ATNP WG2
Utrecht, Netherlands
29 June – 1 July 1998

CNS/ATM-2 Package SARPs Enhancements for Additional Mobile Subnets

Prepared by Ron Jones

Summary

ICS SARPs (i.e., SV-5 of ICAO Doc 9705) currently identifies VDL Mode 2, AMSS (i.e., Inmarsat based), Mode S and gatelink as potential mobile subnetworks. A mobile SNDCF is defined in the ICS SARPs for each of these, except for gatelink. However, the ICAO AMC Panel has recently approved SARPs for HFDL and is developing, or have plans to develop, SARPs for VDL Mode 3, VDL Mode 4 and next generation AMSS subnetworks. The ICS will need to revised for Package-2 to define the SNDCF for each of the new ICAO standardized mobile subnetworks and to allow for routing via the appropriate path including the case where one or more of the new mobile subnetworks are available.

1.   INTRODUCTION

ICS SARPs (i.e., SV-5 of ICAO Doc 9705) currently identifies VDL Mode 2, AMSS (i.e., Inmarsat based), Mode S and gatelink as potential mobile subnetworks. A mobile SNDCF is defined in the ICS SARPs for each of these, except for gatelink. However, the ICAO AMC Panel has recently approved SARPs for HFDL and is developing, or have plans to develop, SARPs for VDL Mode 3, VDL Mode 4 and next generation AMSS subnetworks. The ICS will need to revised for Package-2 to define the SNDCF for each of the new ICAO standardized mobile subnetworks and to allow for routing via the appropriate path including the case where a single aircraft may support more than one type of VDL and/or AMSS subnetwork each potentially supporting a differing type/class of traffic. Also ATNP WG1 will need to incorporate support for the new mobile subnetworks into the Core ATN SARPs and into Doc 9705 Sub-Volume 1.

2.   DISCUSSION

The Package-1 ICS technical provisions (Doc. 9705, SV-5) address only the mobile subnetworks that had mature requirements at the time SV-5 was developed. The ICAO AMC Panel is developing SARPs for a number of new mobile subnetworks. Our understanding of these activities are summarized below:

a) Recently AMCP/5 approved the HFDL SARPs. If accepted by the ANC, the HFDL SARPs will be progressed through the normal State comment and commission approval process. Copies of the draft HFDL SARPs were previously made available to ATNP WG2 members.

b) Currently the ICAO AMCP is actively working on SARPs for VDL Mode 3 which supports both digital voice and data services. The VDL Mode 3 SARPs will define the provisions for its use as an ATN subnet supporting ATS communications. It is possible that it may not use an ISO 8208 SNAcP. The current plan is to complete the VDL Mode 3 SARPs development and validation allowing for approval by the AMCP in 1999.

c) The AMCP is also progressing SARPs for VDL Mode 4. The recent AMCP/5 meeting agreed that the role of VDL Mode 4, as to be reflected in the SARPs, will be to limit its use to supporting only surveillance related applications. In the context of its use as an ATN subnet, this would limit its use to only supporting the ADS application. The current ATSC traffic classes do not provide the means to limit traffic over a mobile subnetwork to just supporting surveillance related traffic. As with VDL Mode 3, it is possible that the VDL Mode 4 subnetwork may not use an ISO 8208 SNAcP. The current plan is to complete the VDL Mode 4 SARPs development and validation allowing for approval by the AMCP in 1999.

d) The recent AMCP/5 meeting developed a recommendation to the ANC to revise the AMCP WG-A work programmme to begin the development of SARPs for next generation satellite systems. The first such SARPs will probably be based on satellite communication services provided by Iridium. In addition to Iridium there are other potential satellite communication services that may be defined by SARPs. It is not clear when the SARPs for such next generation AMSS system(s) will be ready for approval.

3.   RECOMMENDATION

It is recommended that ATNP WG2 prepare a communiqué to AMCP requesting additional information for each mobile subnetwork for which it is anticipated that the AMCP will have approved SARPs by January 2000. A draft communiqué is attached for the consideration of WG2.

It is recommended that ATNP WG2:

a) develop ICS revisions/additions to reflect the recent AMCP approval of the HFDL SARPs;

b) determine those areas that may require revisions when additional VDL subnets are defined with each VDL mode potentially offers differing characteristics in terms of performance and supported traffic types/classes; and

c) determine those areas that may require revisions when next generation satellite subnets are defined with each type of satellite subnet potentially offering differing characteristics in terms of performance and supported traffic types/classes.

ATTACHMENT

DRAFT Communiqué to AMCP

Communiqué to AMCP

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Coordination for Additional Mobile Subnetworks

Work Group 2 of the ATN Panel at its 15th meeting identified a pressing need to coordinate with the AMCP to align the contents of the second set of the ATN SARPs (i.e., CNS/ATM-2 Package) with the ongoing work of the AMCP regarding the development of SARPs for additional ATN mobile subnetworks.

The first set of the ATN SARPs and the referenced technical provisions (Doc 9705) will be published in 1998. These SARPs and referenced Doc 9705 define the technical provisions for the subnetwork dependent convergence functions (SNDCF) for the AMSS, Mode S, and VDL Mode 2 mobile networks. The ATNP working groups are now developing the proposed "Package 2" enhancements for the ATN SARPs and Doc 9705. ATNP WG2 desires to incorporate the technical provisions associated with accommodating any additional mobile subnetwork(s) for which the AMCP will have developed, and approved at the panel level, SARPs by January 2000. This corresponds to a tentative date for approval of the "Package 2" ATN SARPs at ATNP/3 in February 2000. Since the development of the "Package 2" ATN SARPs will be occurring concurrently with the AMCP's development of the mobile subnetwork SARPs, it is important that the working groups of the two ICAO panels closely cooperate in order to not delay ultimate approval of all related SARPs.

WG2 of ATNP requests that the working groups of the AMCP responsible for the development of SARPs for ATN mobile subnetwork(s) provide, at the earliest opportunity, draft materials that would be useful in allowing ATNP WG2 to commence drafting the technical provisions that must be addressed in the ATN SARPs and related documents. Such information would include the technical definition of the subnetwork access protocol, the subnetwork priority scheme and desired mapping between CLNP and subnetwork priority levels, any restrictions on the traffic types (e.g., AOC, ATSC, etc.) allowed to be carried over the subnetwork, and predicted performance of the subnetwork in terms of transit delay at 95% probability.