LCG RTAG 12:
The Collaborative Tool Needs of the LHC

Steven Goldfarb
Shaping Collaboration 2006
CICG, Geneva - 11 Dec 2006

LCG RTAG 12

LCG RTAG
- *LHC Computing Grid "Requirements and Technical Assessment Group"*
  - Proposed by the LCG Project Execution Board
  - Seek Common Ground, Solutions to Problems Shared by the LHC Collaborations

RTAG 12
- *Focus on Collaborative Tools*
  - Video & Phone Conferencing, Document Sharing, Application Sharing, Lecture Archiving, Webcasting, Conference Management, Remote Operations, etc.
- *Assembled Spring 2004*
  - Final Report Spring 2005

Mandate

- Assess the needs for collaborative tools of all collaboration members, located at CERN, major labs or smaller institutes, including isolated ("laptop") users.
- Survey the existing technologies and consider costs, performance, hardware and bandwidth requirements, interconnectivity.
- Make concrete proposals about how CERN videoconferencing facilities and support organization might be consolidated, improved and better supported in the immediate future, with strong emphasis on the performance as perceived by remote users.

RTAG 12 Composition

Participant	Institute	Representing
Peter Hristov	CERN-PH/AIP	Alice
Steven Goldfarb (chair)	University of Michigan	Atlas
Roger Jones	Lancaster University	Atlas
Bolek Wyslouch	MIT	CMS
Ian McArthur	University of Oxford	LHCb
Gerhard Raven	NIKHEF	LHCb
Alberto Pace	CERN-IT/IS	Internet Services
David Foster	CERN-IT/CS	Communication Services
Mick Storr	CERN-HR/PMD	Training
Mick Draper	CERN-IT/UDS	User and Document Services
Tony Doyle	University of Glasgow	GridPP
Philippe Galvez	CalTech	VRVS
Christian Helft	LAL - IN2P3 (Orsay)	HTASC-CSMM Chair
Les Robertson (ex-officio)	CERN-IT/DI	LCG-PEB Chair

LHC Collaboration Representative   *CERN Representative*   *Collaborative Tool Expert*   *Recipient of Final Report*
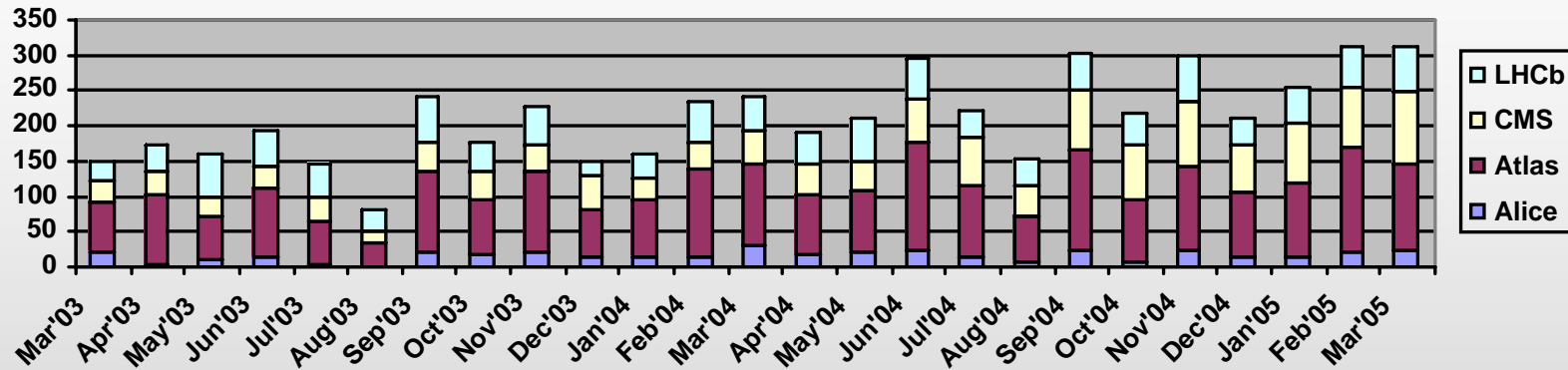
RTAG 12 Activities

Investigation

- *weekly, in-depth discussions between representatives of the LHC collaborations and experts in the field (RTAG participants, invited guests);*

- *discussions with the CERN video and phone conferencing staffs;*

- *analysis of formal and informal surveys of LHC collaboration members;*

- *basic tests of equipment and video conferencing systems using the facilities installed in various CERN conference rooms.*
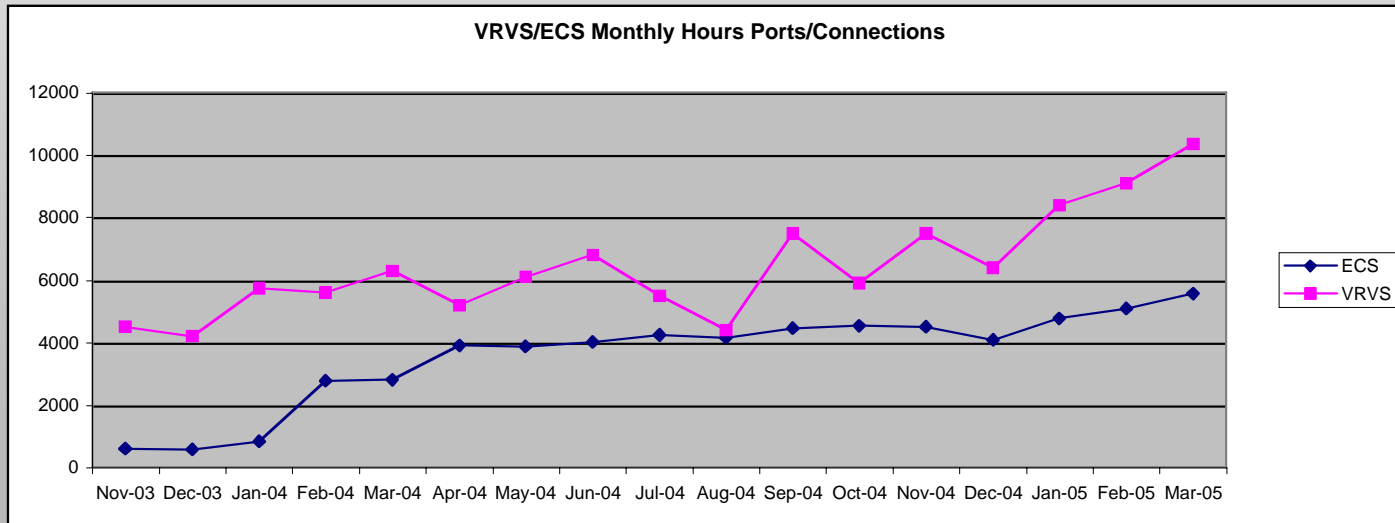
Documentation

- *Report to PEB (1 Jun 2004)*

    http://cern.ch/muondoc/rtag12/Presentations/PEB/20040601/InterimReport.ppt

- *Report to PEB (30 Nov 2004)*

    http://cern.ch/muondoc/rtag12/Presentations/PEB/20041130/ProgressReport.ppt

- *Final Report (CERN-LCG-PEB-2005-07, 27 Apr 2005)*

    http://cern.ch/muondoc/rtag12/Report/RTAG12-Report.doc

LHC Demand for Collaborative Tools

Meetings

Video Conferences

VRVS/ECS Monthly Hours Ports/Connections

RTAG 12 Findings

From the Executive Summary

The RTAG has found a large and growing gap between the requirements of the LHC Collaborations for high quality, robust collaborative tools, and the availability of these tools at CERN and at the participating institutes. This gap is the result of increasing need for and growing popularity of the tools, as the experiments enter the critical stage of commissioning, assembly, and software development, and a lack of dedicated resources on the part of CERN and the collaborations to address this demand.

RTAG 12 Final Report

Major Points

- *No Single, Central Organization within CERN*
- *No Real Coordination or Dialogue Between CERN, Collaborations*
- *Existing CERN Facilities In Minimal Maintenance Mode for 5 Years*
- *Too Few Facilities at CERN*
- *No Common Guidelines for External Labs, Institutes*
- *Existing Services Lacking Support, Clear LHC Requirements*
- *No Decision On Which Services To Use Or How To Integrate Them*
- *Nevertheless, Some Bright Points (InDiCo, VRVS, WLAP) & Good Ideas*

RTAG 12 Findings

In Other Words

> *You want to drive a Lincoln*
> *Maserati, better still*
> *But your Chevy needs a muffler*
> *And you can't afford the bill*
> *That's the Blues…*
>
> Canettes Blues Band

Primary Recommendations of RTAG 12

1. We recommend that CERN establish and maintain a Collaborative Tool Service to support the needs of the LHC collaborations.

2. We recommend that the CTS maintain and support VRVS as a standard video conferencing service for the LHC collaborations.

3. We recommend that the CTS establish, maintain and support an industry standard H.323 MCU-based video conferencing service for the LHC collaborations, complementary to and interoperable with VRVS.

4. We recommend that the CTS provide user support for desktop/laptop phone and video conferencing for LHC collaborators situated at CERN, at their home institutes or elsewhere, as appropriate.

5. We recommend that the CTS install, maintain and support a 24/7 operator-free phone conferencing system at CERN.

6. We recommend that the CTS equip and maintain all auditoria and meeting rooms in building 40, as well as those located elsewhere at CERN, commonly used by the LHC collaborations, for integrated phone and video conferencing.

7. We recommend that the CTS extend current web casting and web archiving services to include all auditoria and meeting rooms in building 40, as well as those located elsewhere at CERN, commonly used by the LHC collaborations.

8. We recommend that the CTS take on the leading role in the development of a global Computer Supported Collaborative Work Environment for the LHC community.

9. We recommend that the CTS support development to equip IP-based tools used by the LHC collaborations, such as VRVS, with a Grid certificate authentication and authorization mechanism.

RTAG 12 Final Report

Follow-Up

Endorsement by LHC Collaborations

- *All Four Spokespersons Expressed Written Support*
    - General agreement with findings, recommendations

Noise by RTAG Chair

- *Final Report Presented at Conferences*
    - HEPix 2005, ESnet 2005, CHEP 2006, ViDeNet 2006, ACCU 2006, ATLAS 2006, Shaping Collaboration 2006

Changes to CERN Organization

- *All Activities Brought Under IT*
    - Coordinated by IT-UDS-AVC Division
- *Creation of RCTF (Remote Collaboration Task Force)*
    - Chaired by Thomas Baron (IT/UDS)
    - Attended by IT Coordination, Developers, LHC Representatives
    - Bi-Monthly Meetings
        - *Focus on Prototypes, Priorities (no budget, yet)*
        - *Current discussions on MoU's and/or service agreements*
    - Documentation
        - *https://cern.ch/twiki/bin/view/RCTF/WebHome*

Follow-Up (2)

CERN & LHC Activities

- *Prototype Video Conferencing Facilities*
  - 40-4-C01 (funded by ATLAS), 40-R-B10 (funded by CMS)
  - Tutorials to Users
  - Next Auditorium in 40 under investigation
  - Central Room Management System
- *HERMES Collaboration*
  - MCU Operated in Partnership: IN2P3, CNRS, INSERM and CERN
    - *http://cern.ch/it-multimedia/HERMES.htm*
- *Audio Conferencing System (24/7 - No Operator)*
  - Under Beta Test
- *Lecture Archiving System*
  - ATLAS Recording all Plenary Sessions, Tutorials in 2006
    - *http://esmane.physics.lsa.umich.edu/wlap-cwis/index.php*
  - New Infrastructure in Main Auditorium, Software & Database Development
    - *SMAC System, Similar to Michigan's WLAP (Ongoing)*
- *InDiCo*
  - Integration of booking system for VRVS, Phone, CRBS (Ongoing)

In my opinion, about as much as can be done without a serious dedicated budget!

What Remains

Completion of Conference Facility Implementation
- *Service-Level Agreement Between LHC & CERN IT*
  - Specification of Requirements & Resources
  - Agreement from Both Parties
- *Similar Agreements with Individual Entities*
  - Universities, External Labs, etc.
- *Adequate Funding in CERN/LHC Budgets*

Support for Conference Services
- *LHC/CERN-Wide Support for EVO, ECS, Other Facilities Currently In Use*
  - Maintenance + R&D

Steve's Opinion

We are very close to a satisfactory solution:
- *An excellent staff has taken over at CERN IT (see Tim's talk next).*
- *They have a clear, workable plan to implement.*
- *The experiments recognize the urgency & are ready to dedicate resources.*
- *We are only waiting for CERN to do the same.*