PREGINET and the Philippine Grid Computing Program: in support of R&D Priorities in the Philippines

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Outline

- R&D Priorities

- ASTI Introduction

- PREGINET

- Philippine Grid Computing Program

- APAN 23rd Meeting in Manila

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R&D Priorities
(from DOST 8-Point Agenda)

- Biotechnology (Agriculture, Health)
- ICT
- Pharmaceuticals
- Environment (Water, Disaster Mitigation)
- Energy

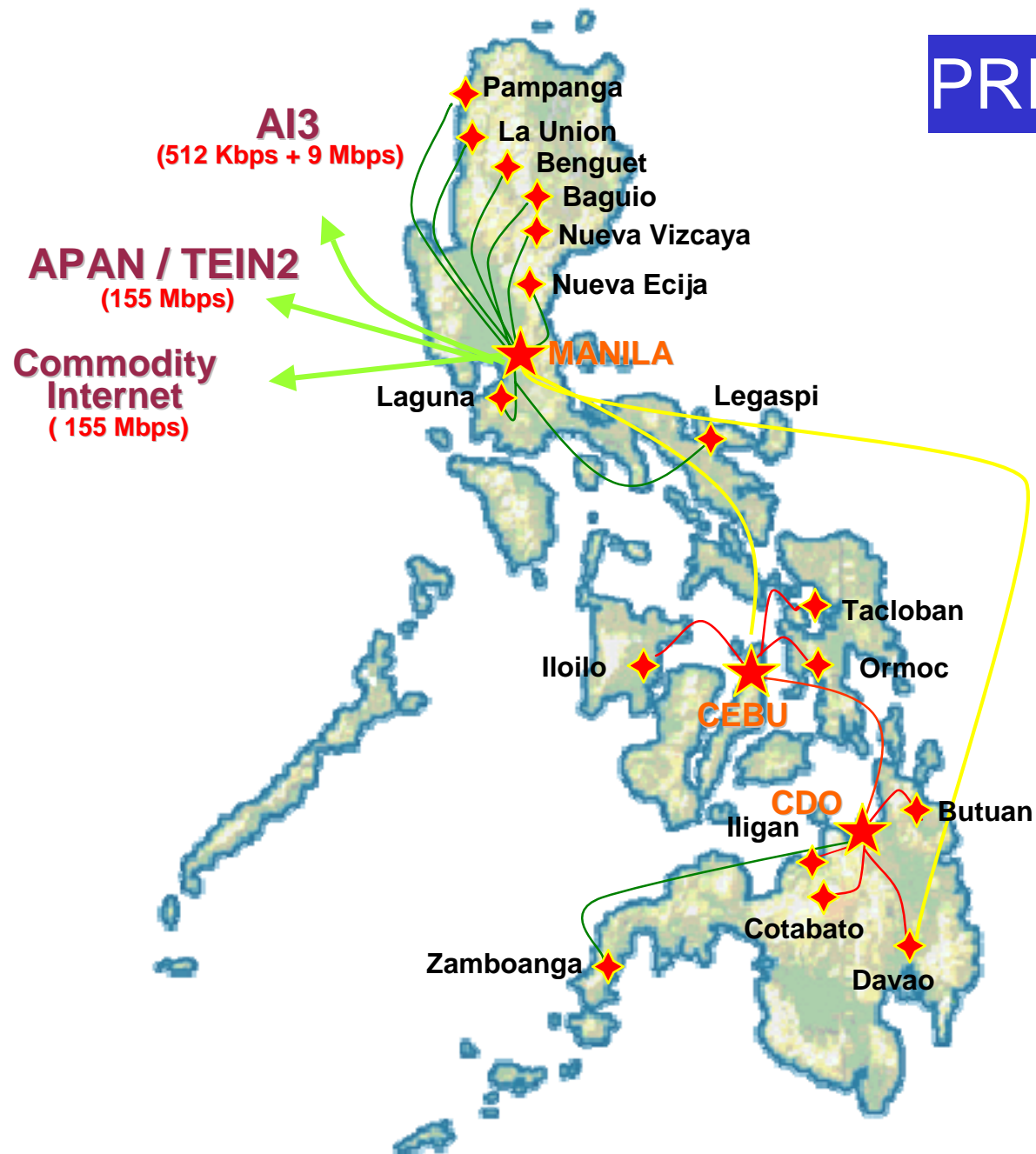*ASTI-DOST*

ICT R&D Priorities
(from DOST 8-Point Agenda)

- Grid Computing

- Open Source and Low-cost Computing

- Internet, Network and Wireless Technologies

- Applications and Digital Content Development

- Foundations of Computer Science and Emerging Technologies

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Advanced Science and Technology Institute

- ICT and microelectronics R&D agency under the Philippines' Department of Science and Technology

- Based inside the University of the Philippines Diliman campus, located in Quezon City in northern Metro Manila

- Manage and operates the Philippine Research, Education and Government Information Network (PREGINET), the national research and education network of the Philippines (http://www.pregi.net)

- Coordinating efforts to establish the Philippines Grid Initiative (http://philgrid.asti.dost.gov.ph)

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PREGINET Infrastructure

AI3
(512 Kbps + 9 Mbps)

APAN / TEIN2
(155 Mbps)

Commodity
Internet
(155 Mbps)

Pampanga
La Union
Benguet
Baguio
Nueva Vizcaya
Nueva Ecija
MANILA
Laguna
Legaspi
Tacloban
Iloilo
CEBU
Ormoc
CDO
Butuan
Iligan
Cotabato
Zamboanga
Davao

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PREGINET Application Areas

- E-Learning (SOI-Asia, OPAPA/Agriculture Extension Technicians, Science and Math Teachers' Training)

- IPv6 Deployment, Testbed and Training

- VoIP Testbed (SIP, ENUM)

- Access Grid

- Philippine e-Library

- Data/Content Mirroring

- Network Measurements

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Philippine Grid Computing Program

- Objectives
  - Establish and maintain a high performance computing facility that encourages multi-disciplinary research
  - Organize an advisory committee which will help develop a roadmap on high performance computing
  - Build capability in grid computing through attendance to relevant trainings, workshops and conferences
  - Develop and conduct courses on grid and cluster computing
  - Connect to the international grid community

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Plan

- Initially, the computing clusters of ASTI, the Compuational Science Research Center of the University of the Philippines, the Ateneo de Manila University and the PAGASA will be connected to form the Philippines National Computing Grid

- Applications for bioinformatics and disaster mitigation are the initial priorities identified

- Strengthening of manpower capability on grid/cluster computing infrastructure, applications and security is another priority

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Bioinformatics in Agricultural Biotechnology

- Development of molecular markers

- Discovery of important genes and their regulatory elements

- Plant transgenesis

- Regulation of GM crops as part of science-based risk assessment

Most of the R&D activities are based at the University of the Philippines Los Banos campus (IPB, BIOTECH, IBS), PCARRD, Philrice and IRRI

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Medical Bioinformatics

- Population Screening

- Drug Discovery and Development

- Outbreak Detection

- Disease Characterization

- Vaccine Development

- Analysis of results and data mining and management (PCR primer design, nucleotide sequence alignment, sequence analysis, phylogeny, protein structure prediction, epitope prediction, etc...)

Most of the R&D activities are based at the University of the Philippines (Manila and Diliman), St. Lukes' Medical

Center, University of Sto. Tomas, RITM-DOH, and UNILAB

Disaster Mitigation

- Numerical Weather Prediction

- Typhoon Tracking

- Rainfall Prediction and Monitoring

- Natural Hazards Mapping (Rainfall and Earthquake Induced Landslides)

- Environmental Monitoring with Sensor Networks

- Remote Sensing and GIS

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International Collaboration

- Bilateral S&T Agreements

  – Philippine-Taiwan Roundtable Discussion on S&T Cooperation, Dec. 12-13, 2006 in Manila

- Multilateral action through Regional and International Bodies such as ASEAN, APEC, ASEM

- Capacity and capability building, joint research projects, experts visit, information dissemination and knowledge sharing

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Asia Pacific Advanced Network
APAN 23rd Meeting
January 22-26, 2007
EDSA Shangri-La Hotel, Manila, Philippines

excellent opportunity for networking and developing collaborations with counterparts working on technology and applications of advanced networks in many interesting areas

we invite you to attend and join this community

http://www.apan.net/meetings/manila2007/

PLEASE REGISTER NOW!

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