

GÉANT and the Big Router Renewal

A Few Things to Share

Bram Peeters CNOO GÉANT

GNA sessions November 2024

Public

The Core Driver: Traffic Growth



Long-term Growth: 30%/year?



3 | GEANT.ORG

3

GN4-3N (2019-2023) and GN5-1/2 (2023-2025)





End of 2023 Fibre and Spectrum

Long Term Contracts

Together with NRENs:

- A truly European-wide reach for services
- <u>Capacity in Europe is no</u> <u>longer a real challenge</u>







GÉANT packet Layer in about 2020

- Juniper MX960/480
 - Reaching the maximum capacity of the platform at 1Tbps per slot
 - The last MPC10 line cards at 2 x 400Gbps have been deployed
 - Running out of slot capacity, and all that...
 - Juniper MX204 in smaller sites -> appropriate for now

• PROCUREMENT IMMINENT!!!





8 | GEANT.ORG

Packet Layer Renewal

Delivering state of the art network infrastructure

3-year project started early 2022

400G availability throughout the whole GÉANT footprint

High-speed network availability to the edges of Europe

Enabling global partners to connect at or close to landing stations





So... Procure for new gear, new partners (?)





Outcome: Nokia!



SR platform

- FP5 is a powerful platform
 - 18 Tbps per slot
 - Growth possibilites
- 400 Gbps now as standard interface
- 800 Gbps ready
- ZR+ optics? DWDM pluggables, straight on GÉANT's open photonic substrate

<u>Challenge</u>: Transition

Transitions are never trivial:

- In-service
- Know-how
- Interoperability
- Complexity of transition itself
- Deadlines looming...



Transition => Automation!

Make the move _now_

Build on Open Source and on Community

• Workflow Orchestrator and Ansible

Enforce well-tested and well-understood design on our new network

- Predictable, standardized procedures
- Complexity: hidden, managed
- All OSS/BSS in sync



https://workfloworchestrator.org/

GAP - GÉANT AUTOMATION PLATFORM

- Network automation enables reliable networks with optimised configuration and minimal errors
- A comprehensive understanding of the network structure enables cost-effective upgrades and restoration
- Automating network management saves time and reduces costs
- Standardised checks and reporting capabilities can be added to the workflow at little or no extra cost and effort
- Network automation simplifies tasks and enables multiple team members to perform them













Thank You

Any questions?

www.geant.org