

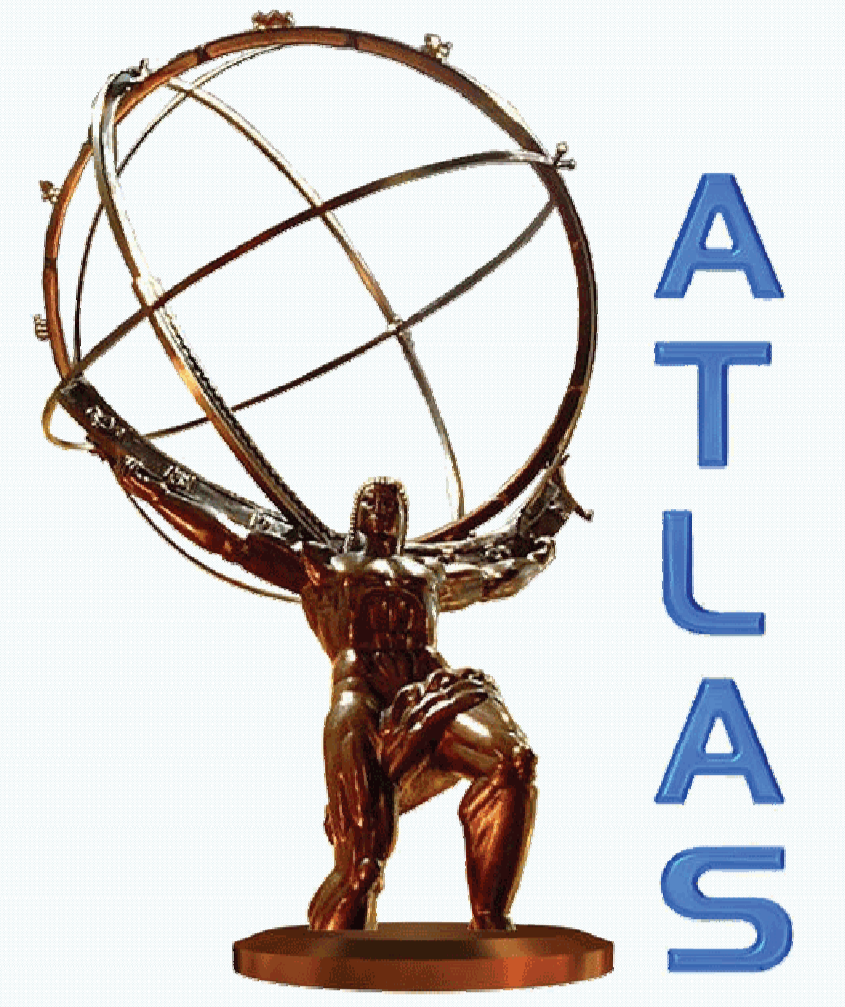
Complete Distributed Computing Environment for a HEP Experiment: Experience with ARC-Connected Infrastructure for ATLAS

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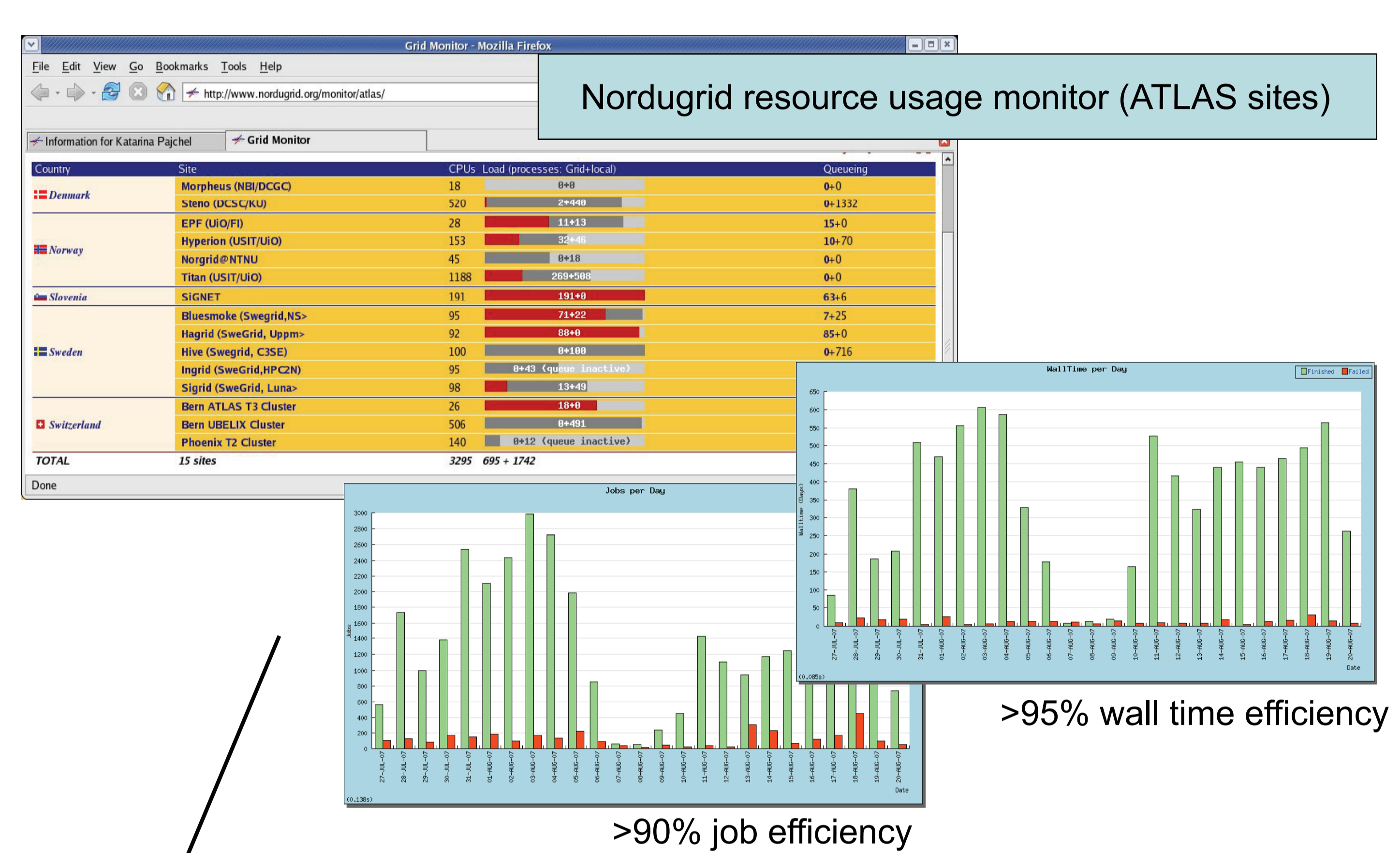
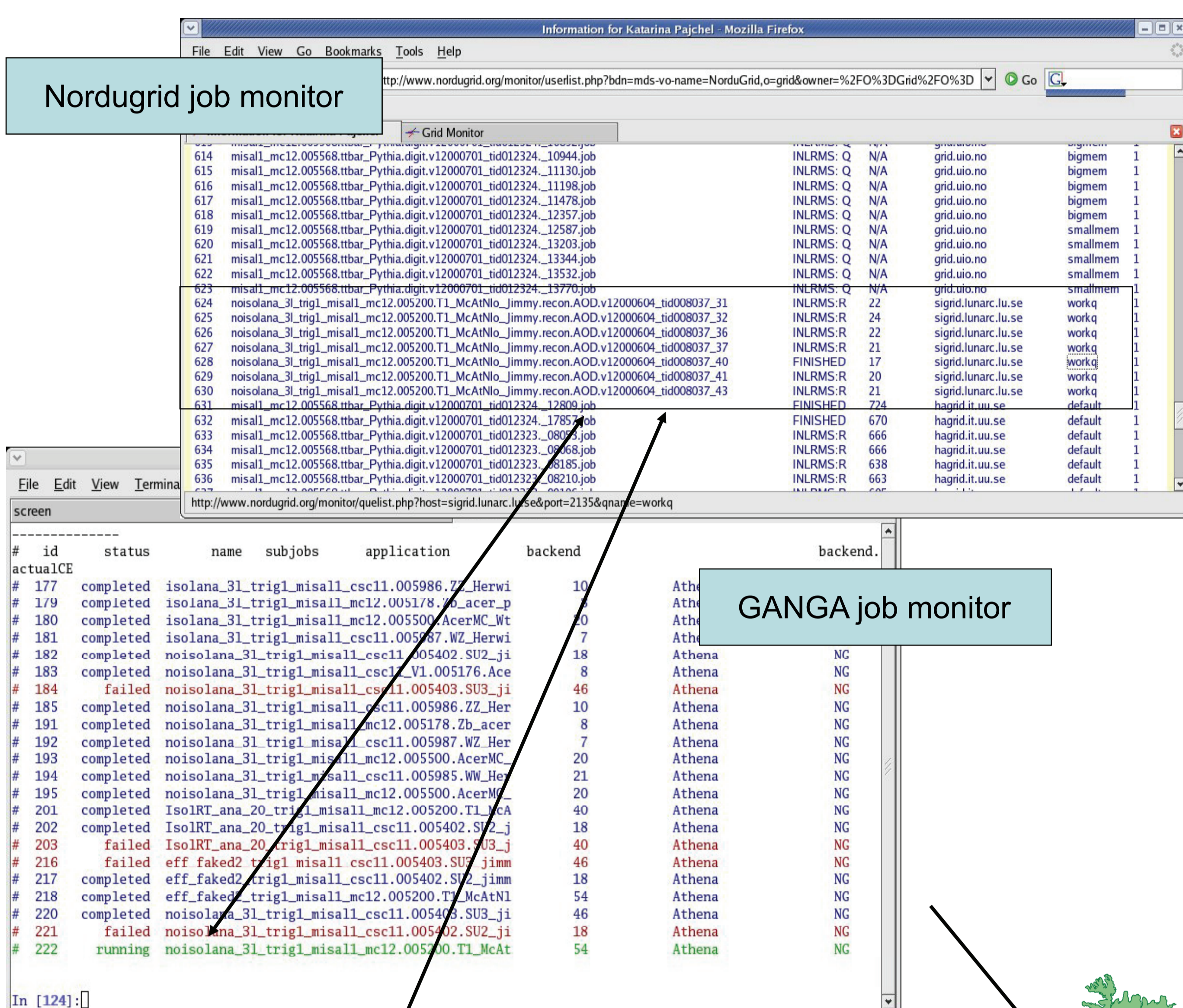


Computing and storage resources connected by the Nordugrid ARC middleware in the Nordic countries, Switzerland and Slovenia are a part of the ATLAS computing grid. This infrastructure is being commissioned with the ongoing ATLAS Monte Carlo simulation production in preparation for the commencement of data taking in 2008. The unique non-intrusive architecture of ARC, its straightforward interplay with the ATLAS Production System via the Dulcinea executor, and its performance during the commissioning exercise is described. ARC support for flexible and powerful end-user analysis within the GANGA distributed analysis framework is shown. Although the hardware resources dedicated to ATLAS in NorduGrid are quite modest, they have provided more than double the agreed contribution to the ATLAS production, with an efficiency above 95% during long periods of stable operation.



Physics analysis jobs are submitted to NorduGrid through **GANGA**

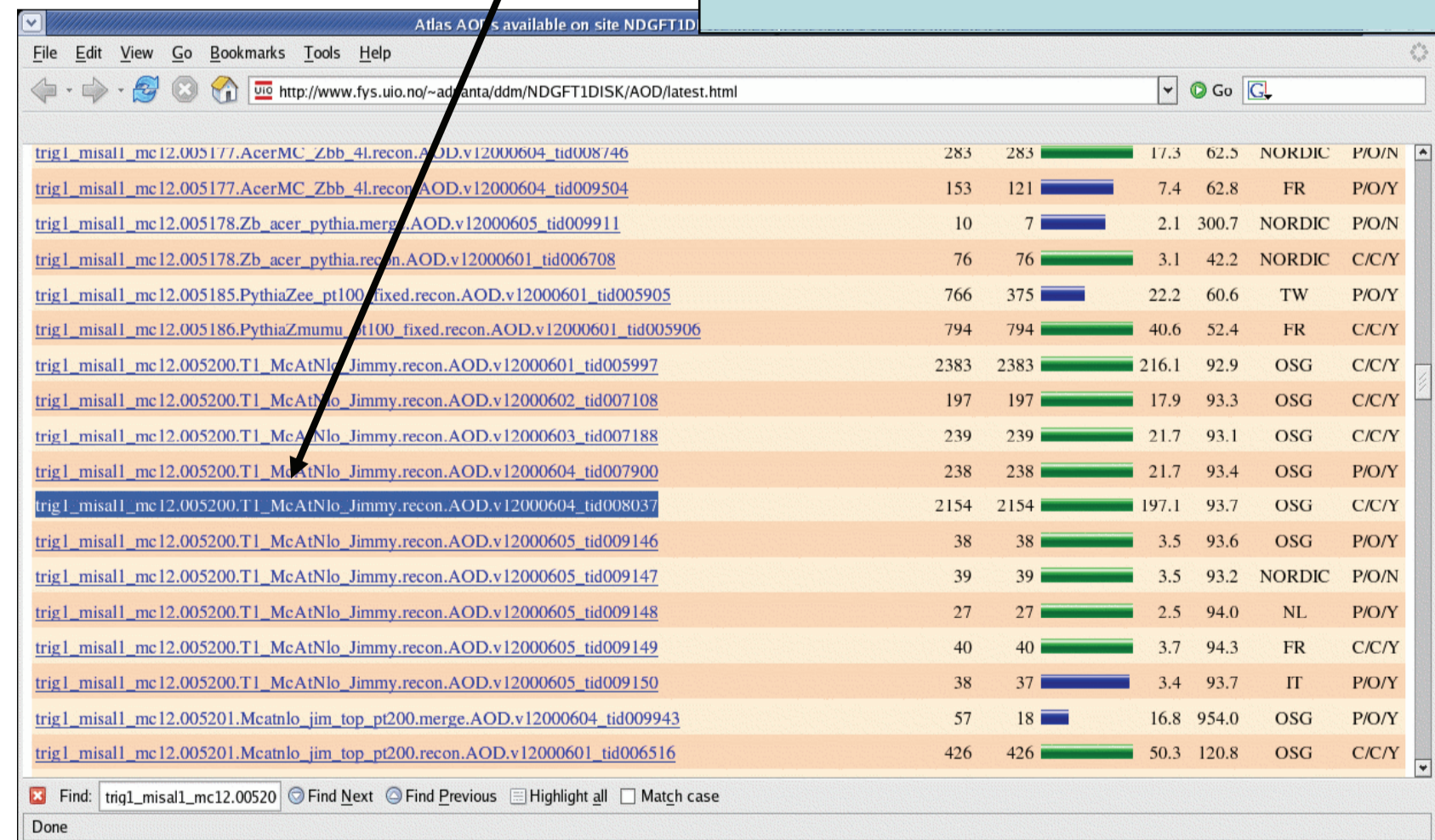
The **ATLAS MC production system** is one of the largest users of NG resources



>95% wall time efficiency

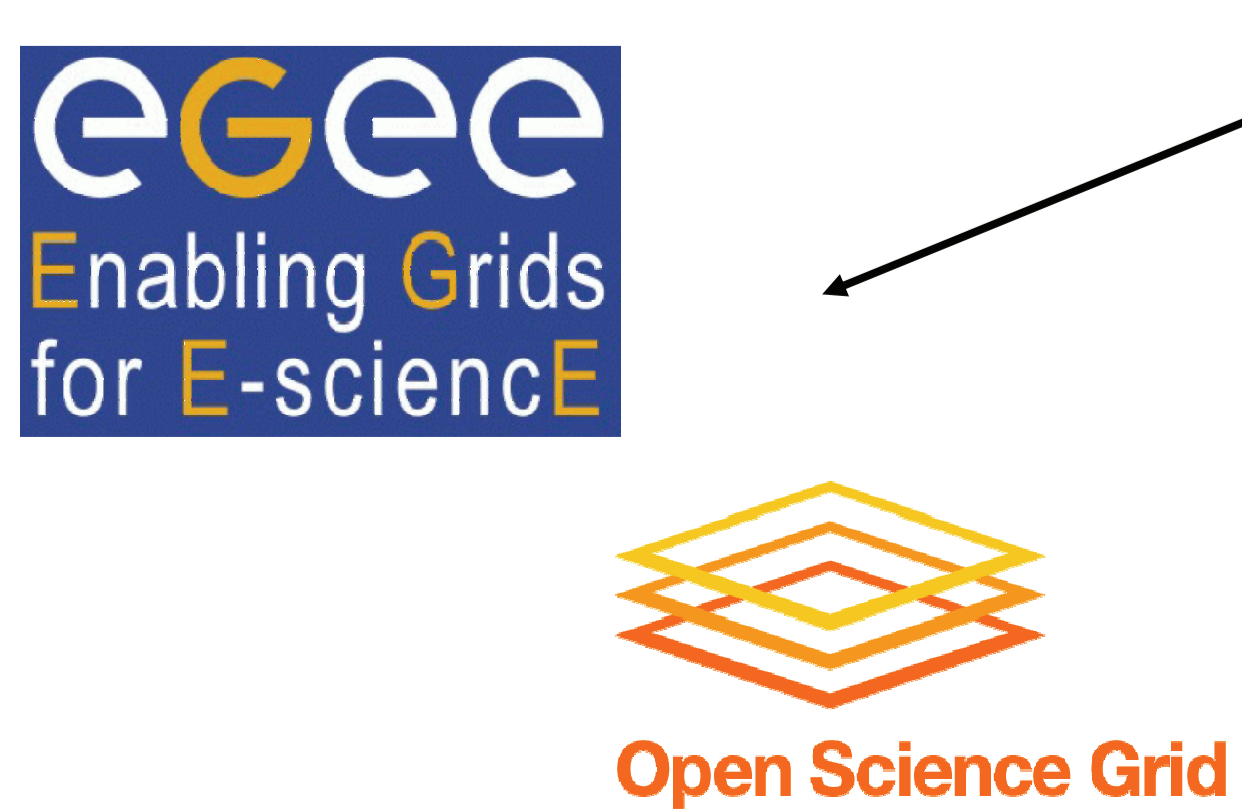
>90% job efficiency

DQ2 dataset availability monitor

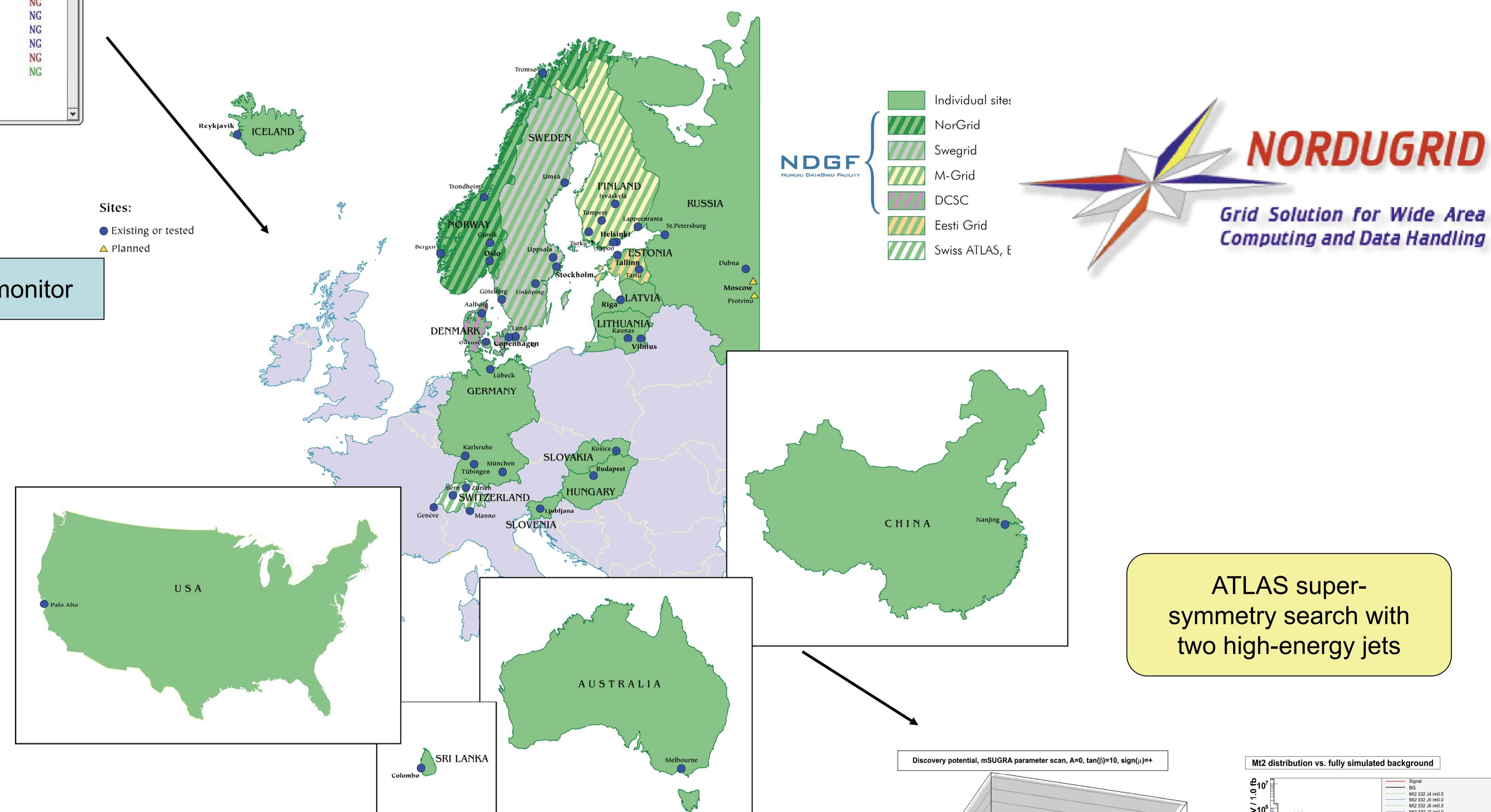


DQ2 is used to copy data between NG and other Grids

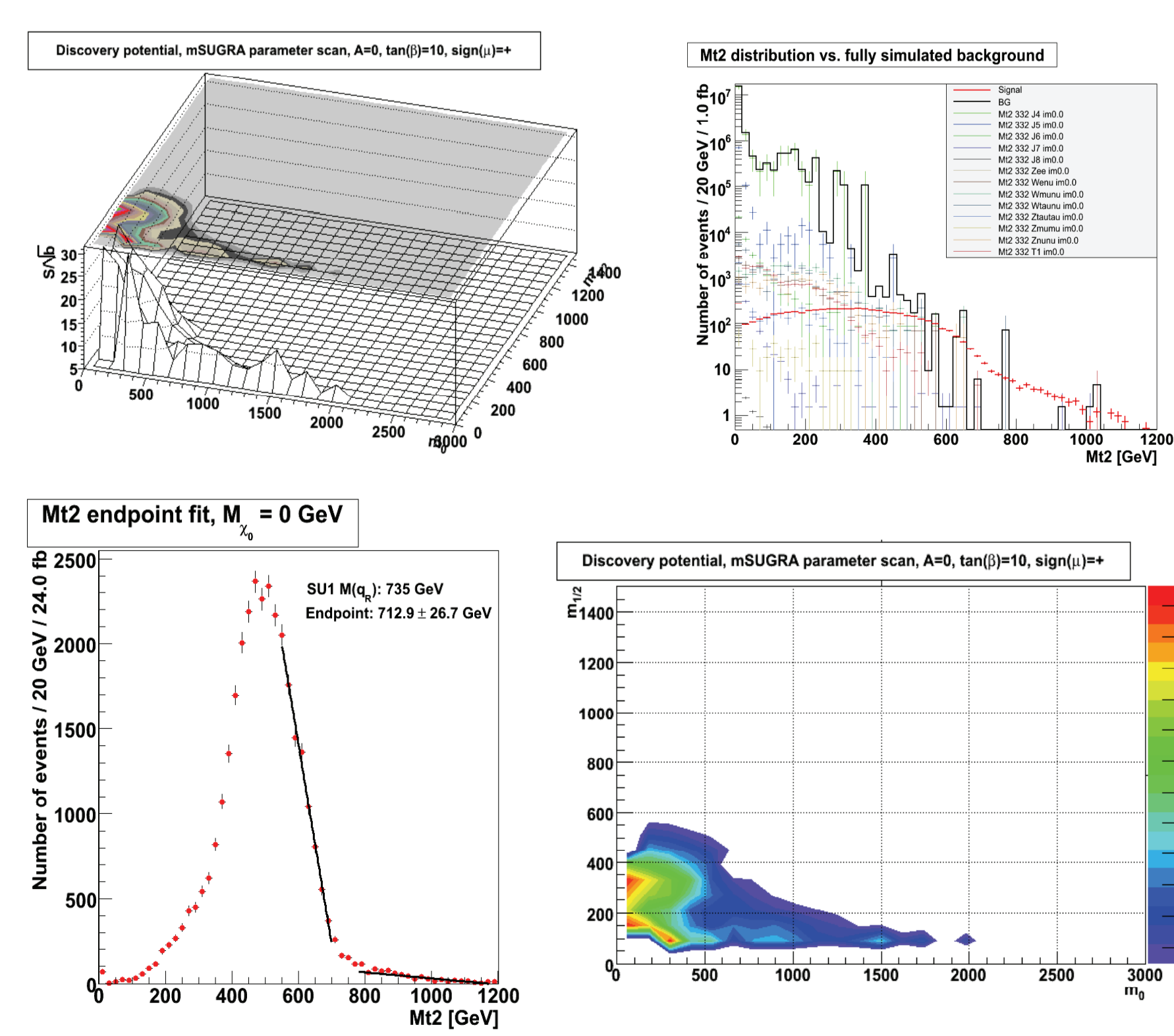
DQ2



Here we show the complete chain of distributed physics analysis, from simulated data generation to Grid job submission, input data collection and finally physics data output. Members of the University of Oslo's experimental particle physics group are involved in all of these activities.



ATLAS super-symmetry search with two high-energy jets



ATLAS preliminary