



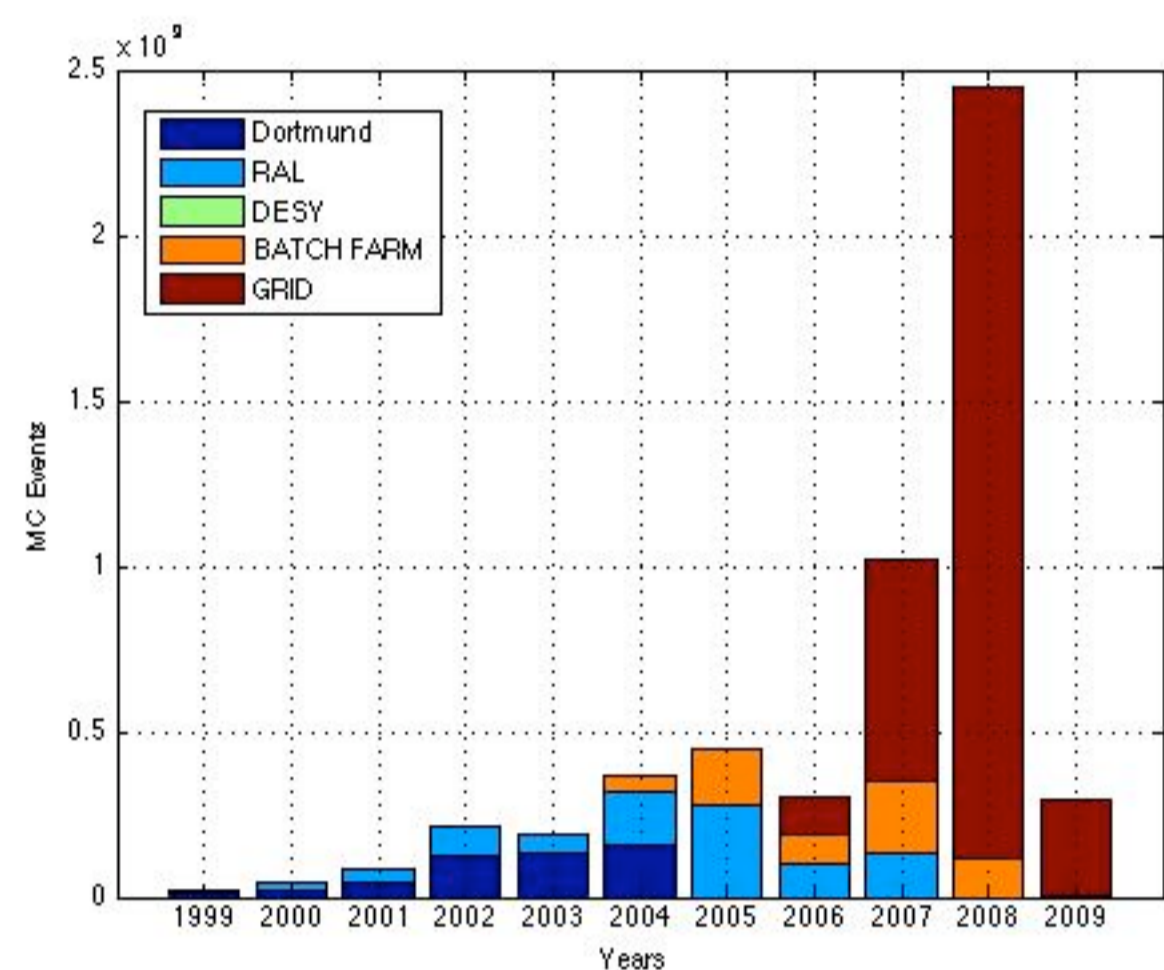
DESY, Hamburg, Germany

H1 Grid Production Tool for Large Scale Monte Carlo Simulation

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The 2008 World Record in number of generated MC events on the LCG Grid:

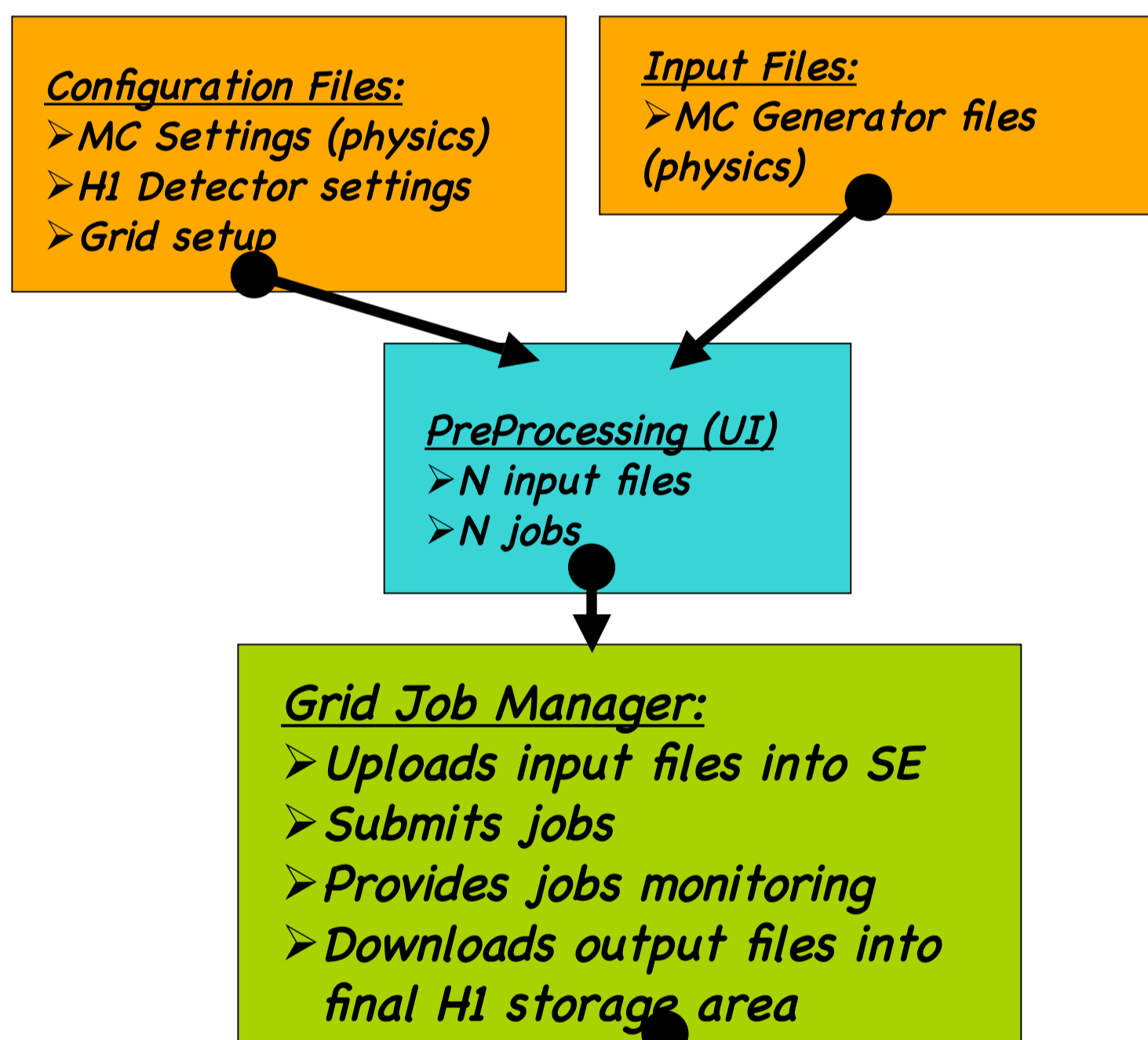
2.4 x 10⁹ MC Events !



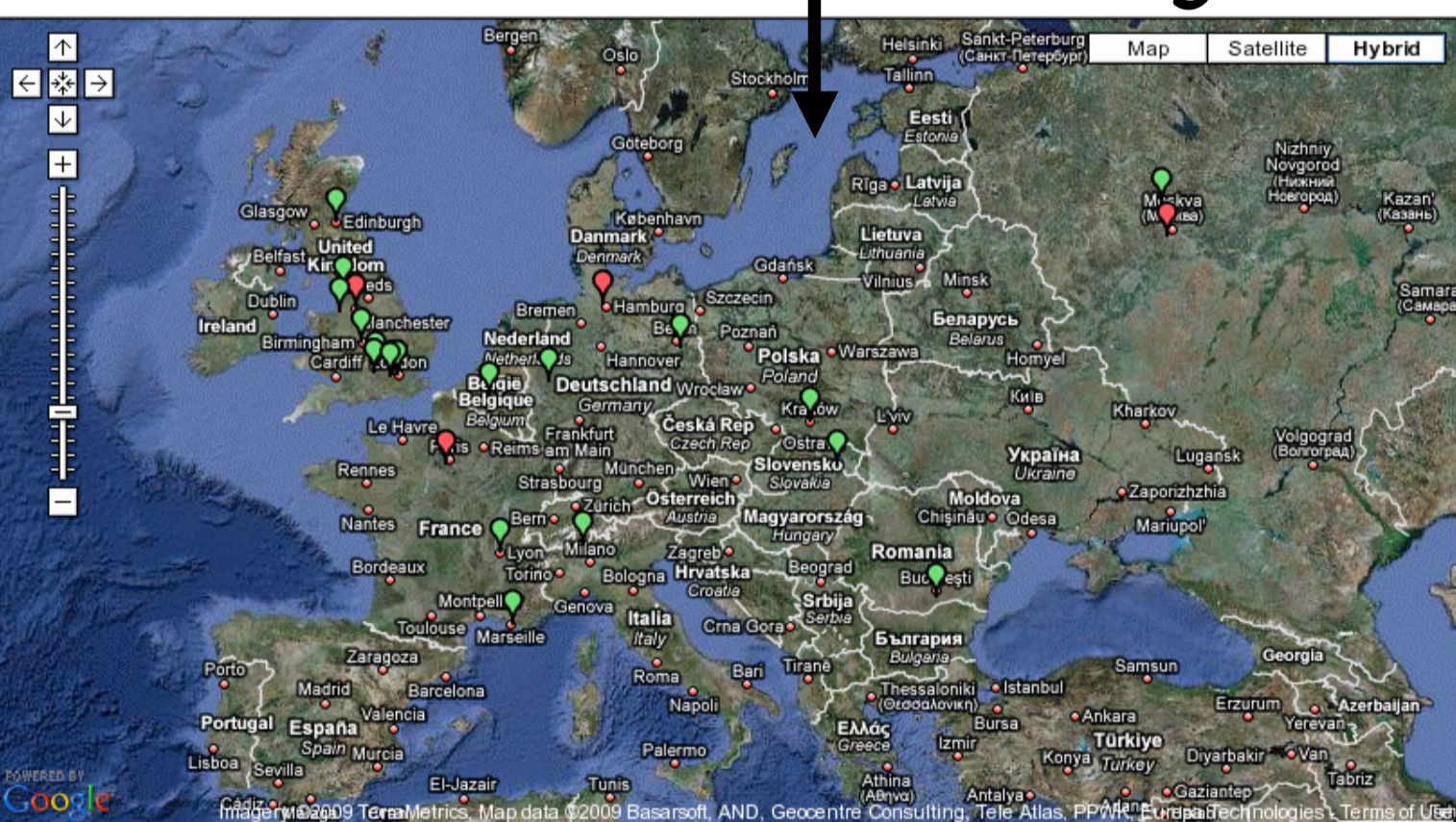
Introduction to the H1 Grid Production Framework

This is an Object Oriented Workflow manager, written in Perl & Python, which converts Monte Carlo (MC) request into executable jobs, supports execution of the jobs on the LCG Grid and downloads resulting files into the final H1 storage tapes.

Preprocessing:



Jobs Execution & Jobs Monitoring:

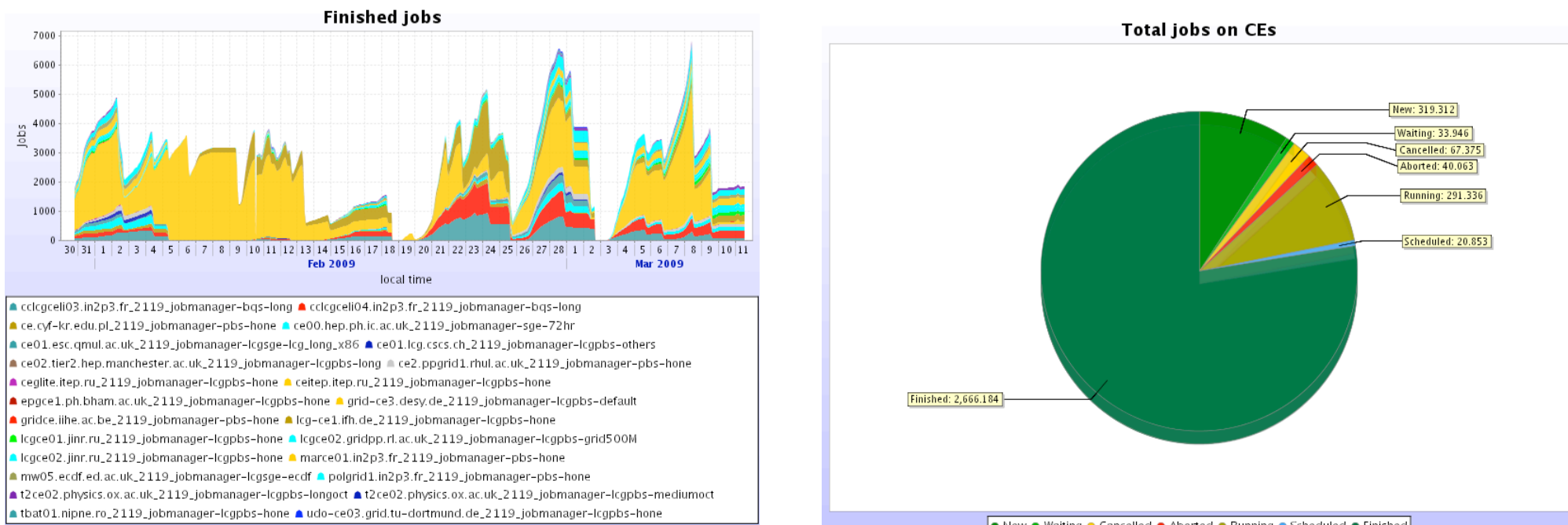


LCG Grid Sites supporting hone VO

Monitoring & Statistics

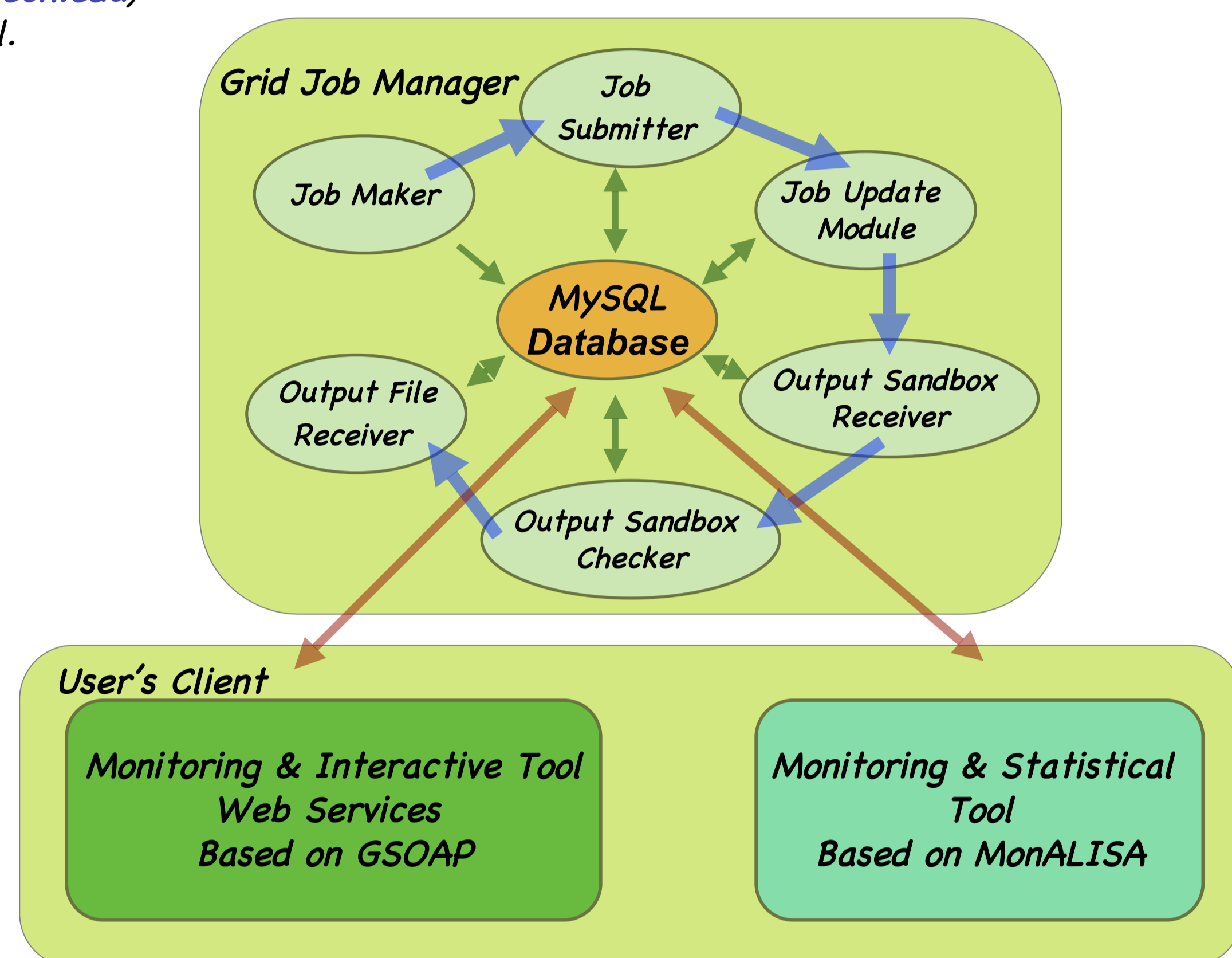
For direct management of the large scale MC production are used:

- Web Services (command line interface allows to check of job's details - more efficient than GUI),
- MonALISA Tool: client contacts with Central Grid Job Manager Database and transfer requested information to the MonALISA Server.



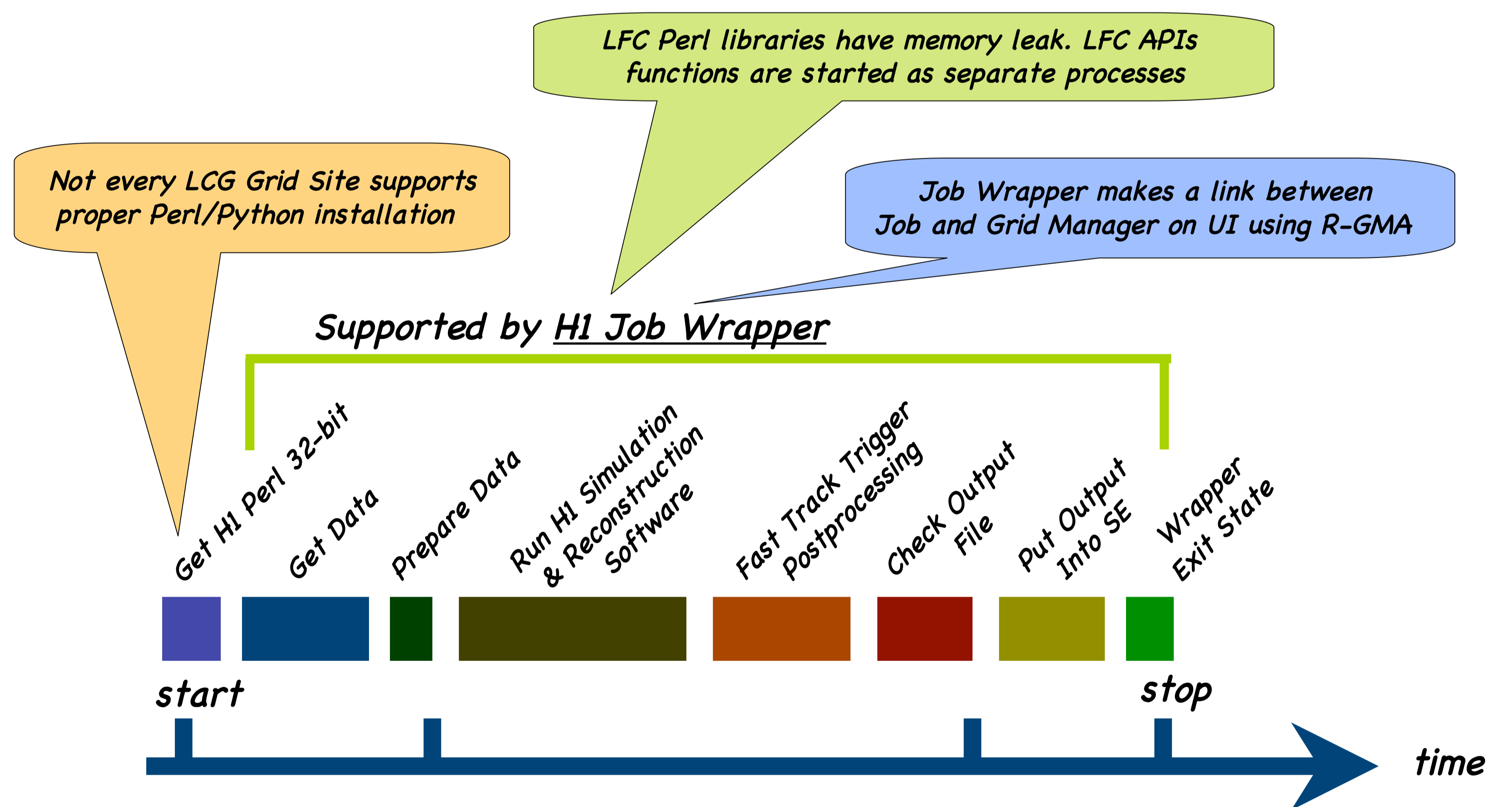
Grid Job Manager

- Modular structure of Grid Job Manager - separate module for each task,
- Centralized Database,
- Each modul acts on jobs which are in the proper state,
- Actual state of the MC production can be checked using Web Services or using MonALISA (<http://monalisa.caltech.edu>) based monitoring tool.

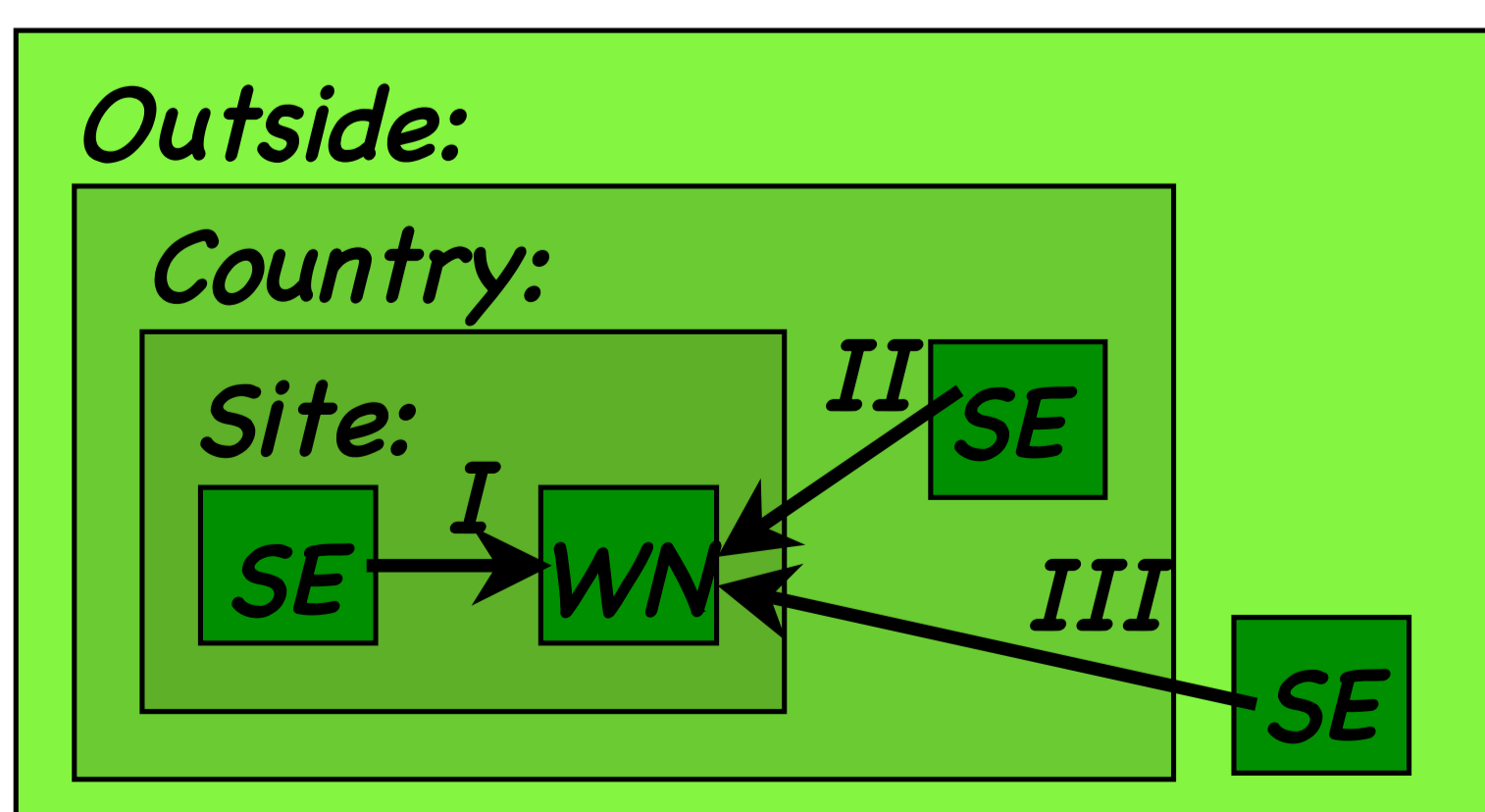


H1 Grid Based MC Production

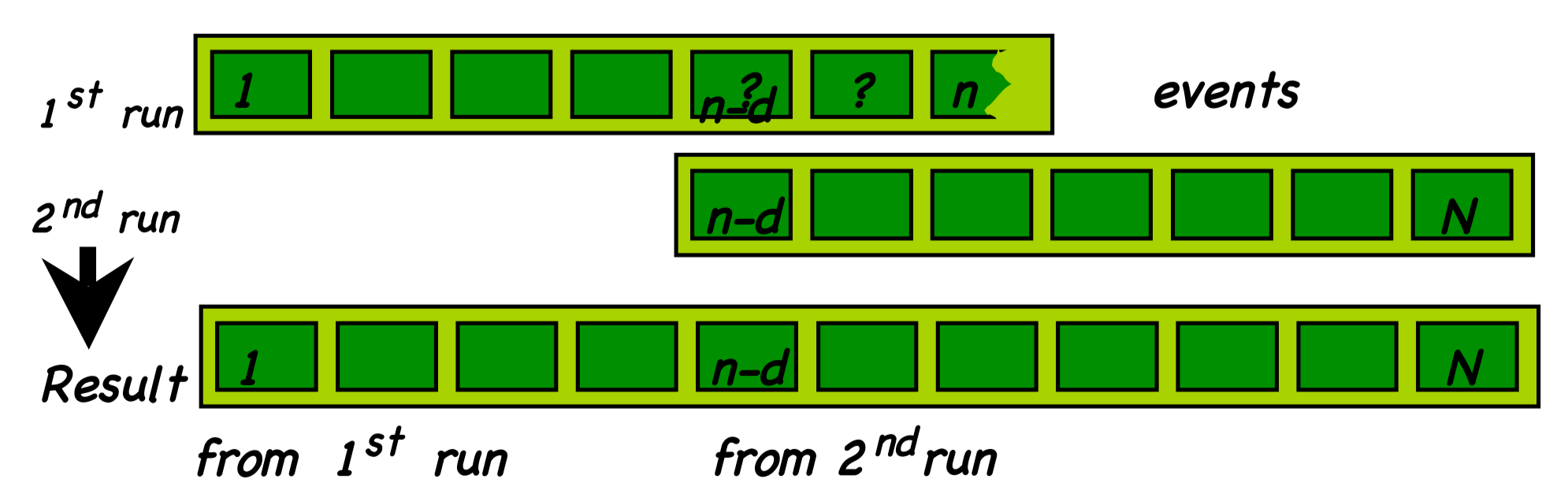
- Basic structure of a Grid Job for N events:



- Get Data priorities:



- H1 simulation & Reconstruction recovery



- R-GMA (Relational Grid Monitoring Architecture <http://www.r-gma.org>) Job Monitoring:

- trace job state during job execution,
- transfer requested information from WN to UI,
- allows for additional localization of running jobs, which are "forgotten somewhere" on the LCG Grid - visible as forever-running objects.