARINC, COCESNA, IATA, IFALPA and SITA.

The Chairperson and Vice-chairperson designated by the CNS Committee elected in the Fourth Meeting are: Ricardo Bordalí (Chile) and Mrs. Veronica Ramdath (Trinidad and Tobago) respectively.
