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The SARPs Validation Database

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SUMMARY

In anticipation of the validation activity for the upper layer SARPs currently being developed by ATNP/WG3 subgroups, the Eurocontrol agency is developing a validation database to assist with the process. This database will establish a reference point to the requirements described in the text specification, and can be used to track the validation process itself.

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1 Introduction

In anticipation of the validation activity for the upper layer SARPs currently being developed by ATNP/WG3 subgroups, the Eurocontrol agency is developing a validation database to assist with the process. This database will establish a reference point to the requirements described in the text specification, and can be used to track the validation process itself.

This paper describes the database, presents its current status (as of September 1995) and future plans.

2 Purpose of the Validation Database

The initial purpose of the database will be to perform a paper validation for consistency, completeness and implementability. This will be done through the activity of loading the database with the information from the SARPs by someone independent of the SARPs development process. As each requirement is loaded into the database, the operator will be required to relate it to the other requirements. This process, in itself will be a paper validation of the SARPs.

Once established, the database will enable the validation effort to track the validation process, recording which of the requirements have been validated and which have not. Comments on the individual requirements can be recorded in the database, so that there will be a central record of remarks by those involved in the validation process, attached to the requirements themselves.

Thus the purpose of the validation database is both to take part in the validation as well as acting as a central record of the status of the validation process.

3 Description

The main function of the database is to store separately each of the requirements of the SARPs. The requirements are identified by the word “shall” which appears in the text. Thus each sentence where the word “shall” appears is identified as a separate requirement.

A tool has been developed to scan the SARPs text, identifying each of the requirements, numbering and extracting them. This provides a unique reference for each requirement. The database will then be populated with a series of sentences, each of which contains a single requirement.

On starting the system up, the user is first presented with a choice of database; there will be one for each of the SARPs (ADS, CM, CPDLC and the Upper Layers). Having selected a database, the user can then choose from a number of views, for example, viewing all the requirements in a particular version, all the validated requirements, or all the requirements that have a dependency on another requirement.

With the selection of the view made, the user can then browse through the individual requirements, or use search facilities to find one particular one. At any time the user may jump directly to the MS Word version of the SARPs, at the paragraph that contains the particular requirement he/she is looking at in the database. This linking of the database to the MS Word document allows the requirements to be viewed in context.

Some of the requirements within the SARPs are dependent upon others. For example, the requirement to implement an ADS event contract is dependent upon the requirement to be able to detect the events and to generate the report in a timely manner. These links and dependencies can also be represented in the database, thus preventing it recording a requirement as validated until all its dependent requirements are validated.

The database allows the validation status to be attached to any requirement, so that during the validation process, an accurate record can be kept of the status of each requirement and the tests used to validate it.

Users may annotate the requirements to indicate any particular findings. Several annotations, made by several people, may be made about a single requirement. The purpose of these annotations will develop during the validation process. They may, for example, be used to record the results of a particular test in detail, stating why the test passed or failed; or they may be used to record suggested changes to the SARPs that would correct a failing. Currently, the annotation facility is being left flexible.

4 Environment

The database runs on a PC running MS-Windows. It requires MS Access version 2.0 and MS Word version 6.0 (or 6.0a) to be available on the machine.

5 Current Status and Future Plans

The first versions of the database and the supporting word processor tools have been created. Sample text has been extracted from an early version of the ADS SARPs and used as test data with which to populate a database. This initial version, and its initial population is under test.

As the SARPs become stable and go under version control, it is intended that they will be put into the database. It is intended to include SARPs for ADS, CM, CPDLC and the upper layers.