chep 06

Computing in High Energy and Nuclear Physics
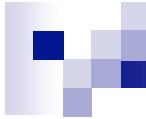
13-17 février 2006, T.I.F.R. Mumbai, India

Résumés

Séances plénières :

- Etat d'avancement de LHC
- Réseau de PC low-cost en inde
- E-Science par microsoft
- mySQL
- High Performance Computing par IBM
- LCG
- Le futur de ROOT
- Les activités de la grille (japon, chine, taiwan, applications médicales…)
- QCD
- Résumé des sessions parallèles
- Talk sur la grille par le président d'inde.
- ….
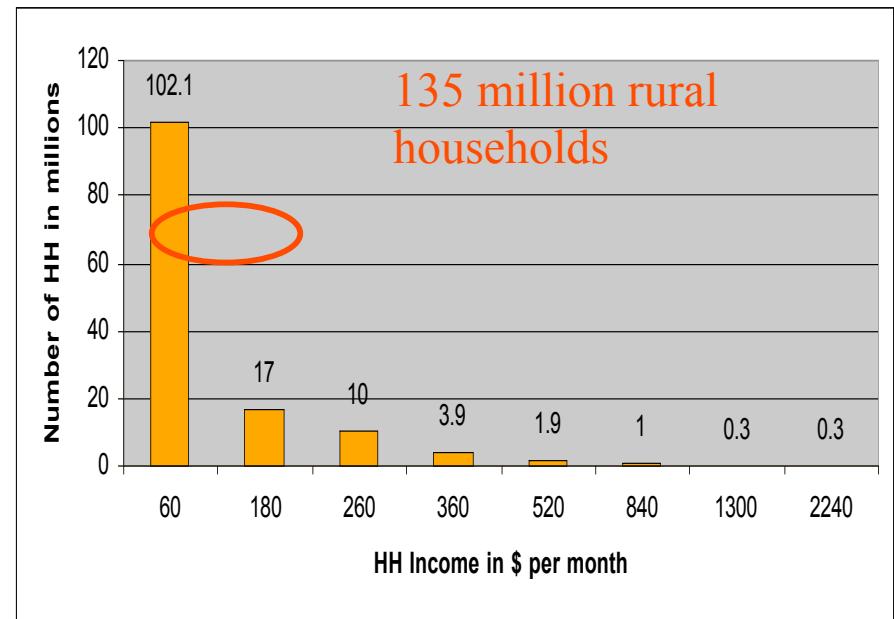
Quelques exemples :
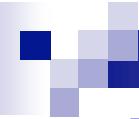
- **Low Cost Connecivity Initiative in India** Ashok JHUNJHUNWALA (IIT, Chennai)
- ROOT in the era of multi-core CPUs by Rene BRUN (CERN)

700 Million de personnes en zones rurales

- Répartis dans plus de 600000 villages (près de 1000 personnes par village avec moins de 0,5Euros par jour.

- **En plus du téléphone,Internet joue un grand rôle pour :**
 - l'éducation
  - la santé
  - les micro entreprises
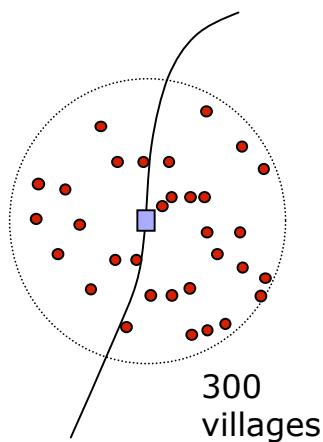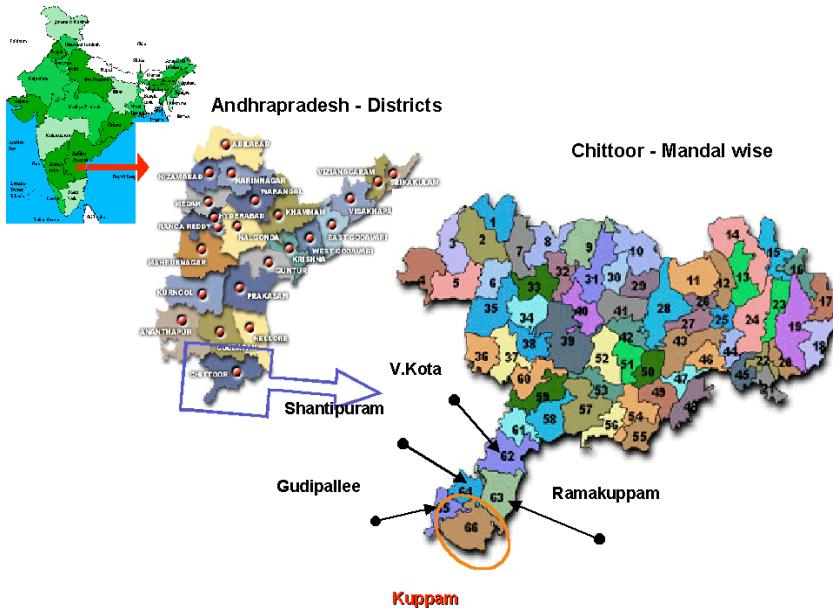
- Apporter dans 600000 villages
  - Les technologies
  - Un modèle solide de dévelopement
 - Une organisation qui pense et agit "Rural"
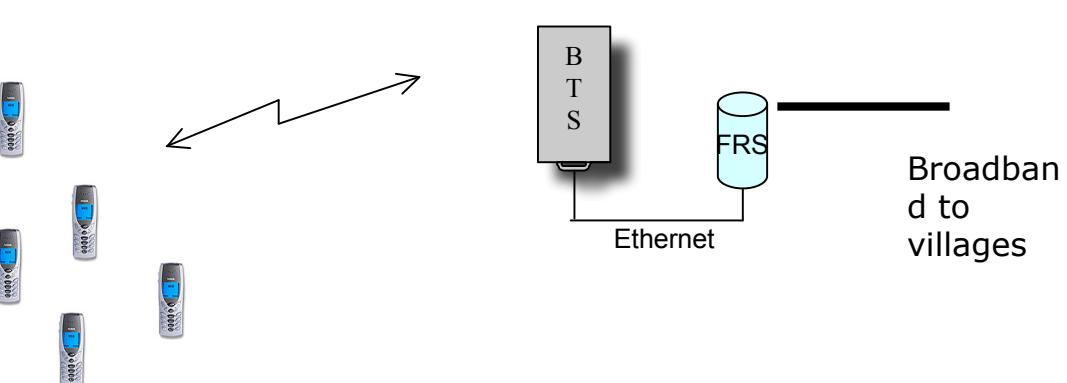
Priorités :

- Infrastructure
- Capacity Building
- Services Point à Point
  - Services de base (email, browsing, games, DTP, astrologie, services public, photographie)
  - Communication (VoIP, Mobile)
  - Education
  - Micro-franchise
  - ITeS
  - Telemedicine
  - Agriculture
  - Services financiers
  - Jobs
  - Buying and Selling
  - E-governance
  - Micro-enterprise
  - Jeux en réseaux

- 3+
- 2+

- 4

- 3
- 3+
- 2+
- 2
- 2+
- 2-
- 2-
- 1
- 1-
- 1+
- 0+
- 0

Architecture :

Andhrapradesh - Districts

Chittoor - Mandal wise

V.Kota

Shantipuram

Gudipallee

Ramakuppam

Kuppam

- ■ Réseau de fibre optique national entre les grandes villes
  - ☐ Désert 300 villages autour de chaque fibre
- ■ Puis réseau sans fil jusqu'au terminaux "low cost" :
  - ☐ 80$ par terminal + écran
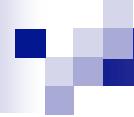
300 villages

B T S

FRS

Ethernet

Broadband to villages

Quelques exemples :

- **Low Cost Connecivity Initiative in India** Ashok JHUNJHUNWALA (IIT, Chennai)
- **ROOT in the era of multi-core CPUs** by Rene BRUN (CERN)
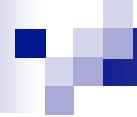
What is BOOT?

- <u>A small, easy to install, standalone executable module</u>
  (< 5 Mbytes)
  - One click in the web browser
- It must be a stable system that can cope with old and
  new versions of other packages including ROOT itself.
- It will include:
  - A subset of ROOT I/O, network and Core classes
  - A subset of Reflex
  - A subset of CINT (could also have a python flavor)
  - Possibly a GUI object browser
- From the BOOT GUI or command line, the referenced
  software (URL) will be automatically downloaded
  and locally compiled/cached in a transparent way.

Software component and libraries :

- <u>Summary from CHEP</u>

  Review of LCG Application area software
- Data Management
  - Historical overview
  - ROOT I/O
  - Relation Databases (4 talks)
  - Condition Databases (3 talks)
- Reflection in C++ (2 talks)
- Math and Statistical libraries and tools (5 talks)
- Geometry representation (3 talks)
- Graphics and Visualization (6 talks)
- Visualization for quantitative analysis in nuclear physics
- MC Generators services (2 talks)
- Integrated development environment (Eclipse)

Online Computing
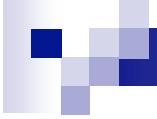
- **Summary from CHEP**

- **Expériences représentées :**
  - ATLAS (7 talks)
  - CMS (7 talks)
  - LHCb (3 talks)
  - CDF (2 talks)
  - HERA (2 talks)
  - Babar
  - Belle
  - Other… (8 talks)
- **Thèmes couverts :**
  - LCG dans les expériences
  - Modèles de calculs
  - Productions Frameworks et expériences à travers la grille
  - Bases de données et gestion des données

Event Processing Applications

Summary from CHEP

Software Tools and Information Systems

- **Summary from CHEP**

- Received 38 abstracts
  - □ 33 oral presentations, 5 posters
- Four main themes (with "fuzzy" borders)
  - □ GUI and generic application design
  - □ Release and distribution management, validation, job configuration and workflow
  - □ Computing studies: compilers, parallel, performance optimization
  - □ Communication and information management

Grid Middleware and e-Infrastructure Operations

Summary from CHEP

CHEP 06 — Categories

- **Grid Infrastructures**
  - The Open ScienceGrid, The Integration Testbed of the Open Science Grid, The German HEP-Grid Initiative
- **Substructures (Site, Site wide Grid, and Campus Grid)**
  - Grif, a Tier2 center for the Paris Region, FermiGrid-Status and Plans, Integrating a heterogeneous and shared computer cluster into grids
- **Interoperation**
  - Grid Deployment Experiences: The interoperations activity between OSG and LCG
- **Operations**
  - Grid Operations: the evolution of the operational model over the first year, Global Grid User Support: the model and experience in the Worldwide LHC Computing Grid, Gridview: A Grid Monitoring and Visualization Tool, GridICE: Requirements, Architecture and Experience of a Monitoring Tool for Grid Systems, Operations structure for the management, control and support of the INFN-GRID/Grid.IT production infrastructure, A Statistical Analysis of Job Performance with LCG Grid
- **Virtualisation**
  - An Edge Service Framework (ESF) for EGEE, LCG and OSG, Virtualisation: Performance and Use Cases
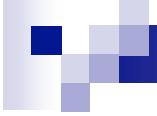
Distributed Data Analisys

- Summary de CHEP
- Voir le talk de vincent

Computing facilities and networking

- Summary de CHEP

Distributed Event production and Processing

- **Summary from CHEP**

- 7 parallel sessions, total of 32 talks
  - 7 ATLAS, 7 CMS, 3 LHCb, 2 CDF, 2 HERA, 1 Babar, 1 Belle, 8 other
- A number of key themes, covering:
  - LCG Service Challenges, including experience;
  - Experiment Computing Models;
  - Grid Monitoring;
  - Production Frameworks and experiences on the Grid(s);
  - Databases & Data Management.