NETWORK MANAGEMENT AT SURFNET

Peter Boers – peter.boers@surfnet.nl
SURFnet network vital statistics

- 300 institutions
- Optical
  - 55 locations
  - 110 optical devices
  - 200 services
  - 12000 km dark fiber
- Layer 2/3
  - 280 locations
  - 400 devices
  - +/- 600 services
  - +/- 220 Gbit/s IP
- Connectivity services
  - NetherLight
  - NFV
  - SURFwireless
- Other
  - SURFcumulus
  - SURFconext
How do we manage the network (1)?

- **The goal is to maintain in-house knowledge about the network.**
- Strategic and long term management at SURFnet
  - 100 % SURFnet
- Complex tactical and operational management
  - 60 % SURFnet 40 % Quanza
- Day to day engineering:
  - 30 % SURFnet 70% Quanza
- Field:
  - 5 % SURFnet 95% Quanza
How do we manage the network (2)?

FTE SURFNET (53)

- Project Management Quanza (2)
- TEN (5)
- Operations and Customer Support (9)
- Project Management (1)
- Miscellaneous (5)
- Architecture (3)
- First Line (2)
- Field Engineering (4)
- Automation (10)
- Product Management (2)
- Wireless (5)
- Network Engineering (5)

Quanza 25%

First Line (2)

Network Engineering (5)

Operations and Customer Support (9)

Project Management (1)

Automation (10)

Product Management (2)

Miscellaneous (5)

Architecture (3)

Field Engineering (4)

TEN (5)

Project Management Quanza (2)
How do we manage the network (3)?

- **Tools optical:**
  - LightSoft
  - Icinga
- **Tools Service Lay**
  - NSO
  - JunosSpace
  - Icinga
  - Northstar
- **Others:**
  - Grafana
  - Network Dashboard
  - InfluxDB
Architectural Vision on network management

- SURF Automation & Orchestration Platform
  - Business Support System 1
  - Business Support System 2
- Network Optical Layer
- Network Firewall-aaS
- Network Service Layer
- Compute or Storage Layer
- New Technical Domain
Long term architectural vision
Long term vision
QUESTIONS?

Peter Boers

E-mail: peter.boers@surfnet.nl

www.surf.nl

Social media: linkedin.com/in/boerspeter

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