International Civil Aviation Organization

MIDANPIRG Communication, Navigation and Surveillance Sub-Group

Seventh Meeting (CNS SG/7)
(Cairo, Egypt, 31 May - 02 June 2016)

Agenda Item 4: CNS Planning and Implementation in the MID Region

REMOTE CONTROL AIR TO GROUND (RCAG) BACK BONE OVER VSAT

(Presented by I.R IRAN)

SUMMARY

This paper explains about solving telecommunication infrastructure networks problems in communication between the control center and RCAG stations using VSAT.

1. INTRODUCTION

1.1 One of the important issues in the implementation of radio communication with aircraft is using telecommunication channels and this communication has become a fundamental requirement in the aviation industry. Also, due to the lack of backup services in this area, this section reached a critical point in the implementation of communication networks which has long been interested by electronic experts.

2. DISCUSSION

2.1 always in the context of other ideas were considered by experts which was surprised by the appearance of data links and experts have always been looking for providing solutions to make the necessary changes to the system. The issue of old systems and data synchronization problems of these systems with data platforms has been considered and regarding to the importance of safety in the aviation field, the importance of this will be more.

2.2 Thus, according to the installed switching system of control centre is no exception of this rule, so the process of connecting of this system to data platforms has been time-consuming. On the other hand, the lack of a backup system in the control center to provide services, has been another problem that has always provided solutions required for it but the dependency to data platforms has been considered which is important.

2.3 In the development of the appearance of data channels, satellite data platforms have also found their place in the data platforms quickly and has managed to an acceptable level to solve problems such as geographical constraints, access control, mobile communications services so that the ICAO organization has been provided these systems in Annex 10 and offered acceptable levels of service in terms of AVAILABILITY.

2.4 PROJECT FRAMEWORK

- Control center section

1. Switching system of control center

1.1. Changes and physical installation of consoles
1.2. Design and Construction of ERCP
1.3. cabling between Air traffic control core and the electronic core
1.4. Construction and installation of central equipment of switching system

2. VOICE OVER IP equipment and relative interfaces.

2.1. Design and Construction of interfaces of voice with VSAT
2.2. VOIP equipment installation and cabling and commissioning of the data
2.3. Installation and Commissioning of interfaces for sound recording sector

3. Supervision and management software section of RMS system

3.1. design and engineering of RMS system software
3.2. Preparation of relevant cabling and hardware and software equipment necessary for the implementation of IP Based - RMS software
3.3. Testing, commissioning and troubleshooting of software in case of problem

4. Ground station equipment of VSAT

4.1. Installation of VSAT equipment needed to upgrade the existing system of the control center
4.2. Coordination to improve the bandwidth of existing system of the control center

- The RCAG stations

1. Ground station equipment of VSAT

1.1. Installation and complete commissioning of VSAT ground station in RCAG stations
1.2. Coordination with the contractor to provide services

2. VOICE OVER IP equipment, INTERFACE and relative SHARE POINT

2.1. Design and manufacture of MINI REMOTE
2.2. Design and manufacture of SHAREPOINT and relevant interfaces
2.3. Installation, commissioning and Troubleshooting of system and connect them to the transmitters and receivers

3. Design and Installation of NEW QIWI

CONCLUSION

Regarding the importance of the project and the experiences gained in this field, we will announce that the aviation electronics specialists of Iran are able to implement similar projects, technical consulting, training and etc. at the regional level relying on science and technology in the region and ensure the following cases:

- Familiarity with and knowledge of the aviation and the ability to implement all phases of project including planning, installation, consulting, training and support.
    - provide maximum services with an emphasis on locally produced parts components providing 24-hour backup service to meet possible future faults;
    - educational services during installation and commissioning process; and
    - fast installation and implementation of VSAT stations at radar and RCAG stations.
- According to provided factors as well as work experience of experts, the aviation electronics specialists of Iran are able to identify and select the best satellite infrastructure service providers in the region and will be able to contribute to the desired level to do with them. In this regard, according to management on bandwidth used in infrastructure, saving a lot of cost and we able to provide advice in this regard.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information in this paper.

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