



POZNAŃ
SUPERCOMPUTING AND
NETWORKING
CENTER

e-Infrastructure and related projects in PSNC

Norbert Meyer



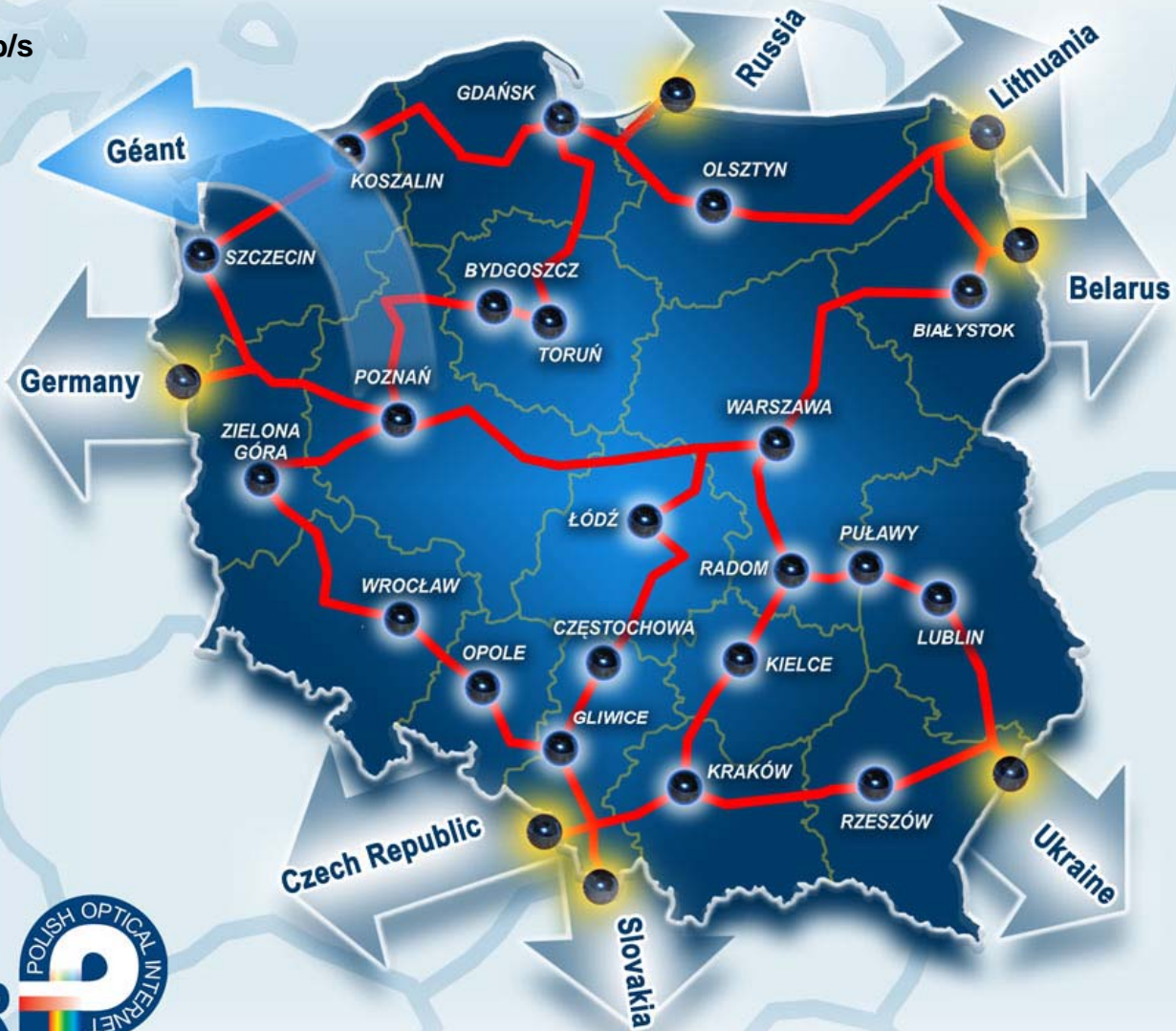
- Operator of Poznań Metropolitan Area Network POZMAN
- Operator of Polish National Research and Education Network PIONIER
- HPC Center
- Systems and Network Security Center
- R&D Center for New Generation Networks, Grids and Portals

PIONIER NETWORK

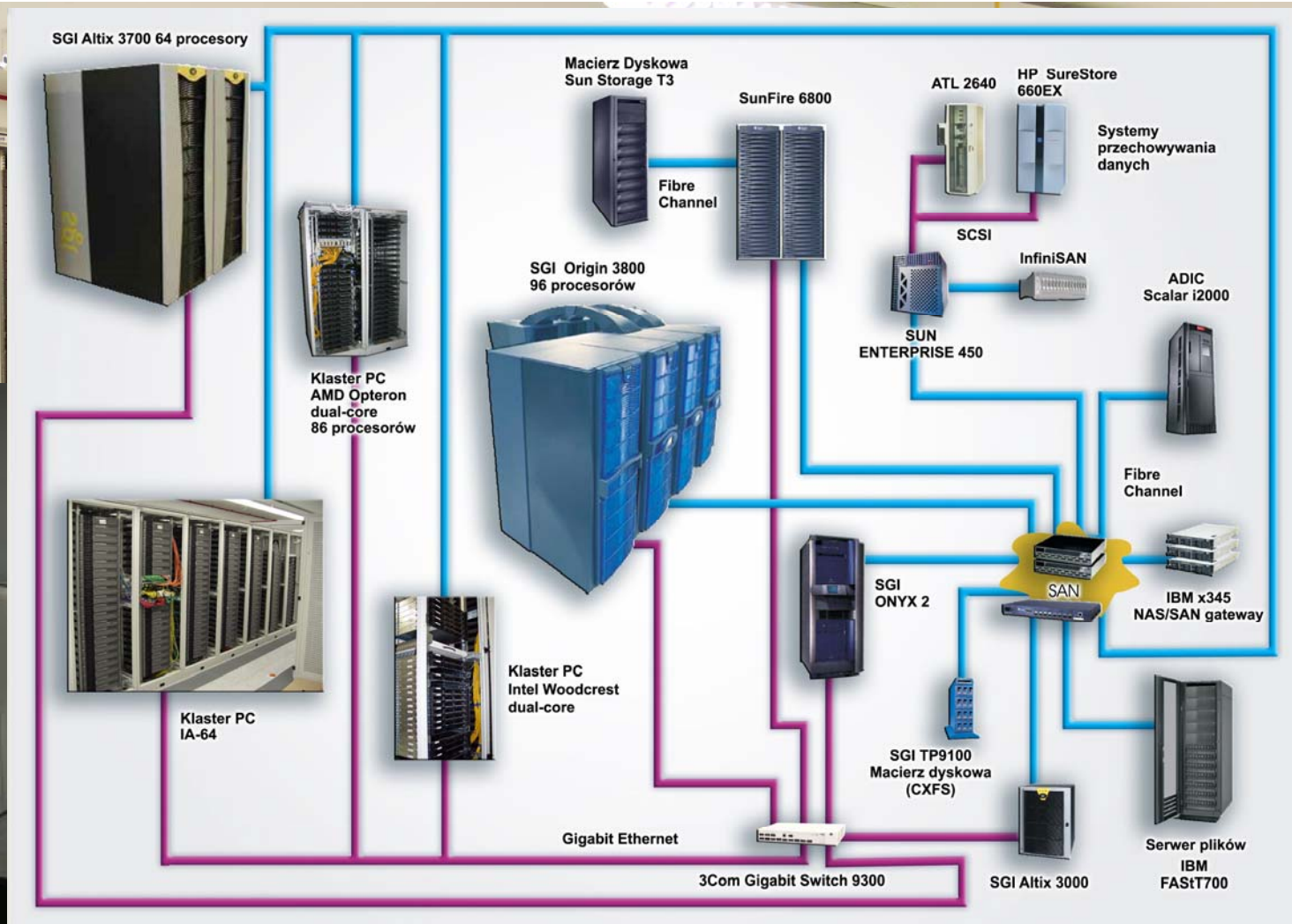
GÉANT 10+10 Gb/s

GÉANT/TELIA
2x2,5 Gb/s

TELIA
5 Gb/s



HIGH PERFORMANCE COMPUTING CENTER



Data Center - (300+) m²

RESEARCH AND DEVELOPMENT

- New Generation Networks
- Distributed Computing
- Portals and Content Management
- Security

Partner in Business

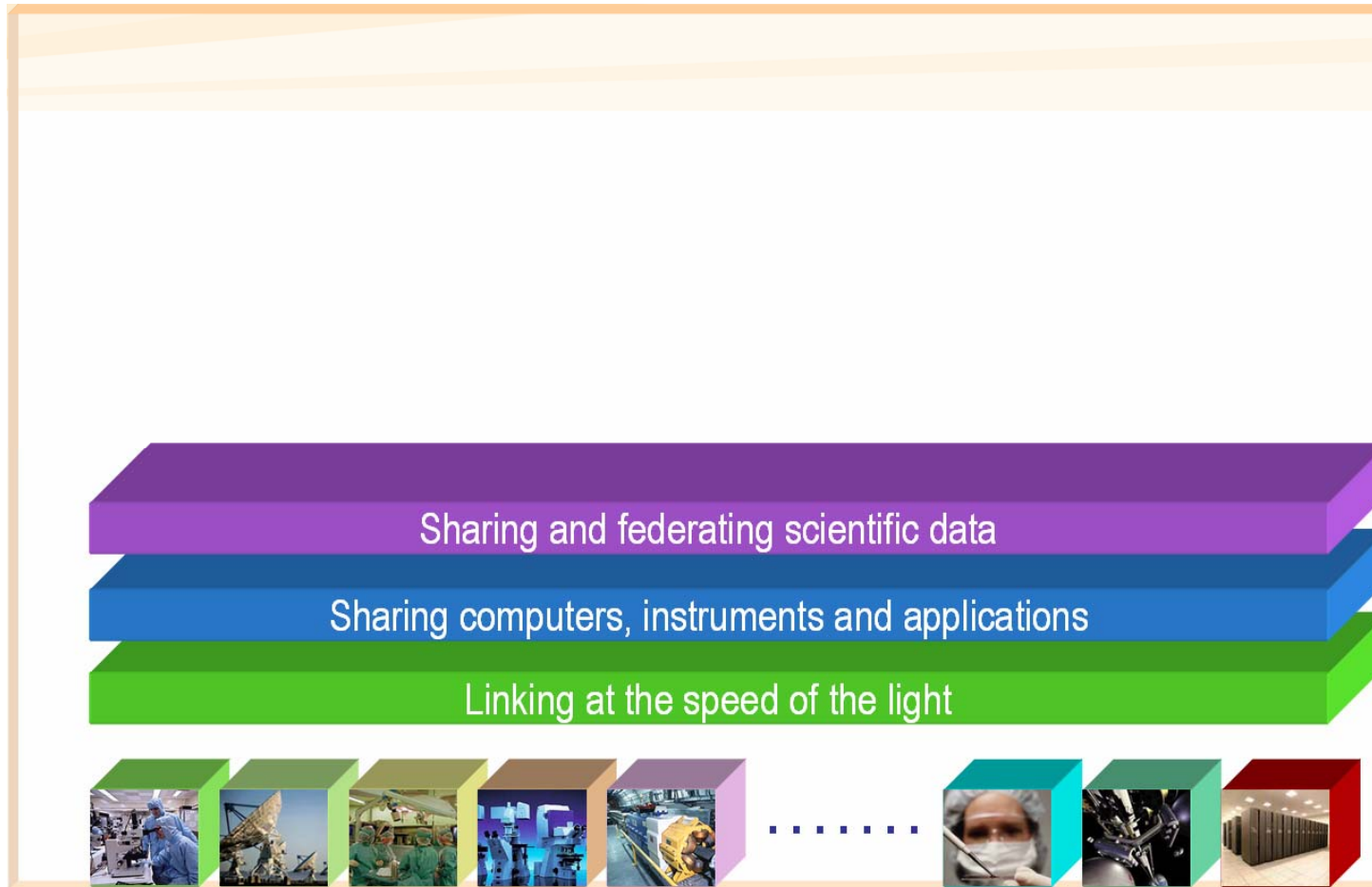
Deployment of R&D

Center of Excellence



The vision of e-Infrastructure

(by European Commission)



The vision of e-Infrastructure

(by European Commission)



e-Infrastructure support in PSNC

- Linking at the speed of light

- Porta Optica, Phosphorus
- WLCG – connecting Tier1 and Tier0

- Sharing computers, instruments

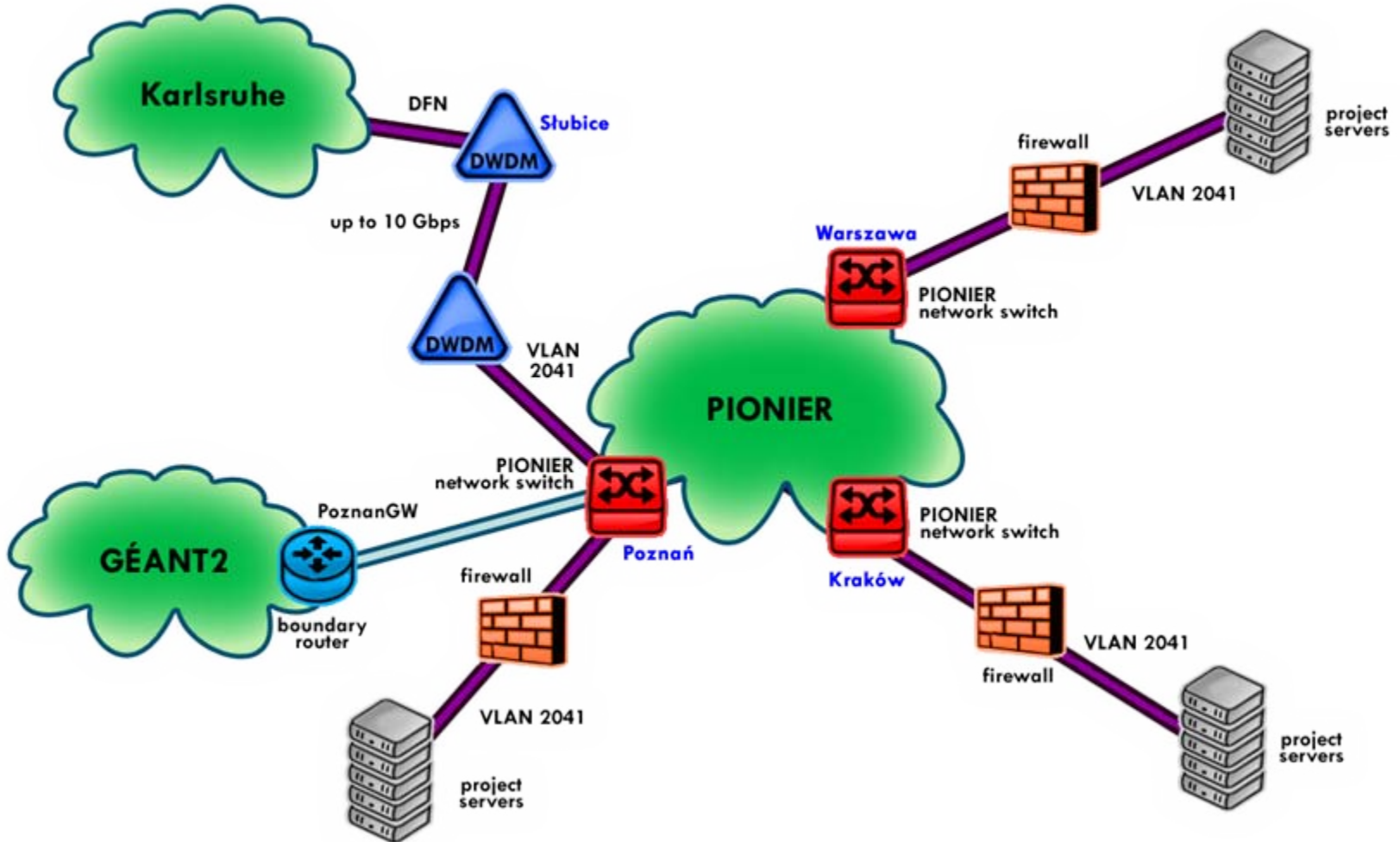
- Capacity computing
- Capability computing
- DORII – all about remote instrumentation

- Sharing scientific data

- National Data Storage

- Applications

High Energy Physics - WLCG



PORTA OPTICA
distributed optical gateway
to Eastern Europe

Partners



University of Latvia
Institute of Mathematics
and Computer Science



KAUNO
TECHNOLOGIJOS
UNIVERSITETAS



Eesti Hariduse ja Teaduse Andmesidevõrk



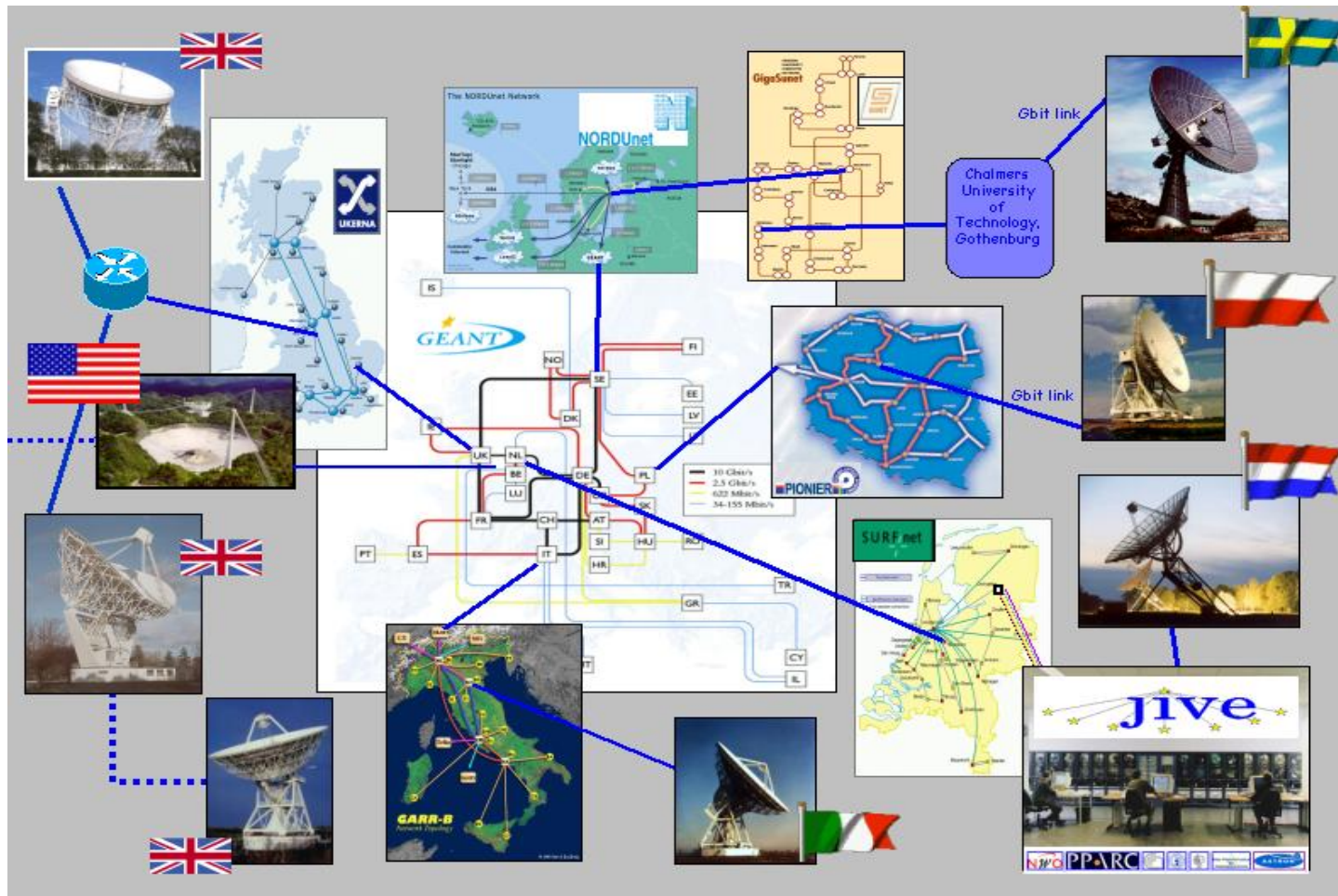
GRENA
European Research Infrastructure for Learning and Teaching



Porta Optica Study - outcome

- Successful completed plans for high-speed national research networks deployment in all beneficiary countries mainly based on DF
- Real NREN plans regarding DF deployment
 - All countries of Baltic States migrate to optical technology using purchased/leased DF
- NRENs plans are known for decision makers
- International CBDF points
 - (EE-LV, LV-LT, LT-PL, UA-PL, UA-SK, UA-MD, MD-RO)
- First undertakings in the course of POS
 - Construction of DF in Ukraine by NASU
 - 155 Mbps link exists between BASNET and PIONIER where access to GEANT2 is provided
 - 155 Mbps link exists between URAN and GÉANT2 via PIONIER
- **Currently Belarus, Moldova and Ukraine are partners in GN3 proposal !!!**
- **Back See Connectivity, Baltic GRID I/II, relation with SEEREN, SEEGRIDc**

Poland in e-VLBI – Expres project



By Mike Garrett from JIVE

- **Connectivity**
- **Introducing grid approach in e-VLBI (distributed software correlation)**
- **Virtual Laboratory**

PIONIER projects

PROGRESS

Construction of an access environment to distributed computing resources and services



<http://progress.pncr.pl>

- New flexible architecture for grid-portal environments
- Efficient grid data management
- Open source package for the delivery of grid portal access

SGIgrid

High Performance Computing and Visualization with the SGI Grid for Virtual Laboratory Applications



<http://www.wcss.wroc.pl/ph/sgigrd/>

- Remote access to expensive laboratory equipment
- Backup center for meteorological simulations
- Remote data visualization

CLUSTERIX

National CLUSTER of Linux Systems
A new generation, distributed PC-cluster



<http://www.clusterix.pncr.pl/>

- Large production Grid for the Polish scientists
- Clusters with dynamically changing configuration
- New generation computational applications.

iTVP

High quality Interactive Television over IP networks for large number of users with value-added services and digital rights protection



<http://projekt.itvp.pl>

- Large scale high quality digital content delivery
- Many types of access: Live, VOD, NVOD
- Interactive and value-added services
- Digital Rights Management
- Access from PC, SetTopBox, PocketPC

dLibra

Digital Library of Wroclaw

First Polish digital library framework developed by PSNC



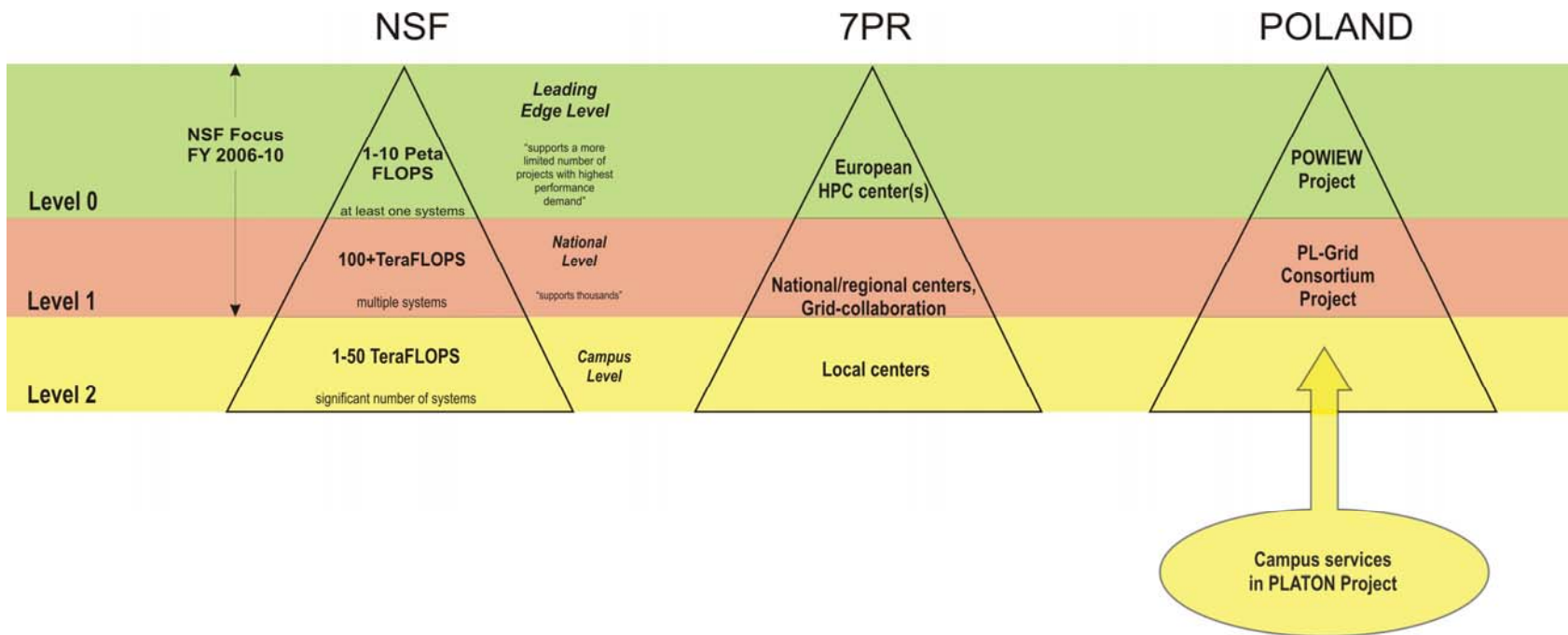
<http://dlibra.pncr.pl>

- Multitier, distributed and portable Digital Library platform
- Support for multiple content types, Hierarchic collections, Resources versioning, Advanced support for resources' metadata, Multiple searching mechanism, Extended access management

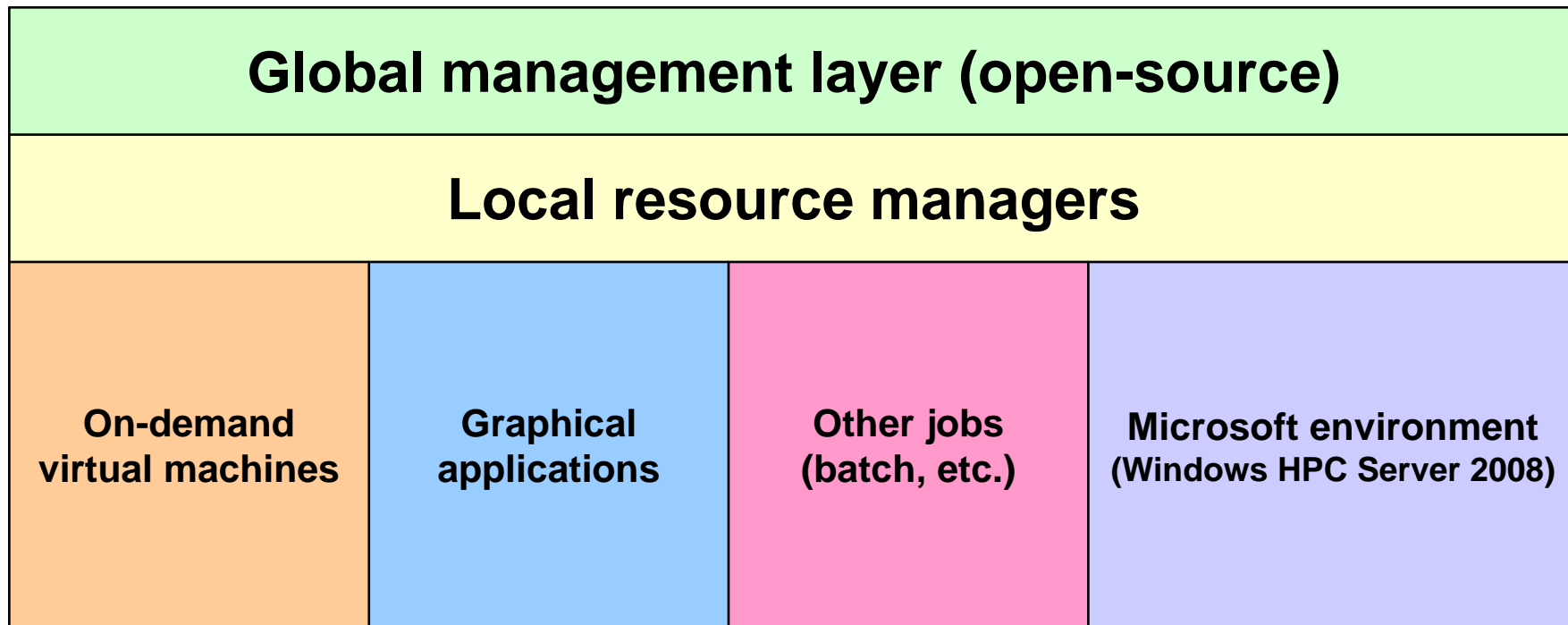
- Integrated services platform for science
 - HD Videoconference service
 - EDUROAM service
 - **Campus computing service**
 - **Archive service**
 - Interactive research HDTV service
- PIONIER sponsored projects
 - Certificate service and internal project
 - VoIP service

PLATON

Campus computing service (1)



Campus service (2)



PLATON

Archive service

National Data Storage



STORAGE NODE

Data Storage Systems:



Disk storage: 120TB

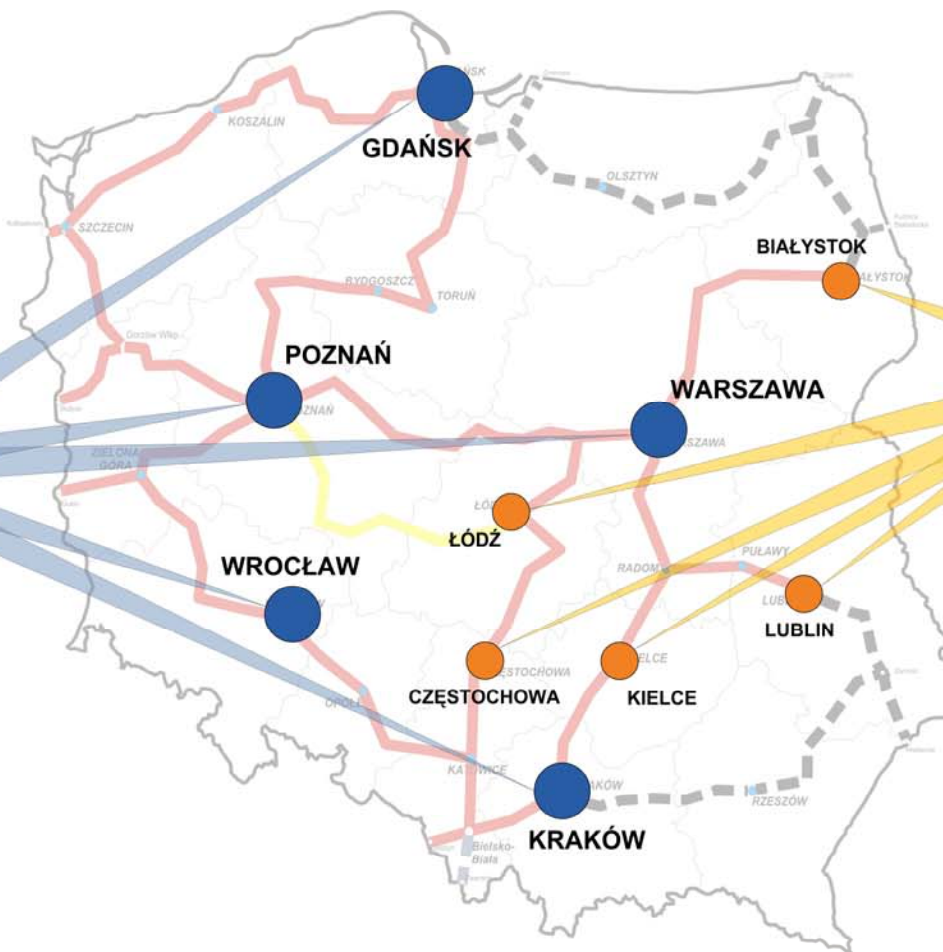


Tape Storage: 3PB

Data Services Systems:



- SCP/SSH
- HTTP/WebDAV
- GridFTP
- Backup/Archive



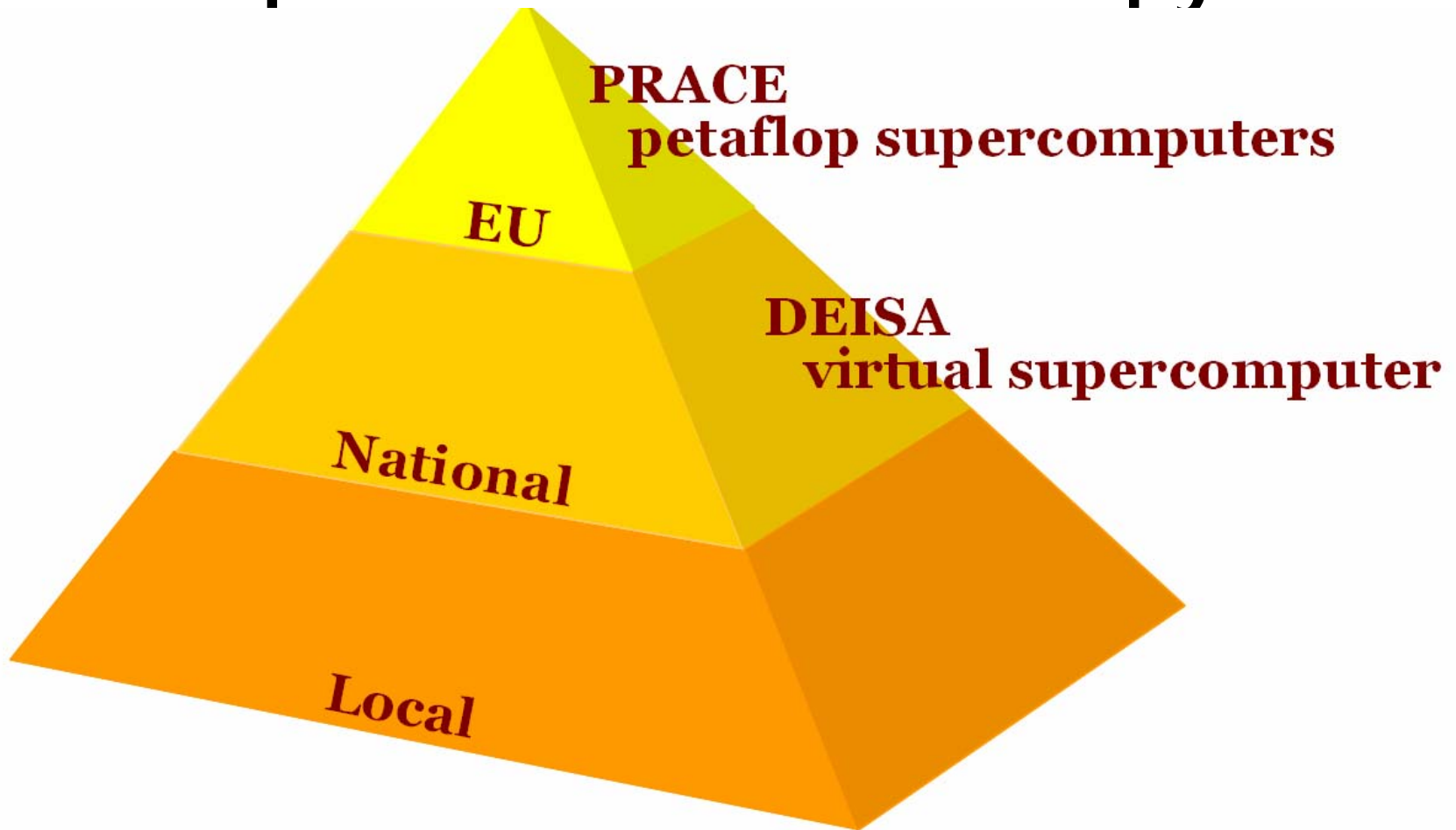
DATA SERVICES NODE:

Data Services Systems:

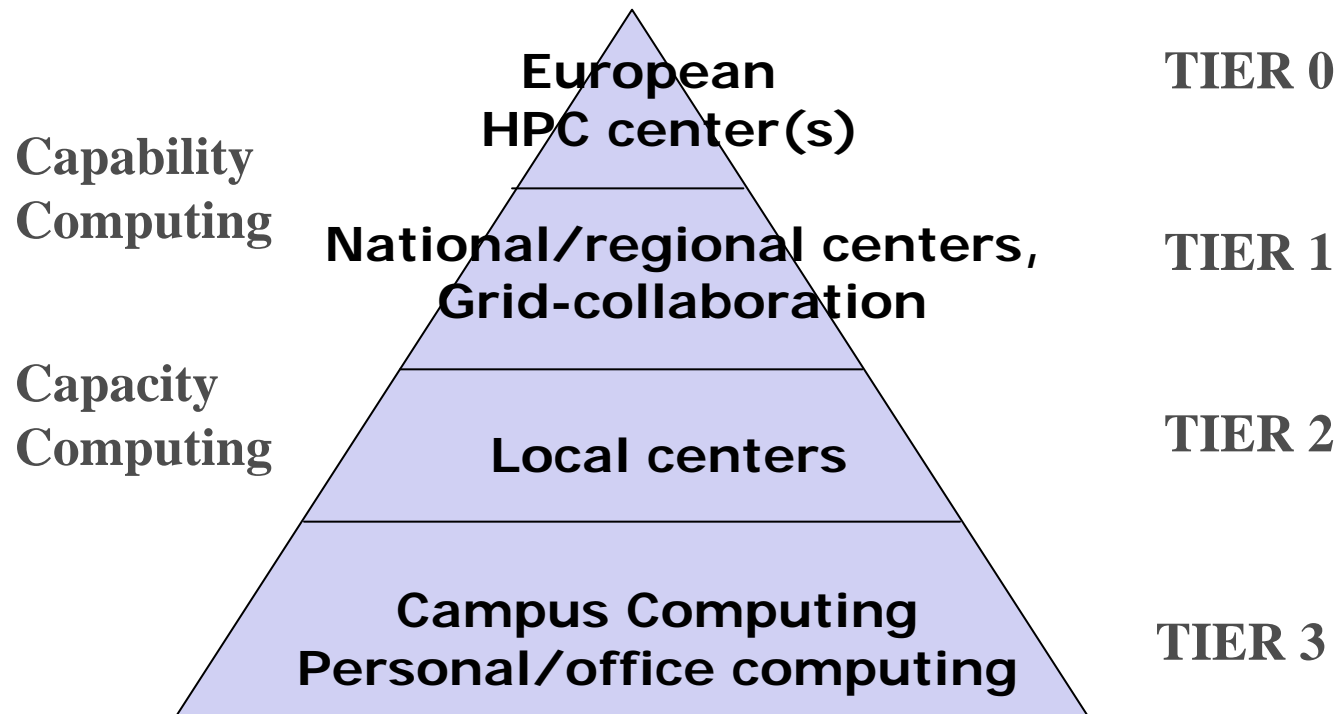


- SCP/SSH
- HTTP/WebDAV
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PFlop installations – HPC pyramid



Performance Pyramid



Work plane - outline

- Preparation of the RI as a single legal entity
 - Legal form and governance structure, funding, procurement, and usage strategy, Peer Review process
 - HPC Ecosystem links: European and national HPC infrastructures e.g. DEISA, the ESFRI projects, EGEE and EGI, communities, vendors and user industries, ...
- **Prepare operation of petascale systems in 2009/2010**
 - Deployment and benchmarking of prototypes
 - Porting, optimising, petascaling of applications
 - Start a process of technology development and assessment for future multi-petascale systems

International co-operation - R&D



Thank YOU for the attention !!

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