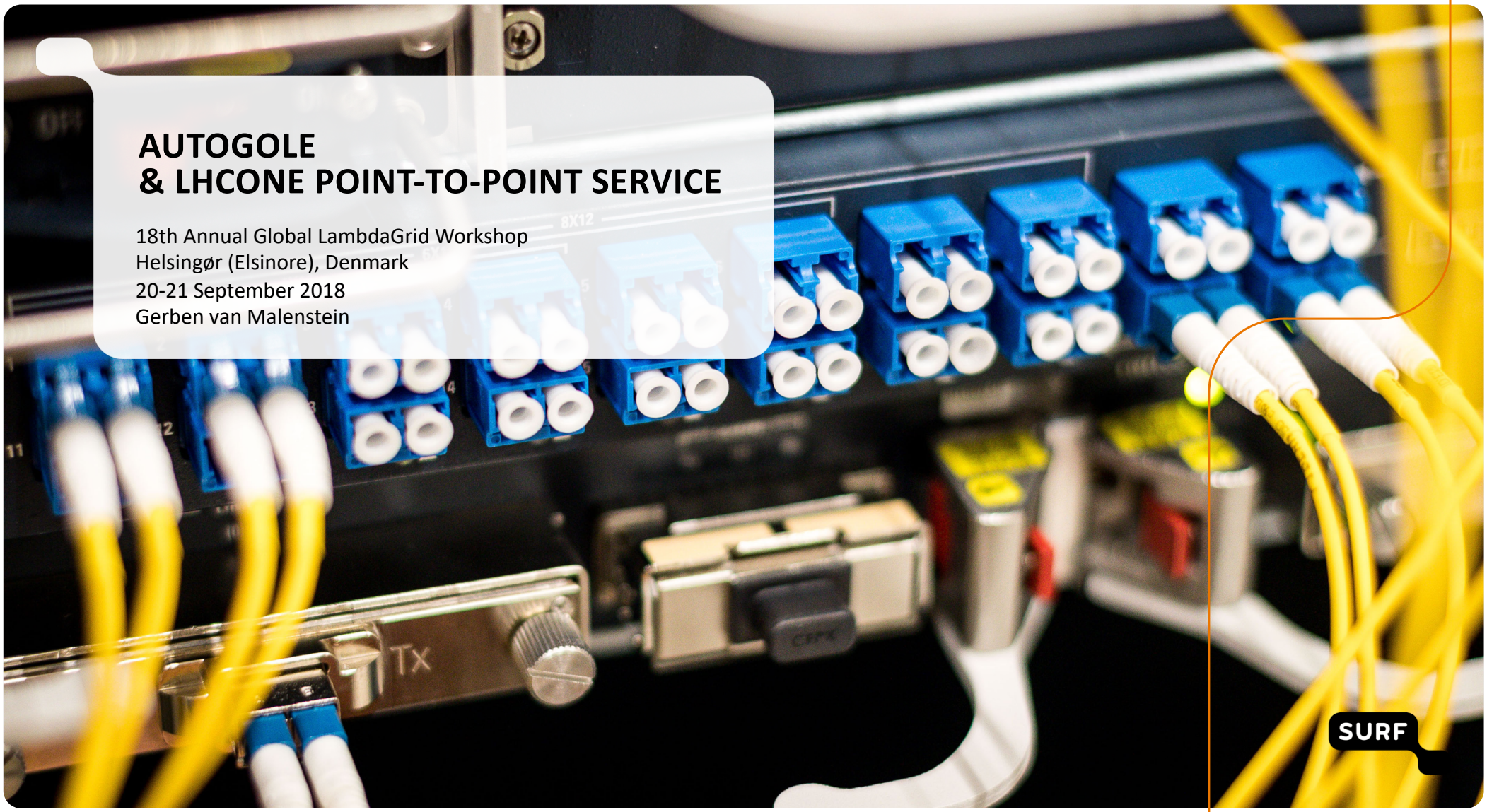


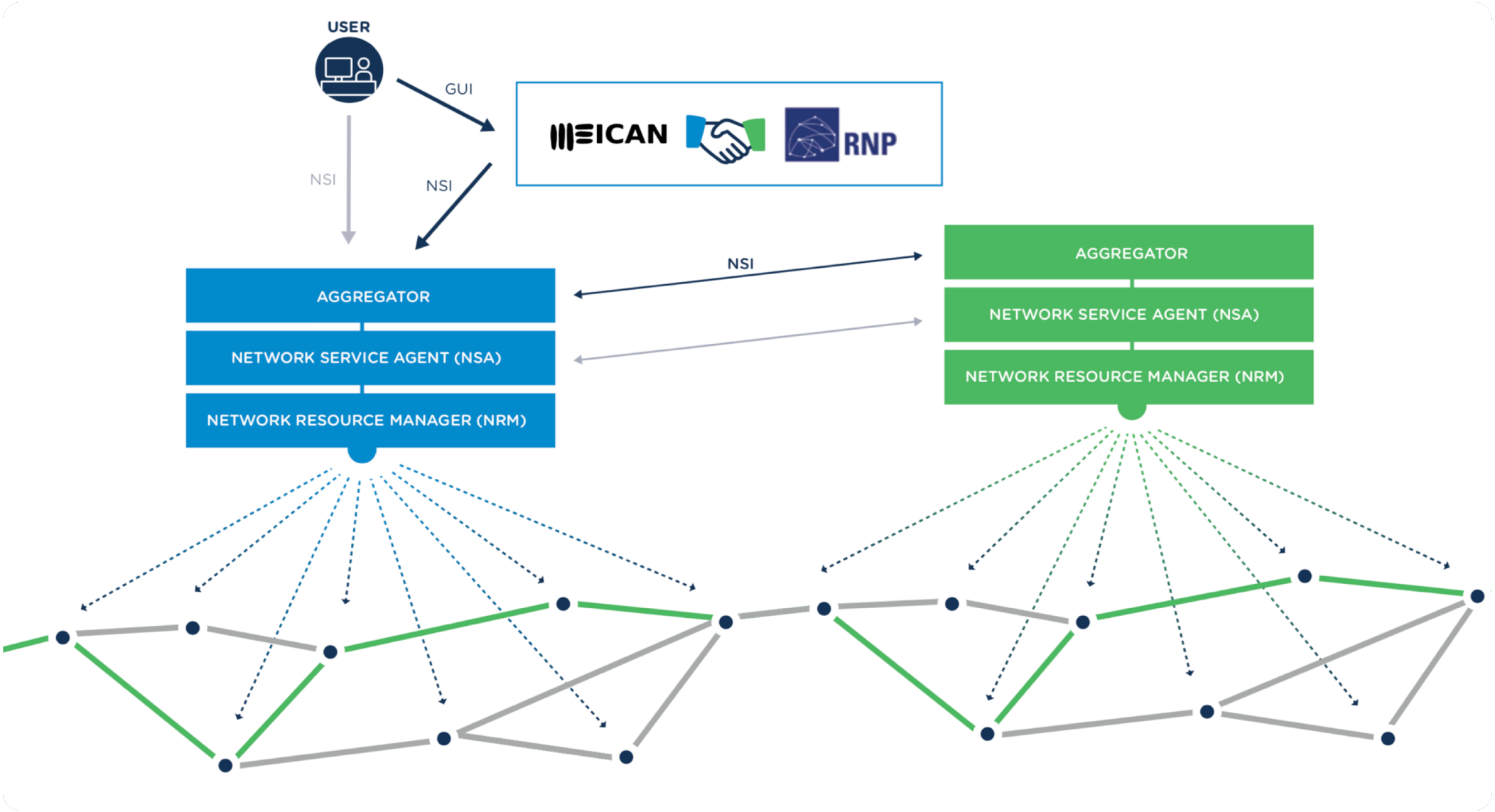
AUTOGOLE
& LHCONE POINT-TO-POINT SERVICE

18th Annual Global LambdaGrid Workshop
Helsingør (Elsinore), Denmark
20-21 September 2018

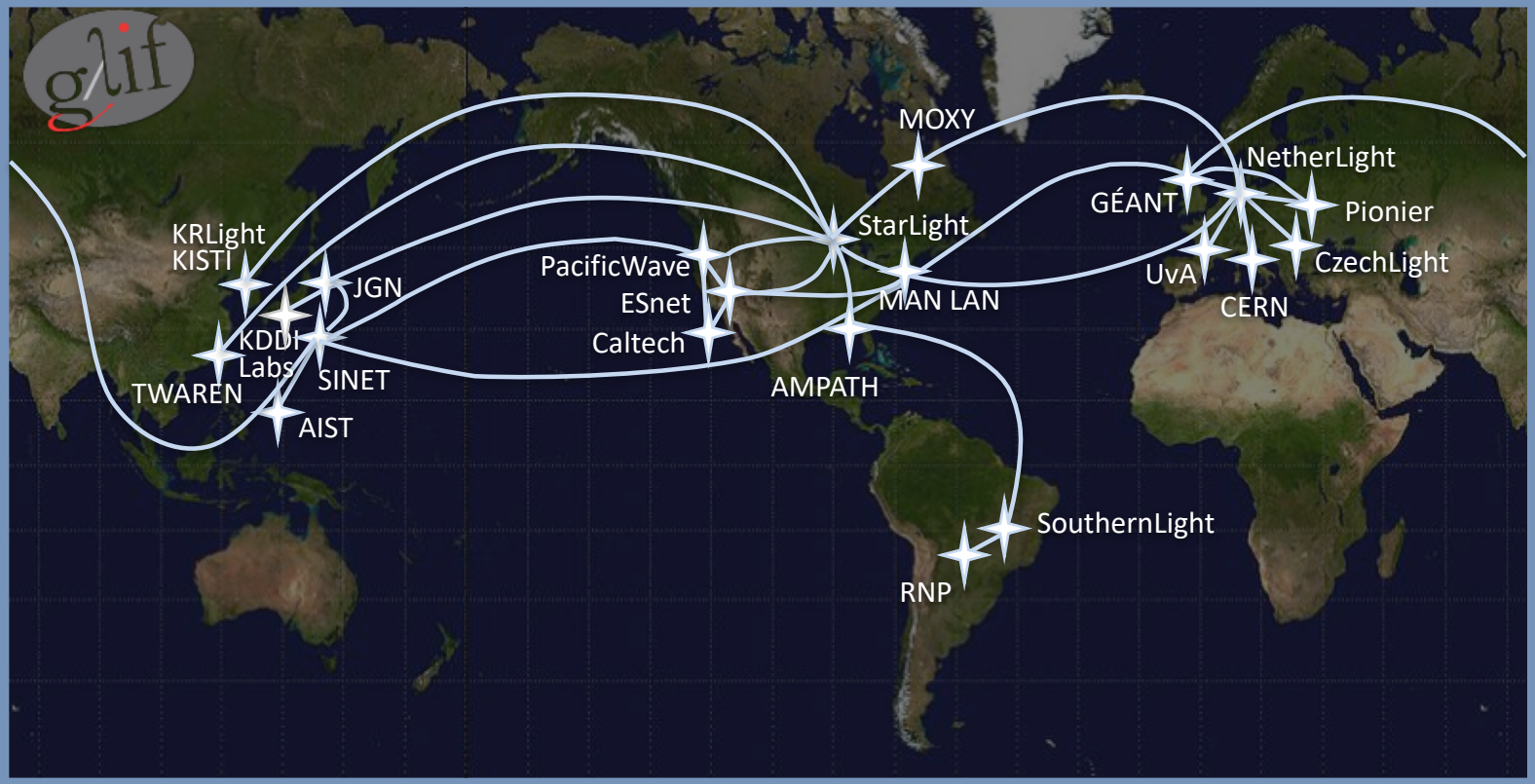
Gerben van Malenstein


STATUS
SURF


INGREDIENTS
RESEARCHERS
SCIENTIFIC INSTRUMENTS
DATA
FAST NETWORKS
AUTOMATED PROVISIONING
?
DTNs


USER
GUI
NSI
NSI
MEICAN
RNP
NSI
AGGREGATOR
NETWORK SERVICE AGENT (NSA)
NETWORK RESOURCE MANAGER (NRM)
AGGREGATOR
NETWORK SERVICE AGENT (NSA)
NETWORK RESOURCE MANAGER (NRM)

GLIF Automated GOLE Fabric 2018



Status AutoGOLE

- CESNET and MOXY have now enabled NSI on their Open Exchanges, congrats!
- GÉANT upgraded to their new CCS

- Now using MEICAN as its front end

  == a graphical web interface for managing NSI-based connections

  also for NOC engineers to manage ports and services

- How about its usage?

  … I don’t mean numbers here …

- How do we fund international software development?

Status LHCONE Point-to-Point Service / DTN effort

- Layer 2 circuits into LHC sites

  turns out to be site-specific L2 <-> BGP implementations

- Else {

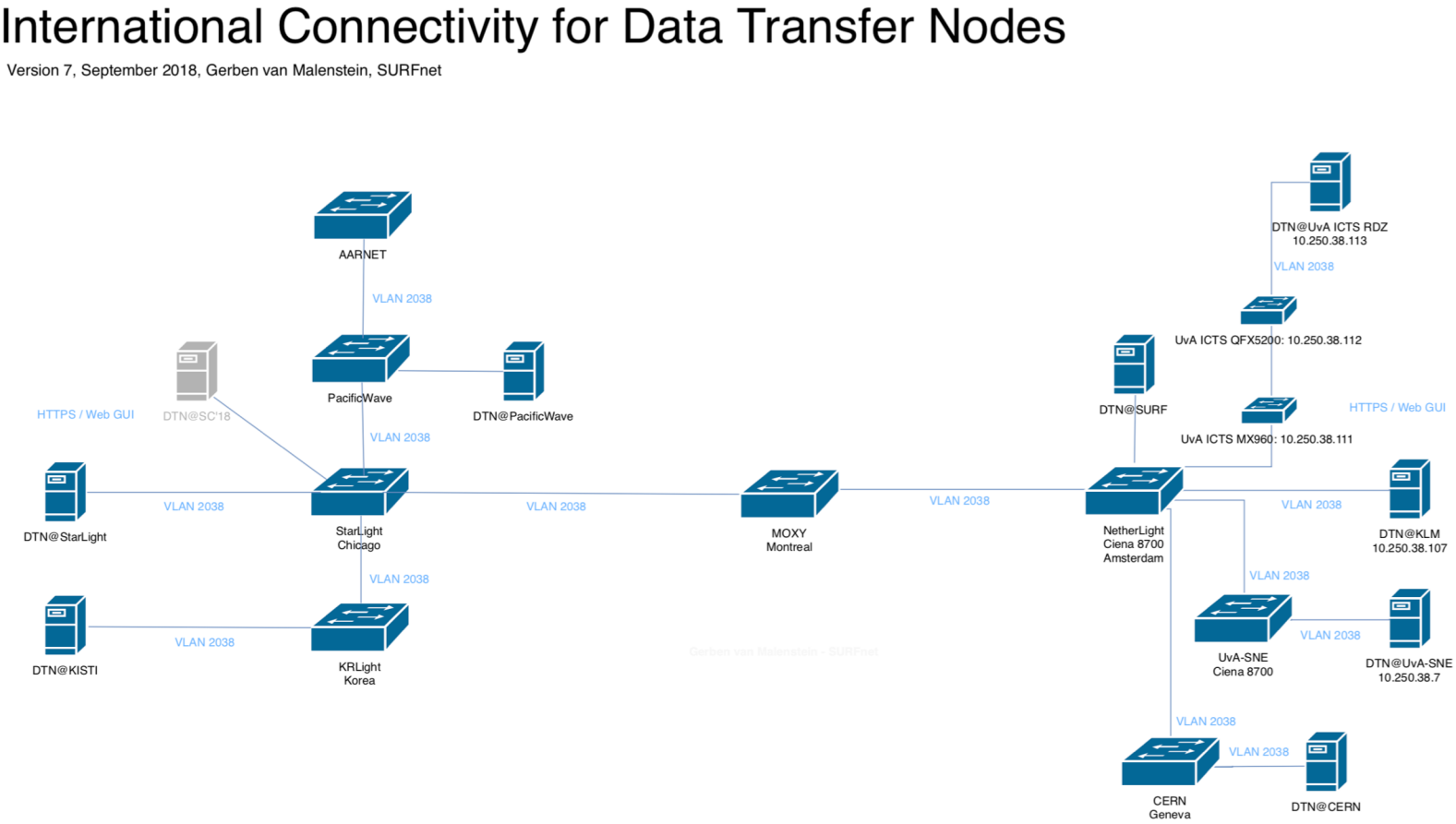
  connect Data Transfer Nodes, worldwide;

  }

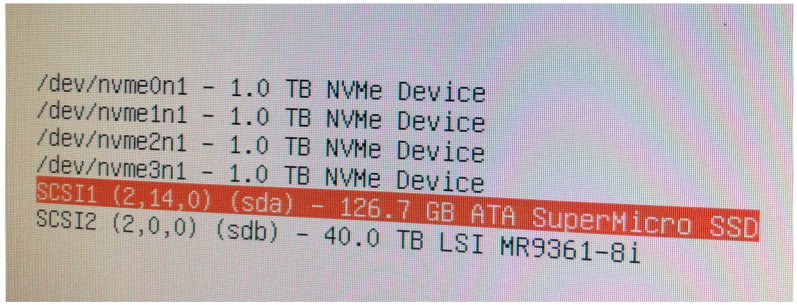
- Using 2038 VLAN as a first implementation

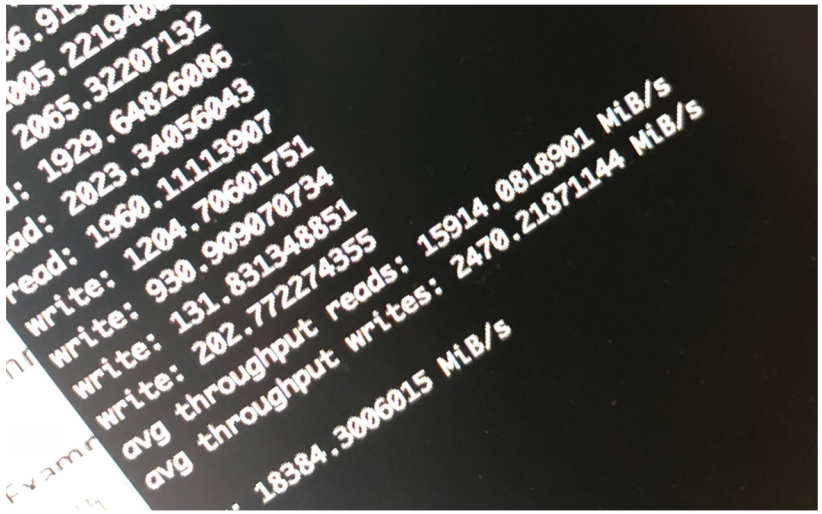
- Demonstration by University of Amsterdam this evening

Status LHCONE Point-to-Point Service / Current DTNs in this project



Status LHCONE Point-to-Point Service / ongoing DTN effort





- IBM POWER9 w/4 NVMe drives as well as 40TB of spinning disks


OBSERVATIONS

Observations

- AutoGOLE as in ‘the broad implementation of multidomain provisioning’ not getting enough uptake in all of our R&E network domains

  although system is technically working

  this is not a technical problem

- Connecting dynamic network services to automated systems on a worldwide scale is not here yet

  NSI is a connection request protocol

  evolving automation through descriptive languages as NML

- There’s no such thing as ‘the DTN’, standardization needed

- Nationally: stuff works. Internationally: !@#$%^&*()

- Don’t want to bother researchers and other end users with our “internal server errors, HTTP 500”

  want to collaborate and facilitate


COMMON GOAL

Common Goal

- A heterogeneously compatible production-grade system supporting research and education

  “Research Platform”

- Connecting automated network services to systems, users, each other, …


TOGETHER

Together

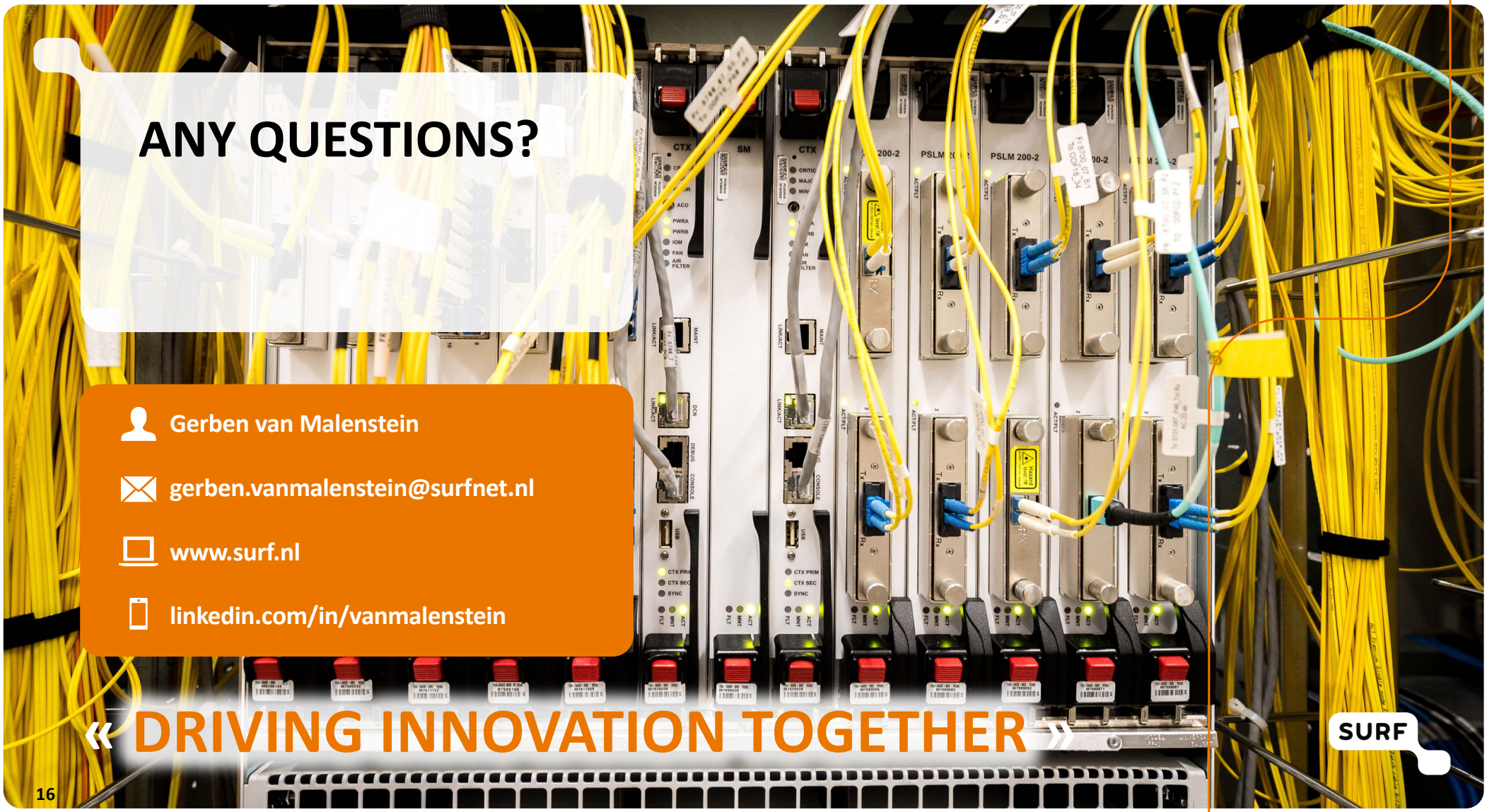
- Proposed first step

  full production implementation of dynamic provisioning across ANA

  no human configuration of network equipment anymore

  … open to any other suggestions, as long as the word ‘production’ is present

- AutoGOLE working group is always open to new participants, please join us!



ANY QUESTIONS?

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« DRIVING INNOVATION TOGETHER »

SURF