



International Civil Aviation Organization

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**Sixteenth Meeting of the AFI Planning and Implementation
Regional Group (APIRG/16),
Kigali, Rwanda (19 – 23 November 2007)**

**Agenda Item 4: AFI Regional Air Navigation Planning and Implementation
Issues
4.2: Communications, Navigation and Surveillance (CNS)**

**Progress Report on NAVISAT Project
A Navigation Satellite System for Middle East and Africa**

Presented By Egypt

Summary

This paper describes the progress of the NAVISAT project, and its future steps that will provide significant benefits for the civil aviation community in Africa and Middle East regions.

References

- MID NAVISAT WG
- NAVISAT Steering Committee
- NAVISAT Feasibility study

1 Historical notes:

- 1.1 In 1997, the "NAVISAT" initiative was presented to the council of African ministers of transportation and communications in their eleventh conference in Cairo.
- 1.2 In 1998, the NAVISAT initiative was presented to the council of Arab ministers of transportation and communications in their meeting in Cairo.
- 1.3 In 1998, the ICAO general assembly adopted the Global Air Navigation Plan for CNS/ATM Systems and the NAVISAT project was presented to ICAO in Montreal by the Egyptian government as a part of the CNS/ATM global plan.

- 1.4 In 1998, the initiative was presented to the COMESA group ministers of transportation and communications in Lusaka.
- 1.5 Since 1998, and from time to time, the project was presented to the ICAO regional offices in Middle East and Africa regions and a working group, which is "NAVISAT working group", was established.
- 1.6 In 1998, frequency coordination for NAVISAT project was initiated when EGYSAT1, 2 & 3 Advanced Publication Information (API) at three geostationary orbital locations were sent to the ITU. The ITU filings included L, L1, C and Ku bands.
- 1.7 In July 2004, a memorandum of agreement between the Egyptian Civil Aviation and Alcatel to jointly conduct a feasibility study and Business plan for the NAVISAT project.
- 1.8 During the study, five steering committee meetings were done. The members were the Civil Aviation entities in Africa & Middle East (ACAC, «to», ASECNA, COMESA, DGAC, EHCAAN, SADC & ICAO regional offices). Some of them were invited but they didn't attend the meetings.
- 1.9 In January 11, 2005, the filling was updated and the Requests for Coordination (RFC) were sent to ITU. The filling names became NAVISAT1, 2 & 3 at the orbital positions 17, 21 & 36.5 degrees east.
- 1.10 In Dec. 2005, the study was finished and accepted by the steering committee. The study was strongly promising.

2 Offered services

The NAVISAT is planned to have the following missions (in the Middle East and Africa regions). The offered services will have better technical characteristics at competitor price.

2.1 Aeronautical mission (it is the main mission):

The ICAO CNS/ATM requirements will be completely fulfilled.

- 2.1.1 Mobile Communications services for civil aviations and airlines (data services and voice services) other services like telemedicine and security may be offered.
- 2.1.2 Fixed Communications services for civil aviations and airlines (data links with different bit rates can be offered through VSAT systems)
- 2.1.3 Navigation services (broadcasting of the augmented navigation signals over the region).

2.2 Complementary mission

Other communications requirements for the passengers will be available (e.g. GSM, internet)

3 Current status

- 3.1 In October 2006, A company called "NAVISAT Middle East and Africa" was established in Egypt to carry out a detailed study for the project and to supervise the frequency coordination process and the other activities.
- 3.2 The "NAVISAT Middle East and Africa" company (as an operator for the NAVISAT) attended the eighth operators review meeting (OMR 8) in TOKYO,

December 2006 for the L-band frequency coordination and planned to attend OMR 9 in Indonesia December 2007 for the same reason.

- 3.3 During its 17th meeting in Rabat (2nd April to 4th April 2007), the ACAC air navigation committee has announced its continuous support to the NAVISAT as a regional system to offer the aeronautical communication and navigation services according to ICAO CNS/ATM recommendations as the offered services are cost effective than the similar available services.
- 3.4 An information paper about NAVISAT has been presented in the last MIDANPIRG/10, held in Doha, Qatar.
- 3.5 A working paper about NAVISAT has been presented in the last APIRG CNS subgroup, held in Dakar, Senegal.
- 3.6 The NAVISAT WG had held its 3rd meeting on 10th June 2007 in Cairo, the meeting report was presented to MIDANPIRG GNSS-TF6.
- 3.7 A working paper about the NAVISAT status was presented to MIDANPIRG GNSS-TF6 (Cairo, 11 – 13 June 2007)
- 3.8 A NAVISAT group was established by the ACAC air navigation committee during its last meeting.
- 3.9 A consortium of a well known companies were selected to carry out the detailed study:
 - 3.9.1 **Booz Allen & Hamilton** as a strategic business consultant,
 - 3.9.2 **Telestar** as a satellite technical consultant and
 - 3.9.3 **FDC** as project management consultant
- 3.10 The contract with FDC was signed while the contracts with the others are being signed.
- 3.11 In December 2007, the detailed Study will be started (costs about 2.0 million euros paid by the Egyptian Government). It will be finished within one year.
- 3.12 After the first phase of the detailed study (about six months from the start), the strategic shareholders (regional public and/or private investors) will be invited to join the project.

4 Implementation plan

The project updated implementation plan is as in Appendix (A) to this WP.

5. Action by the meeting

The meeting is invited to:

- Take note of the contents of this paper, and
- Support the NAVISAT as a part of the CNS/ATM infrastructure in the Middle East & African regions to offer the aeronautical communication and navigation services according to the ICAO recommendations.

NAVISAT updated Implementation plan

