Space Master

Software for Telemetry Data Management

- Acquisition
  - Processing & Calibration
  - Visualization & Export
  - Data Storage & Archive

Science & Engineering Applications Datentechnik GmbH
Space Master

Space Master is a generic reusable telemetry data management system used to process, store, and visualize telemetry data. It runs on multiple client workstations connected to a server.

The distributable server system consists of a small and stable system core software with open plug-in interfaces. This allows the system to be used in new facilities or to adept to new requirements and use cases.

Processing and Master Database

Once an incoming data stream (e.g. TCP-IP, UDP, FTP, etc.) delivers a telemetry packet, an event is triggered to start the individual processing sequence for data extraction, calibration and distribution. Process sequences can run either sequentially or parallel and can also initiate new processing sequences. Depending on the processing power of the available hardware platform, the software can:

- Process several million operations per second
- Store more than 50,000 parameters per second on a standard desktop pc

The processing rules for a certain incoming data stream can be defined in two different ways, via:

- Data Base Definition, or
- Variable Sequence Definition

The easiest application is to use the Master Database which provides a comfortable user interface for defining processing rules for raw and calibrated data from an incoming raw data stream.

Data Visualization & Export

Online and offline data can be visualized and evaluated in parallel, with standard table and graphic display. They are automatically merged and displayed within the same user interface component.

The user interface provides functionalities for:

- Tracing data back to its origin
- Customized export (raw data, XML, CSV, etc.)
- Report generation
- Access right management

Visualized data points can be traced back to their origin. Anomalies which are the result of a bit error in the source data can be traced back to the original source packet, and can be manually corrected and overwritten.

Visualization can be achieved via a:

- Desktop client based on Eclipse
- Synoptic displays (Mimics)
- Web 2.0 technology (based on RAP / AJAX)

Interfaces

The server consists of an open web service based communication layer, which can be used to adapt distributed client application through different programming languages such as: java, .net, C++, LabVIEW™

About S.E.A.

S.E.A. Datentechnik GmbH is an engineering company founded in 1995 and located in Troisdorf and Cologne/Germany. The firm is involved in the product and projects business. S.E.A. develops and distributes high end measurement and testing hardware and software for almost all industries, as well as solutions for the test and qualification of airborne and space related technical systems. The complete Space Master system is currently being used for the Philae Mission, a deep space cornerstone mission of the ESA and is also used for experiments the material science lab facility (MSL) on board the ISS.

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