EUROCONTROL

AERONAUTICAL TELECOMMUNICATION NETWORK PANEL

WORKING GROUP 3 (APPLICATIONS AND UPPER LAYERS)
Utrecht, Netherlands, 29 June - 3 July 1998

EURO-16 AG-DL - Eurocontrol Datalink Project

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SUMMARY
This paper introduces the forthcoming EURO-16 AG-DL project which will investigate the feasibility of integrating datalink applications into existing and future Flights Data Processing Systems of Air Traffic Systems.

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1. INTRODUCTION

The Operational Requirements for data link services, as defined within ICAO, will form the basis for the definition of air traffic services in the European high density area as developed by the EUROCONTROL ODT/ODIAC subgroup. In order to provide for the required air traffic service, European ATC providers have to prepare their ATC systems for the introduction of the envisaged data-link service and its applications.

The EURO-16 AG-DL project discussed in this paper is intended to support European ATC providers in their preparations for the use of data link services.

2. EURO-16 AG-DL PROJECT

2.1 Overview

The primary objective of the EURO-16 AG-DL project is to investigate the feasibility and impact of integrating ATN data link applications into ATC centres. This activity is a necessary step to enable subsequent pre-operational validation and the definition of an implementation plan for the envisaged service.

Under the EURO-16 AG-DL project, the requirements for a data-link server will be investigated and specified. The server will provide a means to integrate the ATN, with its data link options, into existing and future ATS environments.

This activity will be followed by an evaluation of the impact of the use of the integrated data link services on a French and German ATC environments and in the NATS NERC sectors. The work will analyse the impact on the ATS HMI and FDPS and will also make an initial assessment of the impact on operational concepts, methods and procedures.

2.2 The Data-link Server

The data-link server will be a key component in each European ATC system and provides a link between the ATC systems and the ATN. On the communication side, the data link server provides the interface to the ATN communication infrastructure with its options for data-link service and ensures the exchange of messages with the Aircraft according to the ICAO ATN standards. From the system integration viewpoint it provides the interface with the various existing and future ATC systems.

Various technical options for the realisation of the data link server will be investigated along with its interaction with the ATS FDPS and other systems such as the HMI. The data-link server work package will take into account requirements from all participating states to define a core functionality for the data link server and to then identify additional options to facilitate interfaces to various specific current environments. This will result in an initial specification for the data link server enabling competitive industrial implementations.

The project will ensure that the results from related projects are reused wherever appropriate. In particular links will be established with the ProATN, EOLIA, eFDP and Avenue projects in order to co-ordinate the reuse and exchange of respective deliverables.

2.3 Programme of Work

The project is based on a two-year programme scheduled to commence in September 1998.

The activities of the project will include:

- the definition and feasibility assessment of a data-link server;

- the evaluation of the impact of the introduction of data link applications on the FDPS and the ground HMI;

- the impact on the airborne HMI;

- An operational and interoperability impact assessment of the introduction of data-link systems and services;

- An operational impact assessment of the procedures, operating methods, and operating concepts during the initial phases of air/ground datalink operations.

2.4 Deliverables

The deliverables from the work are:

- an initial specification for a data-link server enabling competitive industrial implementations;

- a report covering:

    1. the definition and feasibility assessment of a data-link server;

    2. an operational and interoperability impact assessment of the introduction of data-link systems and services;

    3. the evaluation of the impact of the introduction of data link applications on the FDPS and the ground HMI;

    4. the impact on the airborne HMI;

    5. An operational impact assessment of the procedures, operating methods, and operating concepts during the initial phases of air/ground datalink operations.

3. PROJECT PARTNERS

3.1 The Team

The work will be undertaken by a team of partners comprising:

- STNA France in Toulouse;

- DFS Germany in Langen;

- NATS United Kingdom in Bournemouth and in London;

- Eurocontrol Netherlands in Maastricht UAC through the PETAL-II Project Office at Eurocontrol Headquarters in Brussels.

Eurocontrol Headquarters in Brussels will provide Project Management, co-ordination and support.

The partners will work together as follows:

- Define and analyse the technical options for the implementation of a data-link server with maximum level of commonalities and assess impacts on other systems such as FDPS. This will be a co-ordinated activity between STNA, NATS, DFS, Eurocontrol Maastricht UAC / PETAL-II.

- Integrate the various components (e.g. HMI, FDPS, data-link server) into individual test-chain implementations to be representative of data-link pre-operational systems. This will be a co-ordinated activity between STNA, NATS, DFS, Eurocontrol Maastricht UAC / PETAL-II.

- Undertake initial validation with test tools and flight trials to enable further evaluation through other European data-link programs. This will be a co-ordinated activity between STNA, NATS and DFS.

- Undertake initial validation of operational integration through flight trials using the Eurocontrol Maastricht UAC / PETAL-II facility.

- Undertake initial assessment of the impact on an airborne HMI. This will be a co-ordinated activity between STNA, and the Eurocontrol Maastricht UAC / PETAL-II facility.

3.2 European Commission Involvement : TEN-Telecom

The European Commission is sponsoring a series of part-funded activities under its Trans-European Telecommunications Networks (TEN-Telecom) programme. The TEN-Telecom programme addresses feasibility, validation and deployment activities in respect of telecommunications networks, services and applications. TEN-Telecom aims to support projects which are able to generate sustainable activities with a high social or business impact.

By supporting the study phase, as well as pilot implementations and practical demonstrations (and in some cases also the initial steps of deployment), the TEN-Telecom programme enables several operators to work together to create a business case for launching a new innovative service or product. This will pave the way for obtaining the funding necessary to launch the new service as a viable commercial venture. In this way, TEN-Telecom is intended to bridge the gap between technical development and commercial operation in global telecommunications.

The EURO-16 AG-DL project is part of the TEN-Telecom programme.

4. CONCLUSION

The project will provide a strong indication of the viability and impact of reliance on data link operation for current and next-generation FDPs in ATS.

The Working Group is invited to note the information provided