GÉANT IP platform update

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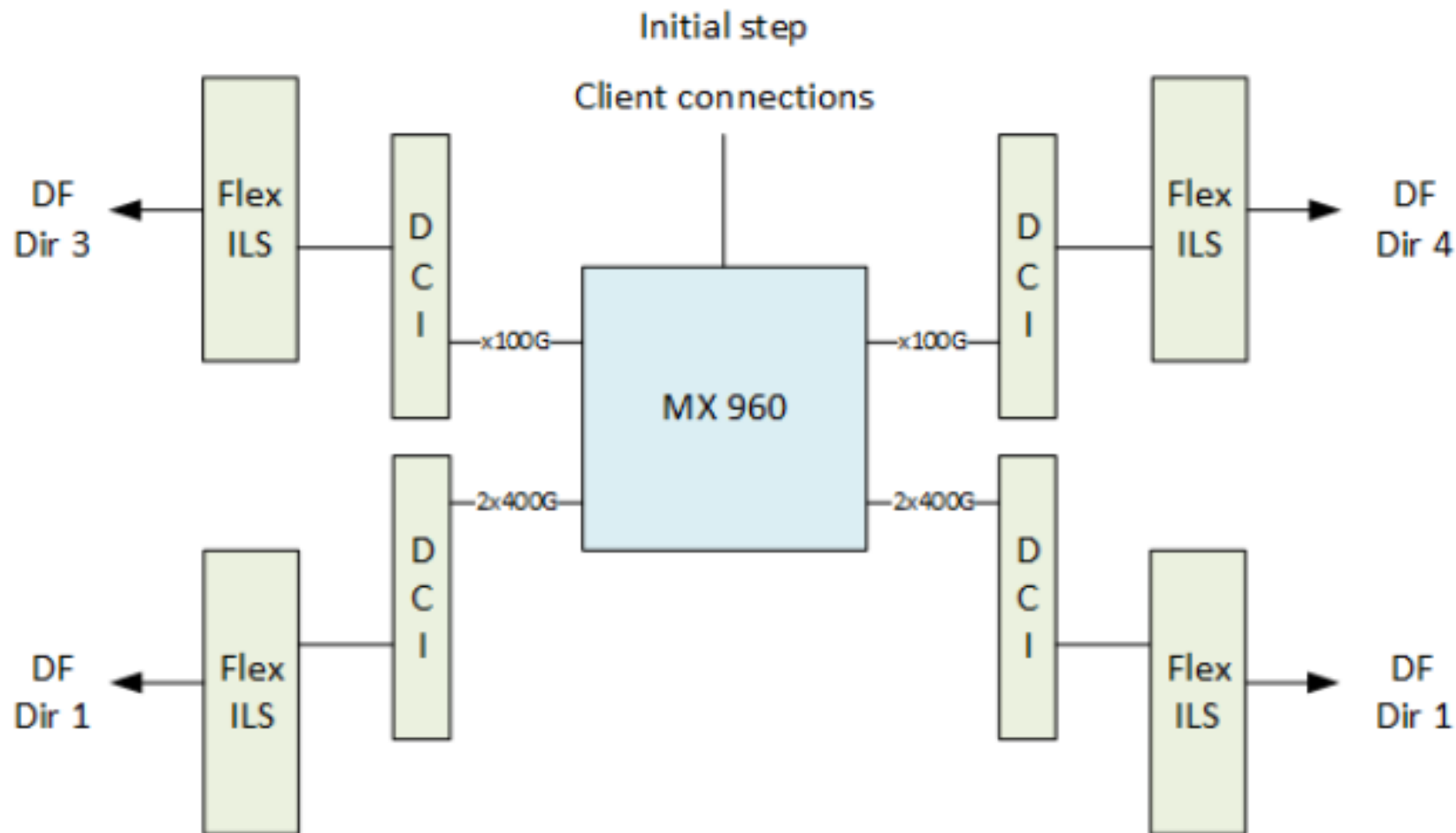
Migration process – High-level overview

1. Deploy NOKIA routers – basic connectivity

2. Base config and initial IP connectivity

3. Trunk migrations

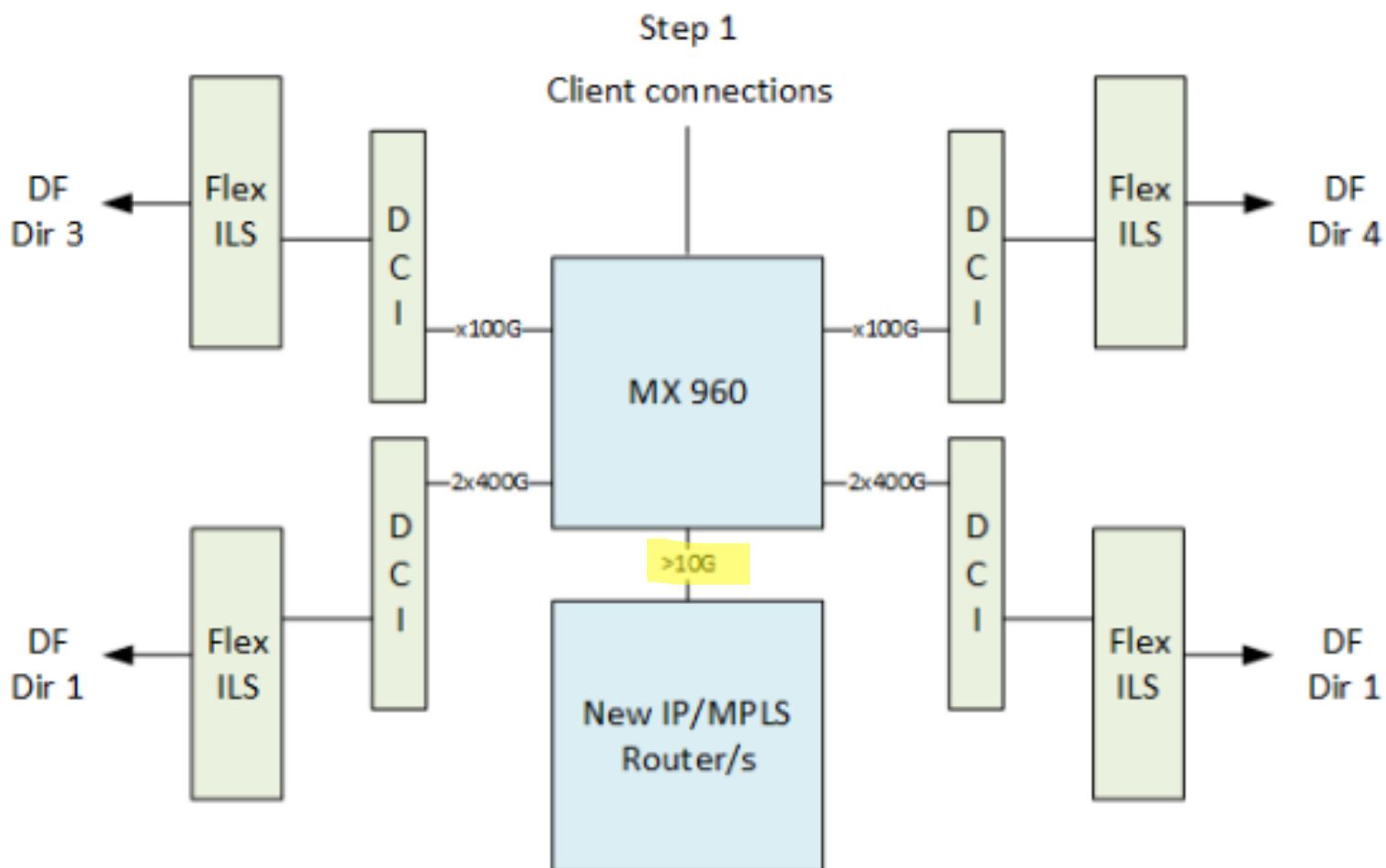4. Service migrations

5. Old Juniper routers recovery

Trunk Migrations – Existing connectivity

DCI = transmission layer transponder, FlexILS = transmission layer terminal node, DF Dir = dark fibre
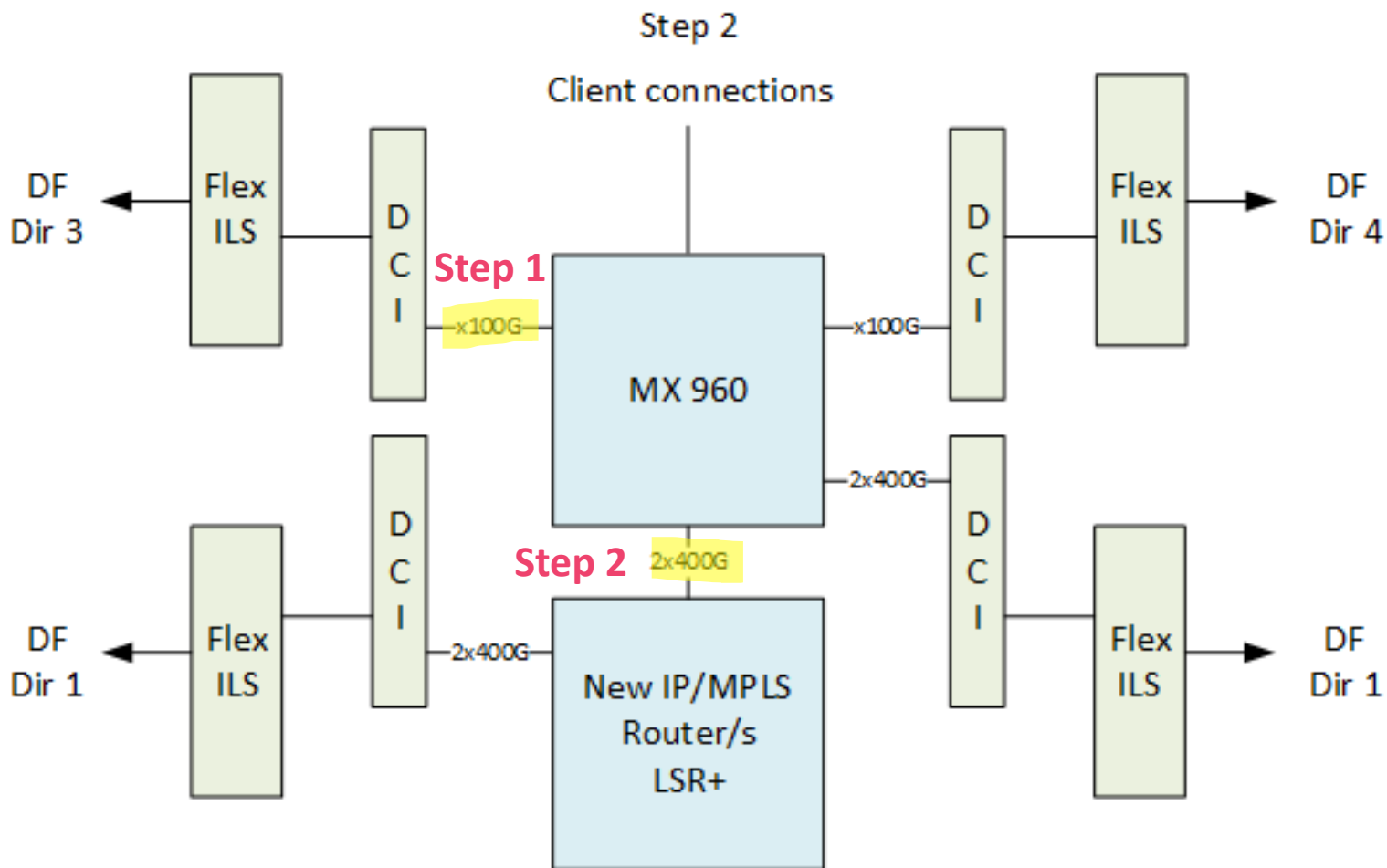
Trunk Migrations - Initial NOKIA connectivity

Connectivity after installation:
- 2x 10G to Juniper PE router
- OpenGear out-of-band
- PoP Switch connectivity

Trunk Migrations – Phase one

Step 1:
- Raise ISIS value & migrate a high bandwidth IP trunk from the Juniper PE -> NOKIA P router
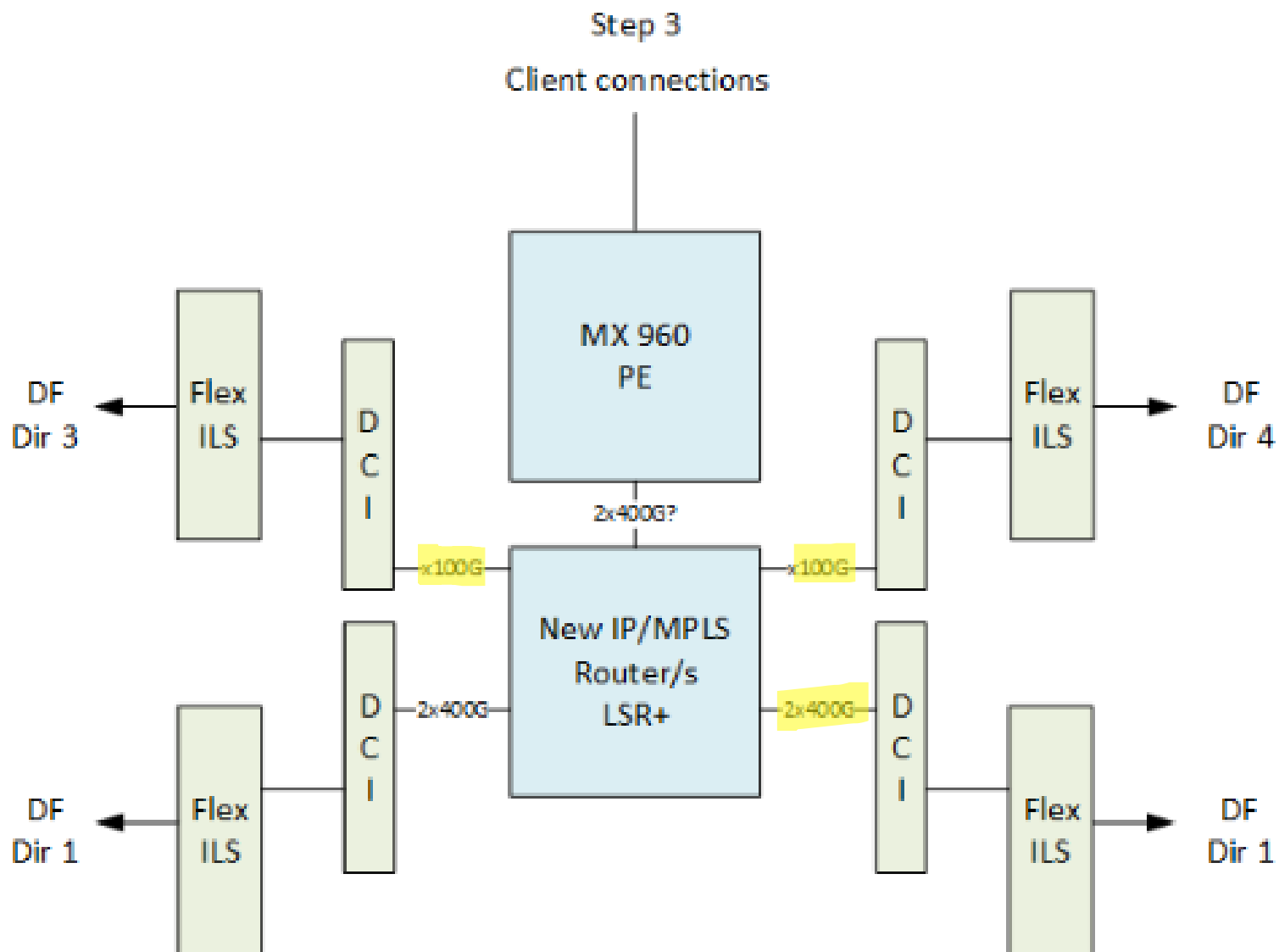
Step 2:
- Re-use the (now) unused 2x400G ports on the Juniper MX to upgrade the P->PE IP trunk

Step 3:
- Pause…..
  - Check stability
  - Check OSS/BSS
  - Re-build trunks in IMS

Trunk Migrations – Phase two

Step 3

Client connections

MX 960 PE

2x400G?

x100G x100G

New IP/MPLS Router/s LSR+

2x400G 2x400G

DF Dir 3

Flex ILS

DCI

DCI

Flex ILS

DF Dir 4

DF Dir 1

Flex ILS

DCI

DCI

Flex ILS

DF Dir 1

Step 4 (24 hours later):
- Migrate remainder of IP trunks

Step 5:
- Check stability
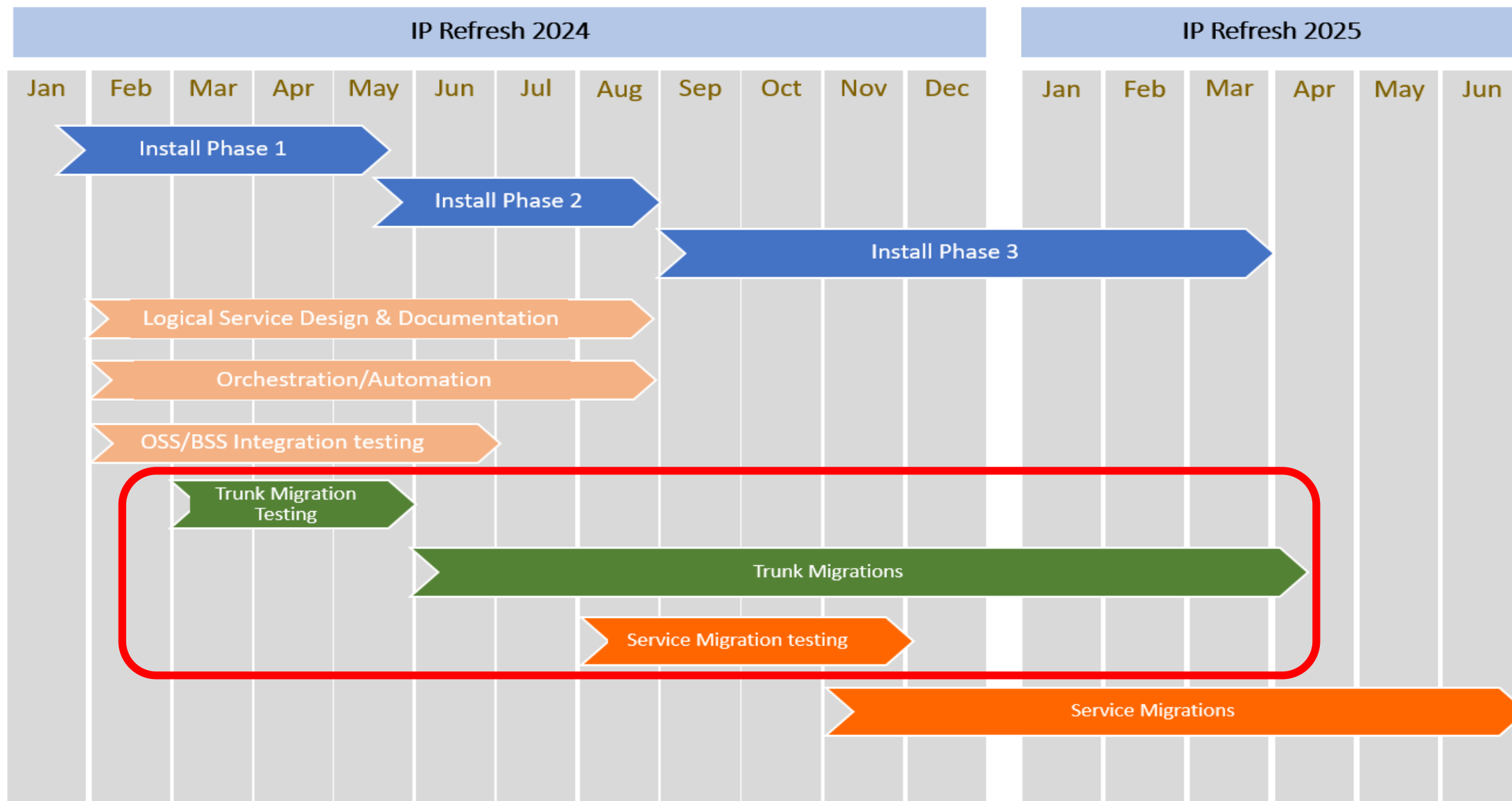- Check OSS/BSS
- Re-build trunks in IMS

Trunk Migrations – impact

- Little impact expected for NREN traffic

- Trunk migrations expected to be carried out during normal working hours

- Usual 10 day maintenance notice to be issued

- May adopt a different approach to smaller phase 3 sites
  - Trunk and service migrations may be completed in the same time frame

Challenges so far….

- New vendor, new hardware, new software, new partner….

- New delivery mechanism (automation)

- Limited lab resource – in high demand!
  - Hardware and software testing
  - Partner testing
  - Migration testing
  - OSS/BSS testing
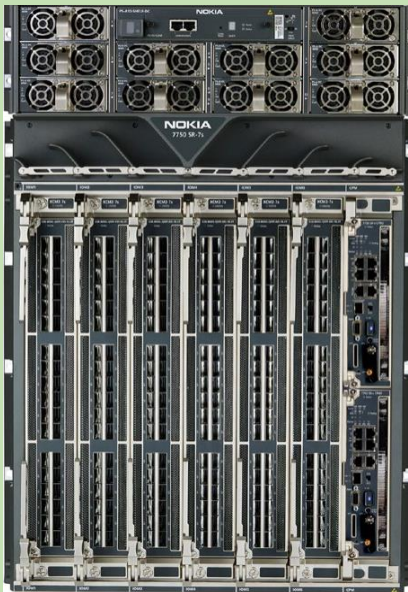
- Some initial delays in hardware supply

Timeline Summary

Site list

Tier 1 (SR7)	Tier 2 (SR7)	Tier 3 (SR2se)	
☑ Amsterdam	⧖ Hamburg	Marseille	Brussels
☑ London 1	⧖ Prague	Dublin	Bucharest
☑ London 2	⧖ Poznan	Cork	Porto
☑ Frankfurt	⧖ Vienna	Lisbon	Athens
☑ Paris	⧖ Milan	Luxembourg	Tartu
☑ Geneva		Sofia	Bratislava
		Kaunas	Riga
		Stockholm	Stockholm
		Belgrade	Bilbao
		Madrid	Budapest
		Ljubljana	Zagreb

Service Migrations – Current status

- Low Level Design still being formulated between GÉANT, NOKIA and NOMIOS
- Method for service migrations to be decided after extensive lab testing is completed
- Significant amount of integration work with Inventory Management System
- Extensive use of automation

Thank You

Any questions?

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