



Software and Support for USCMS



Introduction

- I am a new member of CMS, coordinating core software support efforts for USCMS on this side of the Atlantic.
- This newly formed task is a reorganization of old tasks, two motivations:
 - to align more closely with the needs of the USCMS physicists
 - to more efficiently manage the US based software effort
- There are three main areas of work
 - Core software re-engineering project
 - Engineering support for USCMS efforts
 - Support of Existing CMS code for use in USCMS



Core Software Re-Engineering

- In 2003 USCMS was fully involved with the migration away from Objectivity and the creation of pool
- In spring of 2004 more effort added in time for participation in the DST workshop (discusses DC04)
- In Nov. 2004 CCS sent CMS architect and others to meet with USCMS participants and external experts
- This group concluded that the current core software (a functional prototype) does not meet all of the needs of the collaboration for production performance and features.



Core Software Re-Engineering

- Conclusions were presented back to the CPT JTB (see reference materials)
- The project was approved in Feb 2005 at CPT week. In the new CPT organization it's part of the new software task. I will be co-leading the project.
- There is international CMS wide participation in this project



Core Software Re-Engineering

- Tight schedule, with two immediate milestones
 - 1) March 15th, CMS week, status = ahead of schedule
 - “Proof of Principle” demonstration that Pool can write files with meaningful content which is directly browsable by root
 - The LPC Jet/Met group is providing the first reconstruction code using the prototype EDM classes.
 - It will contain the JetCollection as well as the associations back to the constituent towers of the individual jets
 - 2) April CMS Physics week
 - Completion of documentation suitable for presentation to CMS
 - First proto-type of the components required for a parallel integration effort with the ORCA developers



Core Software Re-Engineering

- Manpower resources:
 - **Bill Tanenbaum**
 - **Marc Paterno** and Walter Brown (50% each)
 - **Chris Jones** (Cornell is joining CMS)
 - **Luca Lista**, Shahram Rahatlou(INFN)
 - Vincenzo Innocente, Peter Elmer, Emilio Meschi, Shaun Ashby (consulting fractions)
 - **Lassi Turra, Giulio Eulisse, Shazhad Muzaffar, Zhen Xie** (DM integration, 20% + 3*50%)
 - **Ianna Osborne and Maya Stavrianakou** (IGUANA, OSCAR integration)
 - Continuing consulting help from Fermilab Computing Division RunII experts



Engineering Support for USCMS

- In the past USCMS allocated 25% of all CAS engineers to support physics software efforts
- We are strengthening this effort by creating a proposal driven process, where I receive information about the time to complete the proposal, and the amount of engineering FTE effort involved
- I am charged with balancing the requested with the available manpower
- When necessary I negotiate with the project leads to set priorities



Engineering Support for USCMS

- LPC has taken responsibility for Jet/Met reconstruction software.
- Consulting help for Jet/Met rewrite
 - Reorganize the ORCA Jet/Met objects and algorithms in preparation for detector commissioning
 - Effort is lead by Robert Harris as one of the LPC Jet/Met co-leaders
 - Help is provided by Mark Paterno and Bill Tanenbaum
 - This effort is closely aligned with the core software rewrite
It is part of the first demonstration milestone... they our the first adapters and realize that the design will evolve



Engineering Support for USCMS

- Consulting help for the Oscar Validation Project
 - Development of an automated full physics level regression test suite for the CMS simulation
 - Effort is lead by Daniel Elvira as one of the LPC simulation group leaders.
 - Help is provided by Maya Staviranakou and John Marraffino



Support of Existing CMS code for use in USCMS

- User Support - Natalia Ratnikova, and John Marraffino
 - Software consultant support through lpc-howto
 - Revaluation of new SCRAM release
 - Integration of FNAL and CERN run time env.
 - Support of the LPC development env.
 - Development of transparent job submission
- USCMS Tier 1 user liaison – Hans Wenzel
 - Helps with all of the above
- TBN-CP to be provided through M&O LPC support
 - LPC desktop configuration, software and dataset help