INTERNATIONAL CIVIL AVIATION ORGANIZATION

CAR/SAM 01/01 CNS Informal Meeting
(Bogota, 9 to 11 October 2001)

Agenda Item 3 **Review of proposals to satisfy AFS communications requirements taking into consideration CAR/SAM/3 RAN Meeting Conclusion 9/8**

(Presented by the Unidad Administrativa Especial de Aeronáutica Civil - Colombia)

Summary

This working paper presents a proposal from the Colombian Administration with regard to AFS communications problems, considering the Colombian VSAT network..

1. BACKGROUND

1.1 In accordance with Conclusion 9/8 of the CAR/SAM/3 RAN meeting, during the CAR/SAM CNS 01/00 meeting held in Mexico, criteria was established to perform a technical/financial study on the various solution options with regard to the requirements established in the FASID for the AFS.

1.2 The administrations have, for many years, examined the AFS conditions established in the FASID tables. Even though a significant improvement in the quality of the service has been provided to civil aviation, some requirements have still not been efficiently overcome.

1.3 The trend of the technology in the development of the CAR/SAM networks has been to take advantage of the flexibility and economy of VSAT communications, which are required by users in the search for communications solutions, taking into account requirements such as immediateness and reliability in the establishment of the communication, all in benefit of air safety.

1.4 The Colombian State, which has its own network that has proven satisfactory as a communications means for AFS services in accordance with the FASID, including the performance statistics of the station installed and in operation in Ecuador, reaffirms the opportunity that the States involved in RAN CAR/SAM/3 Conclusion 9/8 have in adopting the Colombian network as a solution to current AFS problems.

2. ANALYSIS

2.1 The deficiencies in some of the AFS circuits established in the CNS FASID and related with C/CAR States/Territories, specifically Colombia, Curacao and Jamaica, have been product of various causes such as, domestic PTT problems, obsolete equipment or technology, or the complexity in the implementation of the services, including the last mile problems, among others.

2.2 The cost of some solutions, without a guarantee in service quality, have hindered the implementation of better facilities and the transition to the CNS/ATM systems concept. This is the immediate case of channel requirements for RLA/00/009 GNSS project.

2.3 The previous CAR/SAM 01/00 CNS meeting held in Mexico in June 2000, recognized the different communication network solution options that would be available both in the Caribbean and South American Regions. Among them, the Colombian State informed the meeting on the operational status of its own VSAT communications network.

2.4 From the information presented in Information Paper NI/2, on the current status of the Colombian network, Colombia confirms the Meeting on the option of establishing solutions to the AFS problems in the FASID requirements, with the implementation of direct circuits between Cocesna, Jamaica, Curazao and Colombia, through the use of the Colombian VSAT network.

2.5 The development of air safety, supported with the understanding and cooperation among States is vital with regard to providing optimum solutions through cooperation agreements that can achieve the sharing of efforts and resources between the parties involved. In this respect, the Colombian Administration proposes States represented in the meeting to have the opportunity to examine the communications solutions based on the Colombian VSAT networks which, in addition to the technical and operational viability, has cost/benefit advantages with regard to current conditions.

2.6 As determined by Conclusion 1/1 of the CNS-CAR/SAM 01/00 meeting, the various solution alternatives to the AFS problems have to provide a technical and economical analysis in order to maintain equal conditions for the various States of the Region. Global solutions have to be taken into consideration in the costs (even if this will require a combination of technologies), in addition to recurrent costs due to payment of service provision, maintenance of both State owned communications or those where a State would incur to permit the communications transport means of other States.

3. PROPOSAL OF THE COLOMBIAN ADMINISTRATION

3.1 On the basis of the aforementioned, the Colombian Administration proposes States/Organizations to establish bilateral technical cooperation agreements to serve as legal support for the solution of the Colombian State through the provision, installation and operation of the Colombian VSAT network stations, as a loan, as solution to the AFS circuits

3.2 The agreement will be subscribed for a period of one year, to be extended under mutual agreement between the parties, time during which the State/Organization receiving the VSAT station assumes the responsibility of maintaining in operation, both technically and physically, the elements composing the VSAT station.

3.3 The State/Organization asumes the risks of loss or damage due to its use, bad management or terrorist activitiy of all the elements of the VSAT station, during the time of the lease and until the return of the station to Colombia.

4. ECONOMICAL CONSIDERATIONS RELATED TO THE PROPOSED SOLUTION

4.1 Current Costs

4.1.1 CAR/SAM States have hired communications services through analogue channels with local service providers (mostly state-owned PTTs). In each case, the provision of the service does not always have a satisfactory balance, be it for the quality of the service or operational costs. In the case of Colombia, this is no exception: the costs for said services per channel are around US$5,000 per month (with the exception of the ATS circuit with Jamaica, US$8,000 per month), without overcoming satisfactorily the channel availability problems.

4.1.2 Another cost are the limitations to implement new services with additional capabilities developed based on the technology, but that the service providers are uncapable of supporting them.

4.2 Operational costs

4.2.1 The operation of remote VSAT Colombian stations would also imply operational costs such as:

- Use of frequency
- Civil works for the preparation of the area
- Insurance policy payment
- Station transportation costs and future return to Colombia

4.3 Other costs

4.3.1 Consideration should be taken that other costs could be involved, such as:

- training
- Station physical safety
- Hired maintenance service

5. SUMMARY OF BENEFITS

5.1 Among the benefits in the Colombian proposal, are:

- Solution to the AFS problems detected in the CAR/SAM Regions.
- Economy for non payment to service providers of current channels.
- Implementation in short period of time
- Proven system performance
- There are no recurrent management maintenance costs
- There are no proportional costs for the system's equipment (HUB, NCS, design and engineering)
- Possibility of integration to REDDIG
- Possibility of integration to a MEVA

- High availability due to HUB geographical redundancy
- 24H HUB technical support
- Services and stations growth capacity
- Additional AFTN connection to current ATS service.

6. **RECOMMENDATIONS**

6.1 That the meeting examine the solution proposed by the Colombian Administration and urge States&Organizations to carry out a review of same to adopt immediate solutions to the communications problems found in the CAR/SAM Regions.

6.2 That the Lima and México ICAO Regional Offices perform a follow-up of the agreements to be established by the meeting for the prompt development of the solutions proposed in this working paper.

7. **Action suggested**

7.1 The participants are suggested to become aware of the information provided in this working paper, analyze and determine the actions to follow in order to comply with AFS plans.

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