GigaPort

Dutch Tier 1
SARA / NIKHEF & SURFnet

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To / T1 networking meeting, Geneva, Switzerland
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SURFnet

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SURFnet

- Provides the Dutch National Research Network
- Not for profit company, 55 employees
- 100% subsidiary of Stichting SURF
- 170 connected organizations, 750.000 users
- Turnover (2004): 35 M€
- Infrastructure services:
  - innovation paid for by government
  - cost effective exploitation for higher education and research

SURFnet

SURFnet6 on dark fiber

- SURFnet6 will be entirely based on SURFnet owned managed dark fiber via the customer premises
- Approx. 6000 km fiber pairs available today; average price paid for 15 year IRUs:
  < 6 €/meter per pair
- Managed dark fiber infrastructure will be extended with new routes, to be ready for SURFnet6

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SURFnet6 overview

- A hybrid optical and packet switching infrastructure
- Based on customer-owned managed dark fiber
- Native IPv4, IPv6 and Light Path Provisioning over a single transmission infrastructure
  - Managed via a single control plane
  - Network nodes reduced from 20 routed locations to 2 routed locations

Paving the way to a ubiquitous and scalable Services Grid

SURFnet

Dutch Tier 1 networking

- **SARA connected to SURFnet6:**
  - 10G for commodity IP
  - 10G Light Paths for the LHC OPN, and other projects like DEISA
- **SURFnet connected to GEANT2:**
  - 10G for commodity IP
  - Multiple 10G Light Paths, one will be dedicated for the LHC OPN
- **SURFnet exploring Cross Border Fiber:**
  - With DFN in Germany, e.g. for Dutch T1-German T1 connection

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SURFnet6 status

- Building of optical core and routed core: nearing completion
- Start of pre-production: running as of July, 2005
- Start of production & start of transition: planned for August, 2005
- SURFnet6 has all connected organizations: not later than December 31, 2005
- Start of GE and 10GE light path services: January 1, 2006 network-wide, this quarter for Amsterdam

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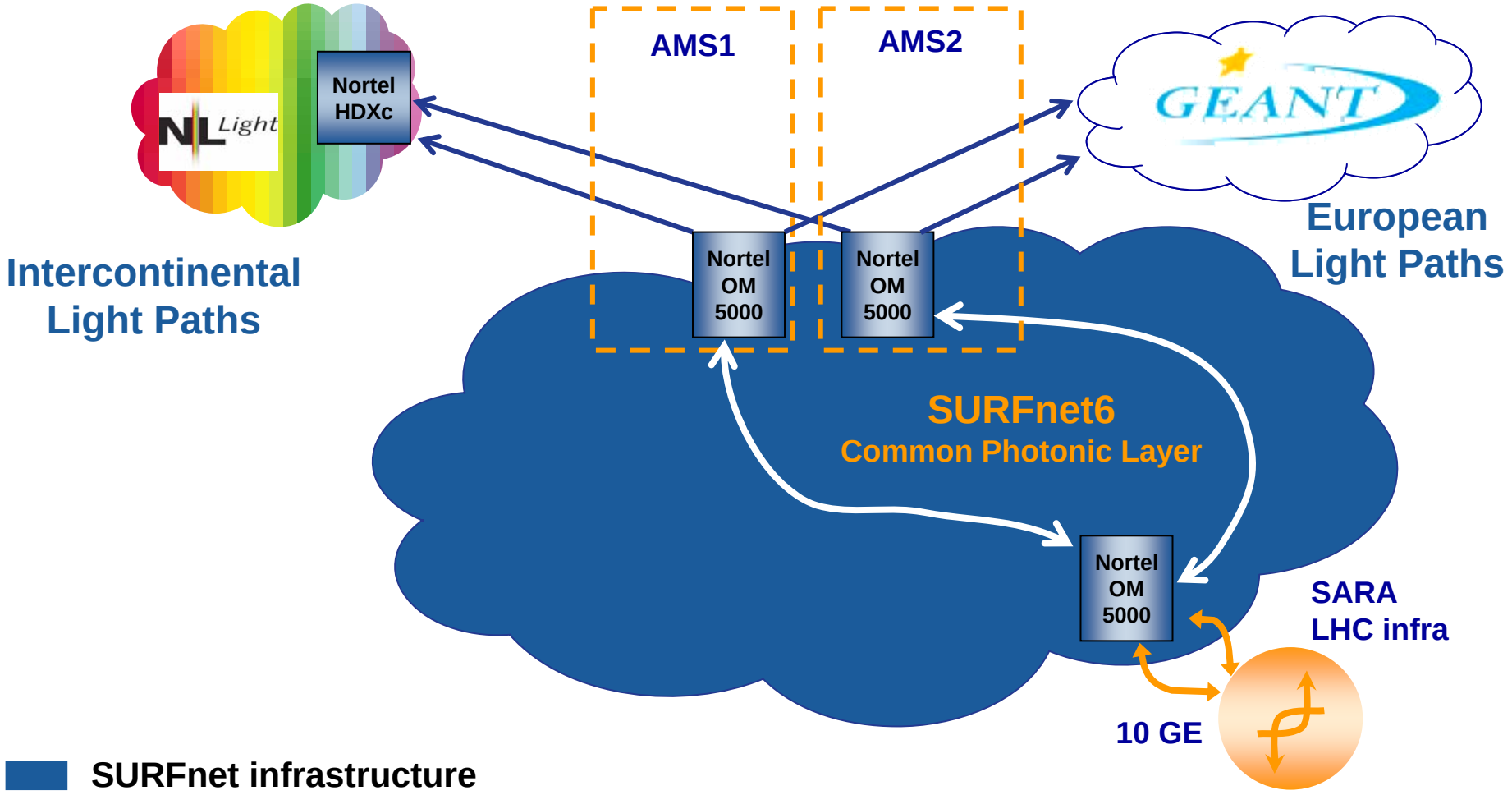
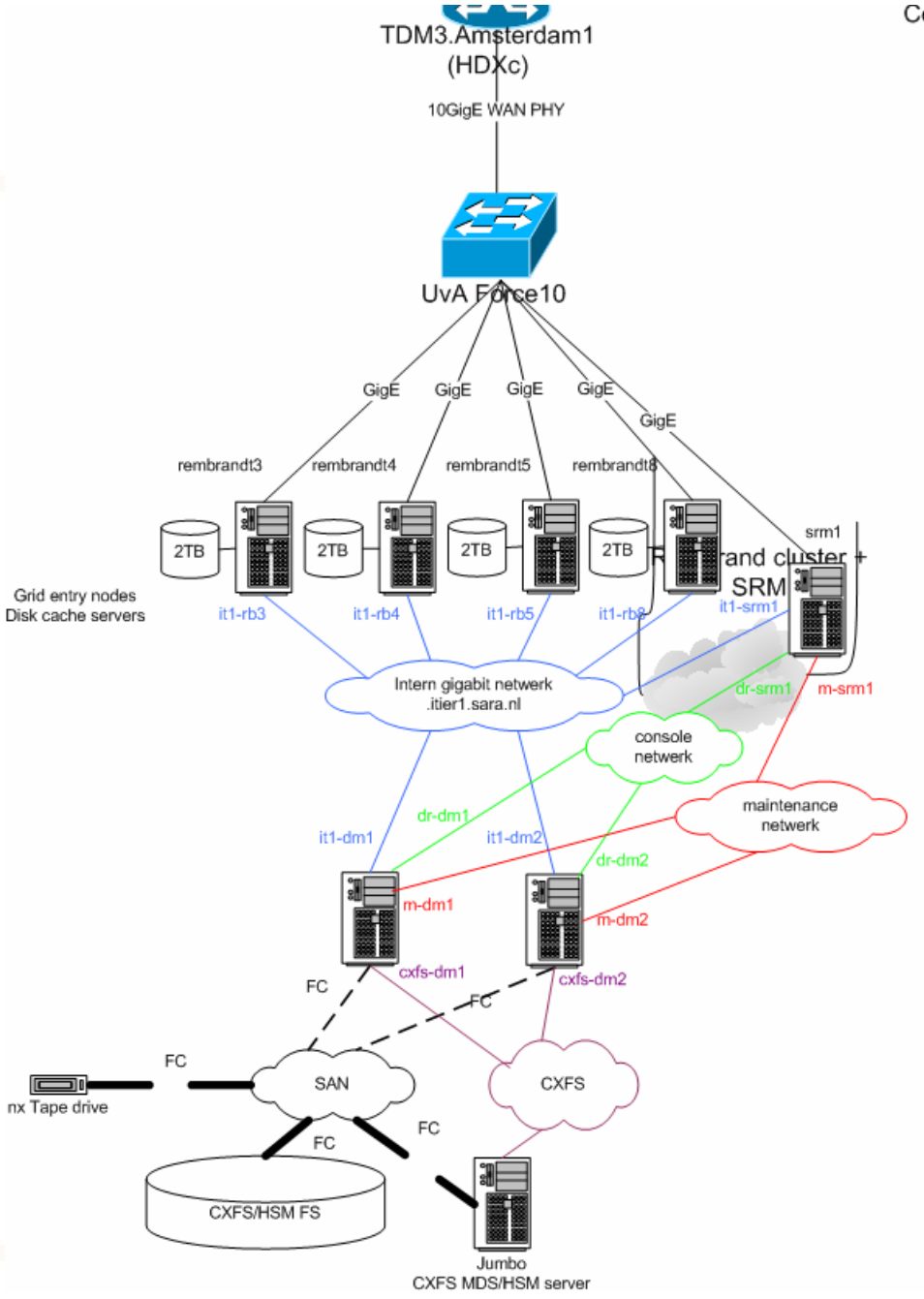
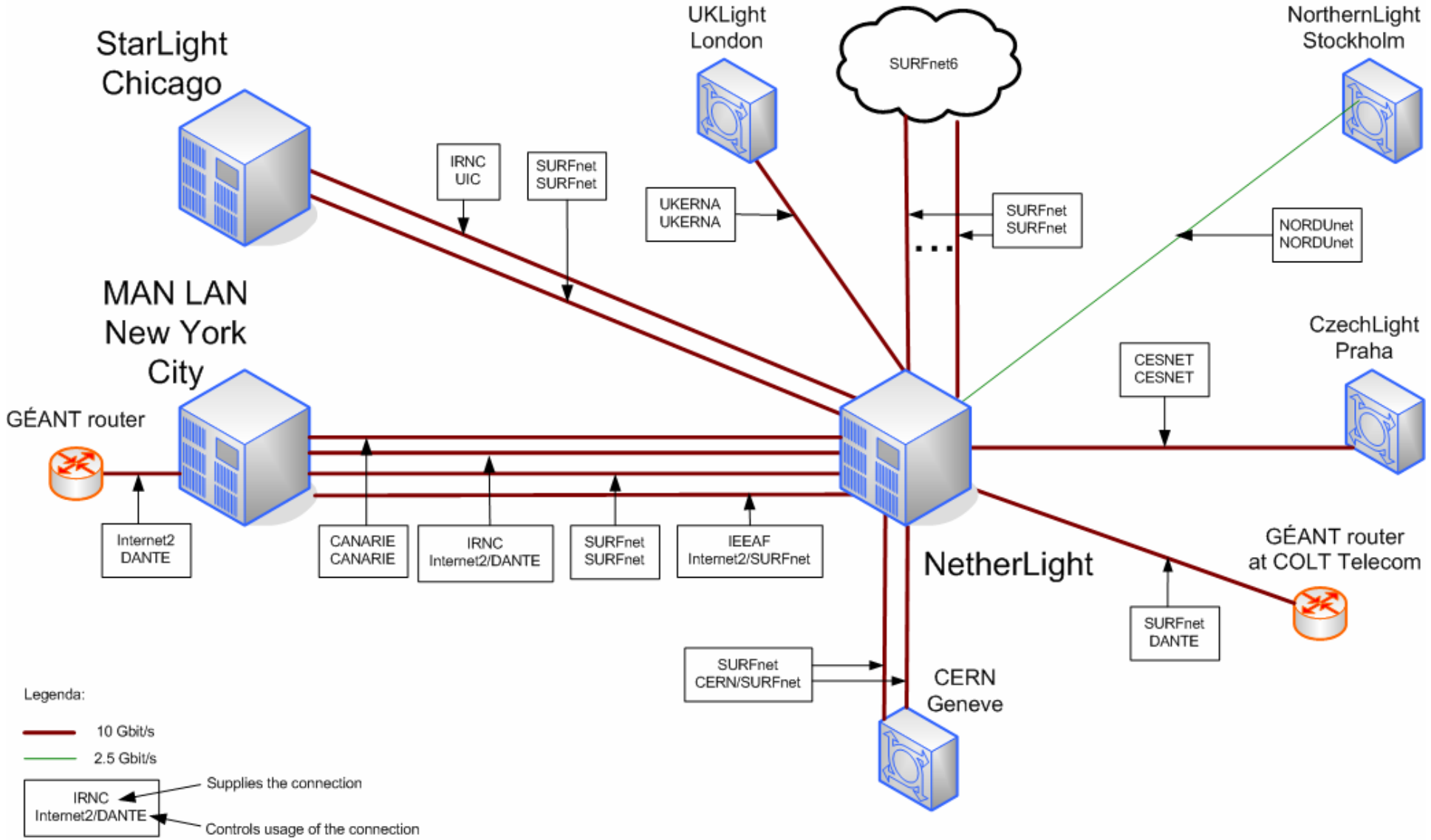
SURFnet6: Light Path Provisioning implementation




TDM3.Amsterdam1
(HDXc)
10GigE WAN PHY
UvA Force10
GigE
GigE
GigE
GigE
GigE
rembrandt3
rembrandt4
rembrandt5
rembrandt8
2TB
2TB
2TB
2TB
srm1
SRM
Grid entry nodes
Disk cache servers
it1-rb3
it1-rb4
it1-rb5
it1-srm1
Intern gigabit netwerk
.itier1.sara.nl
dr-srm1
m-srm1
console
netwerk
maintenance
netwerk
it1-dm1
dr-dm1
it1-dm2
dr-dm2
m-dm1
m-dm2
cxfs-dm1
cxfs-dm2
FC
FC
FC
FC
FC
SAN
CXFS
nx Tape drive
CXFS/HSM FS
Jumbo
CXFS MDS/HSM server

NetherLight lambda connectivity

July/August 2005



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Thank you

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http://www.surfnet.nl/

http://www.gigaport.nl/

http://www.netherlight.net/

http://www.glif.is/

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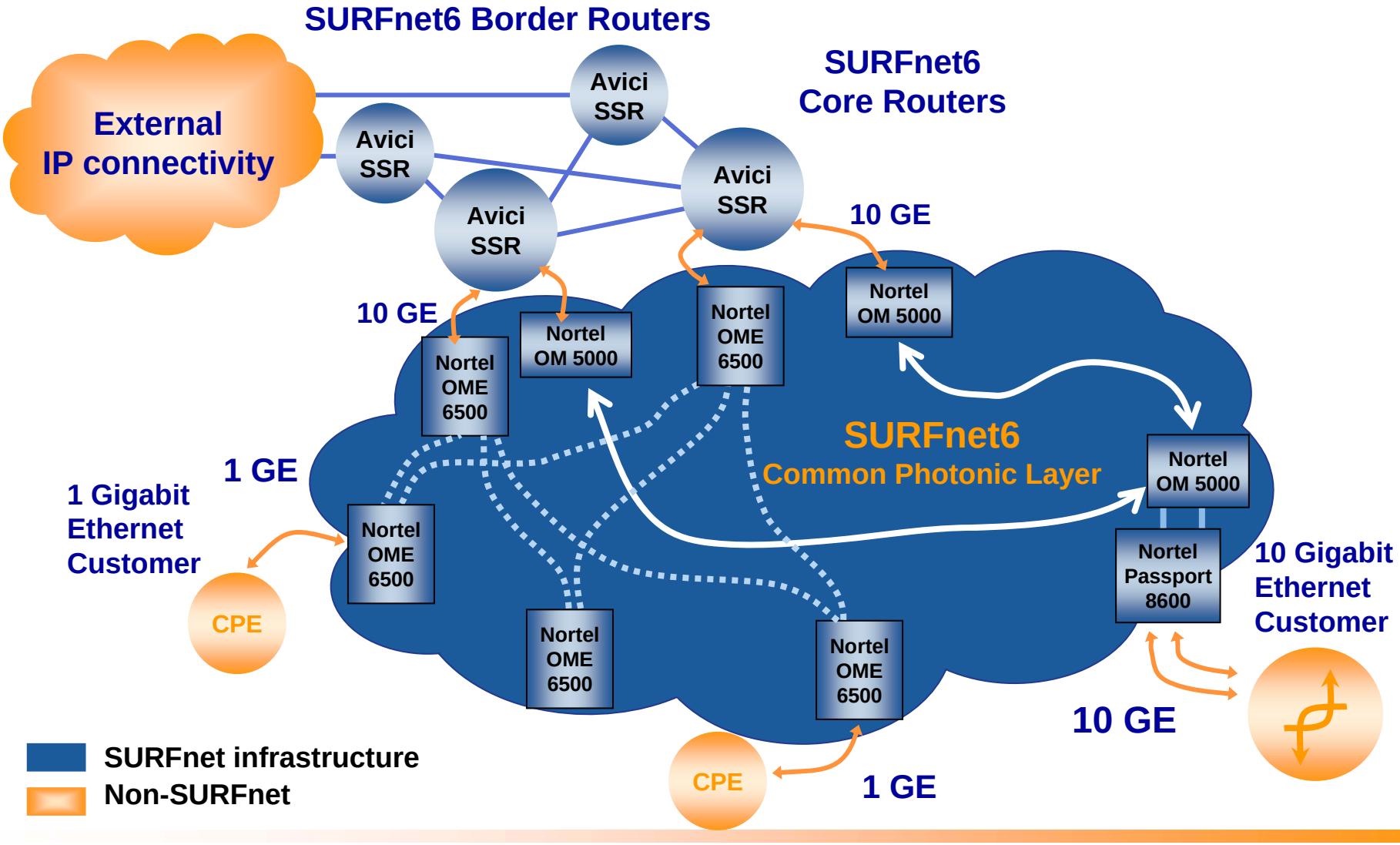
SURFnet6: IP network implementation