



Contribution ID: 360

Type: poster presentation

## A Grid-based Batch Reconstruction Framework for MICE

The international Muon Ionisation Cooling Experiment (MICE) is designed to demonstrate the principle of muon ionisation cooling for the first time, for application to a future Neutrino Factory or Muon Collider. The experiment is currently under construction at the ISIS synchrotron at the Rutherford Appleton Laboratory, UK. As presently envisaged, the programme is divided into three Steps: characterisation of the muon beams (complete), characterisation of the Cooling Channel and Absorbers (data-taking restarting in 2015-2016), and demonstration of Ionisation Cooling (2017-2018).

The MICE Batch Reconstruction framework reconstructs all MICE data recorded to date for a particular MICE Step, using a specified MAUS version. Our job manager process holds a local SQLite database of MICE runs already reconstructed with a given MAUS version; it repeatedly checks against the MICE Metadata DB and on identifying data runs that have not yet been reconstructed it will submit a job to the Grid to run MAUS against that data run. For this we select from those Tier2 sites that hold a copy of the raw data. The reconstructed data are stored on the SE at the site where the job runs and registered in the LFC. On successful reconstruction, the Grid job registers an FTS transfer request with a separate File Transfer Controller (Web Service based) to copy the reconstructed data to the Castor SE at RAL, where they are stored on tape. This decouples the FTS transfer request and monitoring from the Grid job. After the output has been transferred to the Castor SE at RAL, a corresponding record is added to the MICE Metadata DB by the File Transfer Controller. The MICE Metadata DB can then co-ordinate the further distribution of the reconstructed data across the Grid, including to HTTP-enabled SE's to allow MICE collaborators to access the data directly from any web browser.

**Author:** MARTYNYIAK, Janusz (Imperial College London)

**Co-author:** NEBRENSKY, Henry (Brunel University)

**Presenter:** MARTYNYIAK, Janusz (Imperial College London)

**Track Classification:** Track4: Middleware, software development and tools, experiment frameworks, tools for distributed computing