

Agenda Item 5: Advances achieved on the implementation of AIS/MAP Automated Systems in the SAM Region

5.1 Under this agenda item, a follow-up to the agreements reached by the CAR/SAM/3 RAN Meeting (1999) regarding the need to develop basic requirements and planning criteria for a CAR/SAM AIS Database (CASADAB), recognising as well the impact of that type of systems on the effective implementation of CNS/ATM, GNSS and FMS systems, pursuant to the Global Plan for CNS/ATM systems, was made by the Meeting. In such sense, the Meeting took note that the GREPECAS Database Task Force agreed to focus said activities on the development of technical, operational and administrative requirements for the establishment of AIS/MAP databases and the definition of technical requirements for the electronic exchange of aeronautical information/data, through a standard conceptual model.

5.2 Regarding the need for the development and the implementation of AIS automated systems in the SAM Region, the Meeting observed that it would be advisable for States to duly consider the fact that AIS service automation in the Region, cannot be seen as an isolated event of each particular State, but rather, the implementation of this type of systems should be subject to regional coordination. In this sense, it should also be noted that standard specifications are required for the operational integration of all the systems within a common development platform, using standard conceptual models for the electronic exchange of aeronautical information/data. Consequently, the Meeting concluded on the need for regional coordination and to use resources from the regional technical cooperation projects to develop technical specifications and implement and commission the automated AIS systems in the SAM Region.

5.3 The Meeting also observed that significant improvement has been operated in some SAM States with respect to the implementation of NOTAM Data Banks at their AIS services (see **Appendix A** to this part of the Report). However, it has also been noticed the need to implement common query protocols to allow for standard access to this type of facilities, as established in the GREPECAS COPM Manual (Chapter 7) (see **Appendix B** to this part of the Report), since the problem persisted in the area of concern. In such sense, the Meeting considered as convenient to urge the States to give special attention to the uniform application of said query protocols.

5.4 Considering the operational need to ensure the availability of aeronautical information and data within the required level of integrity and updated in real time, the Meeting studied this matter taking into consideration that the AIS/MAP Divisional Meeting (Montreal, 1998) approved Recommendation 3.2/2, which considered the possible use of the INTERNET for the exchange of aeronautical information/data, taking into account data integrity requirements. In such sense, the Meeting considered as convenient to encourage SAM States to promote the use of the INTERNET facilities in their AIS Services.

5.5 The Meeting considered the need that States should take concrete action in order to comply with the effective implementation of national data banks (NASC) in direct support of the CAR/SAM Integrated Automated AIS System, and the need for a uniform application of query protocols for national data banks (NASC) in the SAM Region. It considered as well, the possible use of the INTERNET for the exchange of aeronautical information/data, taking into account data integrity requirements, and the requirement for the application of ISO 9000, 9000-3 and 10003 standards and any other specification applicable for this purpose, in order to ensure the integrity of the aeronautical information/data provided. In such sense, the Meeting adopted the following Conclusions :

CONCLUSION 5/1: IMPLEMENTATION OF NATIONAL DATA BANKS (NASC) IN THE SAM REGION

That SAM States:

- a) that have not yet implemented NOTAM data banks (NASCs) in their International NOTAM Offices in direct support of the CAR/SAM Integrated Automated AIS System, and taking into account that the current level of technological development permits the implementation of these facilities at a reasonable cost, be urged to take prompt action to implement the required NASCs by 2004, and to that end, use, inasfar as possible, the economic resources of technical cooperation projects;
- b) for the implementation of their NASCs, apply the “Coordinated Plan” and the “COPM Manual” as approved by GREPECAS for that purpose; and
- c) when implementing new NASCs and/or re-designing their NASCs, take into account the need for these to provide aerodrome AIS offices pre-flight information bulletins (PIBs), pursuant to the operational requirements of users, and to integrate such systems into the OPMET data banks and flight plan databases, in order to offer an integrated pre-flight service.

CONCLUSION 5/2: IMPLEMENTATION OF COMMON QUERY PROTOCOLS

That SAM States that:

- a) have NOTAM data banks already installed that do not meet the common query protocol requirements contained in the GREPECAS COPM Manual (Chapter 7), take the necessary measures to review and adjust their systems in order to effectively comply with this technical requirement by May 2004 at the latest;
- b) are in the process of acquiring and/or developing NOTAM data banks, design their systems in such a way that they effectively meet the aforementioned common query protocol requirements; and
- c) have NOTAM data banks, issue without delay and through AIC, the common query protocol of these banks, as well as the product offered by these facilities.

CONCLUSION 5/3: IMPLEMENTATION OF QUALITY SYSTEMS IN NOTAM DATA BANKS OF THE SAM REGION

That SAM States that:

- a) have NOTAM data banks in operation, take the necessary action to implement quality assurance systems in said facilities, through the application of ISO 9000, 9000-3 and 10003 standards and any other specification applicable for this purpose, in order to ensure the integrity of the aeronautical information/data provided;
- b) have not yet implemented a NASC, consider within the list of specifications for its implementation all of the technical requirements needed for the implementation of quality assurance systems in said facilities.

CONCLUSION 5/4: IMPLEMENTATION OF AN INTEGRATED AIS DATABASE SYSTEM IN THE SAM REGION

That, in order to enable the implementation of an integrated AIS database system in the ICAO South American Region, SAM States take the necessary steps to have the necessary economic resources for the implementation of AIS databases in each State, and for the implementation of a regional AIS database capable of selectively and rationally integrating national databases into AIS databases of other Regions, in direct support of the future navigation satellite systems.

CONCLUSION 5/5: USE OF INTERNET TECHNOLOGY BY SAM AIS SERVICES FOR SUPPLEMENTARY PROVISION OF AERONAUTICAL INFORMATION

That, considering the growing use of INTERNET technology by the AIS services of the different ICAO Regions, as well as the need to have effective alternate means for the regular provision of aeronautical information to the different types of users, SAM States, inasmuch as possible:

- a) consider providing INTERNET facilities to their AIS services, so that the former can be used as an alternate means for the supplementary provision of aeronautical information/data to international users;
- b) develop the most appropriate and convenient standards, specifications, and operational procedures for effective use of INTERNET and INTRANET facilities for the production, maintenance and provision of AIS products through this communication environment; and

- c) once this facility has been implemented in AIS services, disseminate in an efficient manner the types of AIS products to be provided and the frequency with which said products will be available through said facilities.

**CONCLUSION 5/6 - USE OF REGIONAL PROJECTS FOR THE
DEVELOPMENT OF THE SYSTEMS IN THE SAM
REGION**

That, in order to promote the effective application of Conclusions 5/1, 5/3, 5/4 and 5/5 adopted by this Meeting, States of the SAM Region take the necessary steps to encourage the establishment of a new Regional Project of Technical Cooperation and/or extend the scope of one of the projects currently under way in the Region (RLA/98/003 and RLA/98/019-REDDIG), in order to have the necessary resources for the implementation of AIS automation systems in each State, in direct support of the future satellite navigation systems.

APPENDIX A

ESTABLISHMENT OF NOTAM DATA BANKS IN THE CAR/SAM REGIONS

CAR/SAM States that have implemented NOTAM Data Banks

<u>State</u>	<u>Facility</u>	<u>Level of implementation</u>
Brazil	NOTAM bank	Link with national AIS/AD units// International availability of NOTAM information. According to the information received from some AIS units in the Region, some NOFs have problems retrieving information from the bank// <u>Complies with Standard query protocol according to the CAR/SAM COPM</u> // Was Y2K-certified// Has already incorporated AIP information, for domestic use only. It is not stated whether the bank has the corresponding ISO 9000 standards certification.
Chile	NOTAM bank	Link with national AIS/AD units// International availability; there is no information, however, as to whether it allows retrieval of international information from other FIRs// <u>Non-standard query protocol (to be verified)</u> // No information as to whether the bank has the corresponding ISO standards certification.
Colombia	NOTAM bank	Link with other national AIS/AD units// According to the latest information, this bank does not offer international access for information retrieval, since it presents some operational access problems// <u>Complies with non-standard query protocol</u> // Was Y2K-certified// It was indicated that actions for the certification of NOTAM data bank according to ISO 9000 Standards would be initiated in 2004.
Ecuador	NOTAM bank	Link with the national AIS/AD units// No international availability, since States have problems to retrieve information// <u>Complies with standard query protocol according to the CAR/SAM COPM</u> // Was Y2K-certified. According to the latest information available, there are no problems for international information to enter the bank automatically. No information as to whether the bank has the corresponding ISO standards certification.

<u>State</u>	<u>Facility</u>	<u>Level of implementation</u>
French Guyana	NOTAM bank	There is no specific information about its international availability or whether it is a terminal-type bank of the Paris bank. No information as to whether the States are having problems to query and retrieve information from it// <u>Non-standard query protocol (to be verified)</u> // No information as to whether the bank has the corresponding ISO standards certification.
Peru	NOTAM bank	Link with the national AIS/AD units// International availability; however, no precise information is available as to the level of international availability of this facility or whether it permits the retrieval of information from other FIRs. <u>Complies with Standard protocols according to the CAR/SAM COPM</u> // Was Y2K-certified. It was indicated that actions for the certification of NOTAM data bank according to ISO 9000 Standards would be initiated in 2004.
Suriname	NOTAM bank	According to the information available, this facility presents serious technical difficulties and, because of its configuration, should be replaced with a new bank in order to guarantee a reliable operation of the system.

CAR/SAM States that have not yet implemented NOTAM data banks

Bolivia	Lacks NOTAM DB	The NOF has an intelligent AFTN terminal, which allows storage of national NOTAMs and their listing according to local needs. According to the information available, there are no plans to purchase a NOTAM data bank.
Panama	Lacks NOTAM DB	There are plans to modernise the AIS systems, including the purchase of a NOTAM data bank.
Paraguay	Lacks NOTAM DB	They have some AIS/MAP applications at the AIS central office. Also underway is the process of implementation of an interconnection among aerodrome AIS units through the Internet for purposes of the pre-flight information services. According to the information available, there is a public tender for the purchase of a NOTAM data bank.

<u>State</u>	<u>Facility</u>	<u>Level of implementation</u>
Uruguay	Lacks NOTAM DB	The NOF has an intelligent AFTN terminal, which permits storage of national NOTAMs and their listing according to local needs. They also have an application software that allows the processing of pre-flight bulletins (PIB), which are supplied to the users of the Carrasco Airport through the Internet. The implementation of a NOTAM data bank with modules for AIS/MAP databases is under development.
Venezuela	Lacks NOTAM DB	The NOF has an application software that permits the processing of pre-flight bulletins (PIBs). According to the information available, a NOTAM Data Bank application is being tested, as is foreseen to be connected soon to the AFTN network. This data bank will comply with standard query protocol according to the CAR/SAM COPM.

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APPENDIX B

COMMON OPERATIONAL PROCEDURES MANUAL FOR CAR/SAM INTEGRATED AUTOMATED AIS SYSTEM (COPM CAR/SAM)

CHAPTER 3

COMMON PROCEDURES FOR INTERROGATING NOTAM DATA BANKS

3.1 GENERAL

3.1.1 The usefulness of a NASC will require an efficient application of query messages, which will allow a quick search and consultation of NOTAM messages contained in it.

3.2 QUERY TYPES

3.2.1 Query help:

RQH – Shows an aid for the application of common processing for interrogating.

3.2.2 Request for NOTAM:

3.2.2.1 Request for a single NOTAM:

Format: *RQN AAAA SMMMM/YY*
where: *AAAA* *NOF Indicator*
S *Series*
MMMM *4 digit indicating the NOTAM number*
/ *Separates the number from the year*
YY *Year*

3.2.2.2 Request for several NOTAMs from the same NOF:

Format: *RQN AAAA SMMMM₁/YY SMMMM₂/YY ...SMMMM_N/YY*
where: *AAAA* *NOF Indicator*
S *Series*
MMMM₁ *4 digit indicating the first NOTAM number*
MMMM₂ *4 digit indicating the second NOTAM number*
... *means other NOTAM requested*
MMMM_N *4 digit indicating the last NOTAM number*
/ *Separates the number from the year*
YY *Year*

3.2.2.3 Request for several NOTAMs with continuous numbering:

Format: RQN AAAA SMMMM₁/YY- SMMMM_N/YY
where: AAAA NOF Indicator
 S Series
 MMMM₁ 4 digit indicating the first NOTAM number
 MMMM_N 4 digit indicating the last NOTAM number
 / Separates the number from the year
 Y Year

3.2.3 Request for Checklist

Format: RQL AAAA S
where: AAAA NOF Indicator
 S Series (only one)

3.2.4 Request for Aerodrome Bulletin:

Format: RQA /FILTERS/AAAA₁ ... AAAA_N
where: FILTERS referred to:

Transit:	IFR	(I)
	VFR	(V)
	Both (I/V)	(G)*
Objective:	Immediate notification	(N)
	Importance for operations	(O)
	Bulletin subject	(B)
	Miscellaneous	(M)
Scope:	NAV warning information	(W)
	Aerodrome information	(A)
	Combined information (AE)	(C)*

* The definition of NOTAM qualifiers does not include these change-over filters, but they are valid in the request format.

AAAA₁ means initial aerodrome
 ... means other aerodromes requested
 AAAA_N means final aerodrome