

LCG RTAG 12:
Collaborative Tools
Progress Report

Steven Goldfarb, *Chair*
LCG RTAG 12 Report to PEB
CERN – 30 November 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>

Activities

- *Weekly Meetings, Wed 16:00 in 513-1-024 (VRVS), since Mar 31*
- *External Input*
 - E-Mail Surveys of LHC Experiments
 - Christian Isnard, CERN (CERN Video Conferencing Facilities)
 - Gillian Bezar-Brown, CERN (CERN Phone Conferencing Facilities)
 - Ed May, ANL (RCWG)
 - Bill Johnston, ESnet (ECS Usage for LHC)
 - Charles Severance, UM (WLAP, SAKAI)
- *Assessment, Evaluation*
 - *Workshop Participation (Helft, Galvez)*
 - *Example Meeting Room, Dabbling (Goldfarb)*

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

Principal Findings

Large and Growing Need for Collaborative Tools by LHC, HEP

- *Video and Phone Conferencing*
- *Meeting Management*
- *Application Sharing, Document Sharing, Document Presentation*
- *Usage Growing at 30%/year (VRVS)*

Inadequate Support

- *No Coordinated Program for CERN, LHC Experiments*
- *Insufficient Facilities at CERN*
- *Existing Facilities in Poor Shape*
- *Lack of Guidelines for Equipping Facilities at CERN, Institutes*
- *Need for Integration of Tools, Adaptation to Grid*

Solutions Complex

- *Field is Growing, Changing Very Fast*
- *Still No Turn-Key Solution*
- *Must Have R&D Component to Any Solution*

See more detailed set of findings in June Interim Report

One Detailed Finding

VRVS and H.323 Based Video Conferencing Systems Are Complementary

- *VRVS provides access to anyone with a PC*
- *H.323 systems (ECS) provide reliable, high-quality, conferences between H.323 clients*
- *Both are in heavy use by HEP and the LHC community*
- *Interoperability between the two systems is improving*

Primary Recommendations

We recommend the creation, mandate, and funding of an LHC-wide Collaborative Tool Service.

This service must provide:

- *coordination between the LHC collaborations and CERN concerning the development, installation and maintenance of collaborative tools for the LHC;*
- *participation in other collaborative tool initiatives of interest to the LHC and HENP community, in general;*
- *management of a coherent project designed to address the requirements of the LHC collaborations, to set priorities, and to design and plan the implementation;*
- *help for external institutes, in the form of suggestions for standard infrastructure, advice on installation and utilization, documentation and “help desk” type facilities;*
- *sufficient research and development to maintain expertise in the various fields of collaborative tools, to provide solutions to LHC-specific problems, and to keep the facilities in step with the rapidly changing environment.*

Primary Recommendations

We recommend the development of a global Computer Supported Collaborative Work System for the LHC community.

Missing pieces of an LHC-wide collaborative work system would be developed and integrated with audio and video conferencing services on one hand, and with document and presentation archiving systems on the other hand. The system should provide:

- *meeting organization (find a common time slot for participants);*
- *global video and audio conferencing room booking system;*
- *meeting management (control of room equipment, of floor taking, of remote document presentation, voting system, etc.);*
- *recording and archival of documents and presentations.*

More generally, a particular effort will be targeted at defining and implementing a system that presents the various collaborative tools to the end user with a consistent user interface and strong interoperability.

Primary Recommendations

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

These rooms ought to be equipped and maintained by the LHC Collaborative Tool Service and shared by the collaborations in an appropriate manner.

We recommend there be a standardization of the installed phone and video conferencing facilities at CERN.

Same or similar equipment should be used to equip the facilities, accounting for small necessary changes due to room size, dimension, and usage. Such a standardization would be aimed at

- *reducing initial purchasing and maintenance costs;*
- *simplifying usage and reducing user training.*

While technical support and maintenance should be provided by the service, operator support could be provided for a fee, depending on the needs.

Primary Recommendations

We recommend that common support be provided for desktop phone and video conference users situated at CERN and at the member institutes.

The support would include

- *software downloads and group licenses, as needed;*
- *hardware recommendations, equipment installation and usage guidelines;*
- *a reasonable level of on-line support.*

The guidelines would be provided by the LHC Collaborative Tool Service and compliance would be a requirement for support.

Primary Recommendations

We recommend that VRVS be officially supported for the LHC collaborations.

Adequate resources should be provided to guarantee that

- *CERN conferencing rooms are fully functional for the usage of VRVS for the entire LHC physics life cycle;*
- *operational aspects (reflector set up and maintenance, end point equipment choice and usage recommendations, end user support) of VRVS for the LHC community is taken on by CERN in collaboration with the VRVS team;*
- *documentation be provided for the recommended installation, maintenance and usage of video conferencing facilities at CERN and at the participating institutes. Integration of this documentation with the existing documentation of VRVS is highly recommended*

The LCG should define and sign a Memorandum of Understanding with the VRVS team in order to ensure that missing functionality be implemented and that access to VRVS remain free and efficient for the LHC community.

Primary Recommendations

We recommend that an industry standard H.323 based video conferencing service be supported for the LHC Collaborations.

This service might take various forms in its implementation (co-funding of ECS, of other national facilities, installation of infrastructure at CERN, or a mix of either), but its operation should appear to the end-user as being under CERN's responsibility, and be as close as possible to the state of the art without impinging its stability.

If CERN chooses to operate its own infrastructure, this service should be deployed in close cooperation, and interoperate with existing ones in other countries, particularly ESnet.

Interoperability with VRVS at least at the user interface level will be a goal of its deployment.

Primary Recommendations

We recommend close coordination between the planning and development of VRVS and the H.323 based system supported for the LHC.

The principal objectives of this coordination would include

- *seamless interoperability between the two systems;*
- *complementary development to make optimal usage of available resources to provide the required functionality*

For example, a VRVS user ought to be able to join an MCU based conference and a user of the H.323 based system ought to be able to join a VRVS conference. One ought to be able to reserve meetings on either system using the same interface.

We recommend each new video conferencing facility be equipped with an industry standard H.323 device and a high-end PC.

These minimal recommendations assure the ability for the facility to operate with either VRVS or with H.323 based systems, such as ECS.

Primary Recommendations

We recommend the installation of a 24/7 operator-free phone conferencing system at CERN.

The system should provide

- *a web-based booking system;*
- *possibility of CERN-originated calls, as needed (and paid for);*
- *interoperation with video conferences and, if applicable, with Voice Over IP.*

Although such a system could operate on the standard telephone infrastructure, we recommend that efforts focus on the usage of Voice Over IP telephony and its interoperability with the standard phone service.

Primary Recommendations

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

These services, as appropriate, will include

- *fixed installations (large auditoria);*
- *a portable pool of equipment (smaller rooms);*
- *recording and archival support, possibly on a pay-on-command basis*

It is expected that the necessary technical infrastructure, including web cast server hardware, streaming licenses, archive database and portal, be provided by CERN.

Primary Recommendations

We recommend that meeting rooms targeted for phone and video conferencing and/or for web casting and archiving be evaluated for acoustics and lighting and equipped appropriately.

Improvements such as carpeting, curtains, improved lighting, should be considered as essential to the room's equipment as the video conferencing unit, itself, and should be part of the initial installation.

We recommend that a joint development be made to enhance the VRVS system with a Grid certificate authentication and authorization mechanism.

This mechanism ought to be integrated with the existing infrastructure to provide the capability of single sign-on at a user's desktop for both the experiment analysis environment and the collaborative environment within which the physics analysis is performed.

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Status of RTAG 12

Main Discussions/Assessments Complete

- *Converged on Major Issues*
- *No Major Contradictions with RCWG*

Most Text Exists

- *All Recommendations Exist in One Form or Another*
- *Now in Editing Mode*

Guidance Still Needed from PEB

- *At Whom Ought We Target Our Recommendations?*
 - “We recommend the development of...” (weak)
 - “The LCG should...” (stronger)
 - “CERN must...” (very clear)
- *With Whom Can/Should We Share Preliminary Document Versions?*
 - Not to change substance, but
 - To ask if clarifications are needed
 - To ensure this is a useful document

Conclusions

We Apologize for the Wait

- *We have taken time to argue the issues in detail*
- *We have taken time to make the document extensive and thorough*
- *We are removing any excuses for inaction on the part of the PEB*
- *We all have day jobs*
- *We plan to hand over the document in January*