



Ohio Technology Consortium
A Division of the **Ohio Board of Regents**

Campus to Campus Ohio Brazil

Marcio Faerman

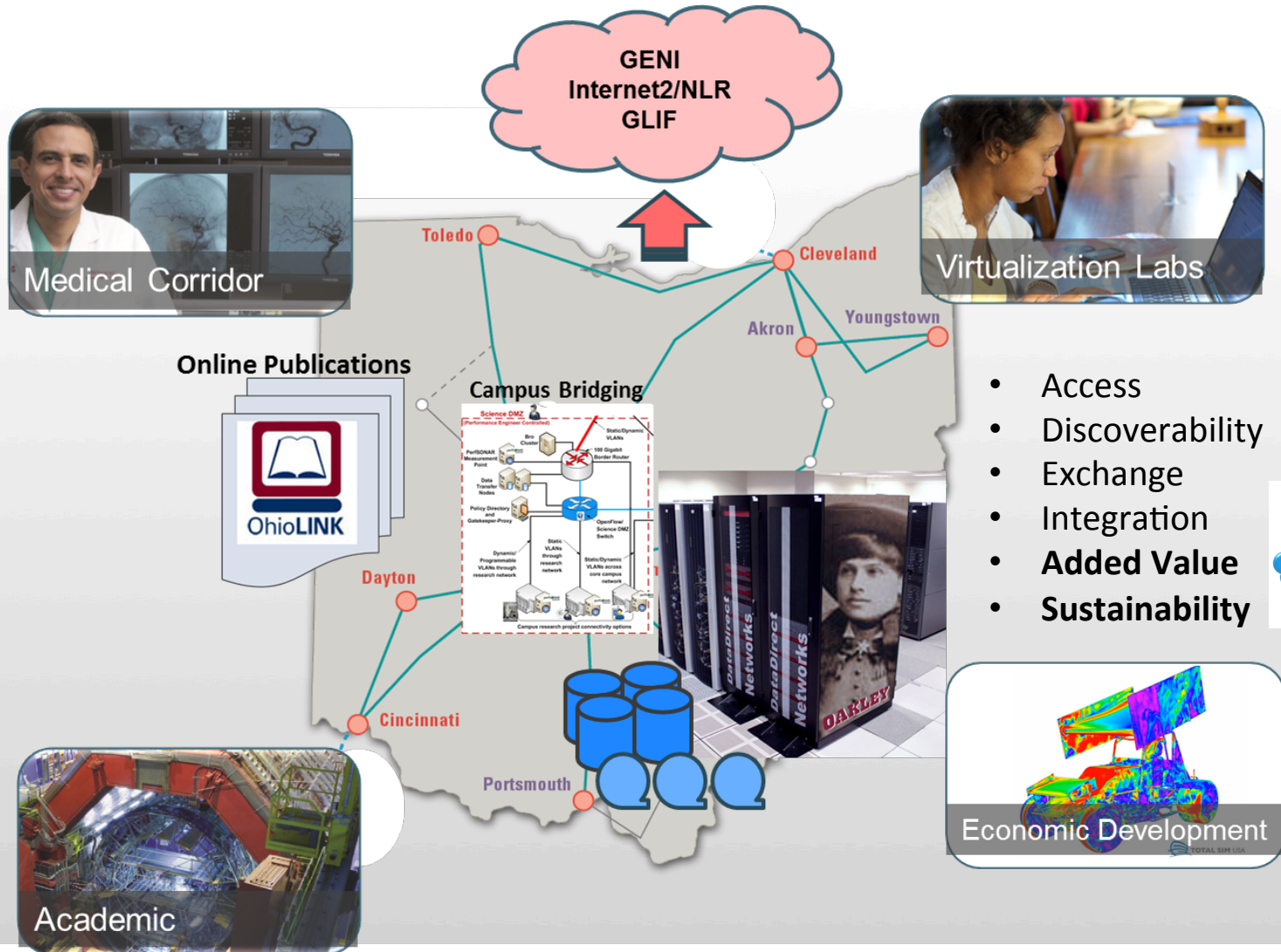
Denver

11/19/2013

OSU Science DMZ: Project Overview

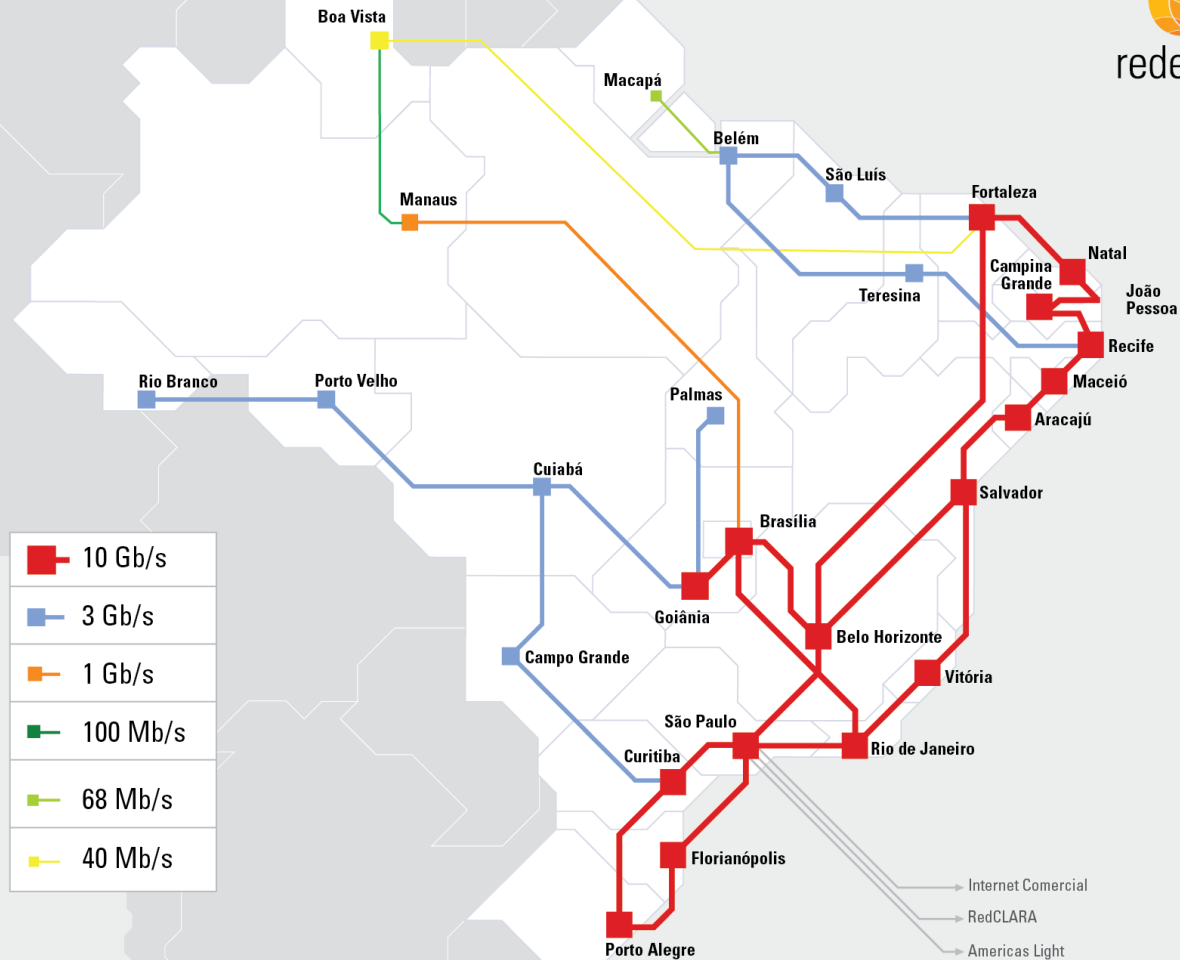
- \$987,019 NSF Grant
 - Carol Whitacre PI, OARnet's Paul Schopis, administrative PI
- Science DMZ construction with advanced technologies
 - 100-Gbps connectivity, perfSONAR, OpenFlow, RoCE/iWARP, Bro
- Connect OSU at 100Gbps to OARnet-Internet2 peered network
 - Aggregate research VLANs arising from internal OSU departments
- Wide-area experimentation case studies with Co-Pis
 - *OSU – MU experiments*: Brain imaging, Soybean translational genomics
 - *OSC experiments*: adoption of cloud-based technologies for big-data import, storage and collaboration, as well as related analytics
 - *OSU HFCMPL experiments*: foster multi-physics research collaboration and high-resolution simulation steering; graduate capstone project

A Vision for Big Data Evolution in Ohio





Situação em novembro de 2013



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Connecting Science DMZs Brazil - Ohio

- USP to upgrade campus network to 100Gbps
- Brazilian NREN investing in Science DMZ Project
 - INPE (Brazil “NOAA”)
 - UFPE
 - UFRJ
 - USP
- Science DMZ Brazil – OSU new grant
 - Ohio/FAPESP
 - OSU Brazil Gateway
 - Marcio Faerman, Alex Berryman (OSC)
 - Tereza Carvalho, Fernando Redigolo, Dino Magri, Marcos Simplicio (LARC/USP)

Campus to Campus Brazil - Ohio

- Integrate perfSONAR
- Data Transfer Nodes
- GENI Racks
- End to End OpenFlow

Potential Applications

- 8K Ultra High Definition Video Transmissions
- Medical Remote Training
 - Live surgeries transmission
- Collaborations in Climate
- High Energy Physics
- Dark Energy Survey
- OptiPortals
- Arts, Cinema
 - CineGrid

Atuação – Projetos, Parcerias & Capacitação



INPE– Earth Observation, Climate Weather, Radioastronomy, Geodesy

- Collaborations with NOAA
- e-VLBI



Discussions



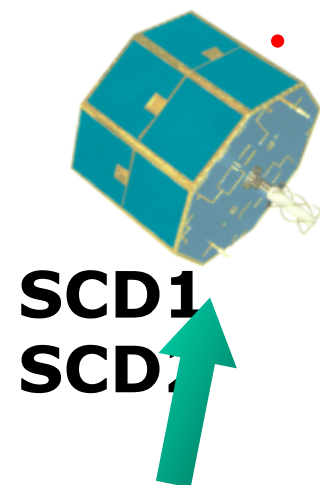
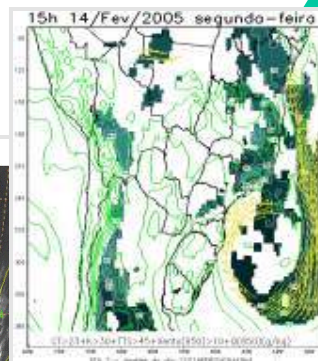
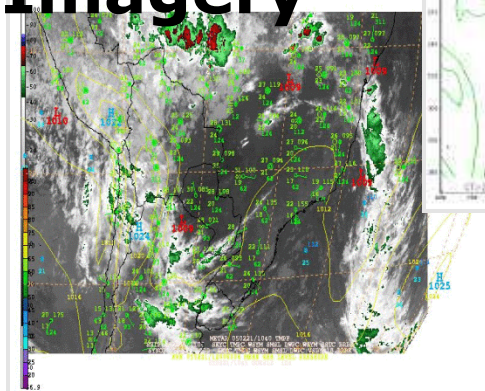
Bulletins



SX6

Weather forecast models

Satellite Imagery



Dark Energy Survey (DES) – Brazil

<http://www.des-brazil.org/>



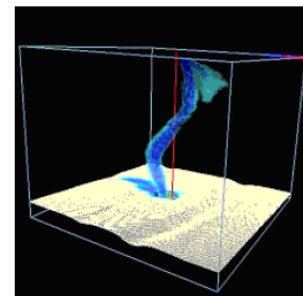
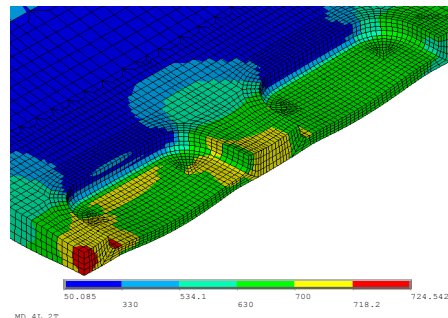
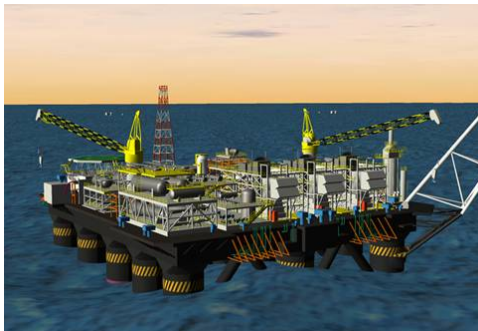
- **Brazilian Consortium**
 - National Observatory (ON) - Lead
 - Brazilian Center of Physics Research (CBPF)
 - National Lab of Scientific Computing LNCC
- **International Collaboration**
 - US
 - Fermilab, NOAO, NCSA, OSU ANL, UIUC, Others
 - UK
 - Spain
- **Collaborations also involve SLOAN, LSST**



Oil, Gas, Energy Sector

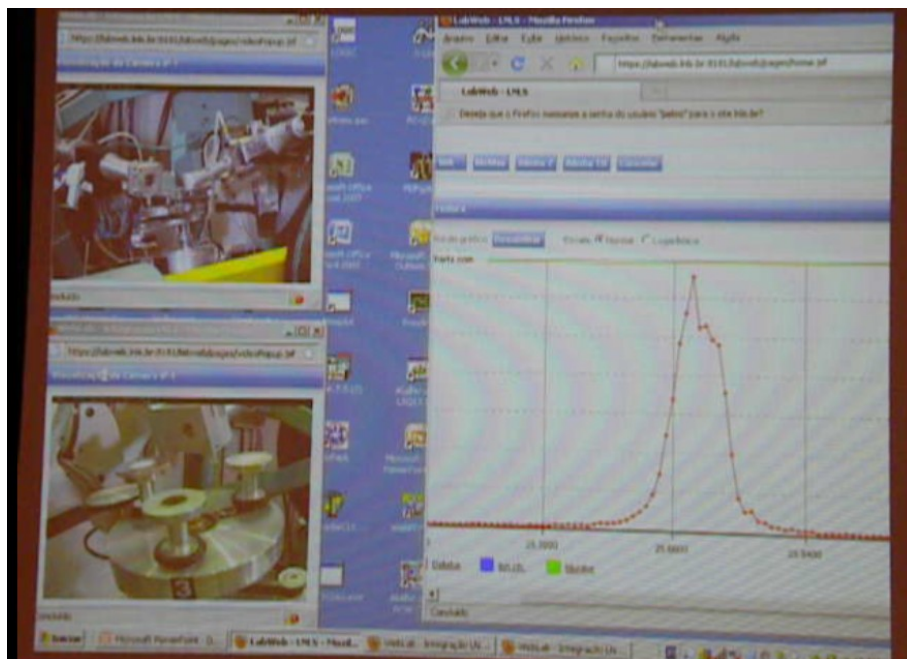


- **Distributed HPC Environment**
 - **One of Largest Grids in Southern Hemisphere – 160 Tflops distributed in 5 sites**
 - **Largest machine – ranked 76th in the Top 500**
 - **3D 4K Vizualization in Real Time**
 - **Emergency Response**



Remote Instrumentation LNLS – National Lab of Synchrotron Light

<http://www.lnls.br>



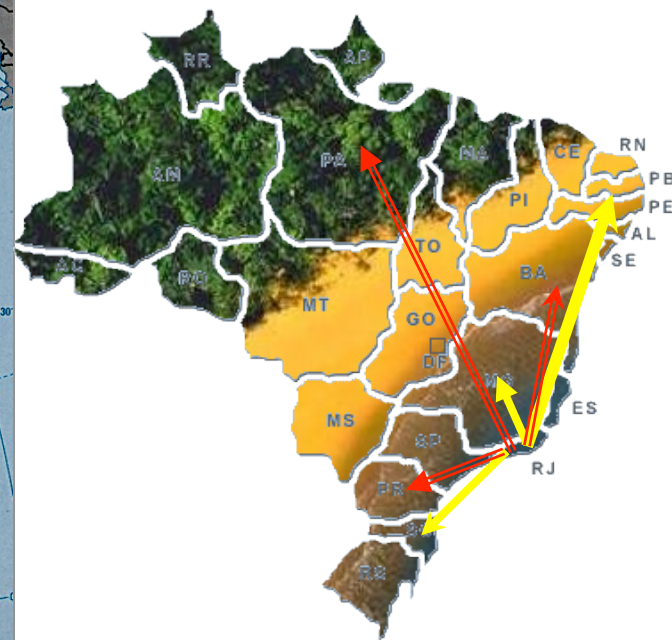
“Pediatrics Radiology”



Medical
Missions
for Children



VC-Sessions monthly



Oncology
Geriatrics
Teenagers

Thank You

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