IHEPCCC activities

LCG Deployment Board

Guy Wormser
IHEPCCC chair
LAL Orsay

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What is IHEPCCC

- HEPCCC committee created in Europe in ~1980 to coordinate HEP computing. Mainly centered around CERN at the time. Membership: Directors of the main European computing centers
- Important role as a discussion forum and coordinating body throughout the years. Creation of HTASC, a permanent technical advisory body. HEPCCC father of the DATAGRID initiative.
- In 2001, it was realized that it was mandatory to include membership from all over the world to the increased worldwide nature of HEP computing
- IHEPCCC was created in 2003 as a ICFA subcommittee, « sister » to SCIC, organizer of this workshop

IHEPCCC mandate

Preamble

- …an efficient information exchange on computing issues between the major HEP centers in the world.

Missions

- …forum between the main persons in charge of HEP computing, by gathering and distributing information about all relevant issues in HEP computing, and especially those with a global nature**.**
  - Typical examples : new technology trends, computing centers strategic policies, security issues, recommendation of standard practices, presentation of R&D results, comparison of various equipments performances.

- **The other missions include:**
  - **Issuing statements and recommendations concerning computing in the HEP community.**
  - **Serving as an interface to other scientific domains on matters of computing.**
  - **Working in close connection with the ICFA SCIC, the physics regional organizations, and the HICB coordinating the grid projects in HEP.**
  - **Reporting to ICFA (ie grabbing the attention of all the HEP major lab directors)**

  - **http://www.fnal.gov/directorate/icfa/Int'l_HEPCCC.html**

IHEPCCC membership

Asia

- **Setsuya Kawabata (KEK-Japan) , Hesheng Chen (Beijing-China), Dongchul Son (Daegu- South Korea), S. Banerjee(Tata-India) , Geoff Taylor (Melbourne-Australia)**

North America

- **Paul Avery (Gainesville-US), Bruce Gibbard (BNL-US) , Richard Mount (SLAC-US) , Randall Sobie (Victoria-Canada), Vicky White(FNAL-US), Frank Wuerthwein (San Diego-US)**

Europe

- **Manuel Delfino (Barcelona-Spain) , Matthias Kasemann (DESY-Germany) , Mirco Mazzucato (Padova-Italy) , Wolfgang von Rueden (CERN) , Michal Turala (Crakow-Poland), Peter Watkins (Birmingham, UK), Guy Wormser (Orsay-France), Chair**

Rest of the world

- **Viacheslav Ilyin (Moscow-Russia), Abdeslam Houmadda (Casablanca-Morocco), Alberto Santoro (Rio, Brazil)**

Consensus on objectives

A/ Guarantee the best possible conditions for the advent on a Grid-based HEP world wide computing

- A.1/ Make sure that all conditions are met to foster the development of viable HEP grid(s)
- A.2/ Make sure that they are interoperable and secure
- A.3/ Make sure that all regions of the HEP world have an easy access to them

B/ Foster collaboration and training in HEP computing

- B.1/ Make sure that the best possible conditions are met to foster the common development of software tools and standards
- B.2/ Make sure that the best possible conditiond are met for best practice exchange and training

IHEPCCC meetings

- **Inaugural meeting May 2004 in Barcelona**
  - http://agenda.cern.ch/fullAgenda.php?ida=a041864
- **CERN Oct 2004, just after CHEP04**
  - http://agenda.cern.ch/fullAgenda.php?ida=a044205
- **South Korea, May 28 2005**
- **Seattle Nov 12-18 2005. Colocated with SC2005**
- **Feb 2006 Mombai, colocated with CHEP2006**
- **Nov 2006 Europe**
- **Spring 2007 US**

IHEPCCC internal organisation

- **Bureau : D. Son, B. Gibbard, GW**
- **Working group on Technical Advisory body: W. Von Rudden, R. Mount, P. Watkins, H. Chen**
- **Working group on creating a HEP Virtual Organization : M. Delfino, R. Santoro, Y. Watase**
- **Working group on Training in HEP Computing: V. Ilyin (chair)**

Technical Advisory Body

- **IHEPCCC chose to use HEPiX as the main provider of ad hoc task forces experts**
- **Contact taken with HEPiX chairpersons**
- **First cases to study :**
  - HEP VO issues
  - Linux Operating systems. Report now available, thanks to A. Silverman et al.

  http://agenda.cern.ch/askArchive.php?base=agenda&categ=a053314&id=a053314s0t3/document
- **Future potential topics:**
  - Better coordination of HEP sofware development
  - Videoconference and other collaborating tools
  - Data storage management
  - All suggestions welcome

The last IHEPCCC meeting in Korea May 27

- **Communications**

The presentation from many countries or regions were done during the digital divide workshop. They can be found at :

http://chep.knu.ac.kr/HEPDG2005/index.html

- **Highlights of the digital divide workshop.**
- **HEPiX-IHEPCCC interaction**
- **HEP VO**
- **Training group status report:**
- **Software development in HEP**
- **Grid projects**
- **New initiatives**
  - large procurements for LHC.
  - Licensing issues

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Digital divide issues

- **HEP is playing an important role in promoting science of many developping countries**
- **The Digital divide workshop in Korea in May was a very good illustration of this phenomemon. The virtusous circle: science/grids/high speed network is proving very efficient in many countries see**
- **http://chep.knu.ac.kr/HEPDG2005/index.html**
- **CHEP06 in India**
- **Sharing the knowledge around the Mediterranea conf in Casablanca Sept 05**
- **Creation of a training task force within IHEPCCC (V. Ilyin chair)**
  - Census of all existing training programs in HEP
- **Preparation of World Summit on IST : Tunis, Durban,…**
- **Second common workshop between SCIC and IHEPCCC in fall 2006 in Europe**

1-pager summary template

- **High speed network landscape**
  - National Research and Education Network Initiatives
  - Present achievements and future plans
  - International connectivity
- **Participation in Grid projects**
  - LCG/EGEE
  - National Grid initiatives
  - Scope, main sciences involved
  - Other E-science initiatives
  - Link between Computer Science community and grid developpers and users
  - Link between HPC computing centers (“supercomputers”) and cluster-based grids
- **Summary**
  - General level of support from Govt, from research community, from industry , from population
  - Role of HEP if any in closing up digital divide

Summary table

Country	National network today	National network 2007	Inter. Connectivity today	Inter. Conn. 2007	LCG/EGEE	National Grid initiative	HEP role in Grid	Computer scientists	HPC participation
Country 1									
Country 2									

- Each column normalized from 1 to 5 using a coding scheme

List of participating countries

- Australia (and possibly Pacific Islands)
- Brazil (and possibly other Latin American countries)
- Canada
- China
- France
- Germany
- India
- Italy
- Japan
- Korea
- Morocco (and possibly other African countries)
- Netherlands
- Nordic European countries
- Pakistan
- Philippines
- Poland
- Russia
- Spain
- Switzerland (and CERN)
- Taiwan
- UK
- USA

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Towards a HEP VO

- **GOAL: take advantage on the new technologies to offer minimum computing services to any bona fide HEP member in any HEP lab.**
  - Solve the travelling physicist problem
  - Create new services for the community
- **Initial proposal to Base it on Certificate technology**
  - Requires to maintain an accurate list of HEP VO members. Has to rely on the institutions. Requires a list of institutions
  - Technical implementation to be discussed with experts
- **Slow progress along this line due to large security concerns and parallel progress of tehcnologies (wireless and laptop are now fully widespread, although it is not the full solution to the problem)**
- **Reorientation towards guidelines on list on miniaml services and how on provide them.**

Towards a HEP VO. Proposal to ICFA

- **Recommendation 1: ICFA should agree and disseminate a definition of what constitutes an individual who can be rightfully considered a member of the HEP community.**
- **Recommendation 2: Encourage the creation and maintenance of a unique list of Institutions which have people working in HEP ("HEP Institutions").**
- **Recommendation 3: Encourage one or more Institutions which have the necessary capabilities, to make available to trusted parties in the HEP community in a secure electronic form the list of HEP Institutions and verification contacts.**

Software issues

- **The degree of duplication of the various software efforts was really striking**
  - For instance, one Mass storage software per big lab
  - Many different grid flavors
- **From the most tiny technical piece to the large frameworks**
- **Could be partly be reduced by more information**
- **How to promote the co development of HEP software (there are some success stories like GEANT4)**
- **Present trend to go away fom commercial software but some licensing issues remain cf MATLAB**
  - Work on licensing issues at HEP level
- **IHEPCCC will prepare a matrix using CHEP04 presentations and calssifications to document which lab is doing what in all aspects of HEP software**


TW Grid in press
Grid Thailand
สถาบันการบริหาร
grid.it project
Grid-Ireland
PPDG
iVDgL
Open Science Grid
INFN GRID
National Grid
EUROGRID
NG
SINGAPORE
egee
ing Grids for
nce in Europe
BIRN
D-GRID
NORDUGRID
Grid Solution for Wide Area
Computing and Data Handling
LCG
Grid3
2003
GRIP
UK
Particle
NEESgrid
Building the National Vir
for Earthquake Engineer
SDSC
S R B
STORAGE
RESOURCE
BROKER
GriPhyN
Data Intensive Science
apac
WestGrid
Welcome to TeraGr
NSF Extensible Terascale Facility
tota la informació sobre el projecte
GridCat
dintre del grid
GEON
The Geosciences Network
APBioNET
PACIFIC RIM APPLICATIONS AND GRID MIDDLEWARE ASSEMBLY
PRAGMA
GridLab
NAREGI
超高速コンピュータ網形成プロジェクト
National Research Grid Initiative
国立情報学研究所グリッド研究開発推進拠点 NII -The National Institute of In
grangenet
NAREGI
K*Grid
moreDream
KMI
Testbed
GFK
APEC APGrid
Access Grid
GNOC
Grid NOC

The Grid bazaar

- Probably useless and counter-productive to push for one unified GRID
- AT least insist on interoperability and minimal set of grids
- But INSIST very strongly that the LHC computing is ONE PROJECT

IHEPCCC recommendation in preparation

The LHC computing project should be considered as a whole. Different flavours of middleware are presently used in various regions of the world and , although it could be argued that is not ideal, this situation is very likely not going to change in the coming years. Therefore, IHEPCC strongly recommends

- i) to pursue and develop all efforts aiming at the maximum interoperability. In doing so, it is important to keep in mind that the LHC grid usage for physics analysis purposes will traverse the present geographical boundaries of these middleware implementations.
- ii) to review the full LHC computing project as a single integrated project
- iii) to adopt names for the various middlewares and the LHC computing grid project that allow to better capture the collective nature fo the enterprise

Procurement and licensing issues

- **a) Most of us will enter a phase of large procurements for LHC. Although it is clearly a sensitive domain, exchanging information between Hep centers either before (to negociate and/or together) or after the procurement (to provide data that can help others to get low cost) can lead to huge savings at the global scale. Can we make a recommendation to ICFA, ie to put together a group of procurement experts from the HEP centers.**

- **b) The question of scope if licences for commercial software used in HEP came up.**
  - -how to be as inclusive as possible when a big lab negociates with a vendor to nclude as many other labs as possible (beware that the labs that ill not in the deal may have to pay a much higher price)
  - -how can we deploy licensed software on a grid if needed (a working group on that topic exists in EGEE).

Conclusion

- **IHEPCCC recently created and off for a good start as a discussion forum and information exchange at the worldwide scale in HEP**
- **HEPiX has been picked up as the natural companion for technical advices, on a voluntary basis**
- **IHEPCCC provides a good way to attract attention of world lab directors on computing issues. Let's take avantage of it. Tell us your messages!**
- **Very fruitful session in Korea with many new initiatives**
  - Comprehensive digital divide report showing the impact of HEP in the virtuous circle
  - Linux OS status report
  - Training working group
  - HEP VO
  - Software development
  - Recommendation on LCG
  - Procurement and licensing