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