

**GN2**  
**(and its support for GRIDs)**

**GNEW 2004**

**Roberto Sabatino - DANTE**

**Geneva, 15-16 March 2004**

# The Challenge for GN2

- **Make it even better than GN1/GEANT**
- **end to end focus**
- **Support GRIDs**
  - **network service**
  - **network performance**

## Structure of GN2

- **Integrated Infrastructure Initiative (III)**
  - 4 years from ~September 2004
- **Networking Activities (human, PR, task-forces etc)**
  - NA1-NA7
- **Service Activities (the network and its services)**
  - SA1-SA4
- **Joint Research Activities (service development)**
  - JRA1-JRA5

## GN2: Network Architecture

- **A recurrent question: is an IP only network the best way to serve emerging requirements such as the ones from GRIDs ?**
- **The answer *appears* to be NO. An architecture that scales better both economically and performance-wise is needed**
- **A *hybrid* network, with switching and routing capabilities**
- **How will we introduce that capability, and when ?**

## GN2 cares about GRIDs

- **SA3 - end to end QoS - relationship with EGEE SA2 and JRA4**
- **JRA1 - network performance - strong relationship with EGEE JRA4**
- **JRA3 - BW allocation and reservation - strong relationship with EGEE JRA4**
- **JRA5 - will develop AAI**

## SA3 - end to end QoS

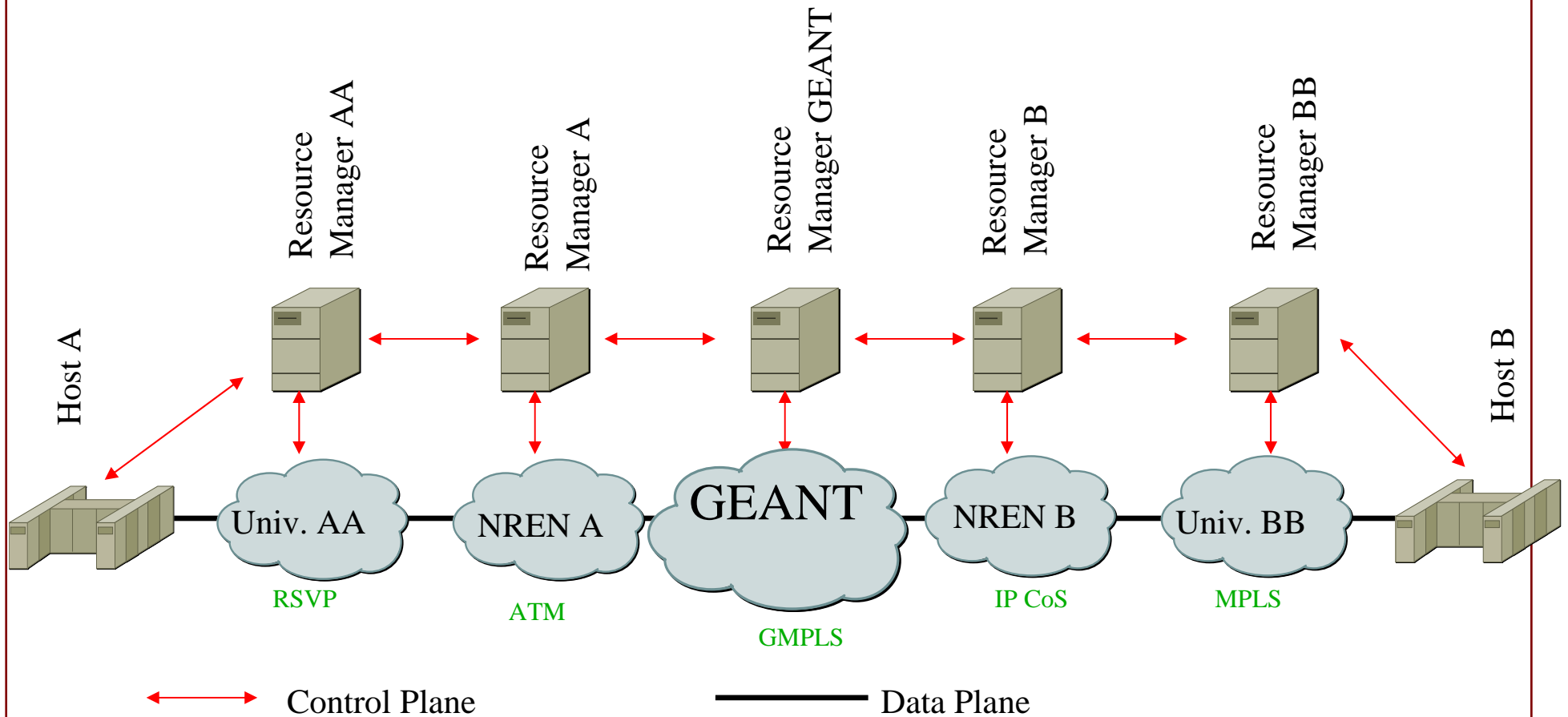
- **PERT - Performance enhancement response team**
  - network, systems and application level experts
  - proactive and reactive measures to improve e2e performance
- **End to end Provisioning of Premium IP**
  - development and use of a Provisioning System used by a Provisioning Team
  - relationship with EGEE

## **JRA3 BW allocation and reservation**

- **Service: point to point (switched) connections operating at up to Gbps capacities (most likely GE), with a given QoS**
- **Analysis/development of technologies to deliver the service**
- **Development of middleware to request (a scheduled) service and to honour the request**

• **Interaction with AAI**

# Multidomain and multitechnology



## Step by step

- **Start with focus on MPLS and TDM based techniques for provision of GE**
- **single domain first, then multi-domain**
- **“manual” setup/operation**
  - **interdomain operational procedures**
- **Increase level of dynamism**
  - **develop Northbound BB interface**
- **Increase level of network heterogeneity**

## End to end ?

- **True end to end is always going to be hard**
  - **last mile domain outside scope of DANTE and NRENs**
  - **commitment to facilitate end to end**
  - **responsibility to manage and implement “edge to edge”**

## Keeping up to date

- **JRA4 - technology and service testing TESTBED**
- **Distributed across GN2, connects NREN testbeds**
- **To evaluate emerging networking models:**
  - fibre networks
  - lambda switching
- **Use them in GN2 when/if possible**

*Thank You !*