



# GÉANT2 JRA1 Update

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# Agenda

- Activity overview
- Update
- Collaboration with other activities
- Future Work



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# Activity Overview

- **GÉANT2 Joint Research Activity - 1**
  - Instrumenting the network for measurements
  - Network Metrics
    - Metrics of Interest
    - Aggregation and Concatenation
  - Privacy and Data Disclosure Policies
  - Framework for exchanging measurements (PerfSONAR Services)
  - Visualisation tools

# Update - 1

## Measurement Infrastructure



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- One Way Delay (DFN-IPPM) and Achievable Bandwidth Measurements (BWCTL)
  - 16 (of 31 planned) locations instrumented
  - Includes GÉANT2 SA3 effort
- Passive Monitoring (DAG cards)
  - 2 locations instrumented
  - 2 locations nearing completion
- Netflow Monitoring (Servers acting mainly as collectors)
  - 3 (of 3) locations nearing completion

# Update – 2

## Network Metrics



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- Metrics
  - Choice of metrics based on requirements of end users
- Concatenation Framework Effort
  - Aggregations in time and space
  - Concatenation of metrics
  - Draft submitted to IETF IPPM Working group
  - More Info:
    - EU Deliverable
      - <http://monstera.man.poznan.pl/jra1-wiki/index.php/DJ123>
    - IETF Draft
      - <http://www.ietf.org/internet-drafts/draft-svdberg-ippm-temporal-00.txt>

# Update – 3

## Privacy and Data Disclosure Policies



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- Effort to understand role based understanding of measurement data requirements
- On going discussions with some projects
  - EGEE (Enabling Grids for E-Science in Europe) project
  - JIVE (eVLBI)
- On going effort to draft GÉANT's data disclosure policies
- Results of GÉANT's efforts could be a starting point for other NRENs

# Update - 4

## PerfSONAR Services



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- Prototype developed to export One way delay measurements (DFN-IPPM) data
- Work on prototype to export Network equipment information (Looking Glass Information for example)
- Work on exporting Passive monitoring has begun
- JRA1 and DANTE have begun working on exporting SDH data from GÉANT2
  
- Eric Boyd will provide updates for the joint effort

# Update – 5

## Visualisation tools



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- CNM tool
  - capable of retrieving IP Utilization and Capacity metrics from multiple domains
  - Using PerfSONAR Services
- EGEE (European Grid Project) has developed a Diagnostic Tool
  - Retrieve IP layer utilisation data from multiple domains and display it to Grid users
    - Using PerfSONAR Services
- IST's PerfSONAR Visualisation tool

# Collaboration with other activities



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- GÉANT2 JRA3 and GÉANT2 JRA4
  - GÉANT2 JRA3 (Bandwidth on Demand) GÉANT2 JRA4 (Testbeds)
    - Joint efforts for Lightpath monitoring
- GÉANT2 JRA5 (Security, Roaming and Authorization)
  - JRA5 specifies Authentication and Authorisation Infrastructure
    - Ensures Interoperability
- GÉANT2 SA3 (QoS)
  - Jointly instrumenting the network keeping in mind each project's requirements
  - SA3 will use measurement data provided by JRA1 via PerfSONAR and Visualisation tools



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# Future work

- Highlights
  - Path based Visualization
  - Metric concatenation effort for Lightpaths
  - Exporting measurement data using PerfSONAR
    - Netflow, Packet Capture and Achievable Bandwidth
  - NEMO Visualisation tool to use PerfSONAR Services
  - Lightpath Monitoring
    - First step is to make data available
    - DANTE and JRA1 will work towards exporting GÉANT2 data
      - SDH by April '06
    - NRENS can then use PerfSONAR Services and DANTE's implementation to export their data
  - Last Mile Monitoring tools