



# What is special with Grid activities in Korea

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Sangsan Lee, Director  
KISTI Supercomputing Center



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## Why is 'Korea' interested in Grid

- 'Korea' has spent tens of billion dollars in building its national network infrastructure for more than a decade.
  - ◆ *Dense coverage by the **National Network** over the peninsula*
  - ◆ *World-best **Public Network** in broadband service home*
    - ◆ *8.6M home connected(60%), internet users 51% population*
  - ◆ *But, lacking in real applications for leading high performance **Research Networks**: KOREN, KREONet2, APII, STAR TAP, TEIN, ...*
  - ◆ *Current requirement for internet service is satisfied. Question is... Is Korea ready for the emerging service over the next generation networks ?*

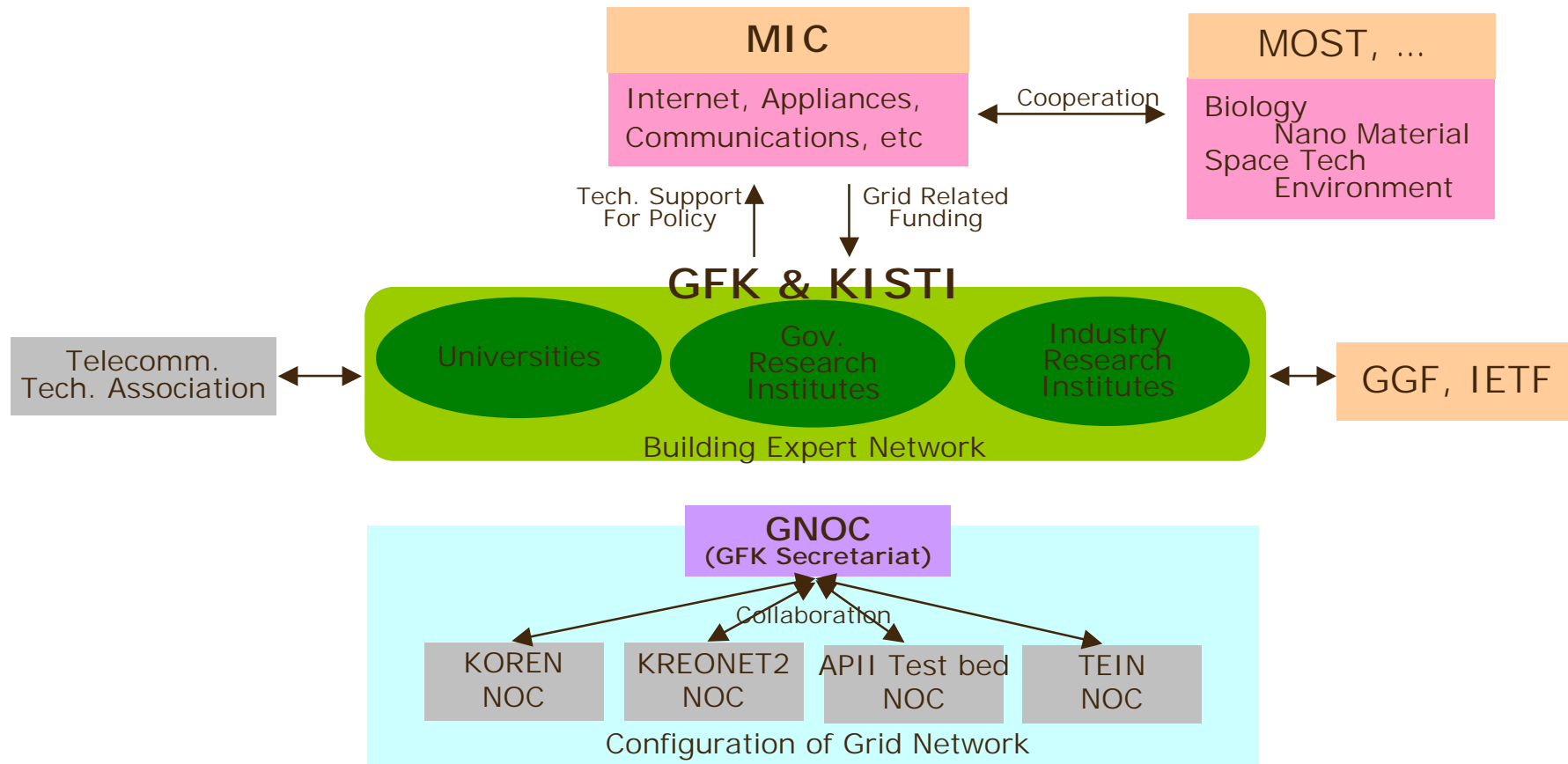


## Why is 'Korea' interested in Grid

- Korea is interested in key technologies to survive and prosper in the 21<sup>st</sup> century.
  - ◆ *6T: BT, NT, IT, ST, ET, CT*
  - ◆ *IT (Information Technology) is expected to play a core role in expediting technology development process*
  - ◆ *Hence naturally come the combination of IT as BIT(BT+IT), NIT(NT+IT), ...*
  - ◆ *Above all, Grid is regarded as the next generation IT to give answers to most problems posed, as a service enabler.*



# How 'Korea' approaches Grid





## How 'Korea' approaches Grid

- Plans, Programs and Projects on Grid
  - ◆ *Plan: National Grid Construction Plan(2002-2006)*
  - ◆ *Program*
    - ◆ *N\*Grid led by KISTI*
    - ◆ *Recommended associated funding: USD 35M except investment on resources and networks*
  - ◆ *Projects*
    - ◆ *N\*Grid(5yrs), Grid Middleware(3yrs), GFK(yearly), ITRC(3yrs), Standardization(from 2003)*
    - ◆ *Grid-like projects: applications over KOREN, APII, TEIN, ...*



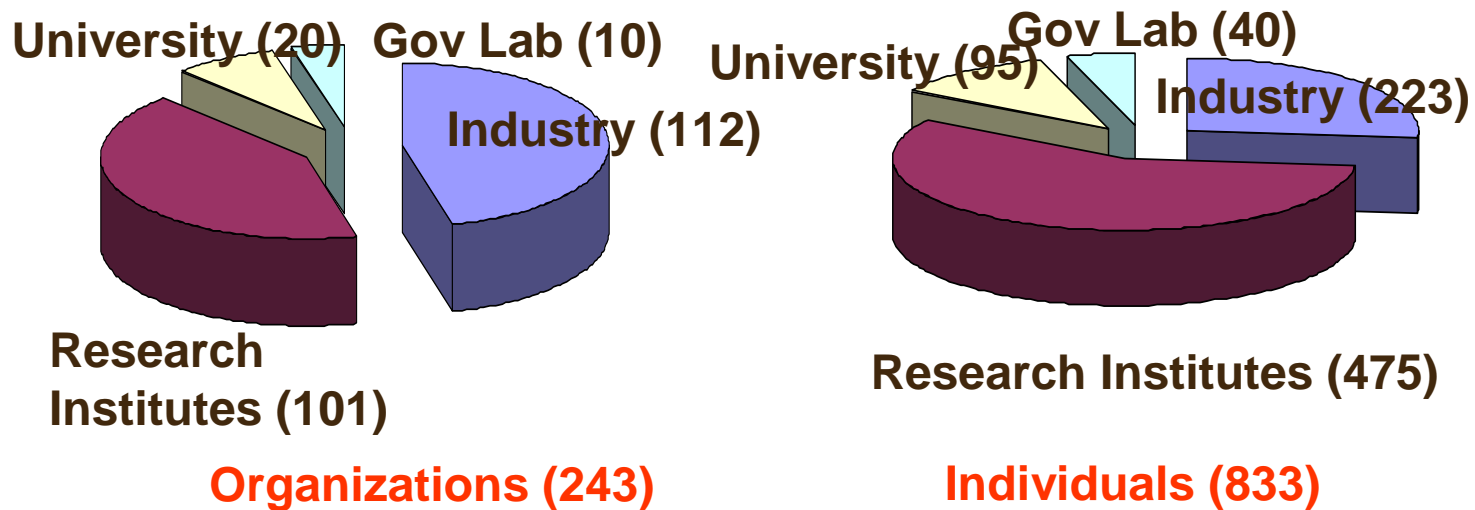
# Korea Grid Programs/Projects

- Grid Infrastructure(N\*Grid: NStarGrid)
  - ◆ *Grid Infrastructure*
    - ◆ *Computation: Supercomputers & PC clusters*
    - ◆ *Access, Data, and VR Grid*
  - ◆ *Grid NOC*
    - ◆ *Coordinating among (research) networks*
  - ◆ *Applications*
    - ◆ *Open competition for pilot Grid projects funding through/among GFK community*
- Grid Middleware(MoreDream)
- Grid Forum Korea
- Grid Standardization
- Grid Middleware Center(GMC)



# Grid Forum Korea

- Formed in Oct., 2001
- Mailing List (Jul., 2002)





# Grid Forum Korea

- List of 24 WG's (386 members)
  - ◆ HEP Data Grid
  - ◆ Solid Mechanics and Materials Simulation Grid
  - ◆ CFD Grid
  - ◆ Nano Material Computing
  - ◆ Computing Grid of Computational Chemistry and Nano Material
  - ◆ Post-Genomics
  - ◆ Genomics
  - ◆ Non-equilibrium statistical physics & Biophysical applications
  - ◆ Environmental Information Grid
  - ◆ CC-Grid-based Computation and Informatics
  - ◆ Seoul Grid Center
  - ◆ Equipments Grid
  - ◆ E-Mail Computing Grid
  - ◆ Grid Contents Identification System
  - ◆ Grid Resource and Job Management
  - ◆ Collaborative Supercomputing Environment
  - ◆ Grid Service
  - ◆ Grid QoS
  - ◆ Grid Toolkits
  - ◆ P2P Distributed Computing
  - ◆ CC-Grid
  - ◆ Grid Security
  - ◆ Grid Network Management
  - ◆ Grid High-Performance Networking



# Grid Forum Korea



GFK 2001 Inaugural Workshop  
Oct. 25-26, 2001  
Attendance: 300



GFK 2002 Summer Workshop  
July 11-12, 2002  
Attendance: 275





## International activities: KISTI

- APEC TEL
  - ◆ Proposed 'AP Grid Implementation' in 24<sup>th</sup> APEC TEL WG in Sep., 2001
  - ◆ Endorsed as 5 year APEC TEL Program(2002-2006)
  - ◆ Technology transfer and national policy coordination
- ApGrid
  - ◆ Participating ApGrid activities led by Japan since Oct., 2001
  - ◆ Collaboration in AP Grid infrastructure construction
- PRAGMA(Pacific Rim Applications and Grid Middleware Assembly)
  - ◆ Participating as an inaugural member institute since Mar., 2002
  - ◆ Hosted 2<sup>nd</sup> PRAGMA workshop in Seoul (Jul., 2002)



# International activities: KISTI

PRAGMA

San Diego  
Mar. 2002



Seoul  
July 2002





# International activities: KISTI

- NCSA
  - ◆ KISTI signed MOU with NCSA in 2001 regarding collaboration in Grid-in-a-Box, Cluster-in-a-Box, Display-in-a-Box.
  - ◆ To establish a Grid infrastructure between KISTI-NCSA for CFD applications by UIUC(USA) & PNU(Korea)
  
- IBM USA
  - ◆ Seeking possibility of collaboration in OGSA for mutual interest
  
- Platform Computing
  - ◆ Searching for P2P-computing candidate applications
  - ◆ Seeking possibility of collaboration on Globus toolkit package



# International activities

- GGF(Global Grid Forum)
  - ◆ Sparsely attended since GGF2
  - ◆ Inertia built up rapidly after GFK formation and Grid projects' start
  - ◆ ~30 attended in GGF5 in Edinburgh, UK (Jul., 2002)
  - ◆ Acting as a regional(AP) representative in GFAC: S. Lee
  
- Special budget for international collaboration is requested for FY2003.
  - ◆ Fostering international Grid collaboration projects both on infrastructure and applications



## What '*Korea*' aims through Grid

- Grid program in Korea so far is led by MIC.
  - ◆ *Making efficient use of expensive instruments by resource sharing: raising efficiency by 20% !*
  - ◆ *IT infrastructure acknowledged to play a critical role in advancing national science and technology*
  - ◆ *Introducing IT based R&D into research community: BIT, NIT, ... (dry lab, in silico, ...)*
  - ◆ *Helping to make presence and build leadership in Korea's international networking efforts in Asia, like APII, TEIN, ...*



## What is lacking in Korean Grid

- Grid application programs...
  - ◆ *MOST understands the trend and proposed the idea (vision) of 'e-R&D' in 2001 (not a program with associated funding)*
  - ◆ *There is no separate funding program on 'real' Grid applications in general science and technology perspective by ministries, like MOST, MOE, MOTI, MIC, ...*
  - ◆ *Expecting TRUE (in scope & size) government supported Grid application programs to come !*
  - ◆ *Grid business models just to arrive in Korea: P2P, company Grid, campus Grid, international distributed data storage, ...*



Thanks for attention !

For further information :

<http://www.gridforumkorea.org>

*(most documents prepared in English)*