http://www.euchinagrid.org

EUChinaGRID

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EGEE04 - EGEE Generic Applications Advisory Panel

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Information Society

Why GRID & China

- China is one of the fastest growing economies in the world with a specific program for GRID (CNGRID).
- Many Scientific collaborations are already active between European and Chinese Researchers (LHC, Astroparticle, Biology, etc.)
- EGEE GRID Middleware can be seen as a sort of common platform which can be the baseline for interconnecting GRIDs worldwide.

EUChinaGRID : Interoperability and Integration of Grids between Europe and China

- **EUChinaGRID will make a step forward supporting the creation a pilot intercontinental Grid infrastructure which will:**
  - strengthen the existing scientific collaborations (LHC, ARGO-YBJ, NBP).
  - promote new collaborations in eScience between Europe and China.
- **To reach this objective several activities are planned:**
  - Support of network interoperability (IPV4/IPV6)
  - Interoperability of services between CNGRID and EGEE
  - dissemination & training.

Participants

1	Istituto Nazionale di Fisica Nucleare (IT) (coordinator)
2	European Organisation for Nuclear Research CERN (CH)
3	Dipartimento di Biologia - Università di Roma Tre (IT)
4	Consortium GARR (IT)
5	Greek Research & Technology Network (GR)
6	Jagiellonian University – Medical College, Cracow (PL)
7	School of Computer Science and Engineering – Beihang University Beijing (CN)
8	Computer Network Information Center, Chinese Academy of Sciences – Beijing (CN)
9	Institute of High Energy Physics, Beijing (CN)
10	Peking University – Beijing (CN)

Status, Timescale & Budget

- Negotiation phase ended.
- Contract will be signed in november ’05.
- 24 Months duration starting on 1st January ’06.
- EU Contribution of 1,300,000 €.
- A total of 495 Person Months (325 Funded).

EUChinaGRID WP's

- WP1 – Project administrative and technical management.
- WP2 – Network planning and interoperability study.
- WP3 – Pilot infrastructure operational support.
- WP4 – Applications
  - EGEE applications (LHC, Bio, etc.)
  - ARGO-YBJ and Gamma Ray Bursts
  - Never Born Proteins
- WP5 – Dissemination

WP breakdown

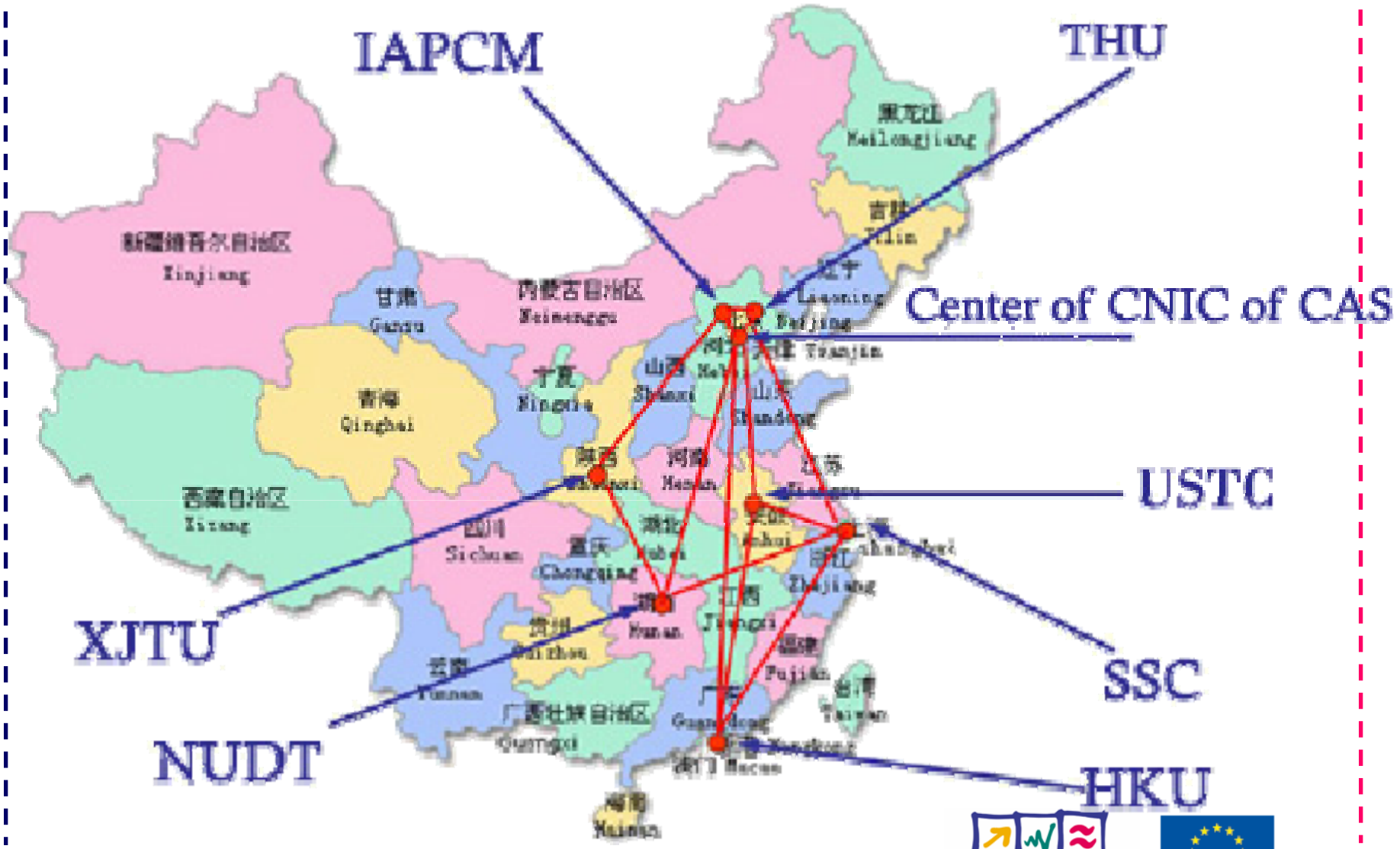
WP1	**Project administrative and technical management**
1.1	Administrative management
1.2	Technical management
1.3	Liaison with related projects
WP2	**Network planning and interoperability study**
2.1	Network connectivity plan
2.2	Analysis of multi-protocols Grid connectivity
WP3	**Pilot infrastructure operational support**
3.1	CNGrid-EGEE interoperability
3.2	Harmonisation of Authorisation and Security Policies
3.3	Operational support of Advanced Services
3.4	Promote new Asian Grid Infrastructures
WP4	**Applications**
4.1	EGEE applications (ATLAS, CMS)
4.2	Astroparticle Physics applications (ARGO-YBJ/GRB)
4.3	Biology applications (NBP)
WP5	**Dissemination**
5.1	Project dissemination activities
5.2	Dissemination of advanced knowledge activities
5.3	Promoting new communities

General schetch

- Middleware: EGEE middleware will be used with Chinese specific additions and modifications.
- Infrastructure: the EGEE and CNGRID infrastructures will be used.
- Applications: EGEE applications (LHC) and other pilot applications will be supported.
- Training & Dissemination: Joint activities with other projects are foreseen (Grid@Asia, BELIEF, etc.) with possible synergies.

EU中国 GRID

CNGRID



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ARGO – YBJ Laboratory

Unique High Altitude Cosmic Ray Laboratory (4300 m a.s.l., Tibet, P.R. China), 90 km North to Lhasa.

Chinese-Italian collaboration.

The Experiment data rate to be transferred is 250 TB/Year requiring a steady transfer rate of the order of 100 Mbps to Beijing and from there to Italy.

Never Born Proteins

- **The number of natural proteins on Earth, although apparently large, is only a tiny fraction of the possible ones:**
  - with 20 different co-monomers (the 20 different natural amino-acids), a polypeptide chain with 60 residues (n=60) can exist in 20^{60} different chain structures.
  - In nature, we have around $10^{13\text{-}14}$ different proteins, so that the ratio between the possible and the actual number is staggeringly large.
- **This means that there is an astronomically large number of proteins that have never been seen on Earth - an incredibly large number of "never born proteins" (NBP).**
- **In particular, the present research in the field is based on a computational approach to study a large library of NBP (10^9 protein sequences) to the aim of clarifying the structural principles that characterize them and of selecting a reasonable number of sequences which can potentially give rise to stably folded proteins.**