AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL

WORKING GROUP 2

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Change Proposal for Supporting VDL SNDCF

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Summary

This paper is in response to action item #6/7 of ATNP WG-2. The paper evaluates the VDL SNDCF requirements developed by ICAO AMCP WG-C and recommends changes to the CNS/ATM-1 Package SARPs for consistency between the internetworking and subnetwork requirements.

1.   Background

WP/191 presented at the last WG-2 meeting at Banff indicated that additional SNDCF requirements have been defined by ICAO AMCP WG-C for the VDL subnetwork. Action item 6/7 was assigned to investigate those additional VDL requirements and propose any changes necessary for the SNDCF requirements specified in CNS/ATM-1 Package SARPs. This paper discusses each of the additional SNDCF requirements specified in VDL SARPs and recommends suitable modifications to CNS/ATM-1 Sub-Volume V.

2.   Description of VDL SNDCF

In VDL, a new subnetwork connection is established between the airborne DTE and the ground DTE each time the aircraft is handed-off from one ground station to another. The existing Internetwork SARPs specifies that the SNDCF context, i.e. the compression table, be maintained per subnetwork connection. This will introduce inefficiencies in the VDL as an aircraft typically transitions through the line-of-sight coverage of a VHF ground station within 10 to 12 seconds.

To overcome this problem, VDL SARPs require that "the VDL mobile SNDCF shall support maintaining context (eg, compression tables) across subnetwork calls. The SNDCF shall use the same context (eg, compression tables) across all SVCs negotiated to a DTE, when negotiated with the same parameters. The SNDCF shall support at least 2 SVCs sharing a context."

VDL will use the fifth bit of the compression technique octet (i.e., the sixth octet of the Call User Data field) to indicate whether the SNDCF context (eg, the compression state) was maintained from an old SVC to a new SVC. If the calling SNDCF is requesting that the SNDCF context be maintained from an existing call to the new call being established, it will set this bit to 1; otherwise, the bit will be set to 0. The VDL SARPs calls the fifth bit "Maintained/Initiated (M/I)" bit. If the called SNDCF has successfully maintained the entire SNDCF context to the new call being established, it will set the M/I bit to 1; otherwise, the M/I bit shall be set to 0. The current version of the CNS/ATM-1 Package SARPs specified the fifth bit to be spare.

3.   Conclusion and Recommendation

Based on the above discussion, it is recommended that the designation of the fifth bit of the compression technique octet, i.e. the sixth octet of the Call User Data field, be changed from "spare" to "reserved for VDL use" in the CNS/ATM-1 Package SARPs.