

1. EITS Data Management System Design

1.1. System

1.1.1. System Tradeoff Study Results

1.1.2. Make or Buy Research

- 1.1.2.1. Transcoding tools (need to convert ASF, need ffmpeg code in Linux, or TBD in Windows)
- 1.1.2.2. RAID management (open source or commercial)
- 1.1.2.3. Physical disk transport or data replication (to get video data from MBARI to ORCA)

1.1.3. System Design

- 1.1.3.1. Workflow diagrams. Create workflow diagrams to show interaction between subsystems [IN PROGRESS]
- 1.1.3.2. Deployment diagrams. Create deployment diagram to show system components in the EITS Data Management System for MARS. [COMPLETE]
- 1.1.3.3. Workflow controller design
 - 1.1.3.3.1. Research different options (commercial, grid flow tools like Pegasus, Chimera, etc.)
 - 1.1.3.3.2. Design and implement Workflow controller on MARS EITS computer
- 1.1.3.4. Write design document

1.1.4. System Verification Requirements

- 1.1.4.1. Extract basic verification requirements from project document
- 1.1.4.2. Write basic system test plan

1.2. Subsystems

1.2.1. EITS

- 1.2.1.1. Setup RAID for ancillary data storage on MARS-EITS computer? (or is this our responsibility ?)
- 1.2.1.2. Define interface to fetching data from EITS instrument
- 1.2.1.3. Duane – others ?

1.2.2. AVED

1.2.2.1. AVED 2006 tasks to complete

- 1.2.2.1.1. Finish AVED UI. [IN PROGRESS]
- 1.2.2.1.2. Integrate Jerome segmentation algorithm improvements. [IN PROGRESS]
- 1.2.2.1.3. Complete AVED and VARS integration (Duane, what exactly is meant by this task? Is this task to import AVED XML into a database? If so, this task is an EITS task, and not a 2006 AVED task. Maybe I'm misunderstanding this.

1.2.2.2. AVED requirements for EITS experiment

- 1.2.2.2.1. Extract basic requirements from project document

1.2.2.3. AVED design for EITS experiment

- 1.2.2.3.1. Modify AVED user interface as needed to meet requirements
- 1.2.2.3.2. Modify AVED algorithm as needed to meet requirements
- 1.2.2.3.3. Document AVED software design
- 1.2.2.3.4. Write user manual for operating AVED software without the user interface. [This task overlaps with AVED Dissemination tasks]
- 1.2.2.3.5. Write user manual for operating AVED via UI (or integrated document in AVED UI). [This task overlaps with AVED Dissemination tasks]

1.2.2.4. AVED subsystems for EITS experiment

- 1.2.2.4.1. AVED capable computer for ORCA.
 - 1.2.2.4.1.1. Setup AVED on computer for deployment at ORCA. (Note, this computer will not be capable of processing large amount of MARS collected video data unless it is a compute cluster. It is assumed

this will be a high-end workstation capable of reprocessing EITS video data)

1.2.2.4.1.2. Test ORCA computer (develop automated AVED test suite may be good idea).

1.2.2.4.2. Transcode subsystem

1.2.2.4.2.1. Install/setup transcoding tools on transcode system

1.2.2.4.2.2. Test transcode conversions

1.2.2.4.3. Job Control subsystem

1.2.2.4.3.1.1. Install/setup job tools on compute cluster

1.2.2.4.3.1.2. Install/setup scratch file system management for EITS experiment

1.2.2.5. Integrated and Verified AVED Subsystem

1.2.3. VARS

1.2.3.1. VARS requirements for EITS experiment

1.2.3.1.1. Extract basic requirements from project document

1.2.3.2. VARS design for EITS experiment

1.2.3.2.1. Modify VARS to annotate Quicktime compatible file formats

1.2.3.2.2. Modify VARS to time-stamp annotations generated from video files, versus video tapes as currently done with VARS.

1.2.3.2.3. Install/setup java on MARS-EITS computer

1.2.3.2.4. Install/setup MySQL Server on MARS-EITS computer

1.2.3.2.5. Install/setup VARS database on MARS-EITS computer

1.2.3.2.6. Modify VARS database to store EITS specific ancillary data (PMT, CTD, e-jelly, hydrophone)

1.2.3.2.7. Install/setup AVED-DB database on MARS-EITS computer

1.2.3.2.8. Install/setup VARS software on VARS workstation

1.2.3.2.9. Install/setup web server on MARS-EITS computer

1.2.3.2.10. Install/setup VARS components (VARS (JNLP), Ancillary Data Loader, etc.) on MARS-EITS computer

1.2.3.3. Integrated and Verified VARS Subsystem

1.3. Subsystem Integration and Test

1.3.1. AVED-EITS Integration and Test

1.3.1.1. Install networking between AVED Cluster, MARS-EITS Computer, and Transcode node

1.3.1.2. Test interface between EITS instrument "New Video Notifier" interface and Workflow Controller.

1.3.1.3. Test interface between Transcode node and Workflow Controller

1.3.1.4. Test interface between Job controller on cluster master node and Workflow Controller

1.3.1.5. Error recovery testing

1.3.1.6. Cluster load balance testing

1.3.2. VARS-AVED Integration and Test

1.3.2.1. Integrate and Test AVED XML output into VARS AVED-DB database

1.3.2.2. Brian - [add here](#)

1.3.3. VARS-EITS Integration and Test

1.3.3.1. Brian - [add here](#)

1.4. System Assembly

1.4.1. VARS Workstation

1.4.2. MARS-EITS Computer

1.4.3. EITS Instrument

1.4.4. Compute Cluster