

GÉANT operational updates

**TF-NGN meeting
Lisbon, September 2004**

NREN Access circuits

- DFN primary AP upgraded to POS STM-64 from POS STM-16 in June 2004
- GRnet primary AP upgraded to 2,5G over POS STM-16 from 1240M rate limited in June 2004
- SWITCH back up access (link to CERN) at 10GEth brought up in June 2004

Interconnections

New transatlantic link to Latin American countries from GÉANT PoP in Madrid to Sao Paulo

- STM-4c
- 1st Sep 2004
- corresponding to the ALICE project – EU co-funded

MPLS Class of Service on GEANT

MPLS Class of Service

- Implemented on GEANT from July 2004
- MPLS can support both:
 - Class of Service (CoS)
 - Traffic engineering (TE)
- Uses same router queues as IP traffic:
 - Best Effort (BE)
 - Less than best effort (LBE)
 - Expedited forwarding (EF) – also used for Premium IP
 - Network control (NC)

MPLS Class of Service

- First candidate: the DEISA project
 - “Distributed European Infrastructure for Supercomputing Applications”
 - Current DESIA partners are connected to DFN, GARR and RENATER
- 1G EF traffic flows needed over GEANT
 - Good practice: max 10% EF pr link not to affect BE
 - This means maximum 1G of EF pr. 10G trunk
 - Necessary to implement TE to avoid overbooking EF on GEANT trunks

MTU upgrade in GÉANT

MTU upgrade in the core

- **Objective:** support transit of Jumbo frames on GEANT
- **Upgrade:** MTU increased from default at 4470 Bytes to 9192 Bytes in Aug 2004 in most of the backbone links
 - exceptions in STM-1 links to LU and IL – not supported on such interfaces

MTU upgrade in accesses

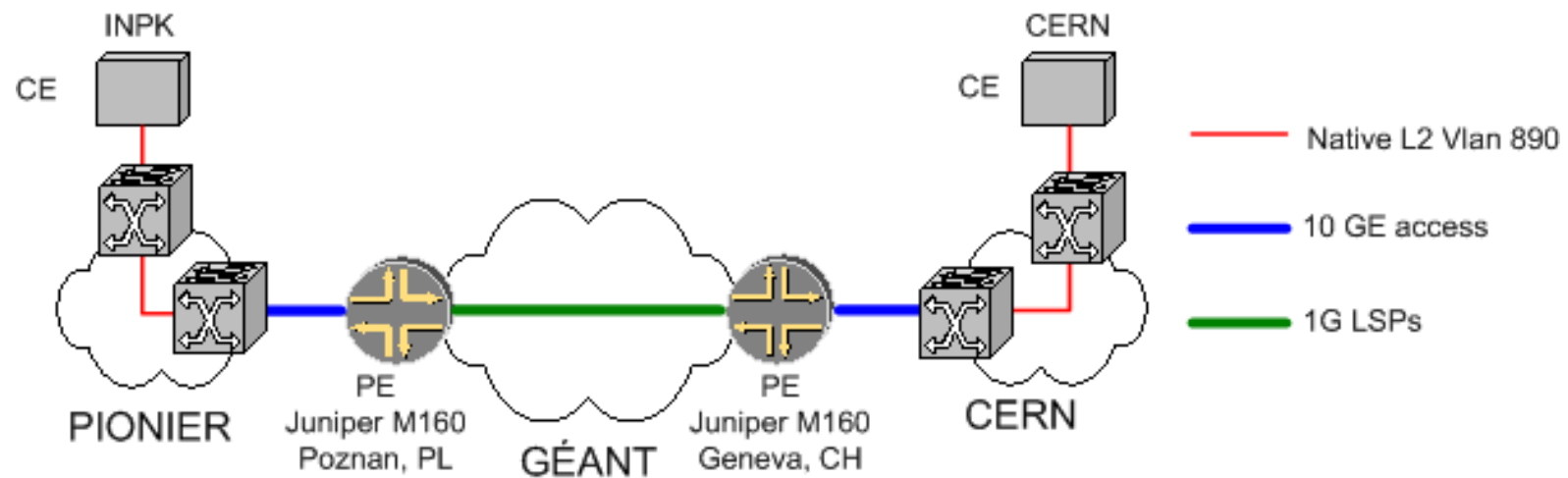
- Links to Abilene, ESnet and Canarie enabled for Jumbo frames
- Some NRENs already benefits from MTU change
 - SWITCH (ch) primary and backup - link to CERN
 - BELNET (be)
- LSPs for Atlas and Datatag projects support Jumbo frames

Other items in GÉANT

Layer 2 connectivity for ATLAS project

Martini Layer 2 circuit configured in July between PL and CH routers to support connectivity for ATLAS project

- limited to 1Gb at the end points in INPK and CERN



GN2 Update

STRUCTURE OF THE CONTRACT

INTEGRATED INFRASTRUCTURE INITIATIVE - I3

NETWORKING ACTIVITIES - NA

Human networks:

- Management & Policy Making
- Dissemination and outreach
- User support (NRENs)

SPECIFIC SERVICE ACTIVITIES - SSA

Focus on services, not infrastructure:

- Network Service Provisioning
- Network Operation and Support

JOINT RESEARCH ACTIVITIES - JRA

Focus on academic, technological research:

- Performance Monitoring
- Test Beds
- Security
- Mobility

GN2 Update - Contract

- **Contract came into force on 1st September 2004**
- **JRAs and SAs starting up now**
 - **JRA1 (Performance Monitoring) most advanced (started early)**
 - **SA3 has some tight deadlines to hit**
 - **Brief updates to follow**
- **Procurement (SA2) ongoing**
 - **Connectivity tender since beginning of year (DF included)**
 - **Equipment tender since July (transmission & switching)**
 - **Convergence expected Oct/Nov**

GN2 Update 2 – The Network

- **Network will be called... GÉANT 2**
- **Provide usual IP services + “lightpath” services**
- **IP topology will remain largely the same as today**
- **IP capacity expected to increase**
 - **10G trunks; upgrades expected on most of the smaller trunks**
 - **a few trunks may need to exceed 10G in 2008**
- **Big increases in capacity expected to support “lightpath” services**
 - **Up to ~5x10G on “hottest” trunks**

GN2 Update – SA3 (1/2)

- **End-to-end QoS**
- **DANTE (Toby Rodwell) leading**
- **Work Items and leaders already well defined**
- **Kick-off meeting held 9th Sept in Cambridge**
- **EGEE/GN2 Interface specification (first version) expected end of Sep**
[bulk of work being done by DANTE within EGEE]
- **Pilot GN2 PERT planned for end of October [similar to GN1 Y4 PERT except includes part-time Case Managers, and a new, GN2 mailing list]**

GN2 Update – SA3 (2/2)

- **Provisioning System architecture under consideration - some thought as to whether there can be any collaboration with other activities e.g JRA1, JRA3**
- **PERT Ticket System (PSNC-lead) designed down to module level. PSNC now also delivering the Knowledgebase System, which will be integrated with the PTS, and the PERT website, which will be the front end to the PTS and KB**

GN2 Update – JRA1

- **Performance Monitoring**
- **Nicolas Simar to cover...**

GN2 Update – JRA2

- **Security**
- **Aim is to help security teams in GN2 in their daily work**
- **SWITCH (Christoph Graf) leading**
- **Work items outlined at last TF-NGN**
- **Kick-off meeting held last week in Malta**
 - **Back-to-back with TF-CSIRT meeting**
- **WI leaders & collaborators identified**

GN2 Update – JRA3

- **Bandwidth Allocation & Reservation (BoD)**
- **DANTE (me) leading**
- **Means connection-oriented BoD – “lightpaths”**
- **Needs to address service provision in single then multiple domains first manually then dynamically**
- **4 work items (with leaders):**
 - **Reqs gathering & state-of-the-art (GRNET)**
 - **Service Specification (GARR)**
 - **Implementation (PSNC)**
 - **Testing & validation (HEAnet)**
- **Work to start in Oct, kick-off meeting 1st week of Nov**

GN2 Update – JRA4

- **Build and operate an Enhanced Testbed facility**
- **DANTE (Marian Garcia) leading**
- **Principle users: other JRAs, GN2 partners, other FP6 projects...**
- **Budget of €2.6M for equipment and connectivity**
- **Discussions now starting**
- **Kick-off meeting 1st week of November (with JRA3)**

GN2 Update – JRA5

- **Ubiquity (Mobility) & Roaming Access to Services**
- **Jürgen Rauschenbach to cover...**