Data Management and Database Framework for the MICE experiment

1. Data management:
   - Raw Data Mover and Reconstructed Data Mover
     - fully automated system designed to safely upload data onto permanent tape storage
     - written in python, use EMI gfal2 API for security
     - use a proxy certificate created from a X509 certificate stored on a hardware token (poster #532)
     - data integrity verified before check-summed copy
   - FTS based tool to distribute data to other Tier-2 grid sites

2. Database framework

- use PostgreSQL
- firewall-protected read-write master DB installed in MICE Control Room
- fully replicated hot-standby read-only slaves installed elsewhere
- Web Service layer provided by JAX-WS deployed on Tomcat
- Java clients, python clients (suds) and C/C++ clients (gSOAP) provided
- Google Window Toolkit based DB viewer.
- several types of records to book-keep
  - real-time configurations e.g. magnet currents during running
  - user-processed records e.g., geometries, calibrations
  - details of GRID processing