



SPECIAL AFRICA-INDIAN OCEAN (AFI) REGIONAL AIR NAVIGATION (RAN) MEETING

Durban, South Africa, 24 to 29 November 2008

Agenda Item 6: Development of a set of comprehensive work programmes in the air navigation field, aimed at improving efficiency of the air navigation system (Efficiency Committee)

CHALLENGES IN THE IMPLEMENTATION AND OPERATION OF VSAT NETWORKS

(Presented by Kenya)

SUMMARY

This paper discusses the challenges experienced by Kenya in the use of VSAT communication for the provision of fixed and mobile services. The paper emphasizes the need for optic fibre as a backup for VSAT in States where the technology is mature.

1. INTRODUCTION

1.1 Kenya commissioned a domestic VSAT system in June 2007. In May 2008 the NAFISAT Network to which Kenya was connected was commissioned. At present; most of Kenya's communication circuits are via VSAT. Since the introduction of VSAT networks in Kenya, the availability of communication has been better than 97%. VSAT technology has become the main means of communication.

1.2 For many years Kenya depended on leased lines from the PTT. The leased lines were unreliable making it impossible to implement part of the AFTN plan e.g. connectivity between Nairobi and Brazzaville, could not be implemented. This problem was solved by the installation of the NAFISAT.

2. DISCUSSION

2.1 In line with APIRG/13, Conclusion 13/15 which called for the establishment of a VSAT network in the North Eastern part of the AFI Region (NAFISAT), Kenya finally commissioned a NAFISAT terminal in May 2008.

2.2 Despite the benefits of the VSAT technology, Kenya continues to experience challenges that need to be addressed. Institutional issues in the implementation of a VSAT network are still a problem. The AFTN circuit between Nairobi and Mumbai is still via a leased line provided by PTT. The cost of bandwidth for VSAT is becoming prohibitive by the day. Corrective maintenance can take up to four months to fix a problem. Spare parts are hard to get and costly. Sun outages pose a risk to VSAT operations.

2.3 The meeting is called upon to take note of the rapid growth of optic fibre technology. Optic fibre is quickly gaining ground in most African States. Kenya is participating in the laying of undersea optic fibre cables; two along the coast of East Africa and another directly to Fujairah in the UAE, all three cables are connecting Kenya and neighbouring States via Mombasa to the rest of the world. This provides the possibility of alternative routings. The targeted services for the optic fibre are mainly internet connectivity and telephones. The aviation industry needs to take note of this development and strategise to get its share. The use of optic fibre has the advantages of faster connection speeds (high bandwidth), lower cost, little path delays, no Sun interferences and minimal maintenance and is easy to implement once the backbone has been laid.

3. CONCLUSIONS

3.1 VSAT networks have no doubt enhanced communication in the AFI Region, paving way to the introduction of RVSM. However to ensure availability, it is important that:

- a) ICAO monitors the growth in usage of the optic fibre technology in the AFI Region with the intention of encouraging States to adopt the technology initially as a back up to VSAT and eventually as an alternative once alternative routing is widely available;
- b) ICAO prepare guidance material on implementation and use of VSAT and to assist states in meeting the challenges stated above as requested by ITU; and
- c) ICAO prepares guidance material on implementation and use of optic fibre cables to pave way for their use as sole medium of carrying safety-critical communication.

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