DE-KIT 3x100G LHCOPN for DC24

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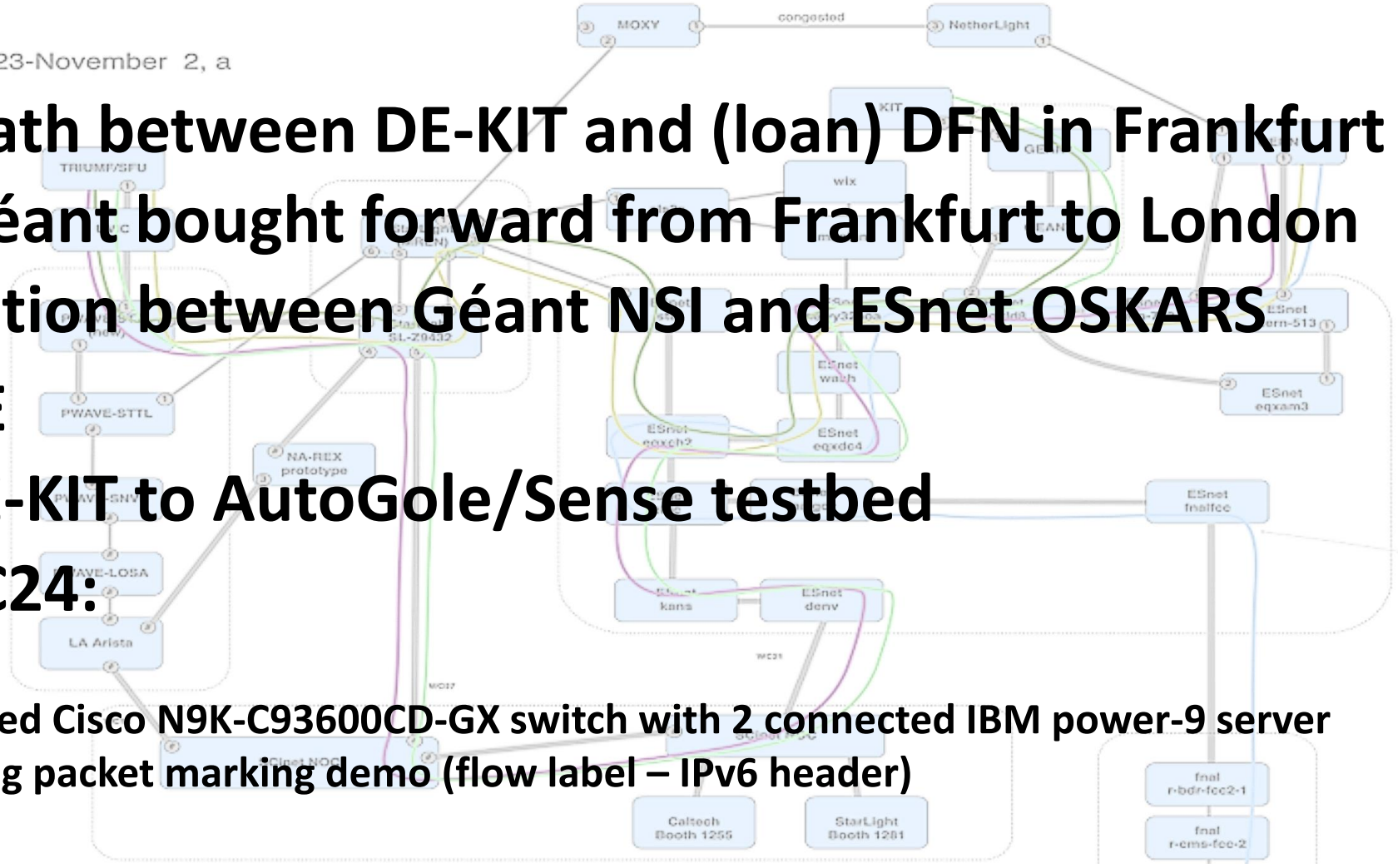
Expected throughput of DC24

25% of LHC-HL → 300Gbps

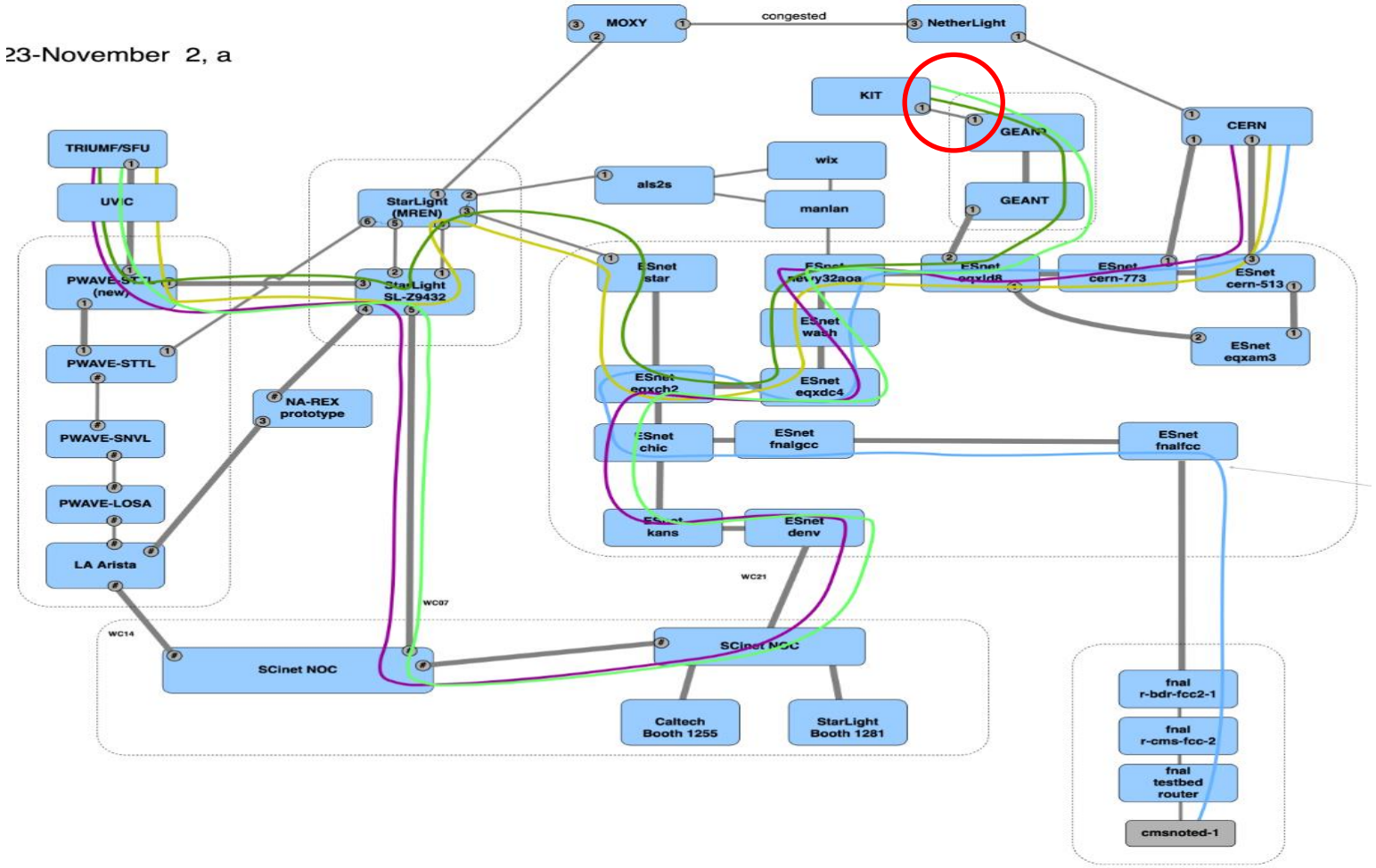
T1	LHC Network Needs (Gbps) Flexible Scenario in 2029	Data Challenge target 2024 (Gbps)
CA-TRIUMF	400	100
DE-KIT	1200	300
FR-CCIN2P3	1140	290
IT-INFN-CNAF	1380	350
KR-KISTI-GSDC	100	30
NDGF	280	70
NL-T1	360	90
NRC-KI-T1	240	60
UK-T1-RAL	1220	310
RU-JINR-T1	400	100
US-T1-BNL	900	230
US-FNAL-CMS	1600	400
(atlantic link)	2500	630
Sum	9620	2430

short history



- **additional light path between DE-KIT and (loan) DFN in Frankfurt**
- **the link was by Géant bought forward from Frankfurt to London**
- **in London connection between Géant NSI and ESnet OSKARS**
- **capacity of 100GE**
- **for connecting DE-KIT to AutoGole/Sense testbed**
- **established for SC24:**
  - **NOTED demo**
  - **Autogole/Sense controled Cisco N9K-C93600CD-GX switch with 2 connected IBM power-9 server**
  - **Two server for the SCItag packet marking demo (flow label – IPv6 header)**

short history -- autogole/Sense



Additional 100G for WLCG-DC24

- via DFN/Géant
- seperate and dedicated 100G Lightpath
- only possible with longterm contract (3 to 5 Years)
- this approach was not followed up further

Keep the 100G connection

next idea:

- **keep the 100G connection from DE-KIT to DFN Frankfurt and to Géant Frankfurt and further Géant Frankfurt to London**
- **Géant NSI to ESnet OSKARS**
- **via ESnet London to Esnet CERN Geneva**
- **use AutoGole/Sense for controling and establishing the connection**
- **connect via the 2*400G and/or 2*200G Esnet / CERN interfaces**
- **load share BGP sessions**

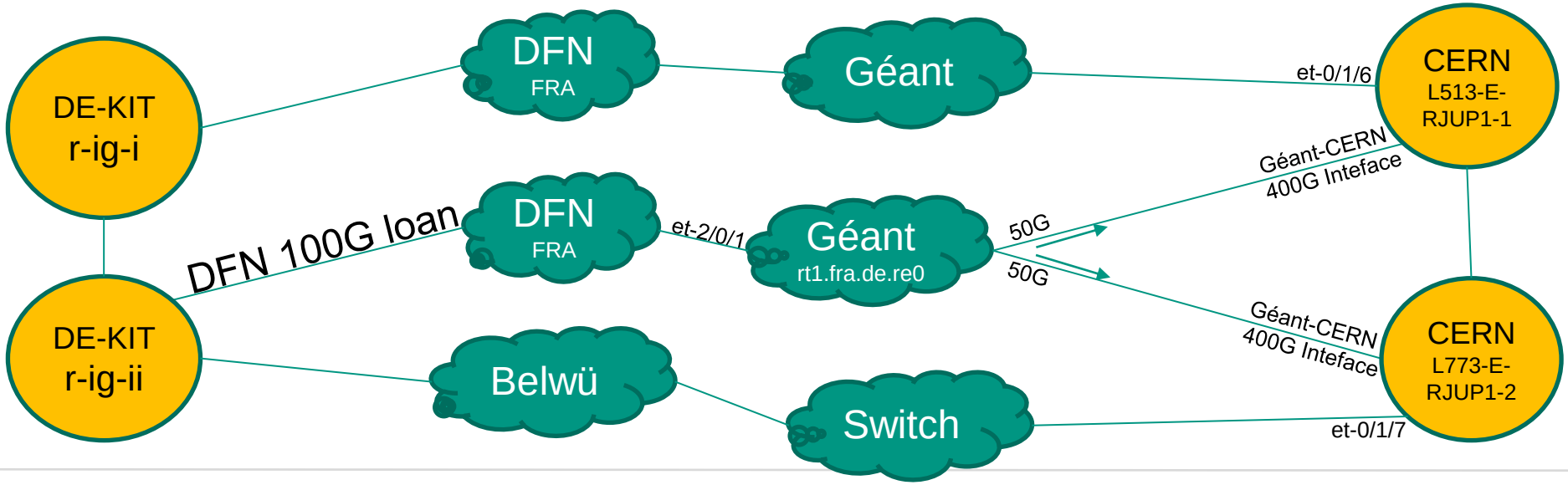
Keep the 100G connection

Final approach:

LHCOPN – Connecting DE-KIT to CERN → 2*100G

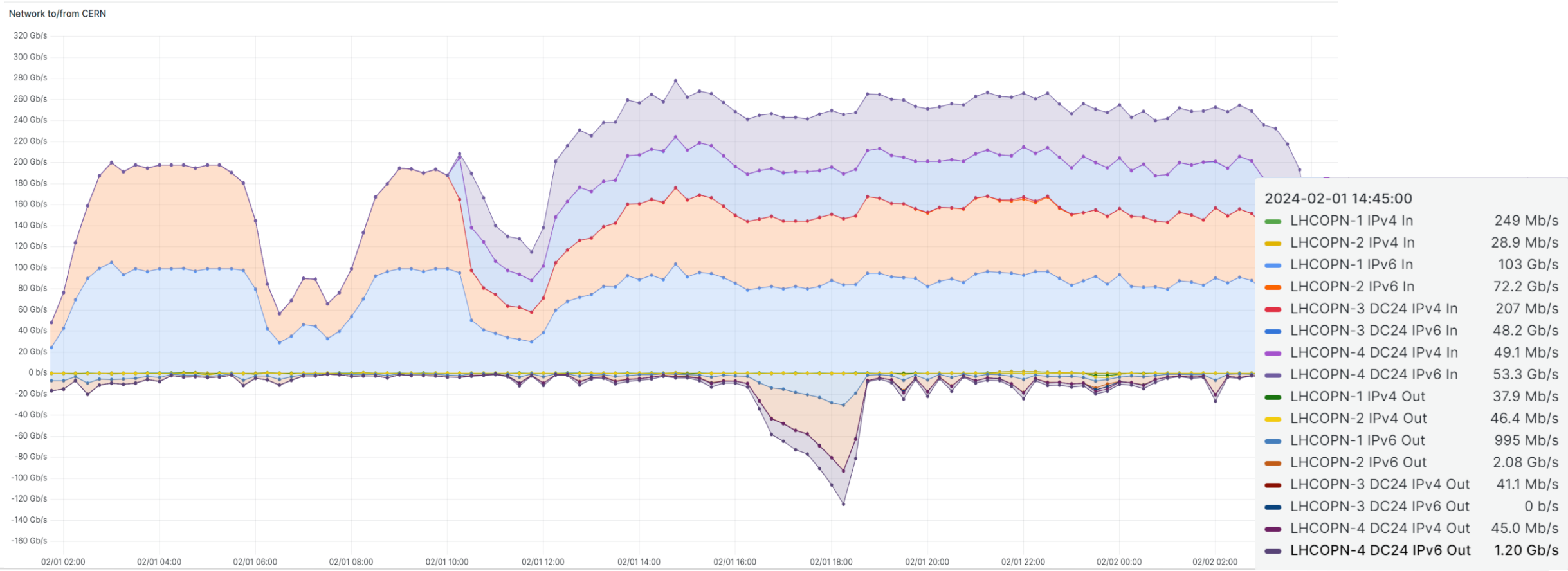
additional 100G LHCOPN DE-KIT to CERN

- **DFN loan of 100G DE-KIT to DFN PoP Frankfurt incl. link to Géant Router in Frankfurt**
- **Géant Frankfurt to Géant Geneva**
- **Splitting the 1x100G to 2x50G as overlay to the 2x400G CERN/Géant interfaces**
  Establish over each uplink two BGP sessions (seperate IPv4/6)



Equal distribution

- close to load sharing between the 4 IPv6 VLANs
- up to 280Gbps



new CIDR

DE-KIT → IPv6 CIDR change

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reorganizing internal structure
DE-KIT (AS58069) changed the advertised IPv6 CIDR

- from 2a00:139c::/45
- to 2a00:139c::/40

Please adjust if necessary your filter for allowing the new CIDR

- 2a00:139c::/32 will be reserved for DE-KIT completely

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thanks for your attention