



*International Civil Aviation Organization*

**MIDANPIRG Communication, Navigation and Surveillance Sub-Group**

**Eighth Meeting (CNS SG/8)**  
*(Cairo, Egypt, 26 - 28 February 2018)*

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

**MID REGION BACKUP CONSIDERATION FOR  
GROUND-TO-GROUND VOICE/DATA COMMUNICATION**

*(Presented by I.R Iran)*

**SUMMARY**

This paper invites MID Region States to consider a backup for Ground-to-Ground communications and assign their focal points for further technical coordination and procedures.

In addition, the link media capabilities are presented to be considered by the States in Part 2.

Action by the meeting is at paragraph 3.

**1. INTRODUCTION**

1.1 One of the important issues of handing over the flights between States is ground-to-ground voice/data communication and in this case, the Infrastructure plays the main role of performing the communication. According the ASBU<sup>1</sup> point of view (Doc 9750 5<sup>th</sup> edition), global interoperability shall be considered during the designing of the infrastructure, so it is crucial that the infrastructures are used by MID States should be coordinated with each other.

1.2 According to the B0-FICE module, infrastructures shall be based on the cloud concept designing and the technology is available. The recommendation is installing the appropriate networks those are able to migrate to ATN IPS in this case, IPV4 & IPV6 networks are the recommended solutions. The enablers or link media for providing of such networks like as MPLS (based on terrestrial interconnections), E1, and Satellite links,...., etc, should be considered, coordinated and accepted by the States.

1.3 Based on the ASBU ground to ground communication roadmap in Block 0, IP-Based networks are suitable, available and support the global interoperability concept and also those are used as an infrastructures, easily, inside the most of States, because the network stakeholders coordinate and standardize the clients, servers and infrastructures quickly. But this coordination between the States are NOT so quickly and easily.

<sup>1</sup> Aviation System Block Upgrades

1.4 Another major issue is providing a backup solution for each ground to ground voice data communication via the States those are connected to the same network. It means that, by the network solution, it is much safer to provide a redundant backup procedure and routes for each interconnections between the States in order to prevent the disconnection for the network members. For this concept, coordination and interoperability play the main role.

## 2. DISCUSSION

2.1 In the past, the interconnections between I.R.IRAN and BAHRAIN, KUWAIT, UAE, PAKISTAN and MUSCAT have been prepared by point-to-point 64Kbps link media via FUJAIRAH - JASK Sea cable and periodically the cable was cut off due to the heavy ship moving there. After the last disconnection for 3 months, the connections were provided by point to point Int. MPLS<sup>2</sup> via service providers and during the time of disconnections, telephony lines were used for interconnections. It seems that a procedure should be defined by the States and they represent the focal points to each other to provide a technical joint plan to prevent such cases. In this matter, two points are important as follows:

**2.1.1 *Discussion about the Link Media possibilities as an infrastructure.*** According to Part 1, there is a variety of link Media. In the following, it defines the available network infrastructures for I.R.IRAN in MID Region, in order to publish, coordinate and update (in some cases) between the States.

- 1) 64Kbps link media via FUJAIRAH- JASK Sea cable. Today it is available and it can be used again.
- 2) Point to point Int. MPLS link media via different service providers are available. But there is no any predefined backup procedures and routes in case of disconnections between the States due to the lack of inter-domain negotiation and coordination. There are many technical network solutions to provide hot redundant routes in case of interconnections.
- 3) A private VSAT infrastructure with HUB is available in IRAN \_TEHRAN ACC that is served by INTELSAT 906 satellite and it could be a safe backup solution in case of any disasters. All of the MID Region States are mentioned in this paper are covered by this satellite beam and it is enough to install a VSAT terminal to use and it could be installed by IAAC<sup>3</sup> service provider.
- 4) INTERNET! Is another service that is available without any disconnection and it could be used by observe the strict security and policy rules. It seems that it could be possible to use internet as a good backup solution.

**2.1.2 *Discussion about defining a Backup Procedure or represent the MID Region States Focal Points for technical issues***

2.2 After presenting the available infrastructure in Part 2.1, it is needed to define backup routes due to prevention of disconnection in ground-to-ground data/voice communication via network solutions. It is needed to connect technical body of States to provide a configuration plan and apply it after agreements. In this part of discussion, primary agreements can be done and focal points will be presented to follow the agreed procedure.

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<sup>2</sup> Multi-Protocol Label Switching

<sup>3</sup> IRAN Airports and Air navigation Company

2.3 In case of using INTERNET, as a backup interconnection between States, it should be negotiated and decided to use. As a technical point of view, it seems that it would be a good backup solution and it can be used in case of disasters, if it confirmed by the States.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this working paper;
- b) discuss about the infrastructures could be used , agreed , redefined and upgrades in some cases; and
- c) primary discussion about defining backup routes and procedures then represents the MID Region States focal points for technical issues

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