



GÉANT monitoring platforms

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GÉANT monitoring platforms

- Network Tools in use
- Challenges
- Plans for evolution
- Monitoring platforms and facilities under review

Current operational Tools



RANCID



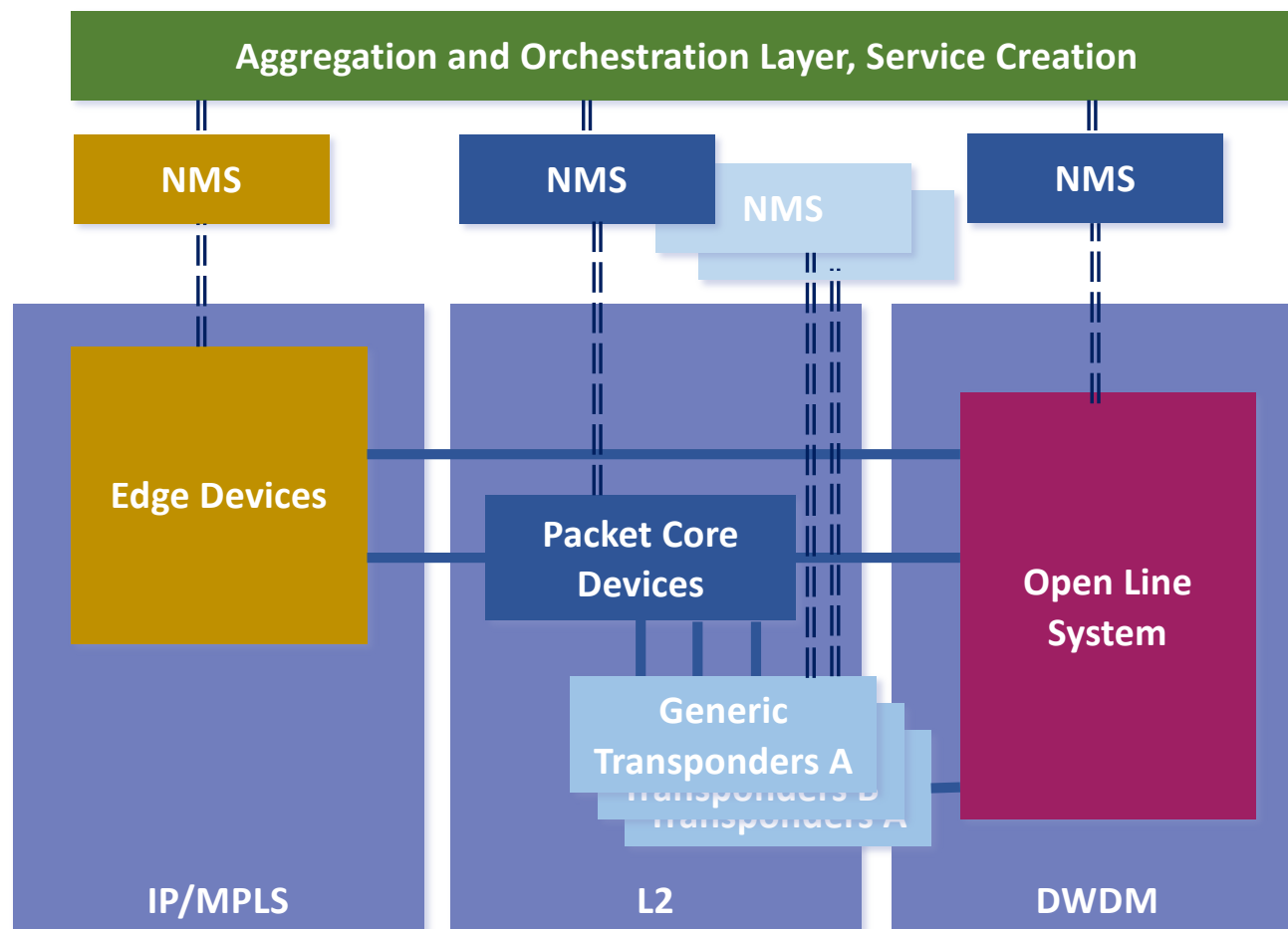
The screenshot displays the GEANT Operations Database interface, which includes several key components:

- TOOLS PORTAL:** A central hub for various tools, including a Partner Portal Gateway and public tools.
- GEANT Public Tools:** A section for public tools, including a traffic analysis tool showing a graph of traffic bytes over time.
- Operations Database:** A main interface for managing circuits, with a 'Circuit Display' view for a specific circuit (DFN AP).
- Circuit Display:** A detailed view of a circuit, showing attributes such as Project (GEANT2), Status (Operational), Circuit Type (Service), Service Type (IP Access), IP Access Type (Primary), Encapsulation (GETH), and Interface Type (10GGE).
- Table:** A table listing various network events, including BGP peering and interface status changes, with columns for Time, Location, Equipment, Project, and Status.



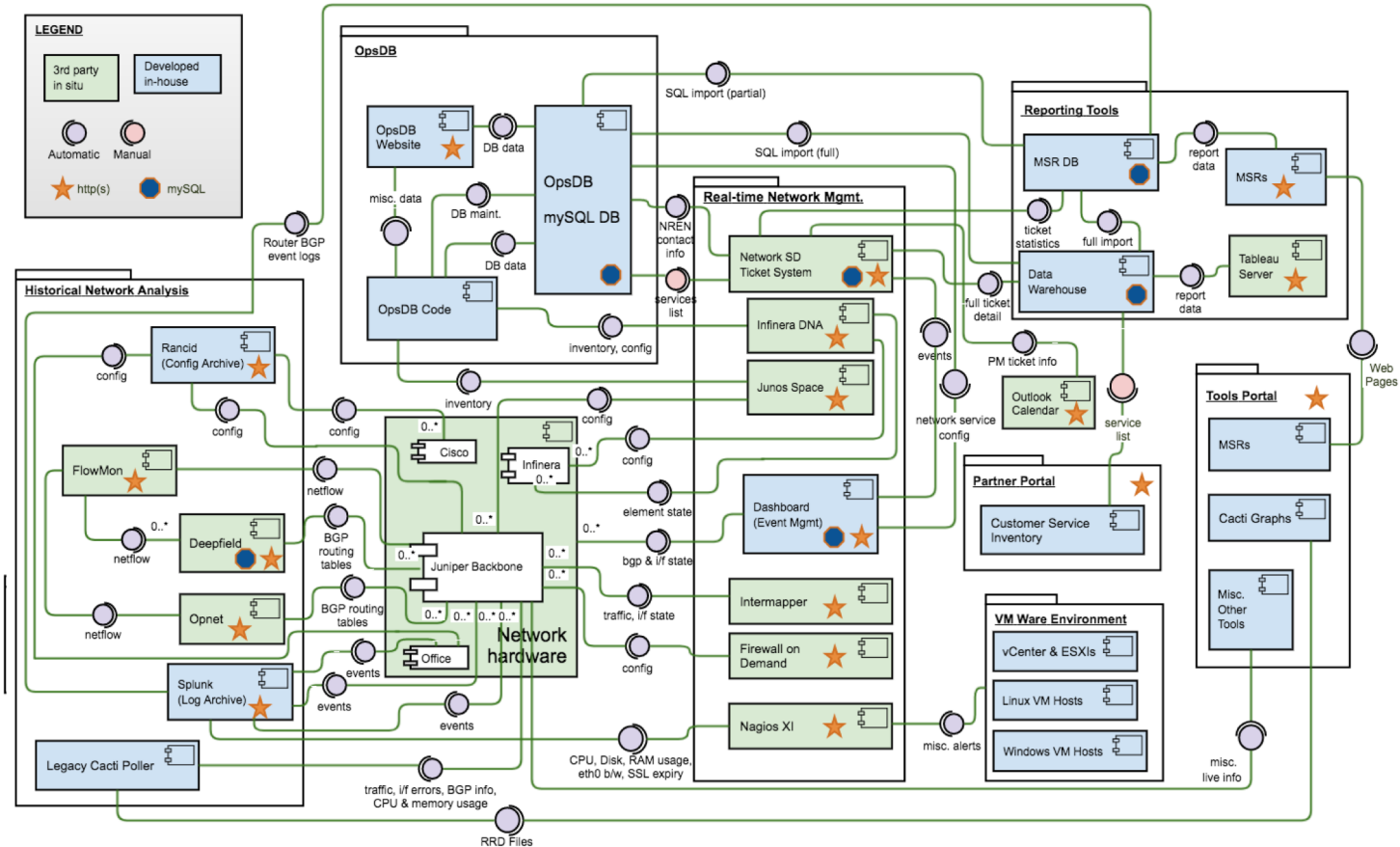


Managing a Disaggregated Network?



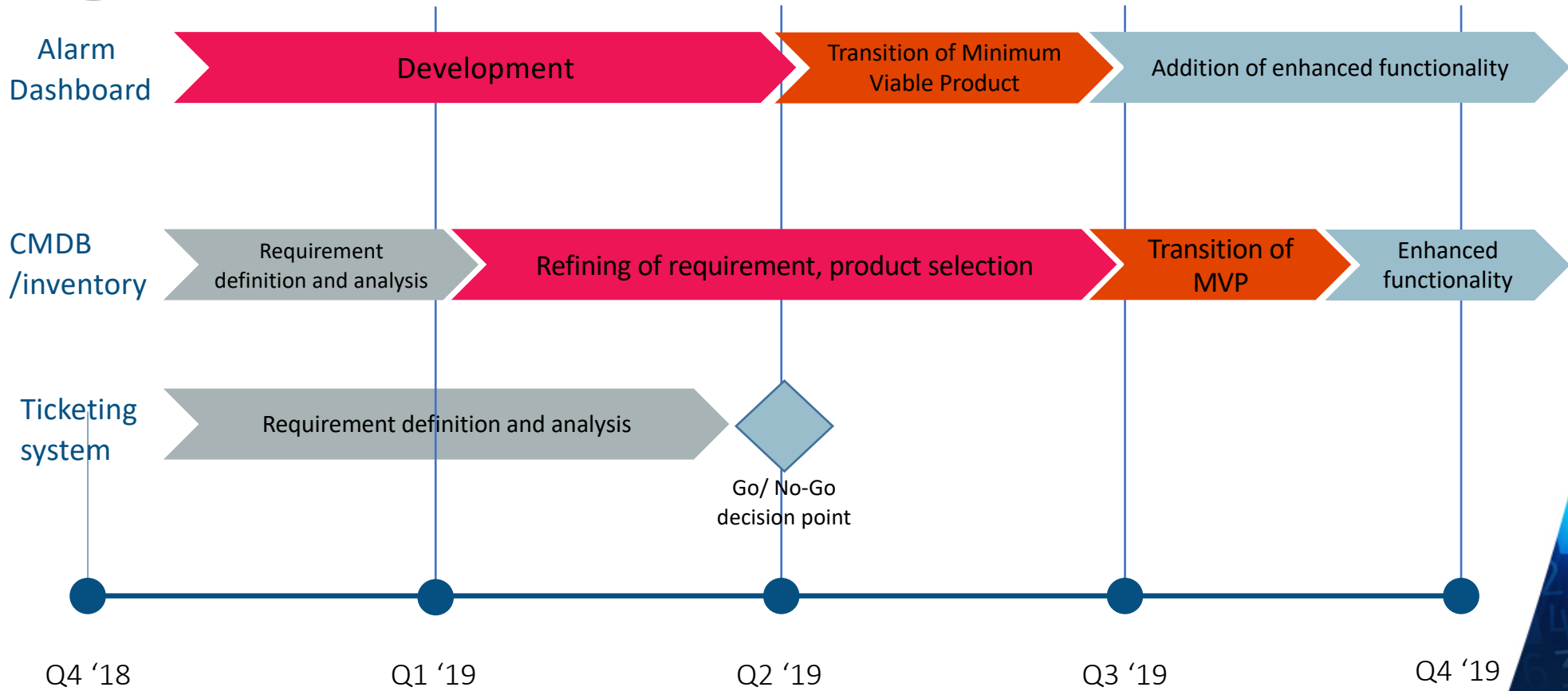
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Operational Tools - dependencies





Operational Tools Evolution Roadmap



Future monitoring systems under review

- SNMP Polling and graphing for enhanced performance - Observium
- Streaming telemetry
- Ethernet Operations, administration and management (OAM)

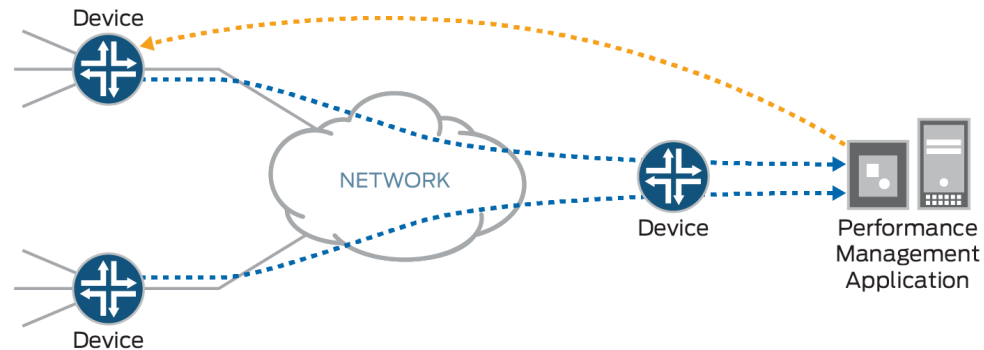


OBSERVIVIUM

- Replacement of cacti SNMP polling
- SNMP polling with alerting features
- Increased speed
- Automatic discovery and graph creation and categorisation
- Initial review including tuning ongoing
- More info: <http://www.observivium.org/>



Streaming Telemetry



- Event-driven - pushed to subscribers
- OpenNTI provides a complete ST listener system – in Docker containers
- Feature set increasing
- May replace SNMP whilst providing better resolution and accuracy.

https://www.juniper.net/documentation/en_US/junos/topics/concept/junos-telemetry-interface-overview.html

Ethernet Operations, administration and management OAM

- Connectivity Fault Management (CFM) for end-to-end Ethernet services
- Link Fault Management (LFM) for point-to-point (with or without repeaters)
- SA1 have deployed CFM and LFM across the GEANT backbone for internal monitoring. Providing:
 - Measurements: one-way delay, two-way delay, packet loss, synthetic packet loss, and
 - Events: SNMP traps and syslog messages - continuity loss; link errors; remotely-initiated loopback
- CFM and LFM have been deployed across the GEANT backbone for internal monitoring.
- Plans to pilot multidomain CFM with DFN.
- “OAM Cookbook” to be produced for dissemination to the community.

More info: Deliverable D5.3 "Enhanced Traffic and Performance Management Reporting System", Document Code: GN4-1-15-86B86

Thank you

Any questions?

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GÉANT tools

Tool Name	Purpose
Cacti graphs	Show data in RRD files
Cacti poller / storage	"Spine" to collect data, RRD / XML to store data (averaged over time)
Deepfield	Network traffic analysis
Event Dashboard (new)	Receiving event data, correlation and GUI
FlowMon	Collects netflow information from routers to support NSHaRP (Network Security Handling and Response Process)
Infinera DNA	Configure and manage Infinera equipment and view alarms via a GUI
InterMapper	SNMP based IP network monitoring and graphical network mapping
Nagios XI	Event monitoring for IT and Multi-Domain services
Opnet / Riverbed / SteelCentral	Network failure scenario analysis and configuration audits
OpsDB	Network resource documentation
OTRS Tickets	Outage and PM information to share with various parties
PerfSONAR MADDASH	Performance monitoring dashboard tracking throughput & performance across the GÉANT network
Rancid	Configuration archive
Splunk	Log management and alerts (using syslog)