

# **NRENs & Grids Workshop**

## **Relations between EGEE & NRENs**

*Mathieu Goutelle (CNRS UREC)*  
*EGEE-SA2 activity*

*Amsterdam, 2005-05-12*

- **SA2: Network Resource Provision**

- Technical Network Liaison Committee,
- Operational interface with NRENs,
- QoS experiment,
- SLAs installation between EGEE ↔ Network (Geant & NRENs).

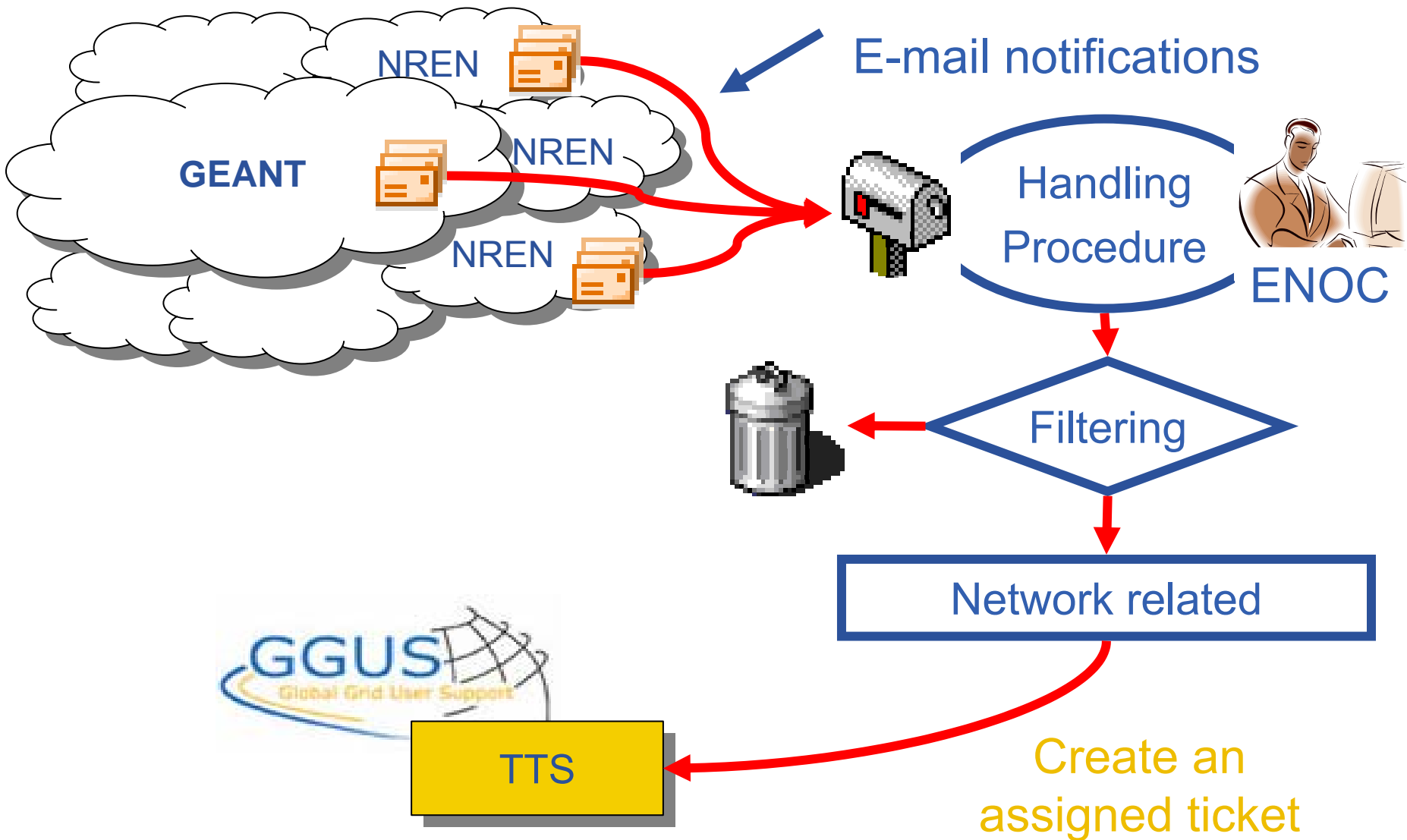
- **JRA4: Network Services Development**

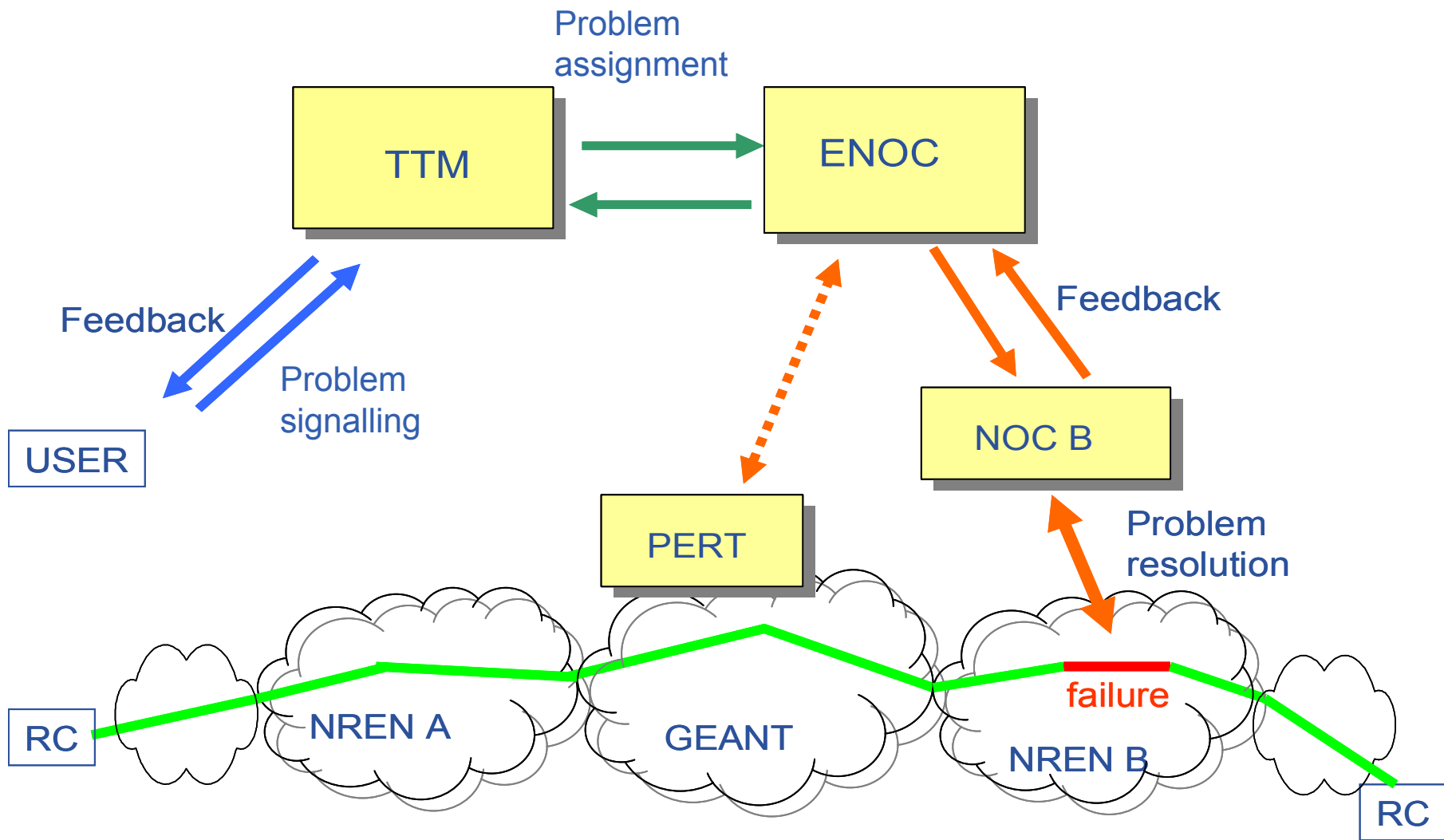
- Bandwidth Allocation and Reservation,
- Network Performance Monitoring,
- IPv6 Uptake.

**Building important working relation between EGEE and the network providers (Geant & NRENs)**

- **Network must be viewed as a class of Grid resource:**
  - Like computing and storage resources,
  - Implies a network resource provisioning architecture,
  - **Problem to manage a resource outside the EGEE world!**
- **This resource depends on the network services provided by the network providers (NRENs, Geant):**
  - Current services: Premium IP (even not in all NRENs),
  - We need to **anticipate on the future GN2 services:**
    - Currently in the definition process,
    - GN2 project started 6 months later than EGEE.
- **Network Activities work in a long term perspective:**
  - Most of the tasks started from scratch: Operational interface, SLA, NPM, BAR...
    - Except the monitoring tools coming from Datagrid (WP7).

- **Define the interactions between the Grid User support and the NREN NOCs:**
  - SLA management (processing, installation, monitoring),
  - Trouble management (reporting, interactions).
- Definition of **procedures and information flows** between NOCs and EGEE:
  - Need of a consistent view of the “EGEE network”,
  - Need to evaluate its reliability and the quality of the services,
  - Will **not replace the current interactions** between a resource centre and its NREN.
- **Progressive integration into the existing Grid User Support (GGUS, <http://www.ggus.org/>):**
  - Single entry point for the support to the Grid users,
  - Difficulties remain (trouble tickets normalization, languages...).





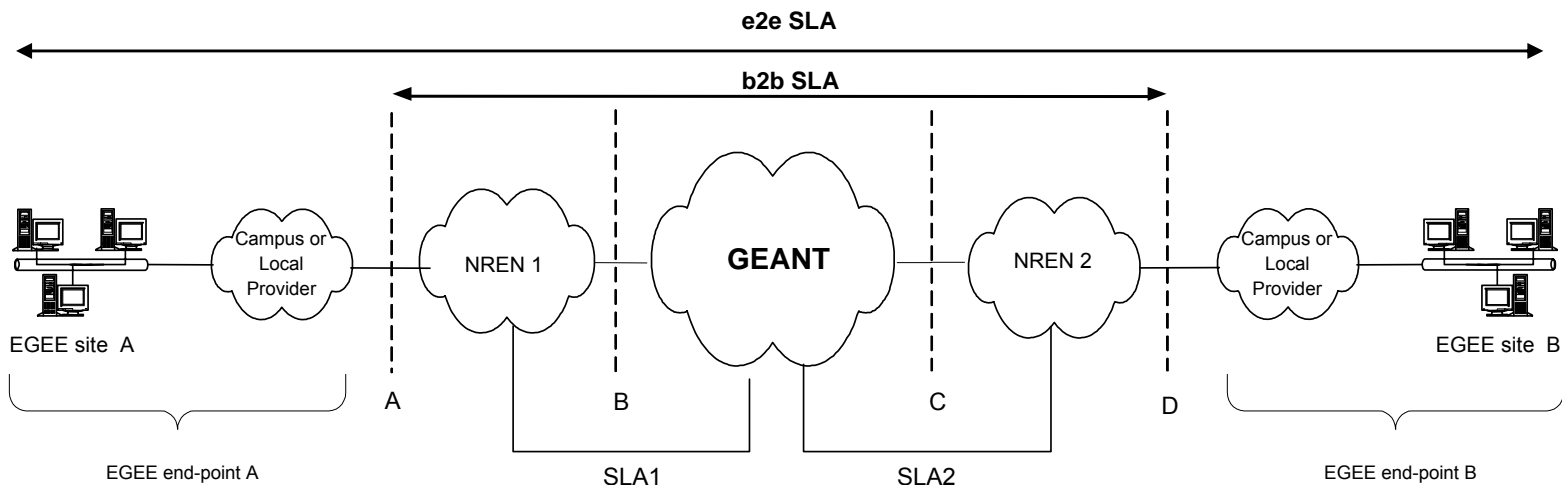
TTM: Trouble Ticket manager  
 ENOC: EGEE Network Operation Center

- **SLA definition:**

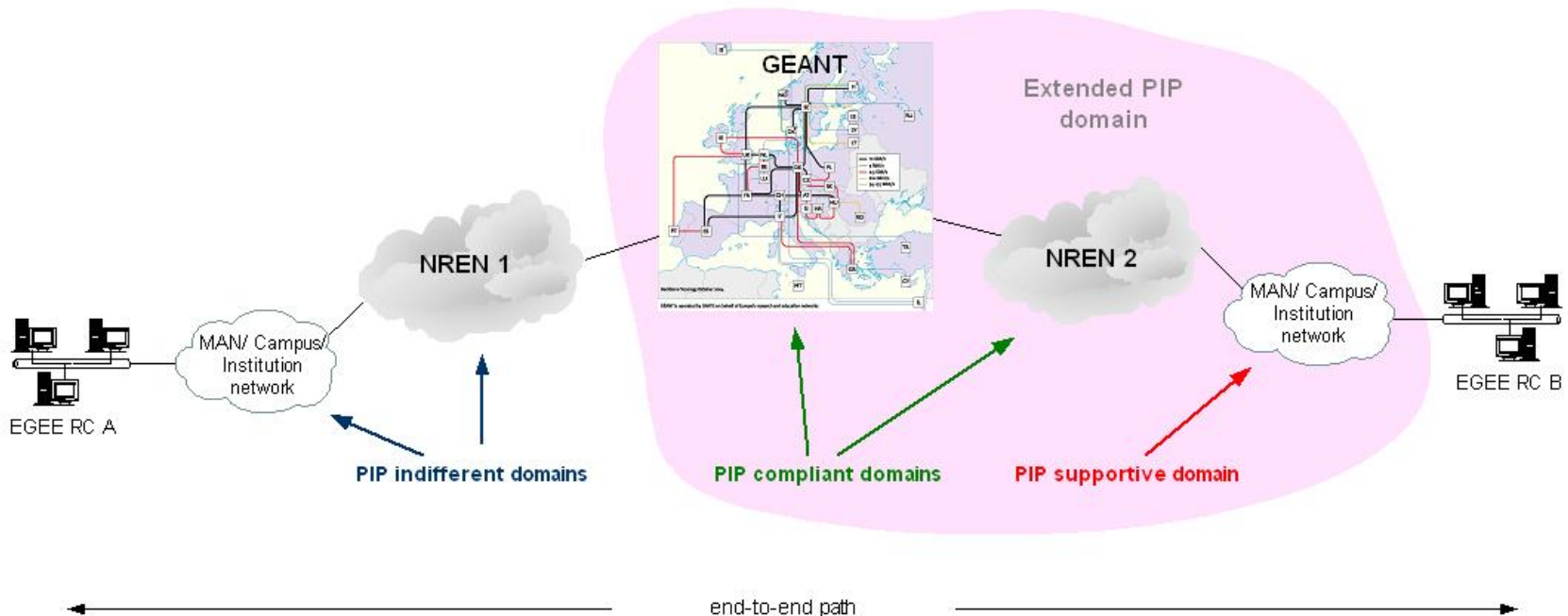
- Based on previous work and answers inside EGEE and from GN2 to some open issues (procedures, demarcation point...),
- Definition **in cooperation with GN2**,

- **EGEE end-to-end SLA template:**

- SLA between the **border of the NRENs cloud** (border-to-border SLA) ;
- Difficulty to accommodate and take into account the **“last mile”**.



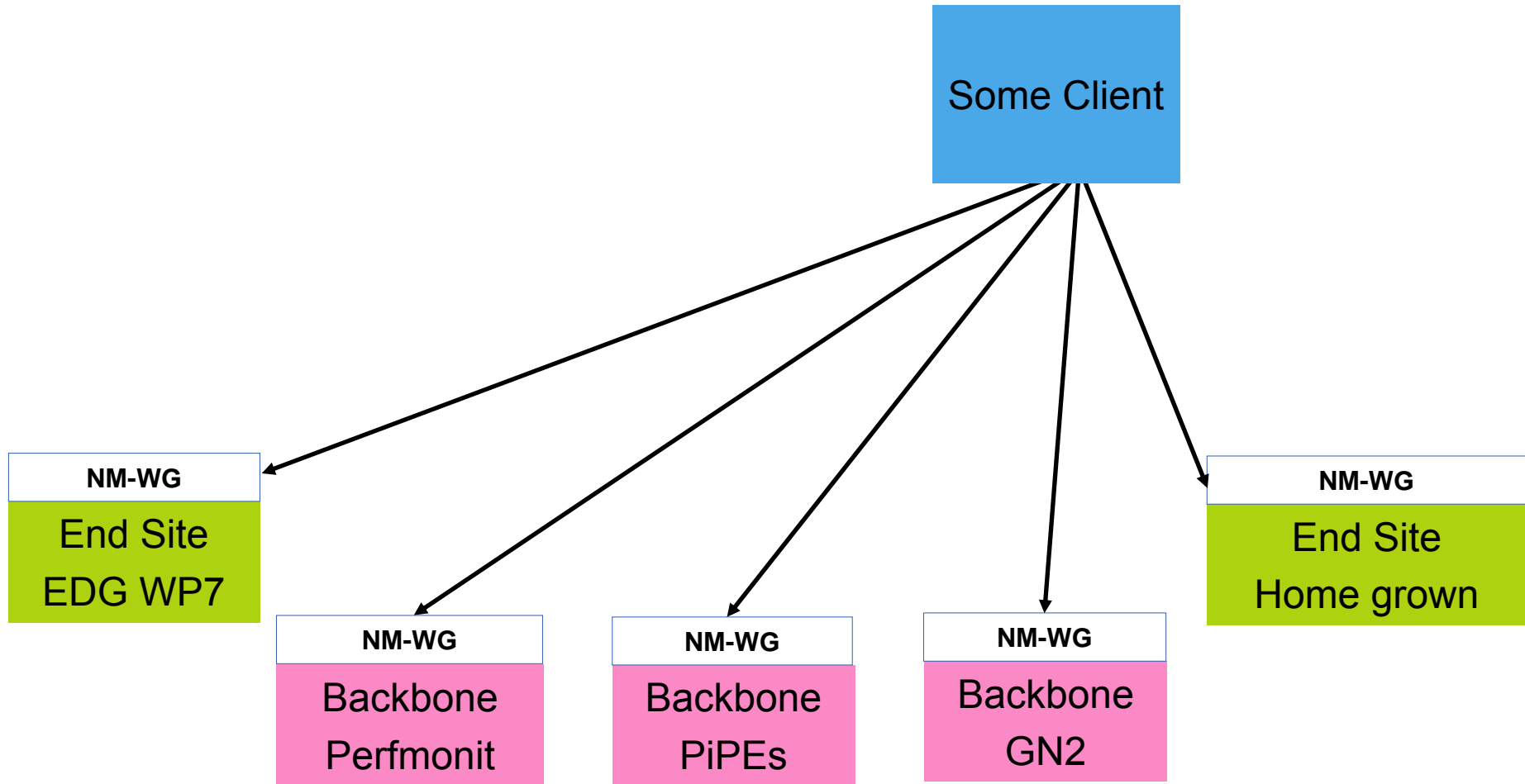
- All domains involved in network services provisioning to EGEE as part of the existing network infrastructure hierarchy have to be categorized as:
  - Compliant with the Premium IP service
  - Supportive of the Premium IP service
  - Indifferent to the Premium IP service

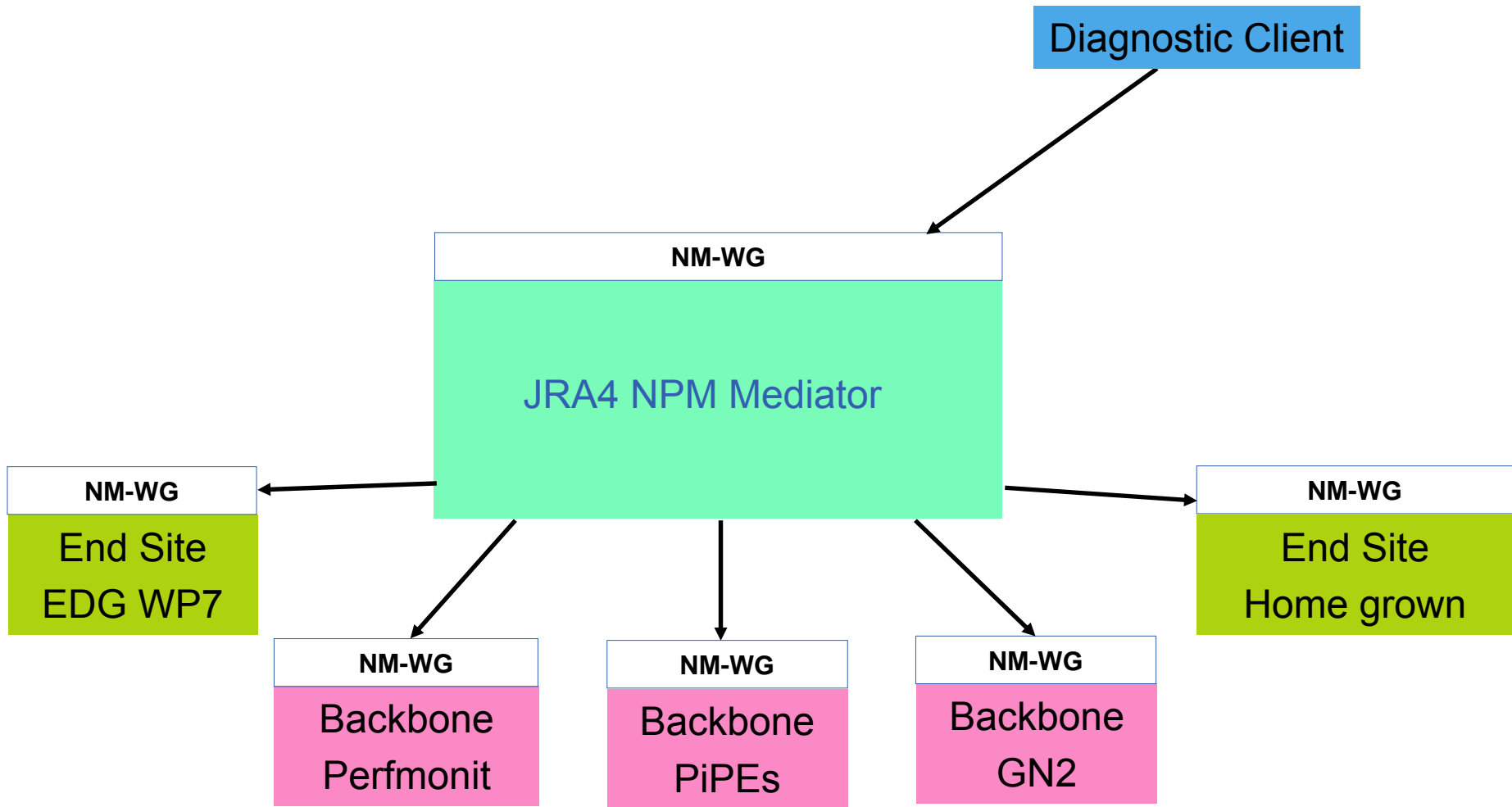




- **Network service use case for an application:**
  - Choice of a particular “interactive” application,
  - Aim:
    - Better knowledge of the SLA processing,
    - Better specifications of the applications requirements,
    - Precision about procedures and identified issues.
- **Status:**
  - Validation on a local platform:
    - Validation of middleware modifications (packets marking),
    - Validation of the experimental protocol.
  - Tests on long distance networks:
    - First in the same administrative domain (Renater),
    - Then, tests involving three different networks,
    - Involved networks: Renater, Geant, GRnet.

- **JRA4 approach:**
  - Standardization of access to network performance monitoring across different domains and frameworks,
  - GGF NM-WG recommendation is the selected basis for standardisation.
- **Purpose:**
  - Provide to Grid operations networking information for monitoring and troubleshooting,
  - SLA monitoring,
  - Information publication in the Grid Information System.
- **Potential user : middleware, end-user, Grid operations**
- **Status:**
  - Prototype ready (demo during the last GGF),
  - Security (on-going work inside EGEE),
  - Work on the interactions with the middleware.





- **Purpose:**

- Provide Grid users the ability to use network services (reservations),
- Interface with the mechanisms that will be available in the network,
- Will first propose the Premium IP service.

- **Status:**

- Step-by-step integration with the network services:
  - Static configuration between 2 backbone sites — **june 2005**,
  - Investigation of the “last mile” problem — **oct. 2005**,
  - Pilot reservation system in limited number of site — **jan. 2006**.
- Need of a **strong participation of NRENs (GN2)**.

- **Integration of network resource in a more complex architecture:**
  - Essential to **meet the applications requirements**,
  - **Convergence** between the allocation and reservation architecture of the EGEE middleware and the reservation architecture developed by GN2,
  - Joint work of GN2 and EGEE.
- **Status:**
  - GN2 architecture is **to be defined**:
    - Based on inter-domain SLAs,
    - A **still very manual prototype** is foreseen due beginning of next year.
  - **Preparatory work** inside EGEE :
    - Convergence to a common architecture,
    - Consistency between the two architectures.

- Progression of the two activities according to plan,
- Good progress in terms of SLAs definitions: **will the NRENs support our model?**
- Test of the operational interface during the summer,
- QoS experiment = further step towards the fulfilment of applications requirements in term of network resources,
- **Good working relations with NRENs and GN2.**

## Questions?