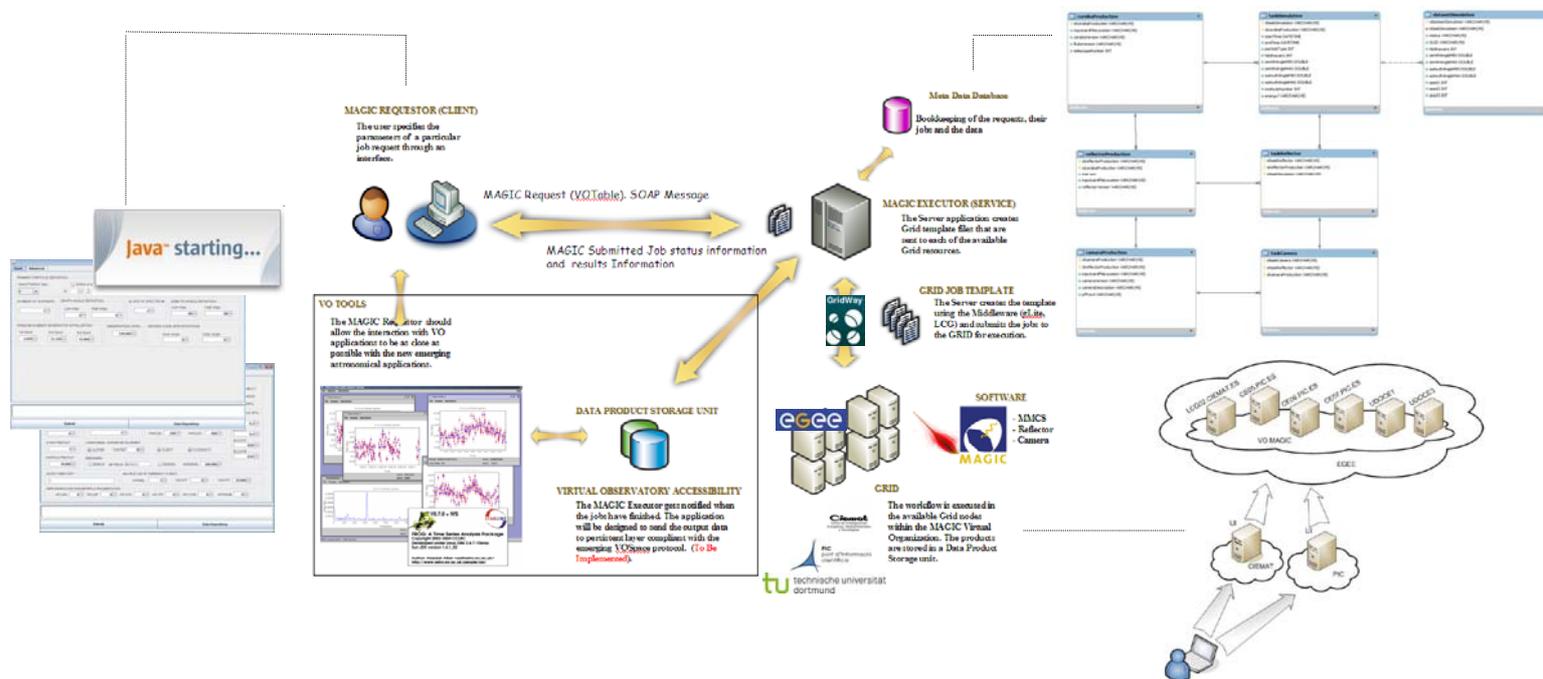
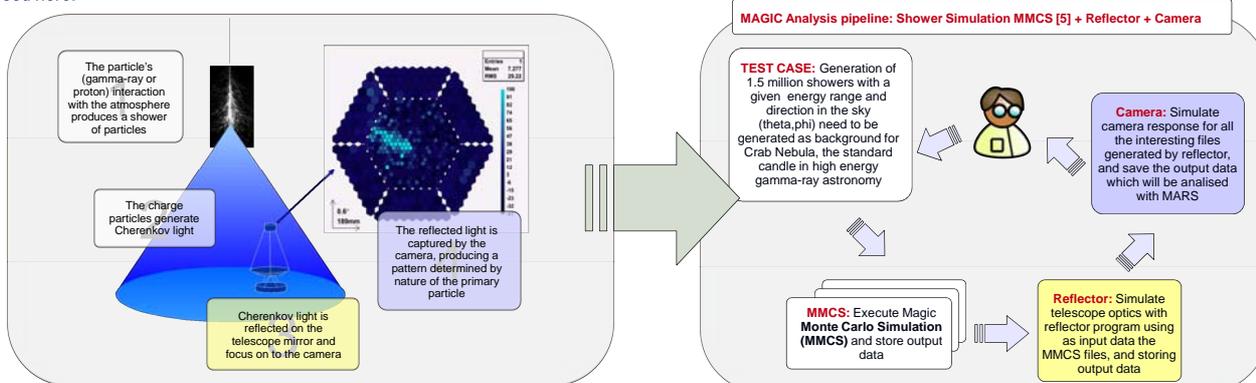


ABSTRACT

The MAGIC telescope [1], a 17-meter Cherenkov telescope located on La Palma (Canary Islands), is dedicated to the study of the universe in Very High Energy gamma-rays. These particles arrive at the Earth's atmosphere producing atmospheric showers of secondary particles that can be detected on ground with the appropriate detectors. MAGIC is one of such detectors, sensitive to the Cherenkov radiation produced by the charge component of the showers. MAGIC relies on a large number of Monte Carlo simulations [4] for the characterization and identification of the recorded events. The simulations are used to evaluate efficiencies and identify patterns to distinguish between genuine gamma-ray events and unwanted background events. Up to now, these simulations were executed on local queuing systems, resulting in large execution times and a complex organizational task. Due to the parallel nature of these simulations, a Grid-based simulation system is the natural solution [6]. In this work, a system which uses the current resources of the MAGIC Virtual Organization on EGEE is proposed. It can be easily generalized to support the simulation of any similar system, as the planned Cherenkov Telescope Array [2]. The proposed system, based on a Client/Server architecture [3], provides the user with a single access point to the simulation environment through a remote graphical user interface, the Client. The Client can be accessed via web browser, using web service technology, with no additional software installation on the user side required. The Server processes the user request and uses a database [8] for both data catalogue and job management inside the Grid [7]. The design, first production tests and lessons learned from the system will be discussed here.

PHYSICS

SIMULATION



Lessons Learned

Future Work

- Reactivation of the MAGIC Virtual Organization on EGEE
- Configuration of the required services for that VO (VOMS, SEs, CEs ...)
- Testbed environment installation and configuration in collaboration with CIEMAT, PIC and TU Dortmund
- Porting of the MMCS software (MAGIC simulation tool) to the Grid environment and automatization of the installation of this software on the Grid
- Development of scripts to test massive simulations on several Grid middlewares (LCG, Glite and EDG)
- Porting of the Montecarlo simulations to the Grid
- Installation and configuration of a node based on Globus + Gridway for job management
- Development of a web-based graphical client (using Java Web Start) for launching Montecarlo simulations using DRMAA API provided by Gridway
- Research and initial developments on new work areas
- Metadata for data catalogue and monitorization
- Development of a multi-agent system for job management
- Virtual Observatory compliance of output data

- Grid-enable the remaining MAGIC pipeline (reflector + camera)
- Multi-agent system for job management
- Easy and Fast way of accessing large amounts of data (e.g. no download required)

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