IAMI / VAST, Vietnam

Grid enabled Medical Informatics In Vietnam
(VAST/IAMI, formerly VAST/ IOIT-HCM)

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Outline

1. Overview
2. Activities of IAMI in EUAsiaGrid Project
3. Support role Telemedicine & Biomed applications
4. Discussion and Conclusion
Overview – IAMI Workpakages

WP1
- Building E - Infrastructure

WP2
- Introduce EUAsia Grid to VNGrid
- Expand more new users using services on Grid

WP3
- Study the usage of advanced Grid tools and services to suitable VN Scientists on Bioscience
- Research tools on Bioinformatics and Biomedics, study and setup the user interfaces, grid portals and demo tools

WP4
- Translation course material to Vietnamese language
- Transfer the knowledge from EUAsiaGrid meetings and Conferences

WP5
- Deploy EUAsiaGrid materials on Grid system of VN for local learning
- Training both technical personnel and user communities to the Grid

EUASia Grid
Overview – IAMI e.Infrastructure

- Grid site(s) using gLite:
  - Keylab site (3CPUs / 6Servers - certified)
  - CNRS site (2CPUs / 6Servers - connect to VinaREN network)
  - DCnet site (6CPUs / 8Servers - waiting for certified)
Activities (1/3)

• Public EUAsiaGrid activities via Website and Forum
  – http://euasiagridvn.ioit-hcm.ac.vn
  – http://euasiagridforum.ioit-hcm.ac.vn
• Collecting user information via Survey monkey
• Others activities:
  – Posters
  – Distributed brochures/bookmarks…
  – EUAsiaGrid Booth visitors at National Conference (Dong Nai City, 05-06 August 2009)
• Connected Institutions/Hospitals in to EUAsiaGrid
- connected institution

<table>
<thead>
<tr>
<th>SN</th>
<th>Institutes / Universities / Hospitals</th>
<th>Contact persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Institute of Chemistry Technology - Vietnam</td>
<td>Dr. Nguyen Cuu Khoa</td>
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<tr>
<td>2</td>
<td>Institute of Geography and Natural Resources - VN</td>
<td>Dr. Le Ngoc Thanh</td>
</tr>
<tr>
<td>3</td>
<td>HCMC University Medical Center - Vietnam</td>
<td>Dr. Tran Thanh Xuan</td>
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<tr>
<td>4</td>
<td>Pasteur Institute HCM City</td>
<td>Dr. Vu Thi Que Huong</td>
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Main Support Roles

- **HCMC University Medical Center – Vietnam:**
  - Research about Ophthalmology using HOPE on the Grid System
  - Co-Support Organization: HealthGrid – Celermont ferrand (France)
  - Contact person:
    - Dr. Tran Anh Tuan - dr.trananhtuan@gmail.com

- **Pasteur Institute HCM City – ARBOVIRUT LABO**
  - Using GVSS Tool to do research on Dengue Fever NS3
  - Design and implement the system to manage the samples for ARBOVIRUS LABO
  - Building the database for saving and presenting the Influenza Virus A H5N1, H1N1
  - Co-support Organization: Institute of Sinica (Taiwan)
  - Contact persons:
    - Dr. Vu Thi Que Huong - quehuong@pasteur-hcm.org
    - Dr. Huynh Chuong - huynh@bioinfohelpdesk.org
HOPE – Platform (1/3)

- Hospital Open-software Platform for E-Health

Information transferred between different locations only using SOAP messages over an SSL secured channel.
HOPE – Platform (2/3)

- **AMGA Server:** content medical information, metadata.
- **SE:** store images.
- **CE:** executing, computing, and analyzing image.
- **Web service:** communication, user interface.
Connect between University of Medicine of Pharmacy HCMC and IAMH
GVSS Tool

(Grid enabled Virtual Screening Service)

Virtual screening:

- **Protein**
- **Inhibitor**
- **Protein + inhibitor**

To develop a new kind of drug...
GVSS Tool

(Grid Enabled Virtual Screening Service)

FP7-INFRA-223791
Deploy GVSS tool
discussion about GVSS between IAMl and HCM Pat
<table>
<thead>
<tr>
<th>Date Range</th>
<th>Task Description</th>
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<tbody>
<tr>
<td>01 Mar – 01 April, 2010</td>
<td>Research to install and configure to do the Monte-Carlo dosimetric simulation on the HOPE when submitting job in to the grid</td>
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<tr>
<td>01 – 15 April, 2010</td>
<td>Collect patient eye-disease images from some hospitals to upload and to do experiment research on the HOPE platform</td>
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<tr>
<td>15 April – 10 May, 2010</td>
<td>Collaborate with hospitals in Vietnam to deploy HOPE platform for research</td>
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<tr>
<td>10 May – 20 Jun, 2010</td>
<td>Research to develop porlets on the HOPE for an application on HOPE</td>
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<tr>
<td></td>
<td>• Try to integrate an open software module in to HOPE portal.</td>
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<td></td>
<td>• Develop porlets as an add-in on HOPE platform</td>
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<tr>
<td>20 - 30 Jun, 2010</td>
<td>Documents and reports</td>
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## Plan for GVSS

<table>
<thead>
<tr>
<th>Activity</th>
<th>Status</th>
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<tbody>
<tr>
<td>Research about docking: material (target, ligand), process, methods, tools, algorithms...</td>
<td>Finished</td>
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<tr>
<td>Research about Dengue virus</td>
<td>Finished</td>
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<tr>
<td>Approach to GVSS and install it on some computer (IAMI and Pasteur Institut HoChiMinh City).</td>
<td>Finished</td>
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<tr>
<td>Introduce to doctors of Pasteur Institute about docking on grid computing, GVSS and how to submit job.</td>
<td>Finished</td>
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<tr>
<td>Collaborate with Pasteur Institute to select target and ligand to implement.</td>
<td>1 March – 15 April</td>
</tr>
<tr>
<td>Submit docking jobs on GVSS</td>
<td>16 April – 1 May</td>
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<td>Summarize and evaluate the results</td>
<td>2 May – end of June</td>
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This study has been supported by EUAsiaGrid project, which is funded by the European Union under contract number FP7-INFRA-223791. We gratefully acknowledge their support. We also acknowledge the support from Breton Vincent; Legre Yannick, Ana Lucia Da Costa and Maigne Lydia (CNRS IN2P3 Clermont- Ferrand) and ASGC Hsin-Yen Chen who gave us many ideas to do this report.
Thank You for your attention