**AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL**

**WORKING GROUP 3 (APPLICATIONS AND UPPER LAYERS)**
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**Update on AEEC Activities**

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SUMMARY

This paper summarizes discussions concerning ATN AEEC
documents and activities.

## 1. AEEC Activities on the ATN

1.1     The Airlines Electronics Engineering Committee (AEEC) is currently developing the specifications for the implementation of the ATN.  There will be two documents that cover ATN implementations:   AEEC specifications 637A Data Link Internetworking Services and 638A Data Link Applications.  637A will cover the implementation of the internet SARPs (this is what Paul Hennig presented earlier in Bordeaux as "ATN-1"), while 638A will cover upper layers and applications.

1.2     These documents will not be a copy of the SARPs (and/or Guidance Material); rather they will explain the operation of the SARPs, referencing the SARPs directly where applicable, and include critical requirements that go beyond the SARPs.  For 638A, and specifically CM, the requirements that go beyond the SARPs include how the initial CM address is input, storage requirements of application information on an aircraft, aircrew interactions, and others.

1.3     The outline of 638A content is given below:

Chapter 1 is an introduction
Chapter 2 is the "ATN Compatible System" section, which describes the ULA (similar to the ACF description in ARINC 622, Data Link Applications over ACARS)
Chapter 3 contains the ATN applications. Currently the only application being considered is CM.   This chapter is broken into a number of sections, mostly taken from CM guidance.  One of the areas new sections relates to "Global CM Requirements".  This will include requirements such as the number of addresses which are to be supported.

1.4 Doc 638A is planned to contain a number of Appendices.  These will include –

Appendix A:   Time-sequence diagrams for the ULA
Appendix B:   Topology choices
Appendix C:   Options for initial CM address input
Appendix D:   CM air and ground ASE state diagrams
Appendix E:   CM time-sequence diagrams and example scenarios
Appendix F:   Encoding examples, guidance and dimensioning information
Appendix G:   Differences between AFN and CM
Appendix H:   Future considerations (backwards compatibility, version numbers, etc).

1.5     Again, 638A will not directly copy the SARPs for requirements purposes.  The portions taken from the SARPs only help in understanding the ATN concept (such as the primitive and parameter tables from chapter 3 and the time sequence diagrams of chapter 5).

## 2. Issues

2.1 The AEEC has raised some issues concerning the purpose of the 637A and 638A documents. Although the draft presented at the AEEC drafting group meeting in Galveston in November 1998 was a second iteration, there were not a lot of review comments at the meeting. This was mainly due to the fact the AEEC was dealing with many other pressing issues. However, 637A and 638A were given high priority for completion.

2.2 Probably the most significant issues are the roles of and relationships between documents produced by the ATN Panel, AEEC and RTCA. The ATN Panel has, of course, produced the SARPs, and the Guidance Material is awaiting publication. The AEEC produces documents relating to avionics implementation: These documents are extremely detailed, to the level of pinouts for backplate connections where this is required. The RTCA is producing MOPs, which document minimal system capabilities. There needs to be coordination between these efforts so that incompatibilities and inconsistencies are not introduced by different groups, and that the same work is not being done in different places. Also, the groups will need help with the interpretation of the SARPs, again in order to avoid operational and technical inconsistencies.

2.3 The document completion timeline is also a issue. There may need to be priorities placed on the AEEC and RTCA work in order to adhere to ATN introduction and trials schedules. Not meeting these schedules could have a profound impact on the future of ATN.

2.4 The Galveston meeting questioned whether or not the ADS and CPDLC sections would need to be included in 638A before implementations could proceed. The current stance on this subject is that the combination of the ULA and CM in 638A, along with the CPDLC and ADS from the ATN SARPs, should suffice in the near term. However, concerns were voiced that if CPDLC and ADS were not to be included to the level of the ULA and CM, there could be the same problems with introducing the ATN as were experienced with introducing FANS-1/A.

## 3. Completion Times

3.1 Currently, the planned completion for 638A is September 1999. Only the ULA and CM will be covered. (Although there are placeholders for ADS, CPDLC, FIS and other applications, these will not be included in the first draft.)

3.2 Completion is dependent on Industry agreeing the solutions for all of the implementation details that are critical to the successful fielding of CM. Although there has not been a significant level of discussion within AEEC on these implementation details to date, some of the Galveston meeting participants agreed to bring position papers to the next meeting in March.

**4.     Conclusion**

4.1     The Working Group is invited to comment on the issues raised in this paper, and participate if possible in solving the issues raised, particularly relating to commonality between ATNP, AEEC and RTCA documentation.