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GN2 Activities and the LOBSTER Project

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- GN2 Activities

- **SA3 – End-to-End Services**
- JRA1 – Performance Measurement and Management
- JRA2 – Security
- JRA3 – Bandwidth on Demand
- JRA4 – Test Bed
- JRA5 – Roaming and Authorisation

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• SA3 End-to-End

- Performance Monitoring and PERT
  - PERT (Performance Enhancement & Response Team)
    - The PERT is keen on helping the end-users on performance issues (you can access it through your NREN)
  - PERT knowledge base
    - http://pace.geant2.net/cgi-bin/twiki/view/PERTKB/WebHome
  - PERT Ticket System
    - Restricted access to PERT staff and customers (NRENs, some pan-European projects)
  - Evaluate and Deploy a QoS Performance Measurement System
    - Adopt JRA1 enhancements
- Ann Harding's presentation on PERT Wednesday, June 8 **14:00-15:30** during the performance session

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SA3 End-to-End

- QoS Provisioning
  - Develop Policy for Allocation of Premium IP
  - Develop Provisioning System

- SA3 needs: Analyse flows to understand what causes a e2e performance problem.
  - tcptrace like – retransmission, packet re-ordered and their pattern, etc.
- Monitor the QoS services.
- Where to physically deploy a packet capture tool?

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- JRA1 – Performance Measurement and Management Today

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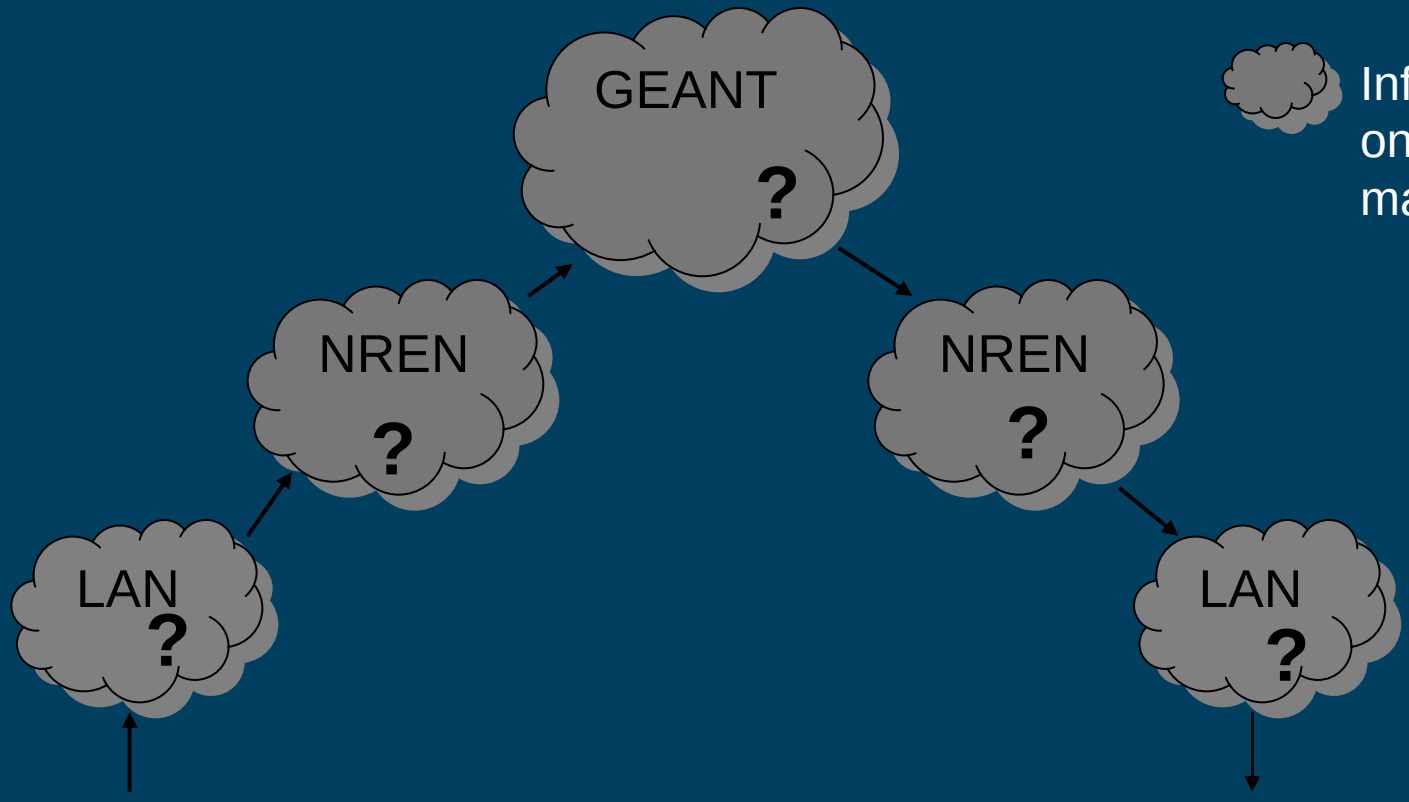

Information available only by the local managers

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- JRA1 main objective: share measurement information

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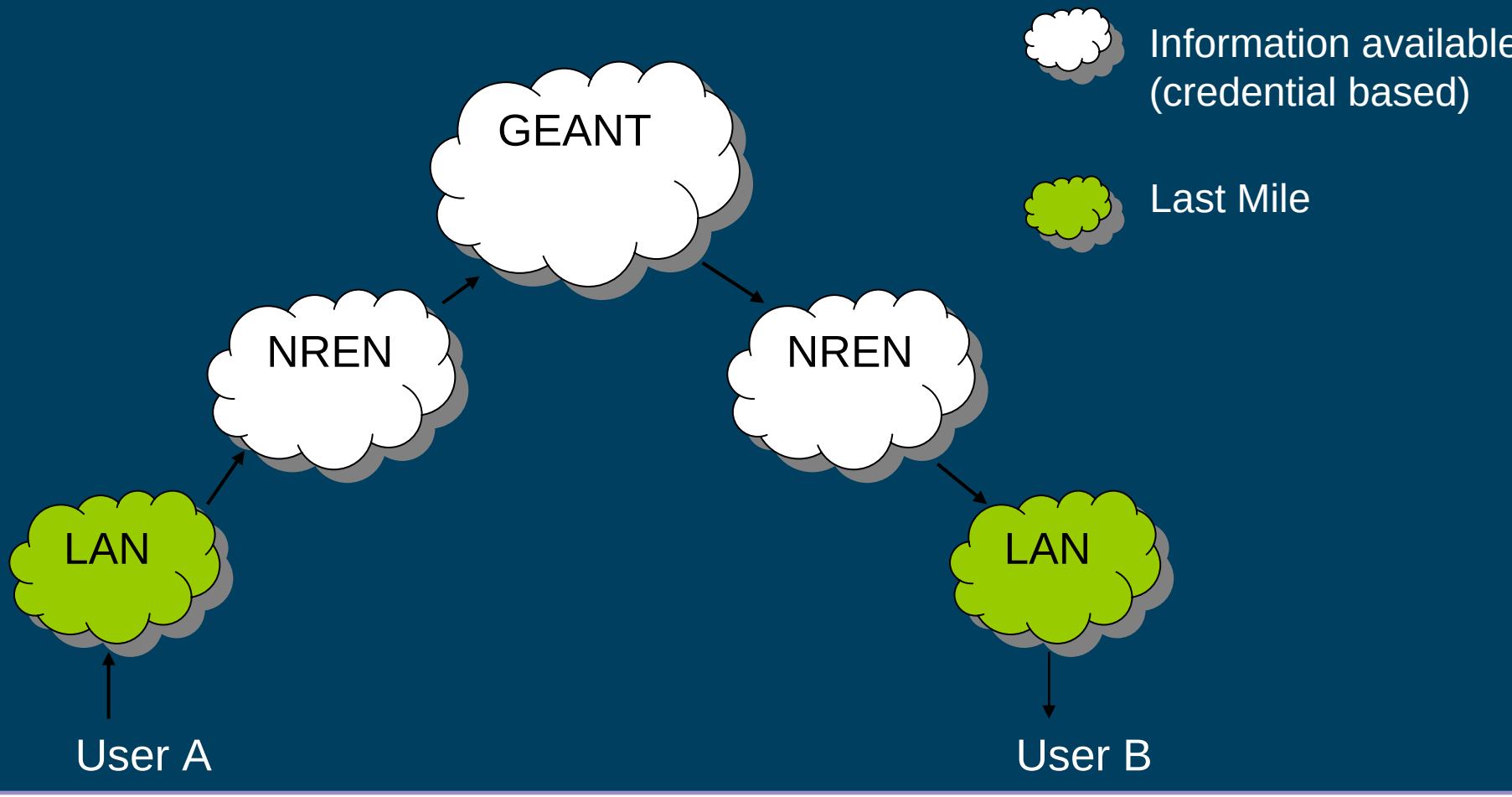

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JRA1 Scope

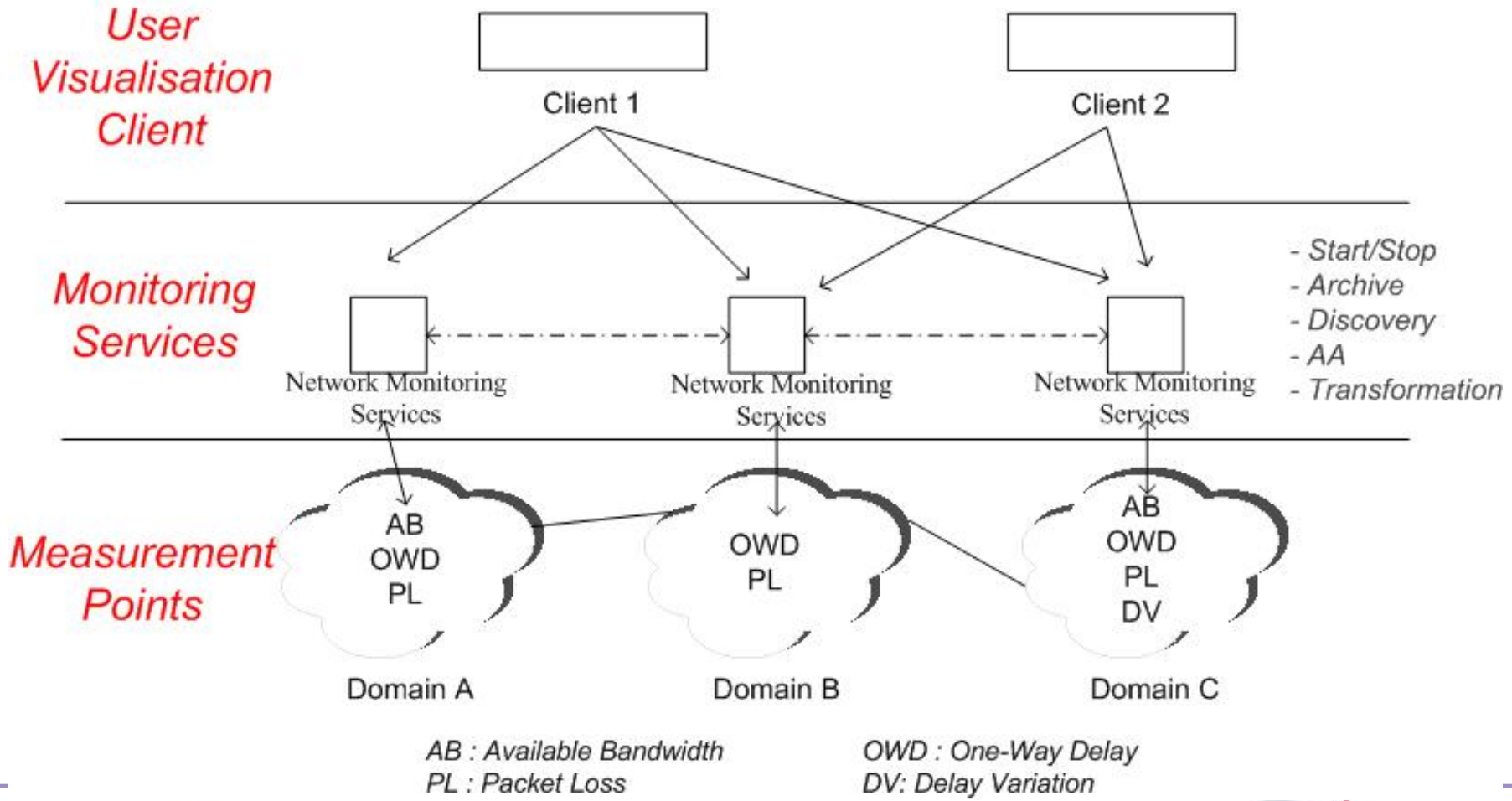
- Provide accessibility to measurement information from several domains.
  - The framework should allow each network to edit it's own resource access policy.
- Benefits:
  - Have a better understanding of what's happening on the network.
  - Decouple the visualisation/analyse from the tool and/or the data provider.

JRA1 Scope

- Integrate few measurement tools within the infrastructure: DFN IPPM, BWCTL, RRD.
- Information targeted: OWD, IPDV, OWPL, RTT, traceroute, link utilisation/capacity, interface error/drops, IP available bandwidth, TCP throughput.
  - Second stage: netflow and packet capture.
- Build visualisation tools to demonstrate the added value offered by such a framework.

- Nicolas Simar's presentation on the JRA1 General Framework Design Wednesday, June 8 - 14:00 - 15:30 (Performance session)

- JRA1 Architecture



GN2 JRA1 vs Lobster

- Similarities:
  - Need of a framework to communicate with distributed monitoring stations – common requirements: AA, resource management, interface,etc
  - Use of user traffic – which implies need for proper anonymisation).

- Differences:
  - Lobster concentrates on passive monitoring, JRA1 uses primarily active monitoring and network equipment data.
  - Lobster needs to run multiple applications on one monitoring station to share
    cost of HW monitoring adapter, JRA1 can avoid multiple applications on one PC
  - JRA1 is looking to promote the packet capture utilisation for performance purpose and NOC support.

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JRA1 and Lobster

- Projects potential synergies:
  - If we integrate Lobster as a measurement tool into JRA1 framework, Lobster will benefit from JRA1 framework services and JRA1 will benefit from passive monitoring applications.
    - Interface - where?
- JRA1 interested to hear about
  - Which are the privacy issues related to such monitoring platform in a multi-domain environment?
  - Which are the anonymisation techniques that could be used?
  - Which are the data storage recommendations?
- CoMo project (Intel Research Cambridge)

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JRA2 - Security

- Development of the “Toolset” to provide new security services.
  - It Consumes monitoring information from a network (single-domain).
  - First starting with netflow data. Possibility to extend it to additional sources of information.
  - Process the information and send alerts to other domains.
- Christoph Graf’s presentation on GN2 JRA2 Tuesday, June 7 from 16:00 to 17:30 (Protecting the network session)

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JRA3 Bandwidth on Demand

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- Point-to-Point sub 10-GE ethernet services transported over several domains (first service, other services later on).
- Up to each domain to carry the service with the technology they want.
- Monitoring is a challenge
  - Out-of-service monitoring to set-up a path (GigE connected boxes to perform tests)
  - Operational monitoring more difficult, how to check the quality of the service when operational.
- Michael Enrico's presentation (Bandwidth on Demand session).

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JRA4 – Test Bed

- Several test bed PoP co-located with GEANT2 ones.
- Connectivity mostly provided by the GEANT2 services.
- Available upon request to NRENs, FP6 projects, GN2 activities.

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JRA5 - The GÉANT2 AAI

- Intends to be one of the basic services of the pan-European academic network
- Common to all services provided by the network
  - Network access
  - Premium IP
  - Bandwidth on Demand
  - . . .
- And to all services based on the network
  - Applications (essentially, Web-based)
  - Grids
  - . . .

JRA5 Architecture
Internal components

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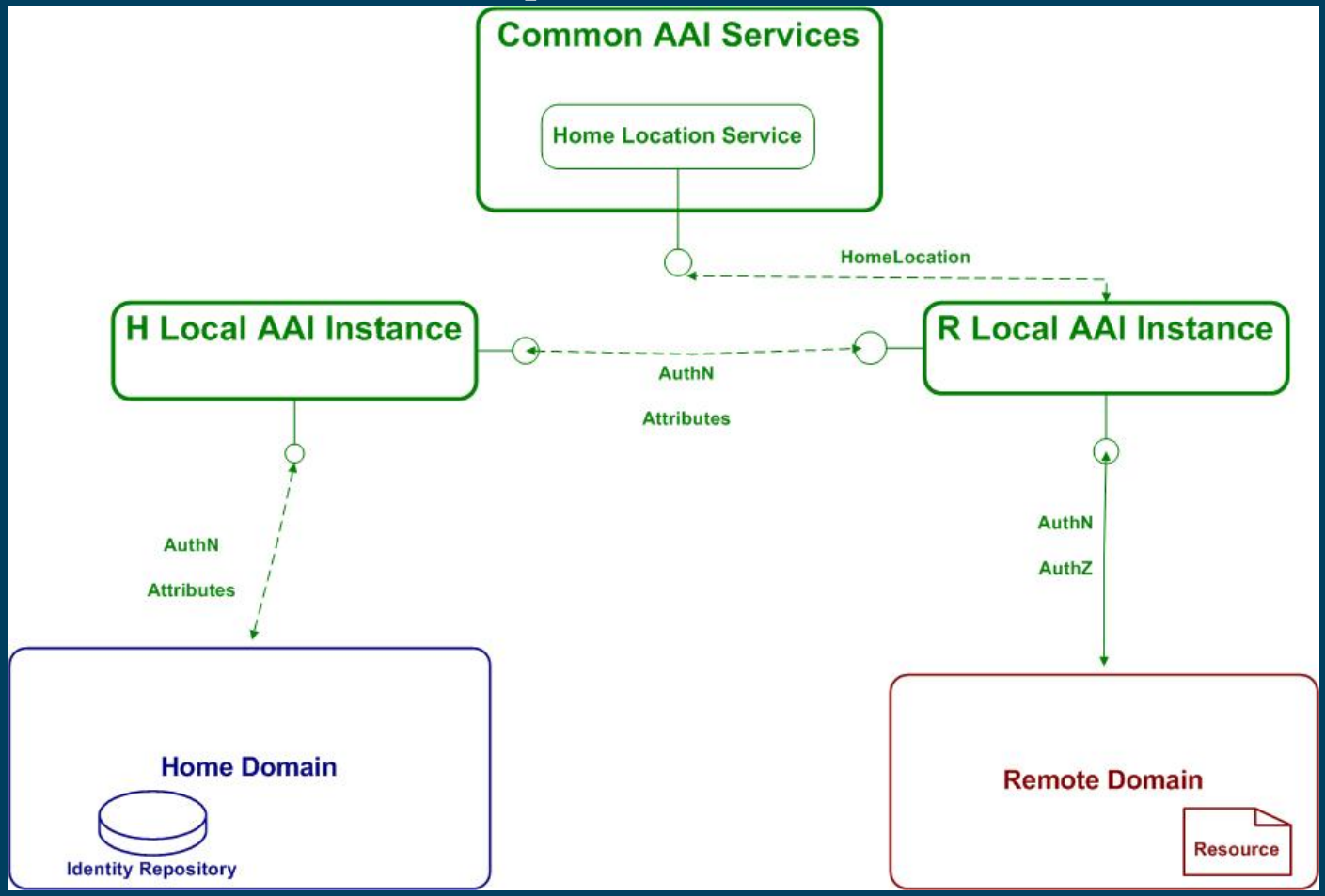
- A local AAI Instance at each federation/domain/realm
  - Providing the interfaces to the federation or services within the domain/realm
- Common Services
  - One defined: Home Location Service
  - Others possible
    - Certificate verification
    - Common diagnostics
  - Only available to the local AAI-I

- **JRA5 Internal components**



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JRA5 Main Requirements

- JRA5 is working on the AAI design document right now, it will be available soon.
- Details on main and functional requirements can be found in the Documentation on AAI Requirements, DJ5.2.1, at the www.geant2.net project pages (media centre)

- Lobster could make use of the AA interface define by GN2-JRA5 to ease integration from NRENs point of view.

- Diego Lopez's presentation on the AA Initiative in GN2 Wednesday, June 8 - 16:00 - 17:30 (AAA Architecture session)

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Proposed passive monitoring application for GN2

- Short-timescale available bandwidth monitoring
  - non-intrusive continuous and precise monitoring
- Packet loss for traffic between selected IP subnets
  - packet loss was frequently requested in Lobster questionnaire
  - observation of user data should provide more realistic information what happens with it
- Security problem detection applications
  - worm, intrusion, DoS detection, not goal of JRA1, but can be useful for GN2 (JRA2)
- Detection of anomalies and events in network traffic
  - performance analysis of individual connections

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Thank you.

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