

AERONAUTICAL TELECOMMUNICATION NETWORK PANEL
WORKING GROUP 3

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Agenda item 8.2: Planning for future work programme -
Ground-ground Applications

Implementation of the CIDIN in the EUR Region

Information Paper

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SUMMARY

Since 1992 CIDIN is successively growing in the EUR Region and becomes the backbone of the AFS infrastructure. By end of 1997, 18 CIDIN centres are expected in operation. Additional centres exist or are planned in neighbour States. The user data conveyed by the CIDIN include AFTN formatted messages, flow management messages (up to 20k characters) and OPMET data (3.800 characters or 15k octets binary information). The Meeting is invited to note the wide spread use of the CIDIN in the EUR Region when considering the development of the CIDIN/ATN gateway as a tool for interoperability with and transition to the ATN.

(6 pages)

1. Introduction

The second meeting of the ATN Panel (ATNP/2) has identified the need to develop SARPs and Guidance Material for a CIDIN/ATN gateway as one of the future work items associated with ground-ground applications [1]. The decision was made in consideration of the increasing use of the CIDIN protocols in certain regions.

At the Langen meeting the CIDIN/ATN gateway will be discussed in connection with the decisions on the WG3/SG1 deliverables for ATNP/3.

In the following, information on the CIDIN implementation in the EUR Region is provided with respect to the present network topology and the conveyed categories of user data.

2. Discussion

2.1 CIDIN topology in the EUR Region

In September 1992, the first CIDIN link was set in operation between Vienna and Frankfurt. After that AFTN/CIDIN centres were implemented step by step further. Fig. 1 and 2 depict the CIDIN topology as reached at the end of 1996 and as expected for the end of 1997, respectively.

The two Central Flow Management Unit (CFMU) systems operated by Eurocontrol are attached to the CIDIN as end systems (i.e. CIDIN stations). A number of CIDIN centres, interconnected with the CFMU systems via CFMU dedicated links, are acting as so-called access centre with respect to other AFTN and CIDIN centres supporting the dissemination and collection of CFMU related data.

It should be noted, that the message communication within the Russian Federation is based on the CIDIN protocols.

2.2 Use of packet switched networks (PSN) for CIDIN

Initially, the CIDIN protocols were designed for use above X.25 permanent virtual circuits (PVCs) established on dedicated point-to-point links [2]. With the emergence of interconnected national and regional ATS packet switched networks, the dedicated links are successively replaced by PSN connections. At the same time, a transition to X.25 switched virtual circuits (SVCs) takes place [3]. Therefore, some links indicated in the Figures 1 and 2 are provided in reality by an PSN connectivity.

2.3 User data conveyed by CIDIN

From the beginning in 1992, the CIDIN was used for the transport of AFTN-formatted messages taking advantage of a considerably improved quality of service in terms of transit times and data integrity. The access function from the (conventional) AFTN to the CIDIN is provided in combined AFTN/CIDIN centres. In the CIDIN specification, this access or gateway function, respectively, is referred to as the AFTN application entity [3], [4].

Since the beginning of 1996, the CIDIN conveys also CFMU related data (AFTN- formatted messages). The CIDIN meets the high capacity requirements caused by the large volume of

exchanged CFMU data. At the end of 1997, the "ATS Data Exchange Presentation" (ADEX-P) becomes effective for the CFMU. The ADEX-P has been developed by Eurocontrol for use in the exchange of messages between computer systems for flight planning, flow management and co-ordination purposes. The upper limit of the message length is 20k characters. The access to the CIDIN for such messages will be supported by the ADEX-P application entity [5].

Since the end of 1996 the whole message flow of the former "Meteorological Operational Telecommunication Network in Europe" (MOTNE) was switched to the AFTN/CIDIN. For the CIDIN segment the OPMET application entity supports messages with up to 3800 characters or 15k octets binary information (digitised weather charts).

3. Action by the Meeting

The Meeting is invited to take note of the CIDIN implementation in the EUR Region when considering the development of a CIDIN/ATN gateway.

References

- [1] ATNP/2-WP/67, Report on Agenda item 5, Sec. 5.3 (specific work items)
- [2] ICAO Annex 10, Volume III, Ammendment 71
- [3] EUR CIDIN Manual, First Edition, ICAO EUR DOC 005 (1996)
- [4] ATNP-WG3, WP/9-22: CIDIN/ATN Gateway (Phuket meeting)
- [5] Report of the EUR AFS/97 Meeting (not yet published).