LCG RTAG 12: Collaborative Tools Interim Report

Steven Goldfarb, *Chair*
LCG RTAG 12 Report to PEB
CERN – 1 June 2004

Mandate for RTAG 12

Proposed by Dario Barberis to PEB (12 Jan 2004):

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

In Particular The RTAG Should Address

▪ Working Venues (type of room, equipment, ease of use)

▪ Integration (where possible) of existing infrastructure (e.g.audio/video transmission between auditoria, re-use of local audio/projection systems,...) where feasible

▪ Which systems (VRVS, Access Grid, etc.)

▪ Collaboration on Desktop (CERN LAN, general support)

▪ Relationship to networking

▪ Future integration into "grid-based analysis"?

RTAG 12 Activities

Organization
- *Web site: http://CERN.ch/muondoc/rtag12*
- *Archived Mailing List: project-lcg-rtag-collab@CERN.ch*
- *List of Members: http://CERN.ch/muondoc/rtag12/Members*
- *Meeting Schedule: http://CERN.ch/muondoc/rtag12/Meetings*

Meetings
- *Weekly Meetings Wed 16:00 in 513-1-024 (VRVS), starting Mar 31*
- *Presentations Thus Far (reverse chronological order):*
  - Atlas Feedback (19-may-2004) - *S. Goldfarb*
  - Why did the EU FR6 Bid Fail to Run? (12-may-2004) - *R. Jones*
  - Overview of Videoconferencing at CERN (05-may-2004) - *C. Isnard*
  - Collaborative Scenario (28-apr-2004) - *A. Pace*
  - VC in HEP (Besides VRVS) (28-apr-2004) - *C. Helft*
  - VRVS Research Roadmap (21-apr-2004) - *Ph. Galvez*
  - Introductory Comments (31-mar-2004)- *S. Goldfarb*
  - Proposal to PEB for RTAG (12-jan-2004) - *D. Barberis*

Composition of RTAG 12

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
Tony Doyle	University of Glasgow	GridPP
Philippe Galvez	CalTech	VRVS
Christian Helft	LAL - IN2P3 (Orsay)	HTASC-CSMM Chair
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
Les Robertson (ex-officio)	CERN-IT/DI	LCG-PEB Chair

Preliminary Findings

LHC Requirements

- *The LHC is an Ideal Example of the Case for Collaborative Tools*
  - Large, Diverse, Dispersed Collaborations, Which Need to Communicate
  - Common Projects Requiring Close Coordination
  - Long Duration: Need for Maintenance, Training

  (Same True for Most Recent HEP Collaborations)

- *The Demands for Collaborative Tools are Large And Growing*
  - Detector Construction Has Been Mainly at External Institutes
    - *Frequent Communication, Coordination*
    - *Periodic Reporting, Sharing of Experience, Planning*
  - Commissioning and Testing Now at CERN
    - *Near Continuous Communication with Experts at Home Institutes*
    - *Close Coordination Becoming Crucial*
  - Software & Analysis Ramp-Up
    - *More Collaborators in Need of Training*
    - *More Frequent Meetings*
    - *Deployment of Software Kits, Grid Tools to Tier Centers*

Preliminary Findings

Collaborative Tools Commonly Used by the LHC Collaborations

- *Video Conferencing*
  - *VRVS, ESnet*
  - Typically Scenarios
    - *Remote Participation of Group Meeting*
    - *All Remote Desktop Meeting*
- *Phone Conferencing*
  - CERN 77000 Service
  - Same Scenarios as Above
  - "Integrated" with Video Conference
- *Lecture Archiving*
  - CERN Auditorium System, Syncomat (or similar)
  - Training, Plenary Sessions, Outreach
- *Document Presentation*
  - Posted to Web, Video of Screen, E-Mail
  - Some Experimenting with Web-Based Systems (e.g. Meeting Room)

Preliminary Findings

CERN Status

- *Minimal Maintenance Mode Since 2000*
    - Gradual Aging of Existing Facilities
    - New Facility Installed Only When Budget Code Provided
    - Each Room Different, Maintenance Stretched Thin
- *Missing Tools*
    - Facilities Do Not Keep Up with Demand
    - No Phone Conferences After 18:00 or On the Weekend
    - Limited Operational Assistance
- *Poor Tools*
    - Video Conferencing Audio/Video Quality Very Bad in Many Cases
    - Rooms Often In Non-Functional or Transitional State

Preliminary Findings

CERN Status (cont.)

- *No Clear Central Planning*
  - Atlas, CMS Paying for Some Facilities "out of their own pockets"
  - No R & D Program
  - Lack of Coordination within CERN (IT/EP/TS)
  - Lack of Coordination with Other Institutes, Working Groups, Projects
  - Lack of HEP-Wide Development Support
    - *VRVS, ESnet, Scheduling Systems, etc.*
- *Inaction by CERN, Collaborations Has Been Expensive*
  - Lost Time (Very Expensive)
  - Lost Opportunities (Hidden Costs)
  - Inability of Some Collaborators to Participate (Invaluable)
  - Travel (Not Most Important, But Measurable)

Preliminary Findings

Example User Feedback

We need access to good phone conferencing facilities at CERN for meetings
well booked in advance but also for shortly announced smaller meetings
for which we don't have a large choice of available conference rooms. We
need the video facility in some cases, usually with a simultaneous phone
connection for participants which could be temporarily without video
facility. Reliability and ease of use are on both cases important
factors. We require setup support and operational support when using
video facilities. In the case of video, it would be good if the
operation of the system could be standardized throughout CERN. We would
welcome if phone connection and video use the same audio installation.
The correct installation of microphones covering the entire meeting room
could help a lot for the efficiency of the meetings. We use heavily the
CERN agenda system and appreciate its reliability. We are open for and
interested in other web based tools.

Preliminary Recommendations

General

- *Collaborative Tools Must Be Recognized as a High-Priority Item*
  - The LHC Cannot Function Without Them
  - Changes Are Needed Now
- *Evaluation of Costs Must Be Inclusive and Long-Term*
  - Include Time Lost Due to Operation Complexity, Problems
  - Include Long-Term Savings Due to Coherent Solutions
    - *Maintenance, Integration of Tools*
- *Need Coordinated Planning of All New Installations*
  - Technical Assessment
    - *Input from Experts, External Institutes*
  - Maintenance Plan
- *Prepare HEP-Wide Solutions Whenever Possible*
  - Systems Must Be Compatible, If Not the Same
  - Periodic Coordination Between CERN, External Institutes
- *Funding Sources Need to Be Identified (And Pursued)*

Preliminary Recommendations

Video Conferencing
- *Evaluate/Repair Existing Facilities at CERN*
- *Install Facilities in ALL Commonly Used CERN Rooms*
- *General Simplification, Uniformity of Facilities at CERN*
- *Develop Coherent Policy for Systems to Use (Or Avoid)*
- *Publish Recipes, Advice for Institute Participating in Meetings*

Phone Conferencing
- *Truly Integrate Phone Conferencing with All Video Conferencing Facilities*
- *Provide After-Hours Service*

Lecture Presentation / Recording
- *Equip Video Conferencing Facilities with Remote Slide Presentation Capability*
- *Examine Web-Based Services*
- *Set Up Service for Record On-Demand*
- *Prepare Facilities for Tutorial, Outreach Recording*

Preliminary Recommendations

Reservation Systems
- *Integrate Room Booking with Video & Phone Reservation Systems*
- *Provide Authenticated Remote Room Booking, if Possible*
- *General Improvement, Automation of Existing Systems*

CERN-Based Program & Service
- *Provide Technical Support for Room Preparation, Maintenance, Operation (On Request)*
- *Continually Assess Technologies and User Requirements*
  - Open Eye to New and Upcoming Developments
- *Coordinate with Research Activities At Other Labs, Institutes*
- *Define Long-term Planning and Vision*

Users
- *Improve Understanding of Collaborative Sociology*
  - Preparation and Conduction of Meetings
  - Usage of Tools
- *Participation by Interested Parties in Planning, Assessment*

Status of RTAG 12

Discussed or Discussing

- *Organization, Coordination, Status of CERN Facilities*
- *Videoconferencing Tools and Facilities*
  - H323, VIC, VAT, etc. / ESnet, VRVS
- *Phone Conferencing Facilities*
- *Other Ongoing Activities*
  - RCWG, HTASC - CSMM

  (RTAG Complementary to More Technical CSMM)
- *User Feedback*

Discussion Still Needed

- *Desktop Environments*
- *Training, Lecture Archival*
- *Immersive Environments, Application Sharing, Grid Integration, etc.*

Time Scale?

- *Document in July, Including Recipes, Roadmap*

Feedback From PEB

General Comments

- *Apparent agreement with organizational recommendations*
- *Even some support for video conferencing "operators"*
- *Concrete examples/recipes are expected*
- *Deadline of July is fine*

Video Conferencing

- *Les would like references to "rooms that work"*