Agenda Item 4: Assessment of operational requirements to determine the implementation of improvements in communications, navigation and surveillance (CNS) capabilities for operations in route and terminal area

PROPOSAL TO ADD A REDDIG II NODE OF THE BACKUP NETWORK (MPLS) AT THE ICAO LIMA REGIONAL OFFICE

(Presented by the Secretariat)

SUMMARY

This working paper presents a proposal to add a REDDIG II backup node (MPLS) at the ICAO Lima Regional Office REDDIG II to use the network infrastructure for voice and data communications between Office sectors and administrative/maintenance users of the network.

References

- Contract REDDIG 22501200;
- Report of the Twentieth meeting of the REDDIG Coordination Committee (RCC/20) (Lima, Peru, 21-23 March 2017);

ICAO strategic objectives:	*A – Safety* *B – Air navigation capacity and efficiency*

1. Background

1.1 The Digital Network of the South American Region (REDDIG I) was implemented in September 2003, and the node of Peru was installed at CORPAC facilities in the Jorge Chávez international airport, providing connectivity to the ICAO Lima Regional Office, which at that time was located at said airport.

1.2 At that time, the telephone switch of the Office was connected to the administrative and maintenance network of REDDIG I, allowing the Office sectors (Director, Deputy Director, Officers and support personnel) to communicate with the administrative and maintenance users of the network. The Office also used its AFTN addresses to communicate with any user of the Aeronautical Fixed Telecommunication Network.

1.3 When the ICAO Regional Office in Lima moved to the San Isidro premises in February 2007, the connection was interrupted, and the Office started communicating with the administrations of the Region mainly through public telephony (DDI) and Internet applications.

1.4 In 2015, the SAM Digital Network was modernised with the installation of a satellite network as the main means of communication and a backup network, where MPLS links were hired for all network nodes. Figure 1 shows the current configuration of REDDIG II.

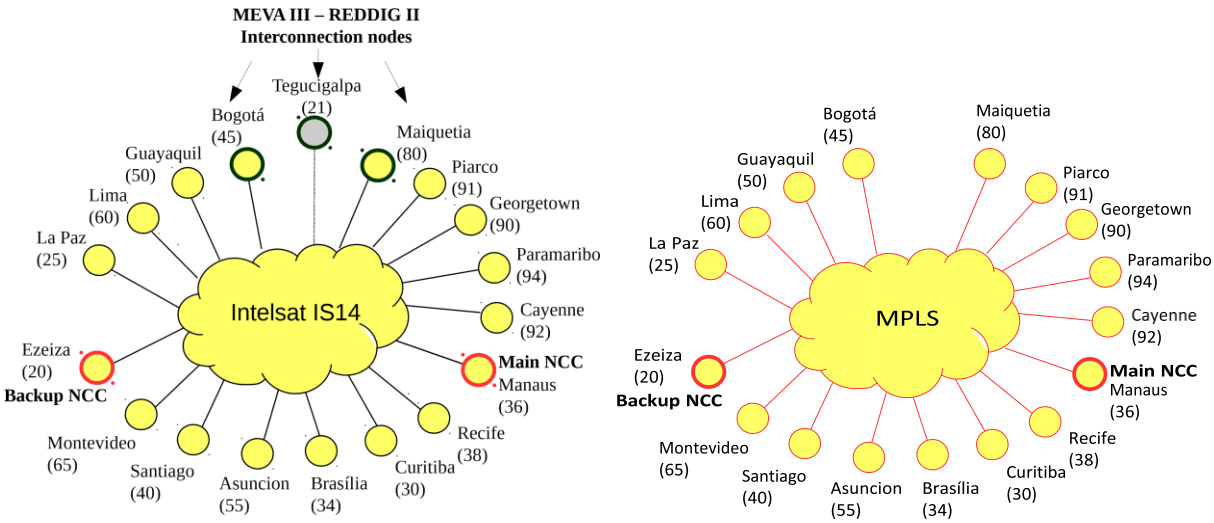

Fig. 2

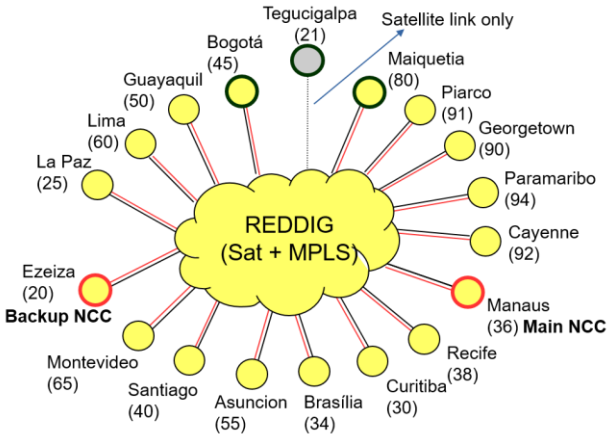

Figure 1 – REDDIG II primary and back up networks

2. Discussion

2.1 The reconnection of the ICAO Lima Regional Office would take place under Technical Cooperation Project RLA/03/901, by hiring a 256-kbps MPLS link connecting the Regional Office to the REDDIG II MPLS backup network. Figure 2 illustrates this concept.

2.2 The estimated cost of an MPLS link to add a node in Lima to the backup network would be between USD 800 and USD 1,200 per month, to be shared by all States participating in Project RLA/03/901.

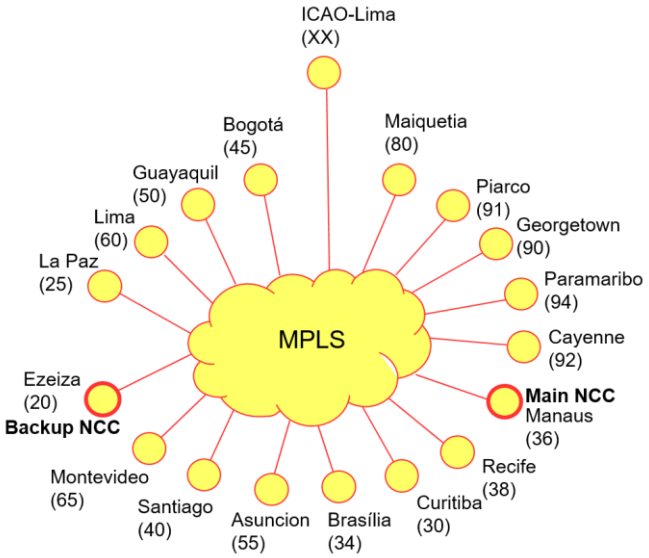

Figure 2 – Backup network with a node in the Lima Regional Office

2.3 The implementation of national IP networks will contribute to the use of REDDIG for communications between State sectors and the Lima Regional Office once it is integrated with the network through an MPLS node.

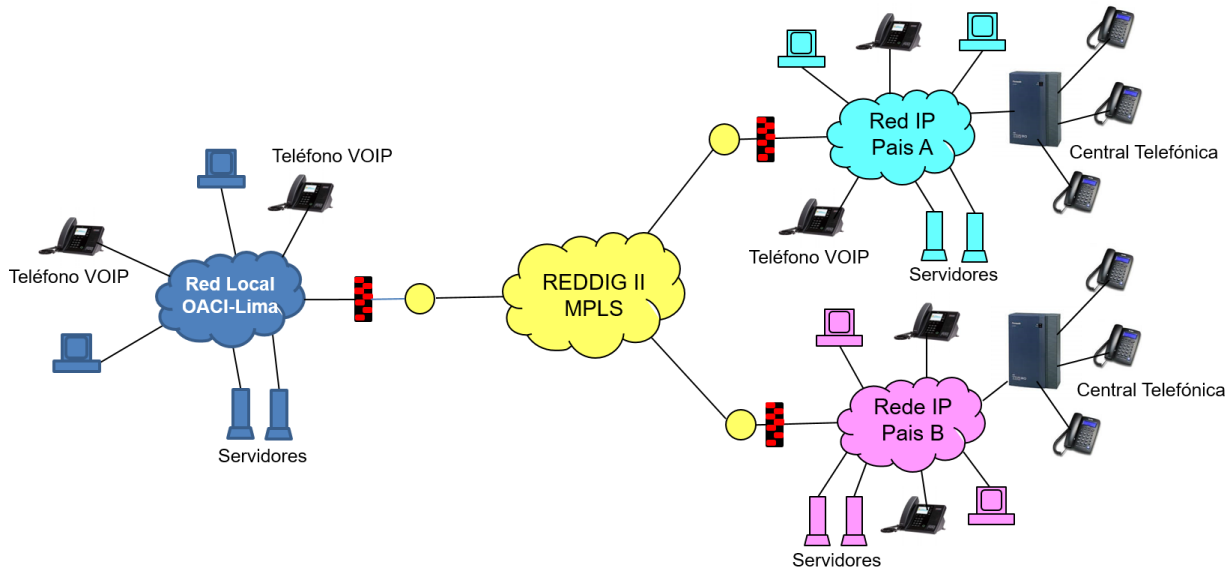

Figure 3 – Regional Office integrated with the backup network

2.4 The connection of the Regional Office with the backup network (MPLS) would provide the following benefits:

- Communication between civil aviation authorities and their representatives with the ICAO Lima Regional Office, without the cost of DDI calls;
- Communication between the AGA, AIM, ATM, ATFM, AVSEC, CNS, MET, and SAR sectors with ICAO regional officers in Lima, without the cost of DDI calls;
- Communication between State administrative sectors and the ICAO Lima Regional Office staff;

- Better coordination between the CNS regional officer and the network administrator, State technicians and the operational sectors responsible for the establishment of AIDC and AMHS interconnections;
- Use of the aeronautical message handling system (AMHS) y regional officers to access AIM, ATM, ATFM, CNS, MET, and SAR information available in the network, and exchange messages with AMHS users in the States; and
- Possibility of accessing the future SWIM infrastructure by Regional Office officers.

2.4 In addition to the aforementioned benefits, the Regional Office node will be able to use the teleconferencing function available in REDDIG II to coordinate with the administrative, operational and maintenance users of the States.

2.5 It is important to note that all the aforementioned benefits will depend on the connection of national IP networks of the States with REDDIG II. Therefore, States that have implemented national IP networks are urged to establish such connections, and those States that have not implemented IP networks are urged to implement other solutions to connect to REDDIG II.

3 Suggested action

3.1 The Meeting is invited to:

a) take note of the information provided herein;

b) discuss the convenience and feasibility of installing a REDDIG node of the backup network at the Regional Office;

c) agree to discuss the feasibility of implementation and implementation procedures at the next meeting of the Coordination Committee, in case the proposal is approved; and

d) discuss any other issues it may deem appropriate.
