QUARTERLY STATUS REPORT				
Project Name			**Date**	
Applications Area			06.02.2010	
Report Period			**Author Name**	
2009Q4			**Pere Mato**	
Milestones for the Quarter			**Status**	**Comments**
SPI				
SPI-18	**30.09.08** **31.03.09** **30.06.09** **30.09.09** **31.12.09**	Migration of the current SPI web contents to the newly deployed content management system. This will require the manual inspection and possibly correction, re-writing of the pages.	In progress. Rescheduled .	First parts of the SPI web are currently being fed into the new Drupal web page infrastructure, but the migration of the contents is still ongoing.
ROOT				
ROOT-24	**31.12.09**	Implement automatic test suites for fitting histograms, graphs and trees.	New	Implement automatic test suites for fitting histograms, graphs and trees with all the possible available options, for numerical algorithms operating on ROOT function classes and for toy MC generation
ROOT-25	**31.12.09**	Provide implementations in RooStats for hypothesis tests and interval estimation with various techniques	New	Provide implementations in RooStats for hypothesis tests and interval estimation with various techniques: full frequentist via Neyman construction, profile likelihood method, hybrid frequentist-bayesian method and full bayesian.
ROOT-26	**31.12.09**	Testing CINT7 with CMS Framework	New	CINT7 is currently under scrutiny building the full CMS framework with a CINT7-enabled ROOT. It is making use of one of the fundamental ingredients of this milestone: genreflex-generated dictionaries fill the CINT dictionaries directly; libCintex is unused. Many problems have been found and fixed (also in the CMS code). The future of this milestone depends on the progress and result of this study with CMS.
ROOT-27	**31.12.09**	Implement delayed loading for genreflex dictionaries	New	Delayed loading for genreflex generated dictionaries. This will reduce the dictionaries' memory cost for Atlas, CMS, and LHCb, and it will reduce the startup time of their binaries.
ROOT-28	**31.12.09**	Implement a a better PROOF benchmark suite to measure real performance	New	The improved benchmark suite will measure the real performance of the available storage systems and give indications on the better configuration options for PROOF, e.g. optimal number of workers per session and the best packetizer parameters.
ROOT-29	**31.12.09**	PROOF dynamic parallel merging	New	Parallel merging with dynamically determined submergers. The optimal number of submergers will be determined from the size and composition of the output list. The first idle workers will be promoted submergers and and asked to merge the results of a set of other workers. Final merging will be done by the master.
ROOT-30	**31.12.09**	PROOF worker auto-discovery using bonjour/avahi	New	Using bonjour/avahi service discovery technology it is possible to eliminate the need for the proof.conf file with static information about the available worker machines.
ROOT-31	**31.12.09**	Implementation of 2D graphics entirely based on OpenGL	New	A first version of 2D graphics entirely based on OpenGL is being implemented. Also based on OpenGL, techniques allowing 5D data set representations are under development. We expect to provide a first implementation of a GL-based pad rendering in time for the next production release.
ROOT-32	**31.12.09**	Interfacing the Pad-GL to the 3-D GL viewer	New	The Pad-GL developments must be interfaced to the 3-D GL viewer and EVE packages. It should be possible to insert 1-d, 2-d, 3-d histograms or any 2-D graphics in a GL scene.
ROOT-33	**31.12.09**	Implementation of an interface for the "graphviz" package	New	An interface to the "graphviz" package: http://www.graphviz.org/ will be implemented. graphviz is already used (via a shell-script interface) to visualize dependencies in the html generated documentation. graphviz is the standard graph-dependency visualization tool used by many open source projects (eg kcachegrind). The new interface class will make use of the existing C-API in this package. This class will be used by several ROOT monitoring tools currently under development and also by RooFit and Roostats.
ROOT-34	**31.12.09**	Finalization and consolidatiuon of the Event Recorder	New	Finalize/consolidate Event Recorder: - Fixing remaining issues (e.g. problem of window registration with very complex GUIs like fit panel, not working with GUI Builder, ...) - Making it more cross-platform reliable (it is now dependent on OS & Window manager)
ROOT-35	**31.12.09**	Consolidation of the GUI builder	New	The ROOT GUI builder has to be consolidated, many widgets have to be added. Even if we don't provide the full set of existing widgets, the ROOT GUI builder must be able to save and load GUI macros without any crash.

POOL				
POOL-17	**31.10.08** **30.04.09** **30.07.09** **31.12.09**	Release of CORAL Server with secure authentication. All functional tests pass.	In progress. Rescheduled	
	This is a rescheduled milestone, previously expected for October 2008 as part of POOL-16. A first implementation of secure data transmission and grid certificate authentication using VOMS and ssl was prepared in Q1 2009, using the new design for component architecture. During Q2, the implementation was completed with the addition of VOMS-based authorization, of a tool for maintaining a list of connections and credentials, and of a more complete test suite.			
POOL-18	**31.10.08** **30.04.09** **30.09.09** **31.12.09**	Release of CORAL Server with full write functionality (DML and DDL). All functional tests pass.	Rescheduled .	This is a rescheduled milestone previously expected for October 2008 as part of POOL-16.
POOL-25	**30.09.09** **31.12.09**	Performance optimizations in the CORAL LFC replica service.	In test. Rescheduled	Performance issues with the LFC replica service have been observed by LHCb during Q2 2009. A first patch to fix some of these problems was included in CORAL 2.3.2 (July 2009). Another patch was added in Q3 to address other pending issues and is currently being tested.
POOL-26	**31.10.09**	Monitoring tools for the CORAL server and CORAL server proxy.	New.	
COOL				
COOL-29	**30.09.08** **31.12.08** **31.03.09** **30.09.09** **31.12.09**	Expose transaction management in the user API.	In progress. Rescheduled .	Prototypes of the API and implementation have been prepared in Q4 2008 and are ready to be internally reviewed for inclusion in one of the upcoming COOL releases. This task has been postponed due to more urgent priorities for the PF (new platforms and externals in Q1 2009, CORAL server developments in Q2-Q3 2009).
COOL-30	**30.09.08** **31.12.08** **31.03.09** **30.09.09** **31.12.09**	Allow session sharing in the user API.	Rescheduled . Depends on COOL-29.	This milestone depends on transaction management (COOL-29).
COOL-39	**30.09.09** **30.11.09**	Performance improvement for CLOB data (bulk retrieval).	In test. Rescheduled	During Q2 2009 Atlas reported slow performance for read access to COOL folders containing CLOB data. The COOL implementation has been changed so that CLOB data are retrieved in bulk via CORAL rather than row by row. The patch has been validated through performance tests, but it still needs to undergo full functional tests before it is committed to CVS and released.
COOL-37	**30.10.09**	Full support for Oracle on Linux SLC5.	In progress.	For the time being, support for Oracle on SLC5 can only be provided if a special installation procedure is used to bypass the SELinux security constraints for the Oracle client libraries. This is due to known incompatibilities of these libraries and SELinux, which are being followed up by the PF team with Oracle Support. The issue is expected to be fully resolved by the upgrade to the upcoming Oracle 11.2 client libraries in Q3 or Q4 2009.
COOL-35	**30.06.09** **30.12.09**	Migration from CVS to SVN.	Rescheduled .	This task has now a lower priority and has been rescheduled because the CVS service will be maintained until all experiments have migrated to SVN, which is not expected to happen before the winter 2009-2010 shutdown.
SIMU				
SIMU-20	**30.11.07** **30.11.09**	Review, redesign and debugging of the FLUGG tool (SF711)	In progress. Rescheduled .	The technical student G.Camellini is working on FLUGG, using the ATLAS HEC test-beam setup. Some progress has been made and issues fixed: the application which was previously manifesting problems now runs for longer, still under debugging.
SIMU-38	**1.06.09** **1.12.09**	Evaluation of Rivet and HepMC Analysis Tool for regression testing based on distributions (GS905)	Partially completed Rescheduled	The HepMC Analysis Tool is already included and used in GENSER; missing the Rivet part. To be rescheduled for December 2009
SIMU-39-b	**01.12.09**	Investigation and improvements of the transition between Geant4 hadronic models (G4901)	In progress.	The studies of Geant4 hadronic models have continued, with the inclusion of more variables (like strange particles, total energy conservation, RMS, etc.), and with the evaluation of more hadron-nucleus interactions, besides the main pi- Fe like n - Fe, pi- Pb, kt - Fe, pbar - Fe. There have been
SIMU-40	**19.12.09**	Contributions to the December 2009 public release of Geant4 (G4908)	In progress	Developments scheduled for the public release of December 2009 include: improvements to the QGS hadronic model fragmentation; the extension and tuning of the CHIPS model for hadron-nucleus collisions up to 100 GeV; a review of the internal cross section in binary cascade and QGS model; a review of physics models to identify and fix cases of event irreproducibility; tuned model of fluctuations for ion ionisation; prototype for applying strict production thresholds for EM particles per geometrical regions; improvement of the Spline interpolation for physics vectors; the extension of geometrical regions to local magnetic fields; improved implementation of selected CGS shapes; interface for computing isotropic safety and geometry step for multiple and single scattering.
SIMU-41	**01.12.09**	Complete build of all versions of generators with 'autotools' (GS911)	New	2nd level milestone
SIMU-42	**01.12.09**	Support MCDB for CMS productions (GS912)	New	2nd level milestone

SIMU-43	**01.12.09**	Evaluation of Rivet for regression testing based on distributions (GS913)	New	2nd level milestone

Summary Of Progress

Issues During the Quarter

Milestones Changes and Actions

References and Hyperlinks

New and Next Quarter Milestones			Status	Comments
POOL-29	**28.02.10**	Fast merge of POOL files.	New. In progress.	Support for fast merge of POOL files has been requested by ATLAS. The feasibility of its implementation is presently under investigation.
POOL-30	**28.02.10**	CORAL API for Oracle partitioning	New	
POOL-31	**28.02.10**	Deployment of a general-purpose CORAL server instance for CERN users.	New	
SIMU-21	**15.12.07** **31.12.08** **15.03.10**	Thin-target validations of Geant4 forward physics (G4712)	On hold. Rescheduled.	Remains limited by the lack of manpower, which was exacerbated by the extra duty of Alberto Ribon to lead the GENSER project in 2008. The new fellow, who will start working on July 1st, is expected to contribute to the forward physics validation of Geant4. Being rescheduled to March 2010.

Comments and Additional Information