



PHOSPHORUS

Phosphorus Project Harmony System Interfaces

Multi-domain reservation and interoperability

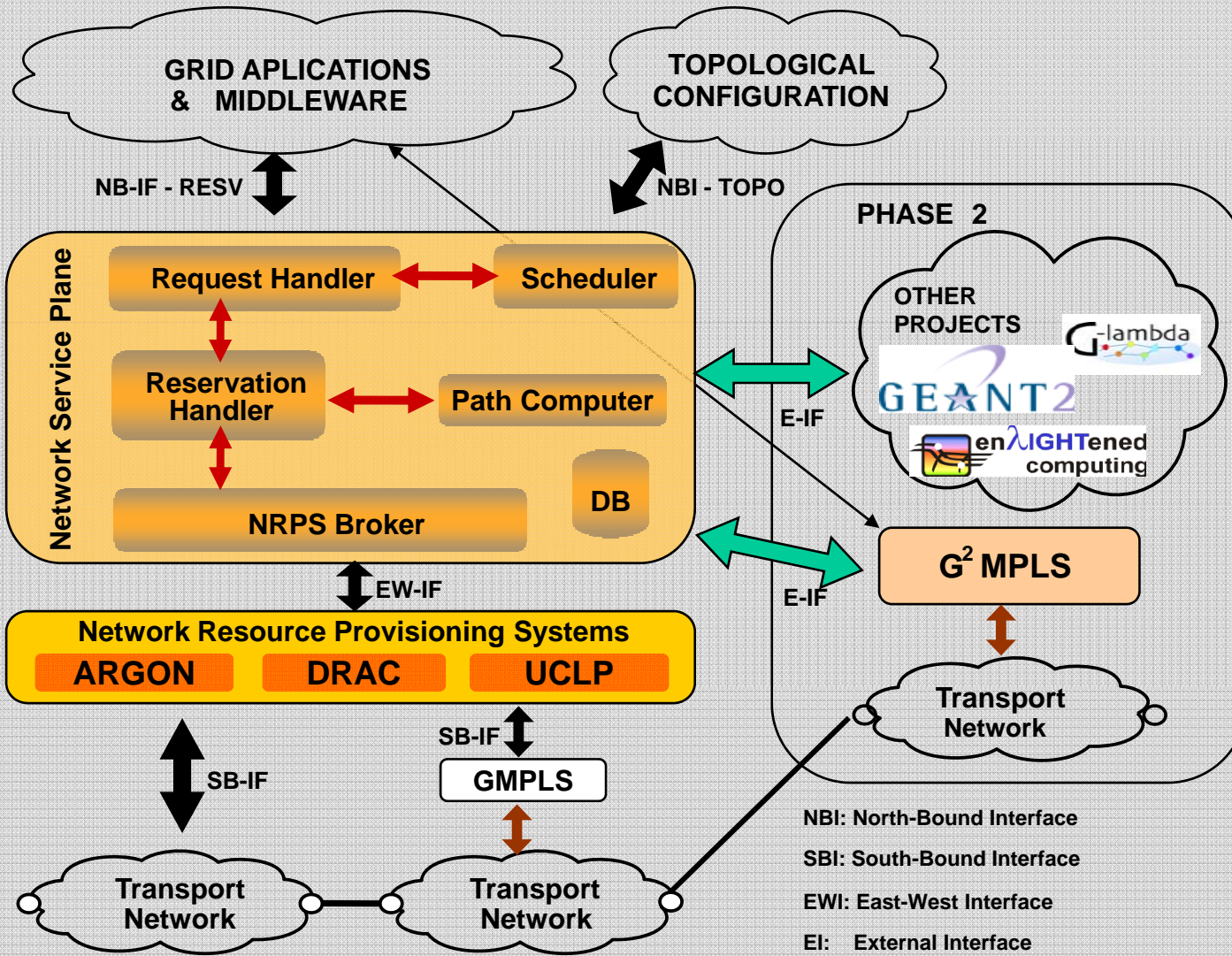
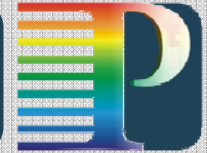
Joan A. García Espín

I2CAT Foundation (Barcelona, Catalonia, Spain)

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Barcelona, Catalonia, Spain

Harmony System Interfaces (Phosphorus-WP1)



NB-IF: Receives the reservation requests from the Grid Middleware. It is used to indicate to the NSP which are the resources under control (NRPSs, endpoints links).

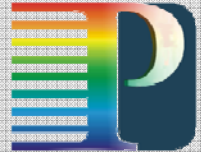
EWI: In charge of the communication between NRPSs.

SBI: Handles the communication between the NRPSs and the lower layers (GMPLS or transport layer).

EI: Provides interoperability between the NSP and the G²MPLS CP or other projects.

NBI: North-Bound Interface
 SBI: South-Bound Interface
 EWI: East-West Interface
 EI: External Interface

Harmony System Interfaces - Summary



- **Northbound Interface (NB-IF)**

Service interface for the Middleware, Grid applications or Administration clients

- Reservation WS (network service reservation service)
- Topology WS (topology registration service)

- **Southbound Interface (SB-IF)**

On the bottom of every NRPS or Thin NRPS

- In GMPLS, it implements the UNI-C interface

- **E/W Interface (E/W-IF)**

Between the NSP and the NRPS Adapter Layer

- Notification WS (information sub-system about events in the topology)
- NSP: implements the Topology service and a client for Reservation service
- NRPS Adapter: Implements the Reservation service and a client for Topology service

- **External Interface (E-IF)**

To communicate with other projects (under development)

Harmony System Interfaces (WP1)



- NorthBound Interface – **Reservation WS**
 - It receives the reservation requests from the Grid applications and middleware
 - Operations
 - CreateReservation → Service Info (ID, typeReservation, Connections..), jobID, Notification URL consumer
 - GetReservation → ReservationID, ServiceID
 - GetReservations → Start datetime, end datetime
 - GetStatus → ReservationID, array ServiceIDs
 - CancelReservation → ReservationID
 - CompleteJob (currently not used) → JobID
 - CancelJob (currently not used) → JobID
 - Activate → ReservationID, ServiceID
 - Bind (currently not used)
 - Notification (under testing)

Harmony System Interfaces (WP1)



- NorthBound Interface – **Topology WS**
 - It receives the topology requests from the Grid applications and middleware
 - Operations
 - AddDomain
 - DeleteDomain
 - EditDomain
 - GetDomains

} Identifier, Reservation EPR, Relationship, Bw, Description

 - AddEndpoint
 - DeleteEndpoint
 - editEndpoints

} Identifier, Name, Description, Interface, DomainId, Bw

 - addLink
 - editLink
 - getLinks
- } Identifier, Source Endpoint, DomainId, Costs

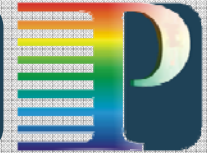
Harmony System Interfaces (WP1)



- East/West Interface – **Reservation WS**
 - NSP works like Reservation WS, and the NRPS uses a client proxy to communicate with the WS.

 - Operations
 - CreateReservation. Service Info (ID, typeReservation, Connections..), jobID, Notification URL consumer
 - GetReservation. ReservationID, ServiceID
 - GetReservations. Start datetime, end datetime
 - GetStatus. ReservationID, array ServiceIDs
 - CancelReservation. ReservationID
 - CompleteJob. JobID
 - CancelJob. JobID
 - Active. ReservationID, ServiceID
 - Bind (not used)
 - Notification (not used)

Harmony System Interfaces (WP1)



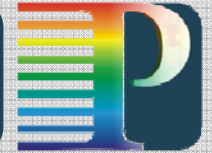
- East/West Interface – **Topology WS**

- NRPS works like client proxy. Topology WS gets the information from the NRPS

- Operations

- AddDomain
 - DeleteDomain
 - EditDomain
 - GetDomains
 - AddEndpoint
 - DeleteEndpoint
 - editEndpoints
 - addLink
 - editLink
 - getLinks
- Identifier, Reservation EPR, Relationship, Bw, Description
- Identifier, Name, Description, Interface, DomainId, Bw
- Identifier, Source Endpoint, DomainId, Costs

Interface towards other projects



- Interface developed by WP1 under Phase 2 of the Phosphorus project for the Harmony system
- Main goal: allow interoperability of the Harmony system with other projects.
- Definition: still not defined
- Delivery estimation: end of year 2008
- This interface will focus on interoperability with other projects, from the peering point of view
- Currently working for interoperability with:
 - G²MPLS (Gateway model) and
 - AutoBAHN from Géant2 JRA3
- Contributing to GNI Interface API definition in GLIF community



Joan A. García Espín

joan.antoni.garcia@i2cat.net

+34 93 553 2518

I2CAT Foundation

Barcelona, Catalonia, Spain

Any questions?

Thank you for your attention!