SAT/12-WP/14

INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWELFTH MEETING ON THE IMPROVEMENT OF THE AIR TRAFFIC SERVICES IN THE SOUTH ATLANTIC

(Sal, Cape Verde, 15 – 17 December 2004)

Agenda Item 5: CNS/ATM systems implementation

FOR AN AERONAUTICAL VSAT NETWORK SUPPORTING DATALINK SERVICES

(Presented by ASECNA)

SUMMARY

The objective of the Working Paper aims to highlight the benefits expected from the implementation of the datalink through a seamless regional aeronautical VSAT network.

I -INTRODUCTION

In accordance with the section 2.4 wording of Conclusion SAT/11 TF/04(Use of ADS/CPDLC applications); it should be important to recall that no ATN is tantamount to no new CNS/ATM Applications. That is to say, the communication links are vital to support the ATS applications derived from the new CNS/ATM systems, in particular ADS and CPDLC applications.

II – DATALINK IMPLEMENTATION PROPOSAL

Nowadays, the data link services are provided by SITA and ARINC , but these data link services support above all the AOC applications and are non ATN SARPs compliant data link services.

Due to constraints of ATS applications; it should be noted that the trials undertaken currently in AFI Region by the use of SITA datalink facilities, are faced with standard transfer delay <10secs(for ADS) and the Quality of Service specified in table 1.

TABLE 1

Application	Availability	Integrity	Reliability	Continuity
CM	99.90%	10^{-6}	99.90%	99.90%
ADS	99.996%	10^{-7}	99.996%	99.996%
CPDLC	99.99%	10^{-7}	99.99%	99.99%
FIS	99.90%	10^{-6}	99.90%	99.90%
AIDC	99.996%	10^{-7}	99.90%	99.90%
ADS-B	99.996%	10^{-7}	99.996%	99.996%

It is why, ATS providers in liaison with IATA, should investigate possible support paving

the way for the implementation of ADS/CPDLC applications.

The integration/interoperability of subregional aeronautical VSAT networks aims to contribute to the implementation of reliable and seamless communications support.

Harmonisation of ANPs and contingency planning depend on it.

IV- A PROACTIVE IMPLEMENTATION

Nowadays, the quality of service is a key requirement and should contribute to make SAT airspace a seamless benchmark safety area.

In so doing, the ATS providers, especially those of SAT FIRs have had to reassess their ways of managing and using their communications infrastructure and continually strive for more competitive and proactive solutions; taking into account the following business realities:

- you have to do more with less;
- the map of business geography is more virtual than real;
- the alternative to evolution is extension;
- if you keep doing the same thing , you will keep getting the same results.

In so doing, the solution lies notably in quality of service, integration , interoperability,harmonization and elimination of network boundaries.

In this context, the migration of CAFSAT network on 10-02 will allow and in conjunction

with AFISNET, to build a cost effective datalink network as illustrated in figures 1 and 2.

This strategy will meet one of the requirements of ATN: To avoid that ground infrastructure shall be driven by those having control on air/ground communications.

Figure 1

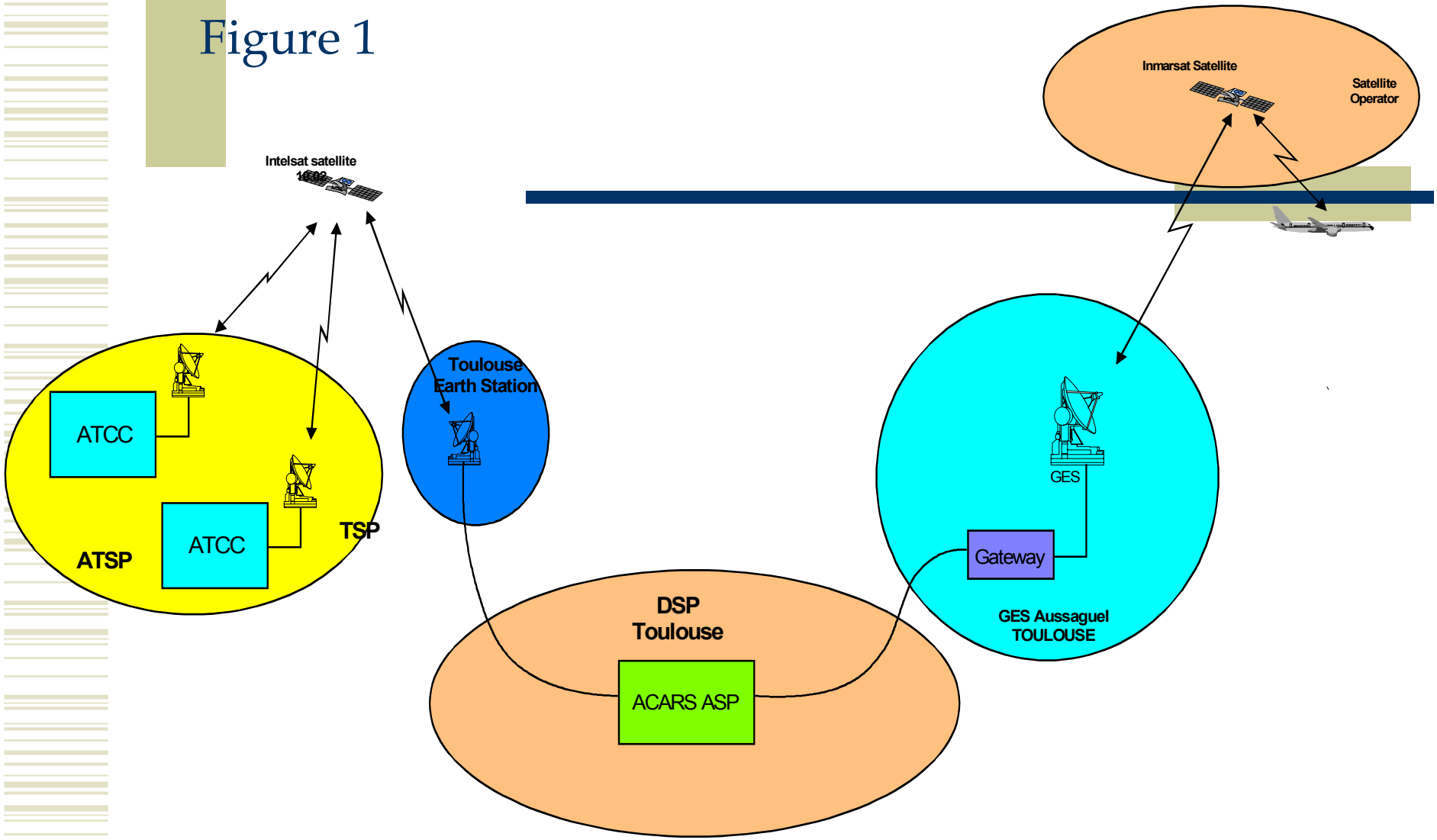
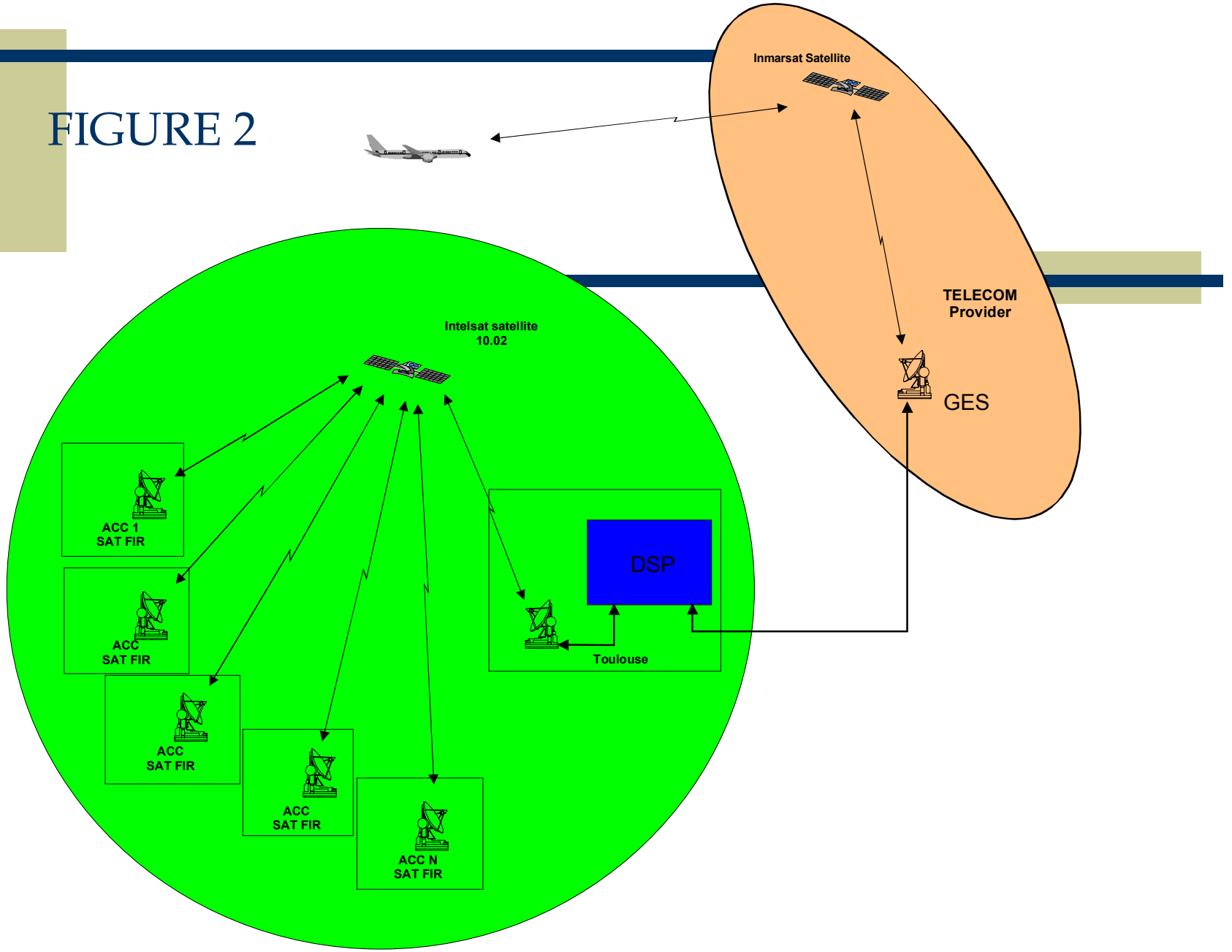

Inmarsat Satellite
Satellite Operator
Intelsat satellite
ATCC
ATCC
ATSP
TSP
Toulouse Earth Station
GES
Gateway
GES Aussaguel TOULOUSE
DSP Toulouse
ACARS ASP

FIGURE 2



Seamless network

VI - CONCLUSION

The meeting is invited to :

- take note of information provided in the working Paper;
- comment and take note of the implementation proposal of a datalink network ;
- establish a steering group and define its work program in order to review thorough the implementation of the proposed data link network.