LHCb uses the SAM (Service Availability Monitoring) framework for:
- Checking the availability of Computing Elements;
- Detecting Operating System and architecture;
- Installing the appropriate versions of the LHCb software if a shared area is provided.

The progress of the SAM test jobs can be followed with the DIRAC monitoring system accessible via the Web.

From the Log Storage Element, LHCb can list all the Computing Element and follow the history of each of them.

The list of Computing Elements and their status with respect to the LHCb VO is extracted from the SAM DB.

The SAM test suite is run with the credentials of the LHCb Software Manager and is composed of several critical sensors for LHCb, grouped in a single task:
- Checks if the length of the queue provided for LHCb is sufficient;
- Examines if the operating system and architecture of the Worker Node supports LHCb software;
- Installs the LHCb software on the shared area and publishes the software tags;
- Runs the whole chain of the LHCb applications (simulation - digitization - reconstruction - analysis) to ensure that the software is properly installed.

Special agreements have been negotiated with the sites to ensure highest priority for these jobs.

CEs passing these critical sensors are eligible to run LHCb jobs.

The SAM submission mechanism has been tested with limited success. The typical errors include:
- Sandbox control;
- Publishing failures;
- Error control.

The sensor workflows are now constructed using the DIRAC API and submitted to the DIRAC WMS where LHCb can monitor them.

At the end of execution on a worker node, the result is published from the WN to the SAM DB and the output is send to a Storage Element. For LHCb this Log SE is accessible via the Web.

- SAM provides a single place for both checking the availability of the sites and for all information about Grid services;
- Integrating the LHCb software installation procedure with the SAM framework provides the VO with an accurate confirmation that a site is functioning correctly;
- We had to abandon the SAM submission framework for managing our jobs due to a lack of flexibility for debugging many problems that we encountered;
- Using DIRAC, LHCb gains full sandbox control and results can be published directly from the Grid Worker Node;
- The hybrid solution presented here consolidates the advantages offered by SAM with the benefits derived from using DIRAC.

J. Closier, S. Paterson, R. Santinelli (CERN) on behalf of the LHCb DIRAC team