ATNP WG 3 WP 9-55__

AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL (ATNP)
WORKING GROUP 3

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FANS-1 CNS/ATM-1 Accommodation

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ICAO has recognised the need to investigate issues regarding the mixed operation of FANS-1 and CNS/ATM-1 equipped aircraft operating in both FANS-1 and CNS/ATM-1 airspace. This paper looks at a couple of issues which must be considered when looking at alternative resolutions.

FANS-1 CNS/ATM-1 Migration

BACKGROUND

IATA is encouraged with the efforts being put forth to resolve the growing issue of how aircraft and controllers are going to function in a mixed FANS-1 and CNS/ATM-1 environment.

As stated previously by IATA, the issue of concern is the difference in the message sets, ***not*** the communications protocols. In accordance with Air Navigation Commission direction, the ADS Panel has responsibility for the operational functionality and the ATN Panel has the responsibility for technical definition (SARPs) of the CNS/ATM-1 applications set.

The ADS Panel has begun taking a close look at the differences between the FANS-1 (BOEING SR&O) and CNS/ATM-1 message sets as defined in the Manual of ATS Data Link Applications recommended by the ADS Panel. Along with participation of the FANS-1 experts and IATA, the panel IS attempting to find an accommodation to this issue.

DISCUSSION

There appears to be two general solutions to resolving the differing message set issue. One is to make changes to either or both of the message sets in order to make them compatible, thus eliminating any human interface differences. This can be accomplished either by a single application single version or by single application dual compatible versions. The other solution is to define an application gateway which would make any necessary conversions to the data in order to eliminate human interface differences. In the latter case SARPs have to be developed for the application gateway.

Since the ADS Panel is responsible for the functional description of the CNS/ATM-1 message set, IATA recognises that the ATN Panel must await any changes defined by the ADS Panel to make changes to the SARPs. However, both panels must recognise the consequences of decisions being made.

Regardless of the resolution, one difference will most likely remain. It is that the FANS-1 messages contain a CRC for integrity, whereas CNS/ATM-1 relies on the Check Sum as part of the Transport Layer. This, however, could possibly be resolved via software and not affect the human interface. Obviously, since the ADS Panel deals only with the operational functionality of the message set, the issue of the CRC must be resolved by the ATN Panel..

Making the message sets compatible will add the least cost and cause less additional software. However, if compatibility of message sets is not achieved, an application gateway will be required. This resolution will change the message structure, therefore destroying the end-to-end message integrity. This means that the gateway will no doubt require a high level of certification to insure that the integrity of the message data is retained.

These consequences must be considered by both the ADS and ATN Panels. Therefore, representatives of both panels must be involved in the resolution of the issue.

RECOMMENDED ACTION:

That the working group take note of the above stated concerns and address them in the course of its work. IATA recommends that the appropriate SARPs be completed by the end of 1997.