

GN2 common components & architecture

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GN2 services

Individual end-users, EC projects, Research groups

JRA1: Monitoring

JRA3

Bandwidth on Demand

SA3

Premium IP service

JRA5

Roaming & AA

JRA2

Security

GEANT and NREN backbones

An observation

- Information System
- Communication model for multi-domain provisioning

.....are common requirements at least in

Premium IP service provisioning (SA3)

Bandwidth on Demand (JRA3)

Monitoring (JRA1)

Moreover...

- Premium IP service
- BoD service
- Active monitoring

.... contend for the same resource!

And...

- They entail path discovery
- They all have AA requirements in order to be safely exposed to users
- They involve some kind of brokerage
- They raise similar policy issues (like prioritisation of requests in case of conflicts)
- ... more adjacencies are likely to come up

Information system

- Will a common database be enough?
- Can we use a single schema or allow each SA*, JRA* to build its own one?
- A topology registry is always useful
 - There are requests (from users/projects, e.g. EGEE) for visualization of the services provided
- A description language can be used to embed logic and policies to each object

Multi-domain provisioning

- A modular, single resource broker per domain, which incorporates service modules
- Such a broker can internally implement its own policies BUT has standard interfaces to communicate with peering brokers from other domains AND standard northbound interfaces
- This model exposes GN2 services in a harmonized manner to users, projects, applications

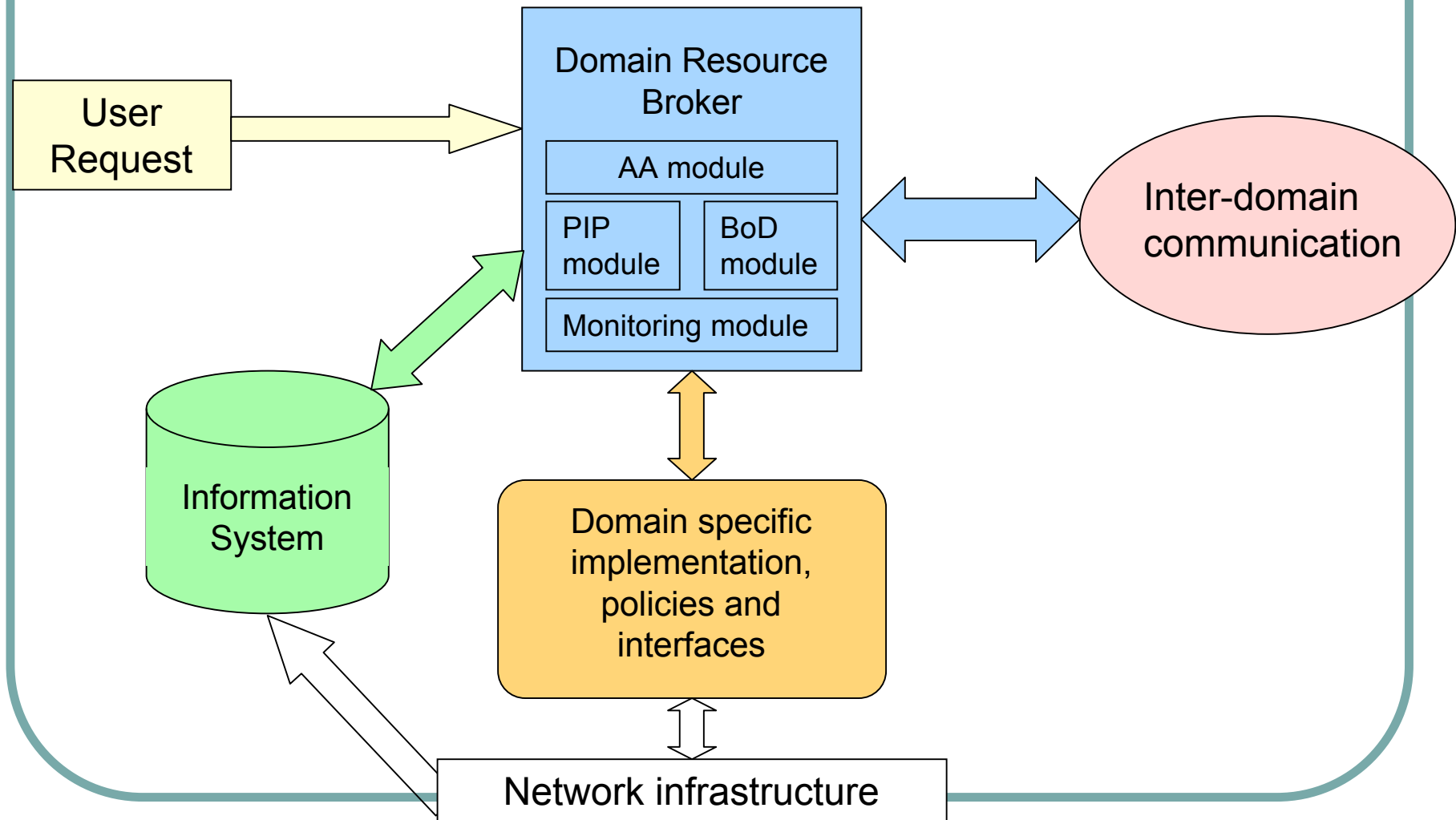
An example

- A BoD request over the GEANT backbone (e.g. an MPLS circuit)
- It requires user AA
- If the monitoring tool uses its own AA
 - Assuming the user also wants to monitor the BoD circuit delivered to him, he will have to go through AA again
- Then ... path discovery
- If the BoD system uses its own path discovery mechanism
 - Available bandwidth on links traversed cannot be verified against Premium IP reservations
 - Setting up monitoring for this particular service instance will invoke a separate path discovery procedure: that of the monitoring service

An example (2)

- In case of troubleshooting
 - Provisioning system and monitoring system have to provide a coherent view to the user and the administrator(s) of the service
 - A single point of reference is required per administrative domain
- Visualization of the service provisioning instance
 - A representation of the path
 - Monitoring information (MP locations)

Architecture



Next steps

- Adopt common architecture
 - Internal implementation details for each service are hidden
- Adopt an interoperable Information System schema
- Fix dependencies between GN2 activities
- Set-up an informal 'Architecture Team'
 - A proposal for a common architecture schema should be approved by the NREN-PC
 - Design specifications from GN2 activities (emerging within the first 6 months of the project) should be constantly examined against this common architecture