

# MUST

## Mission Utility & Support Tools



The Mission Utility & Support Tools are a proven combination of powerful clients and a fast data server. Together these tools provide a very viable aid for most currently flying ESA missions.

The Solenix version of MUST enhances the ESA version in terms of performance and flexibility. It also offers more functionality and new components.

### Quick Facts

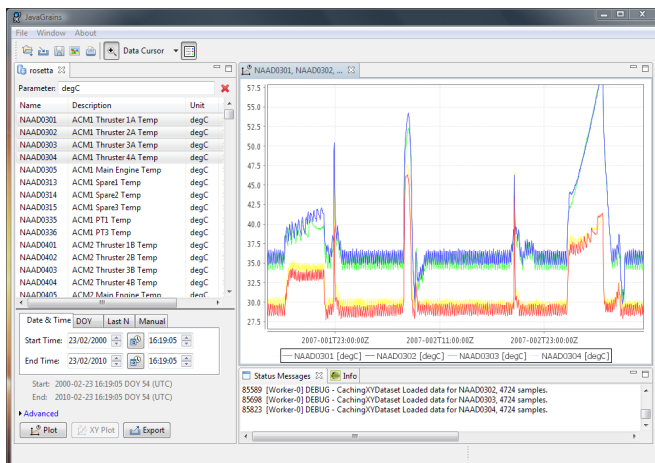
- Support for more than 15 ESA missions
- Developed in response to real user needs
- Developed in close collaboration with users
- Optimized data storage for fast access
- Powerful client applications

### Introduction

MUST emerged from real needs of Flight Control Teams for better data analysis capabilities and integration of telemetry data with other data.

During its history MUST has undergone major refactoring phases and constant upgrades to support more missions, data providers and standards, and it was extended with more functionality. An API was added to provide a single access point to the data.

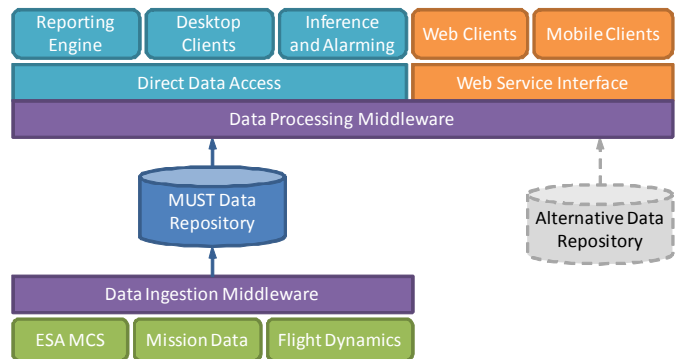
MUST was developed in close collaboration with users since the beginning. This resulted in software directly tailored towards specific user needs.



Grains: Graphical Analysis Client

### Technology

On the server side MUST consists of a relational database, which feeds data into a middleware. The middleware takes care of the client-specific data pre-processing for performance optimizations and in order to provide additional information extracted from the data. Various data interfaces are provided for efficient data transfers to web, mobile and desktop clients.



MUST Architectural Overview

Data is added to the repository using a series of importers, each of which handles data from a specific data source, e.g. a Mission Control System (MCS). Importers for most ESA systems are available already.

The most versatile client for MUST is called Grains and allows the graphical analysis of telemetry stored in the repository. Based on the Eclipse Rich Client Platform (RCP) it provides a native look and feel with high performance on all major platforms.

The most used functionalities of Grains have been ported to the web through sophisticated web clients.

### Status

MUST is currently in use by over 15 ESA missions for monitoring, off-line analysis of data and anomaly investigation. The original MUST system was developed under ESA contract. The Solenix version of MUST is enhanced with additional modules, functionalities and performance optimizations. It is continuously improved with new developments.