

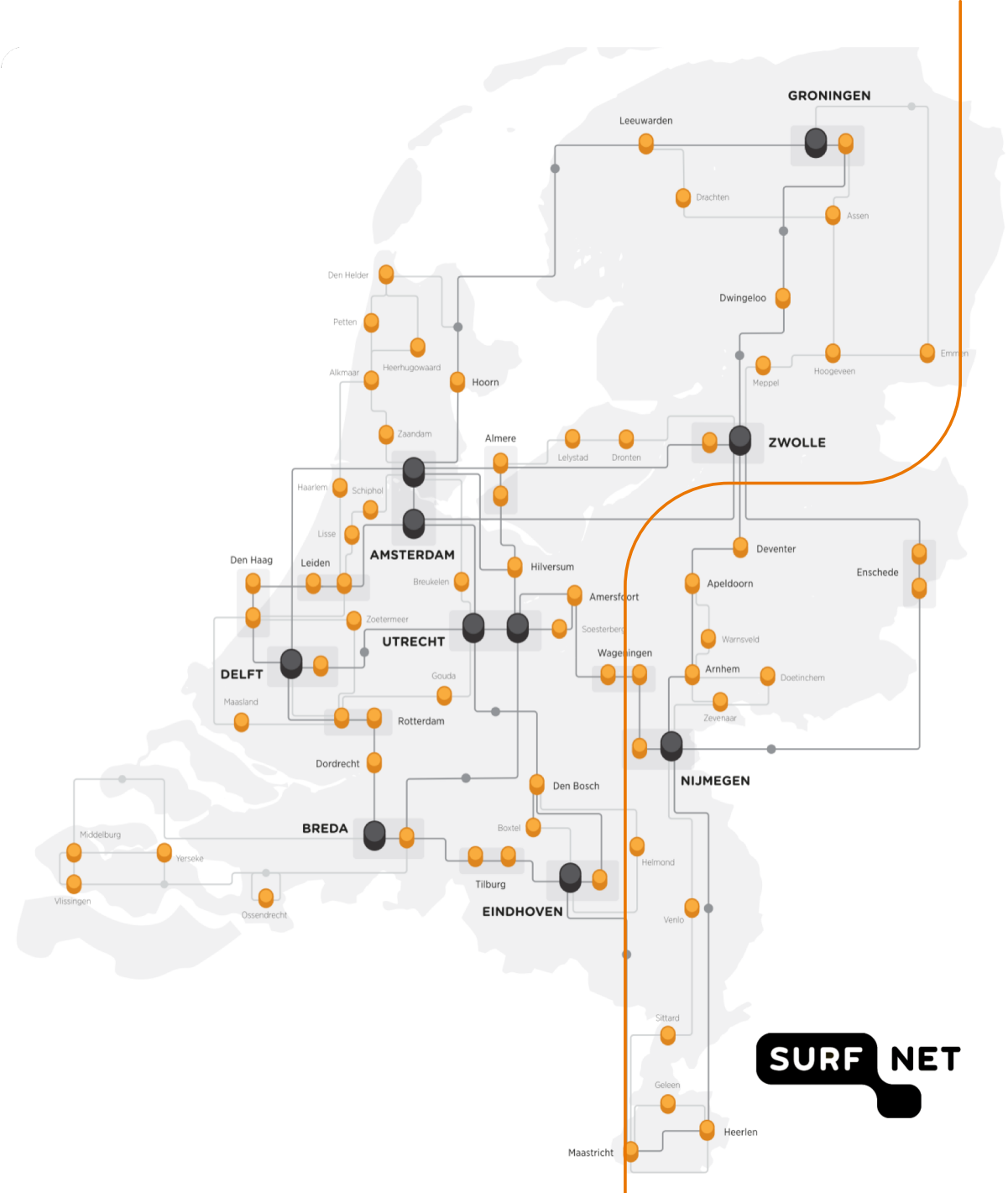


NETWORK MANAGEMENT AT SURFNET

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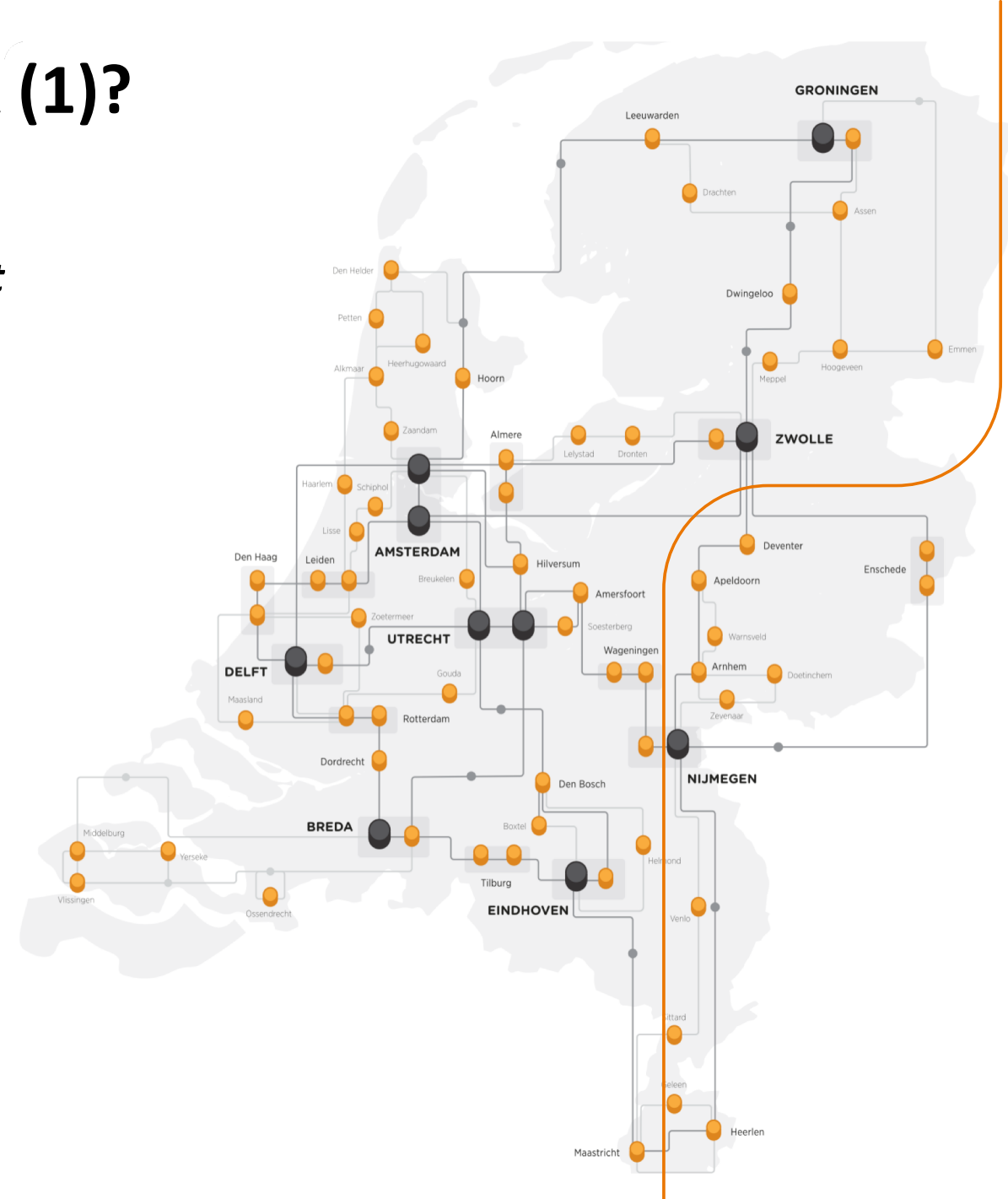
SURFnet network vital statistics

- 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)?

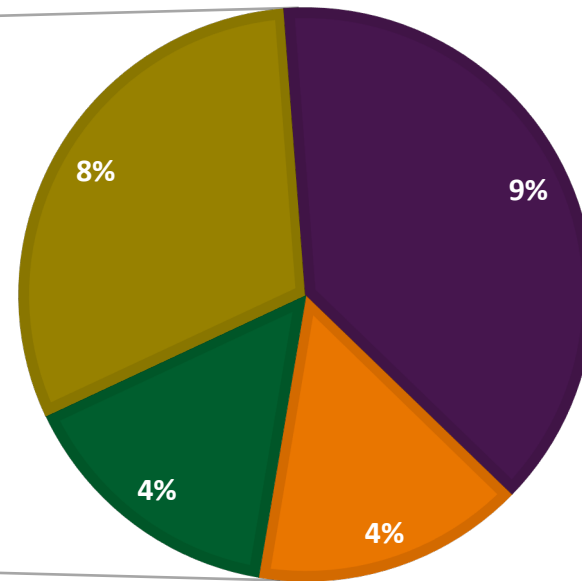
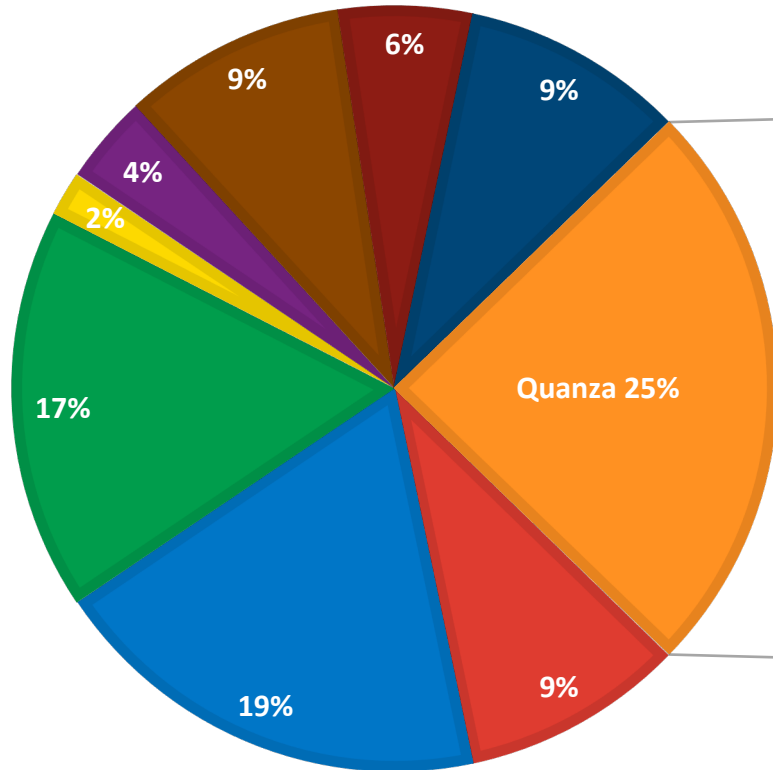
- *The goal is to maintain in-house knowledge about the network.*
- Strategic and long term management at SURFnet
 - 100 % SURFnet
- Complex tactical and operational management
 - 60 % SURFnet 40 % Quanza
- Day to day engineering:
 - 30 % SURFnet 70% Quanza
- Field:
 - 5 % SURFnet 95% Quanza



How do we manage the network (2)?

FTE SURFNET (53)

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



How do we manage the network (3)?

- Tools optical:

- LightSoft
- Icinga

- Tools Service Lay

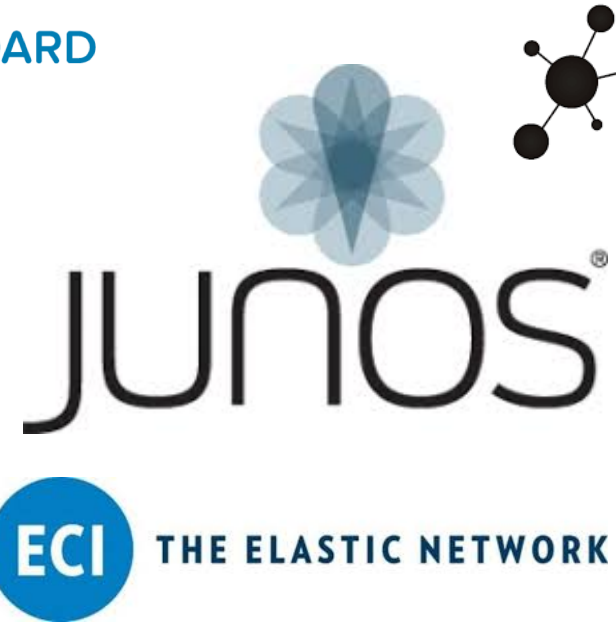
- NSO
- JunosSpace
- Icinga
- Northstar

- Others:

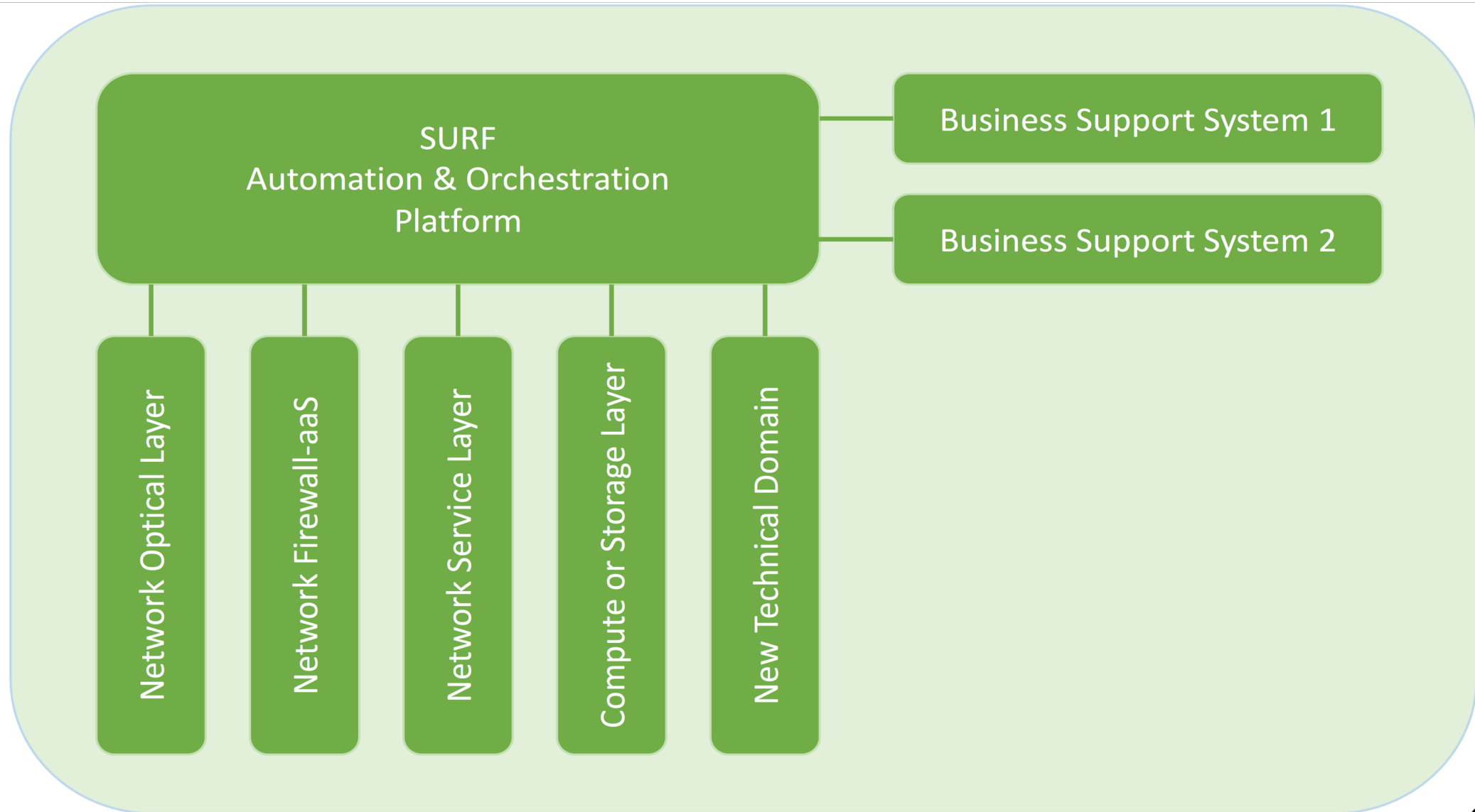
- Grafana
- Network Dashboard
- InfluxDB



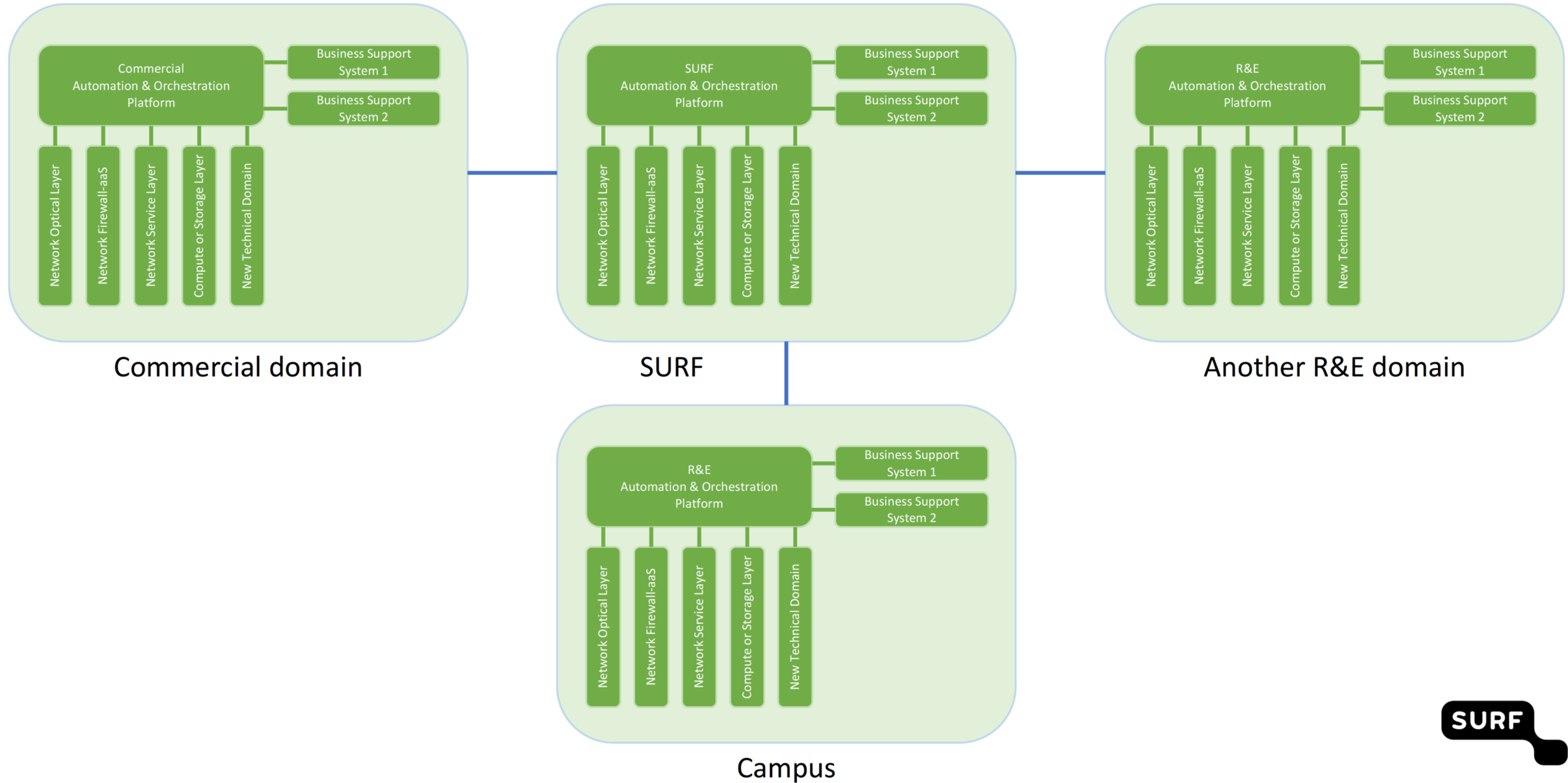
NETWORK DASHBOARD



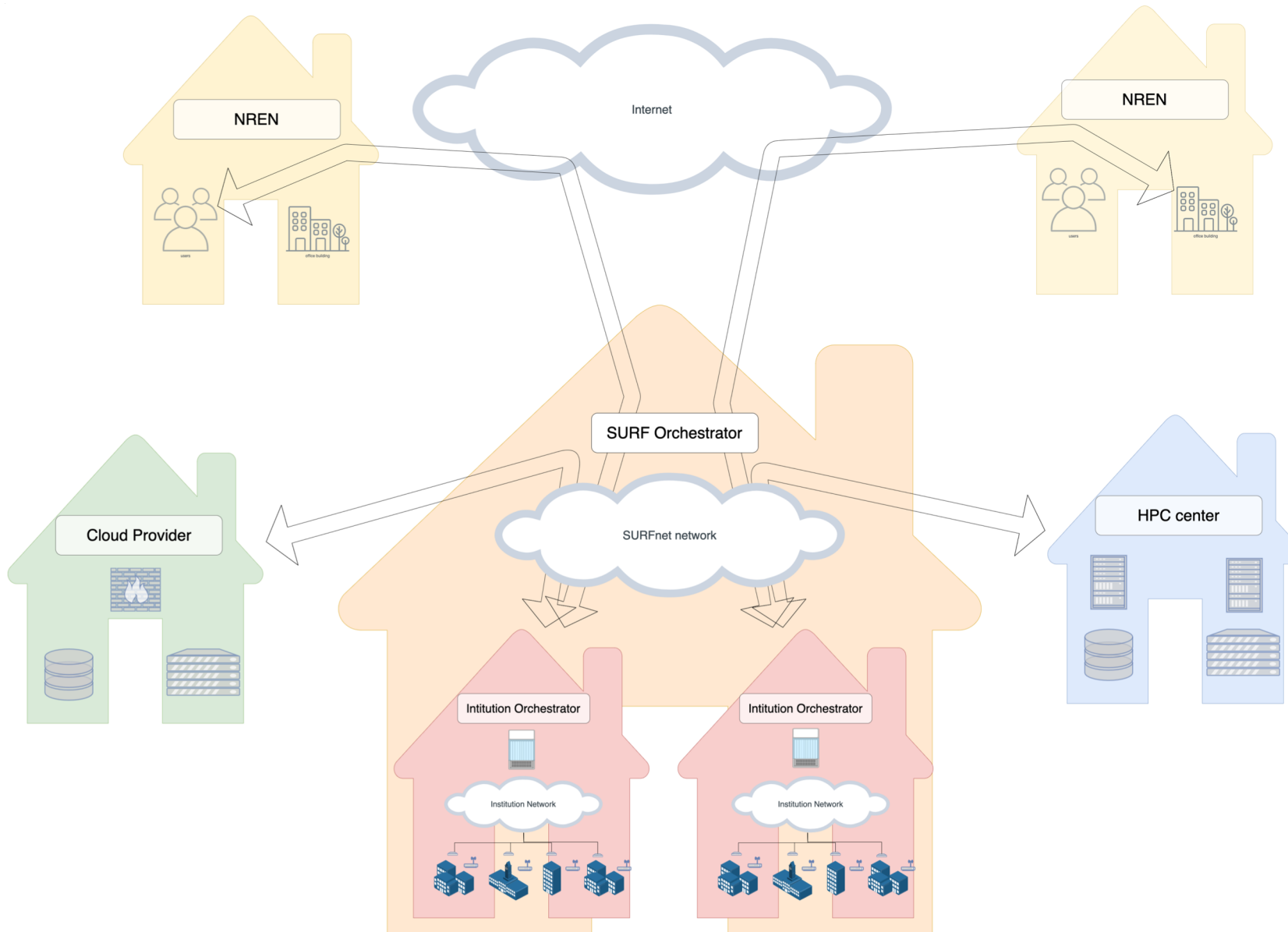
Architectural Vision on network management



Long term architectural vision



Long term vision



QUESTIONS?

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