CGMS-XXVII EUM-WP-25
Prepared by EUMETSAT
Agenda Item: II.6

UNIFIED ARCHIVE AND RETRIEVAL FACILITY (U-MARF): DEVELOPMENT OVERVIEW AND STATUS

This document presents an overview and the status of the development of the Unified Archive and Retrieval Facility (U-MARF) in EUMETSAT.

UNIFIED ARCHIVE AND RETRIEVAL FACILITY (U-MARF): DEVELOPMENT OVERVIEW AND STATUS

1 INTRODUCTION

The objective of the U-MARF (see CGMS-XXVI EUM-WP-22) is to implement a unified, incremental EUMETSAT Meteorological Archiving and Retrieval Facility (MARF), and its related on-line User Services, for data from the Meteosat (MTP), Meteosat Second Generation (MSG) and Eumetsat Polar System (EPS) missions. This service will also support some connectivity with the Satellite Application Facilities (SAF) which will form the distributed element of the EUMETSAT Ground Segment. The U-MARF will be flexible enough to accommodate additional datasets, e.g. from Third Party missions.

The Council of EUMETSAT agreed to the Procurement Proposal for the U-MARF, in November 1997. The procurement approach consists of a phased development, including the development, delivery, integration and testing of a first version (V1) of the U-MARF including Archiving and Retrieval with multi-mission User Service functionality, supporting MSG and MTP. A second version (V2) of the U-MARF will upgrade the first U-MARF version in order to support EPS and SAF connectivity.

In early 1998, a EUMETSAT U-MARF Project Team was set-up and developed a U-MARF Requirements Specification and a development logic, in agreement with the Meteosat, MSG and EPS customer programmes. Upon successful completion of this task, the U-MARF ITT was released in July 1998. A contract was awarded in November and kicked-off on 15 December 1998.

2 U-MARF DEVELOPMENT OVERVIEW

2.1 Development Logic

The U-MARF procurement is based on an incremental development plan in order to accommodate, on the one-hand the very tight MSG Ground Segment schedule constraints, and on the other hand to reduce the risks of inconsistencies between the development of the V1 and V2 versions.

The resulting U-MARF V1 development lifecycle can be summarised as follows:

- A Requirements Analysis Phase (RAP) and Architectural Design Phase (ADP) start the U-MARF development, covering both U-MARF versions. They aim at defining an architecture addressing V1, V2, and the transition strategy between V1 and V2.
  After the ADP, the implementation will only consider V1, with two intermediate V1-A and V1-B versions.
- A Detailed Design, Development, Integration and Validation of the first version V1-A. This version will concentrate on the kernel U-MARF functions, including Archiving, Catalogue, Monitoring and Control functions, and encompasses the implementation of all MSG specific interfaces.

- A Detailed Design and Development, Integration and Validation of the V1-B version, which adds the User Services, formatting/delivery functions and the MTP interface, to the V1-A version.
- After Acceptance of the V1-B version, a so-called "Updated Architectural Design" will be established for the preparation of the V2 development.

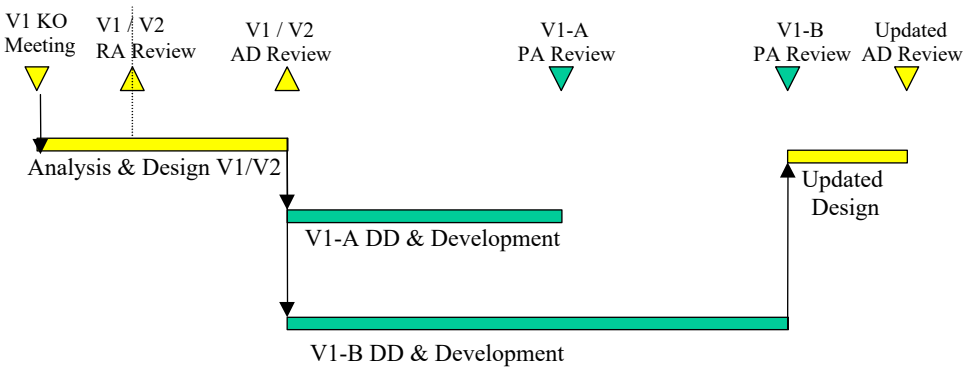

Figure 1: U-MARF V1 Development Logic

The development of the V2 version, which addresses EPS and SAFs connectivity, will consist of the following phases:

- Detailed Design of the V2 upgrade
- Development of the V2 upgrade
- Integration and Validation of the complete V2

With the development logic presented above, the major milestones are currently planned as follows:

Development Phase	Planned Dates
Kick-Off (KO)	15/12/98
V1/V2 Requirements Analysis (RA) Review	10/03/99
V1/V2 Architectural Design (AD) Review	18/05/99
V1-A Provisional Acceptance (PA) Review	22/12/99
V1-B Provisional Acceptance (PA) Review	12/06/00
Updated Architectural Design (UAD) Review	02/10/00
V2 Provisional Acceptance (PA) Review	04/02

2.2 Availability of services to internal and external users

The first version open to the users will be version V1-B. Its objective is to allow the completion of the integration and system verification and validation with MSG and MTP. Upon completion of these phases, all web user services on MSG and MTP will be provided to external users, including information and documentation services and more especially retrieval and ordering services on MTP and MSG data sets through catalogue queries.

Although the process of transcription of MTP data into the U-MARF archive and catalogue will only start at this stage, it should be noted however that the U-MARF will be able to manage MTP services in cooperation with the MTP MARF.

3 STATUS

The U-MARF Project has so far progressed according to its plan.

The U-MARF Requirements Analysis Phase (RA) produced the Management Plan, the analysis of the requirements (including V1 and V2 requirements), and the definition of a preliminary structured model of the Facility (covering also V1 and V2 requirements). It was successfully completed after Requirements Analysis Review (RAR) held on 10-11 March 1999.

The purpose of the Architectural Design Phase, started immediately after the RAR, is to validate and justify the overall U-MARF V1 and V2 architecture. Within this phase, complementary low-level requirements are also defined for the future V2 EPS and SAF development. The proposed generic SAF interface implementation and their implications will be discussed with the SAFs. The Architectural Design Review was held in May 1999, and, after satisfactory closure of all agreed actions, the phase was declared successful in July. The parallel start of the Detailed Design and Production of the V1-A and V1-B versions had been authorised in June.