

# Grid Interoperation with ARC middleware for CMS experiment

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The Compact Muon Solenoid (CMS) is one of the LHC (Large Hadron Collider) experiments at CERN. CMS computing relies on different grid infrastructures to provide calculation and storage resources. The major grid middleware stacks used for CMS computing are gLite, OSG and ARC (Advanced Resource Connector). Helsinki Institute of Physics (HIP) builds one of the Tier-2 centers for CMS computing. CMS Tier-2 centers operate software systems for data transfers (PhEDEx), Monte Carlo production (ProdAgent) and data analysis (CRAB). In order to provide the Tier-2 services for CMS, HIP uses tools and components from both ARC and gLite grid middleware stacks. Interoperation between grid systems is a challenging problem and HIP uses two different solutions to provide the needed services. The first solution is based on gLite-ARC grid level interoperability. This allows to use ARC resources in e.g. CMS data analysis without modifying the CMS data analysis software. The second solution is based on developing specific plugins for ARC in CMS software.

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