

SA NREN Connectivity

SA3CC Meeting

20 April 2022

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Executive Officer: Technical and Operations



Outline

- International Connectivity
- International R&E Exchange Points
- Africa Continental Interconnects
- National Connectivity

International Connectivity

- International Gateway Nodes
- Submarine Cable Systems
 - SACS 100G
 - WACS 60G (100G)
 - SAT3 20G
 - EASSy 20G
 - SEACOM 60G (100G)

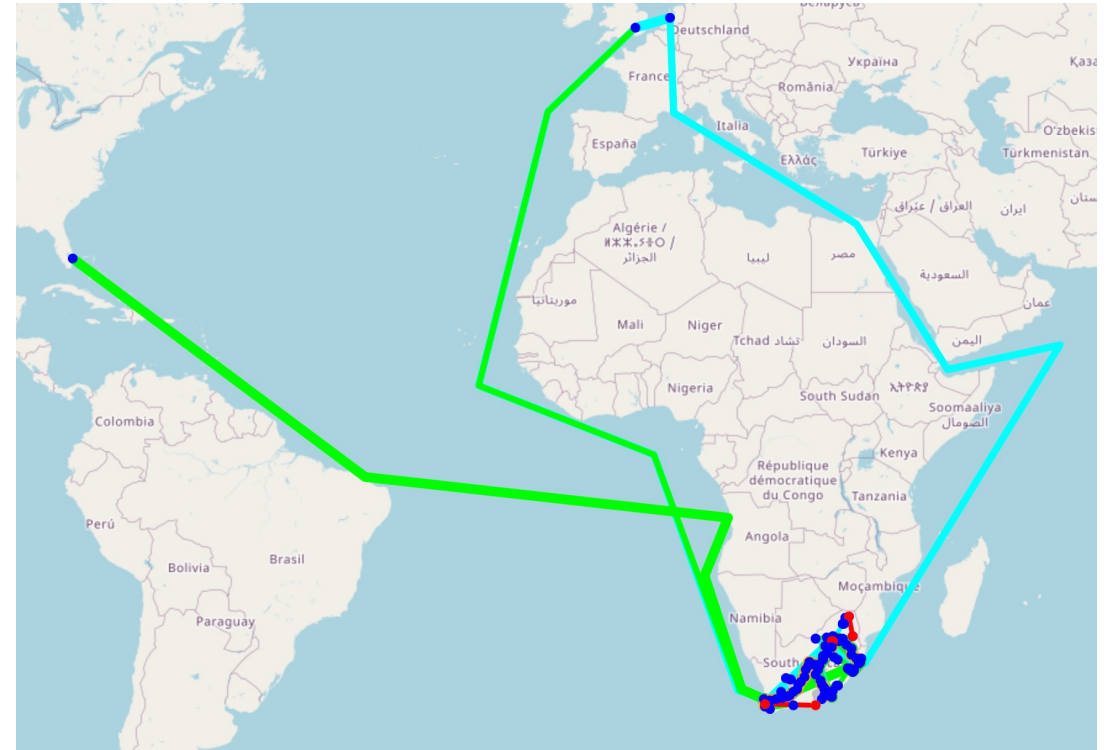


Image: linkmon.sanren.ac.za/nrenmap/

International R&E Exchange Points

ZAOXI

Cape Town



Miami



London



Amsterdam

Africa Continental Interconnects

- UbuntuNet Alliance
 - Cape Town
 - Mtunzini
 - Johannesburg (planned)
- WACREN
 - Cape Town (planned)

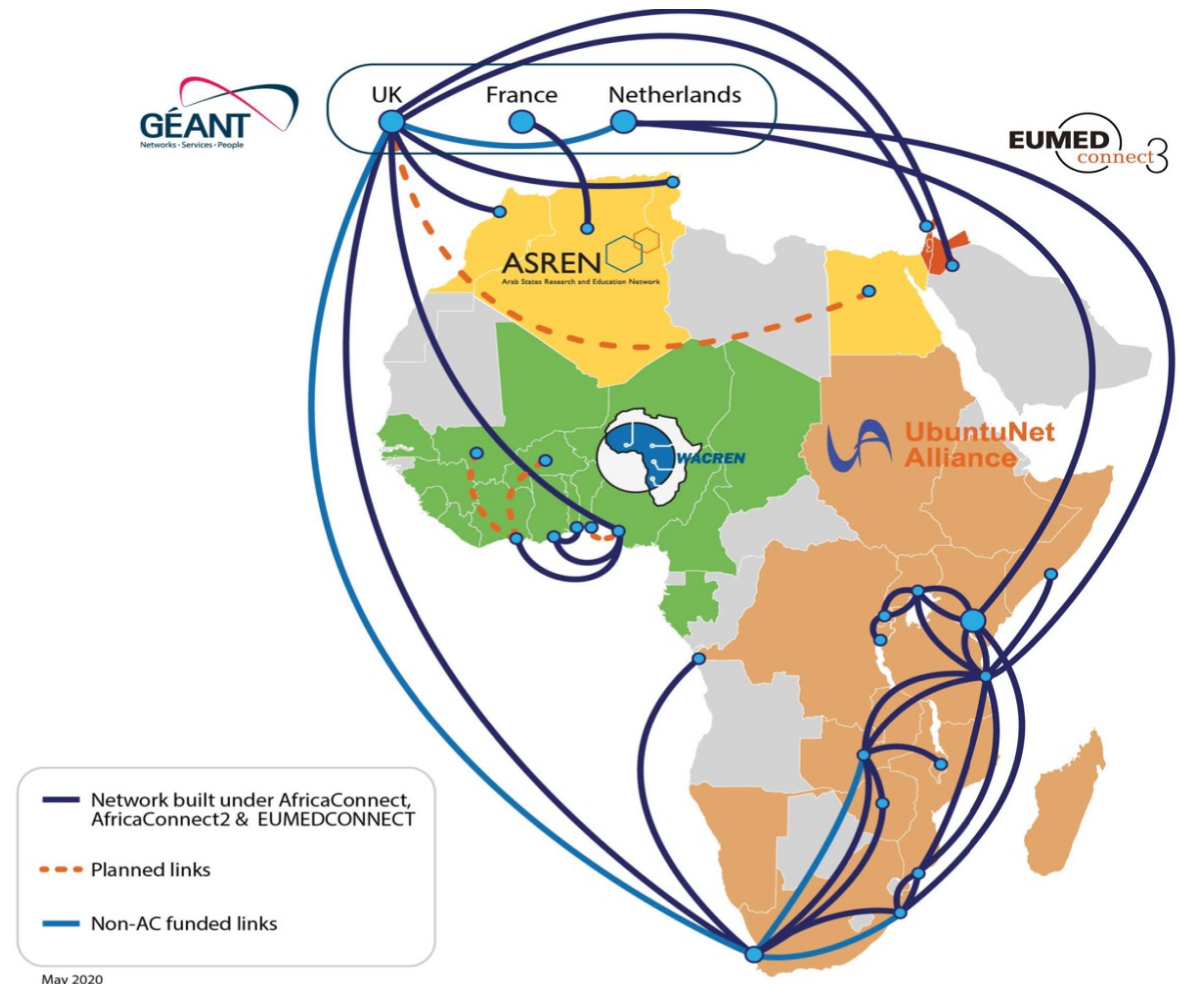
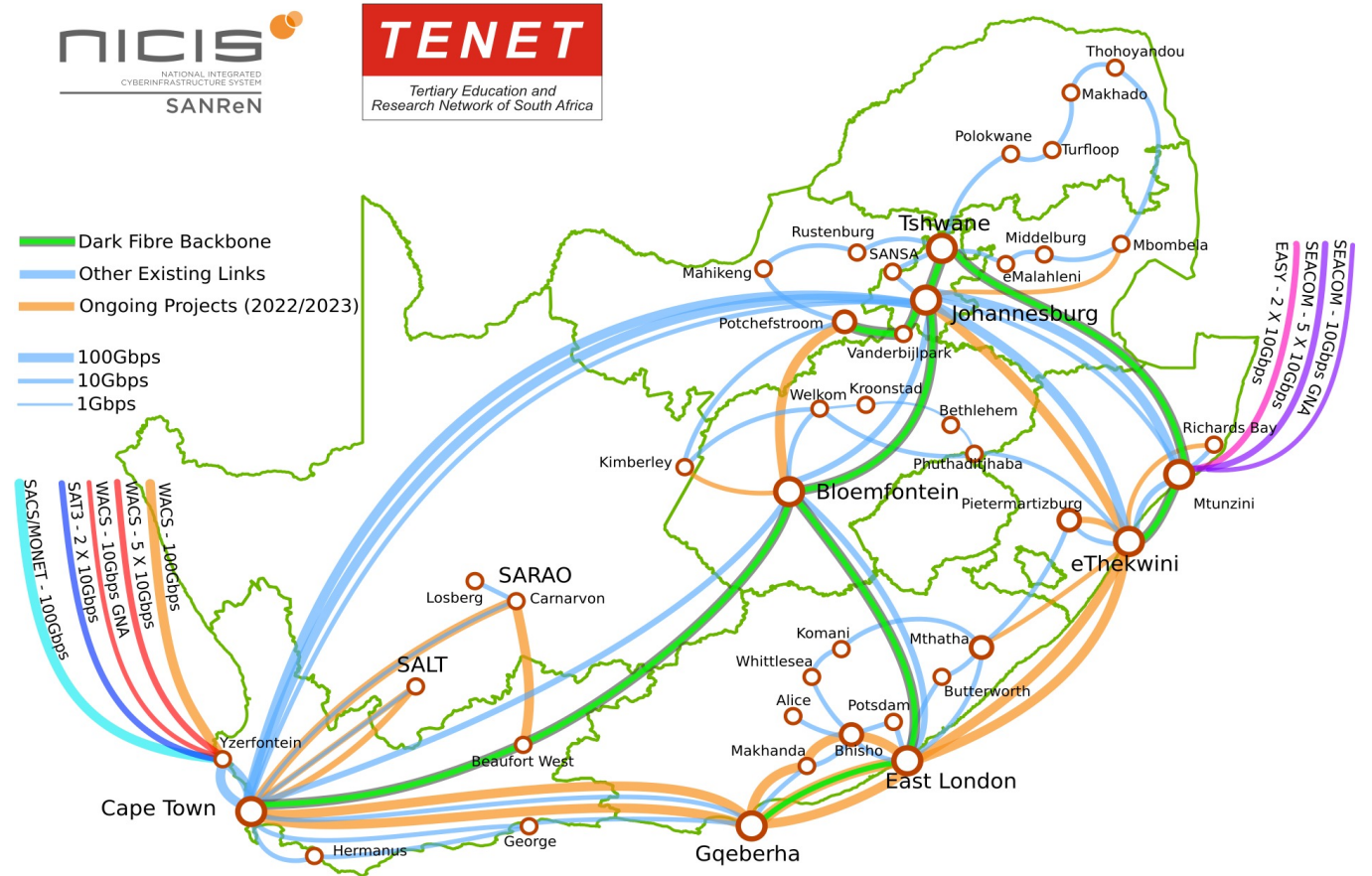


Image: AfricaConnect3

National Connectivity

- All Universities and Research Councils Connected
- Backbone
 - Managed 10G Links
 - DWDM (100G/200G transport)
 - 100G IP/MPLS Links



South African NREN - 2022-04-20 [John Hay]

National Connectivity

DWDM Backbone

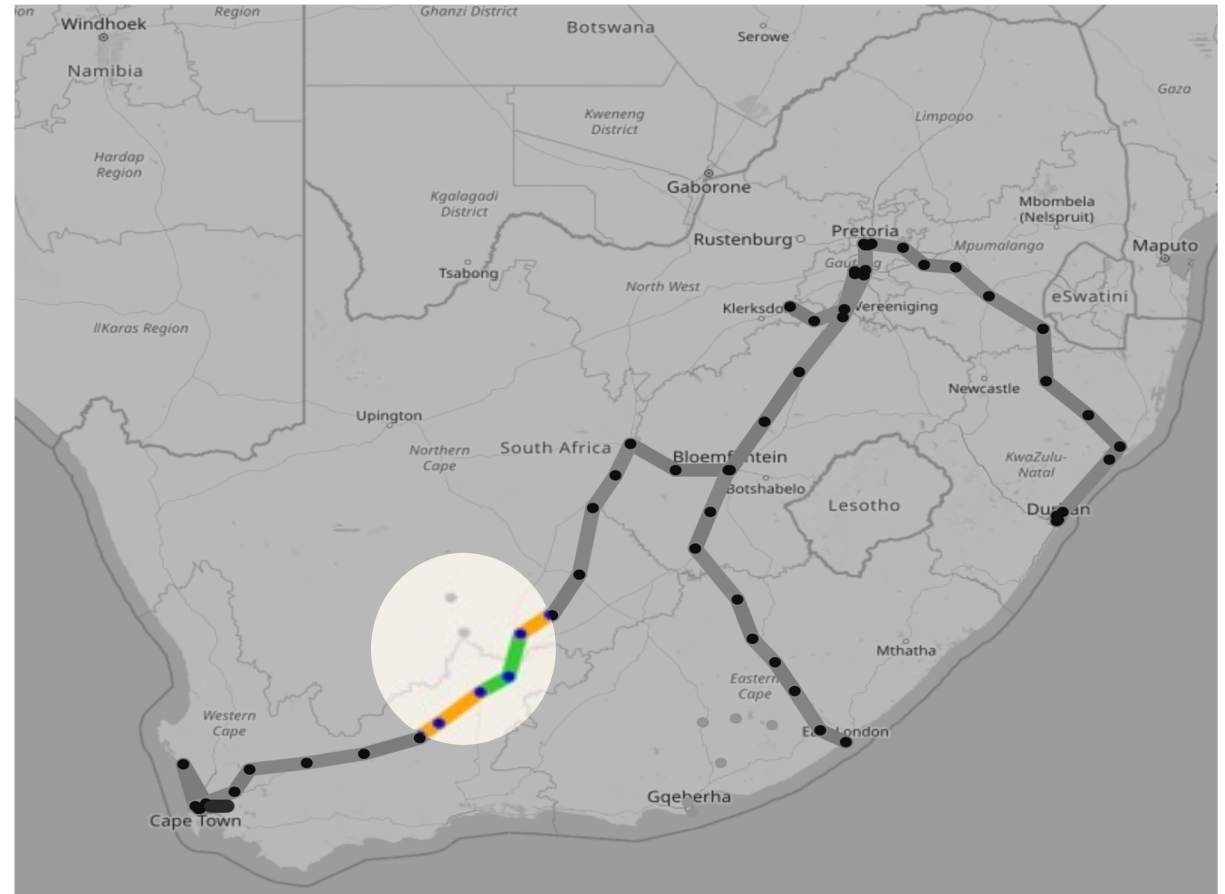
- 96 Channel – Gridless and Directionless Optical Line System
- 100G DWDM Transport – Long Haul
- 200G DWDM Transport – Metro



National Connectivity

DWDM Backbone

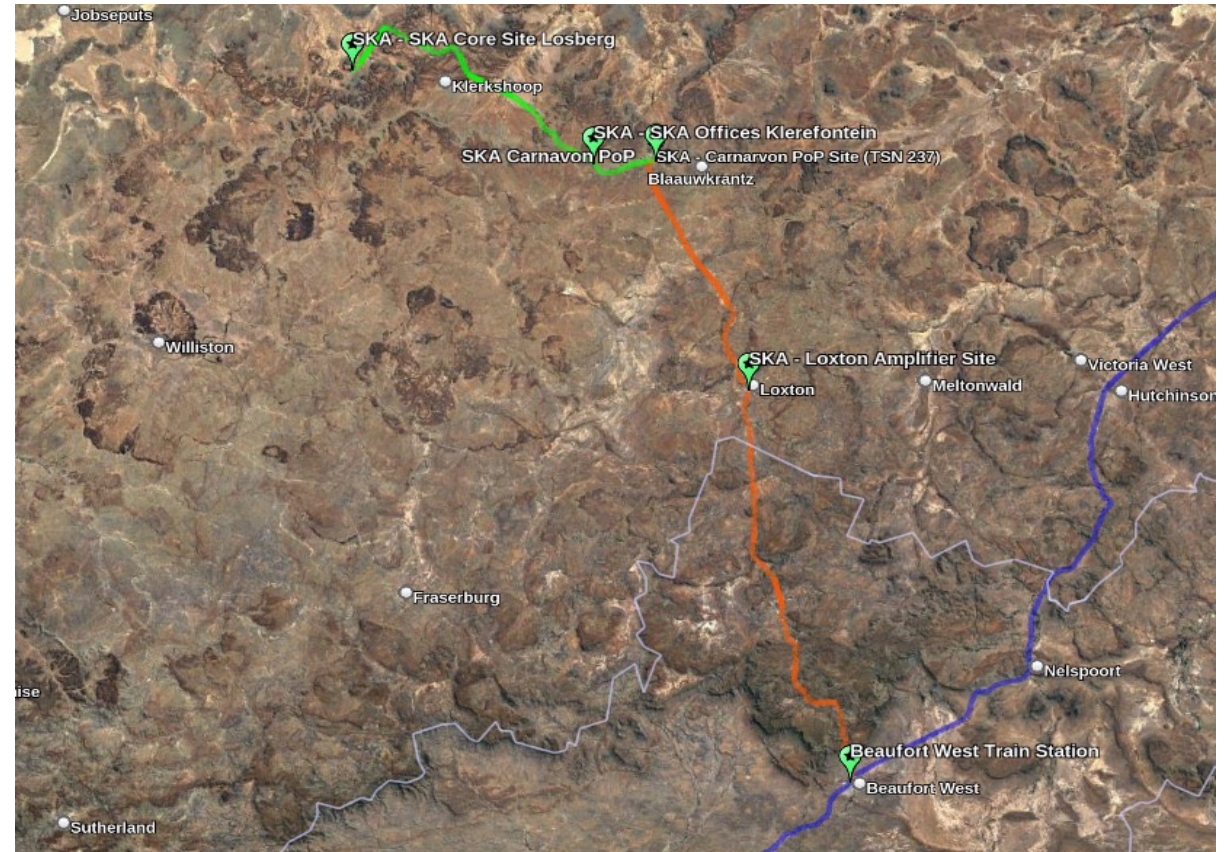
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National Connectivity

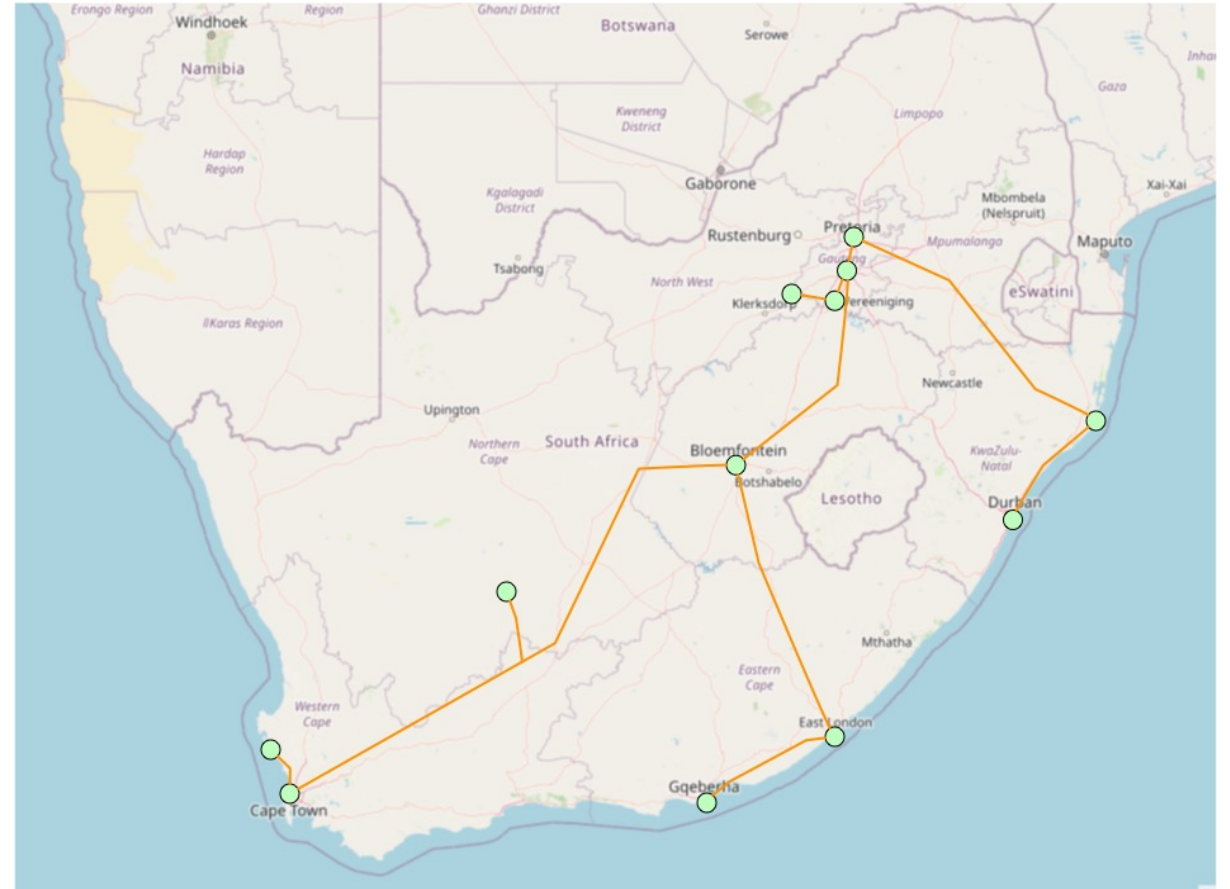
DWDM Backbone – SARA/OKA

- Green - Existing Fibre
- Orange - New Fibre build
 - 174km
 - Environment Impact Assessments - Complete
 - Wayleave Negotiations Underway



National Connectivity Managed 100G Backbone

- 100G Managed Link to improve resilience



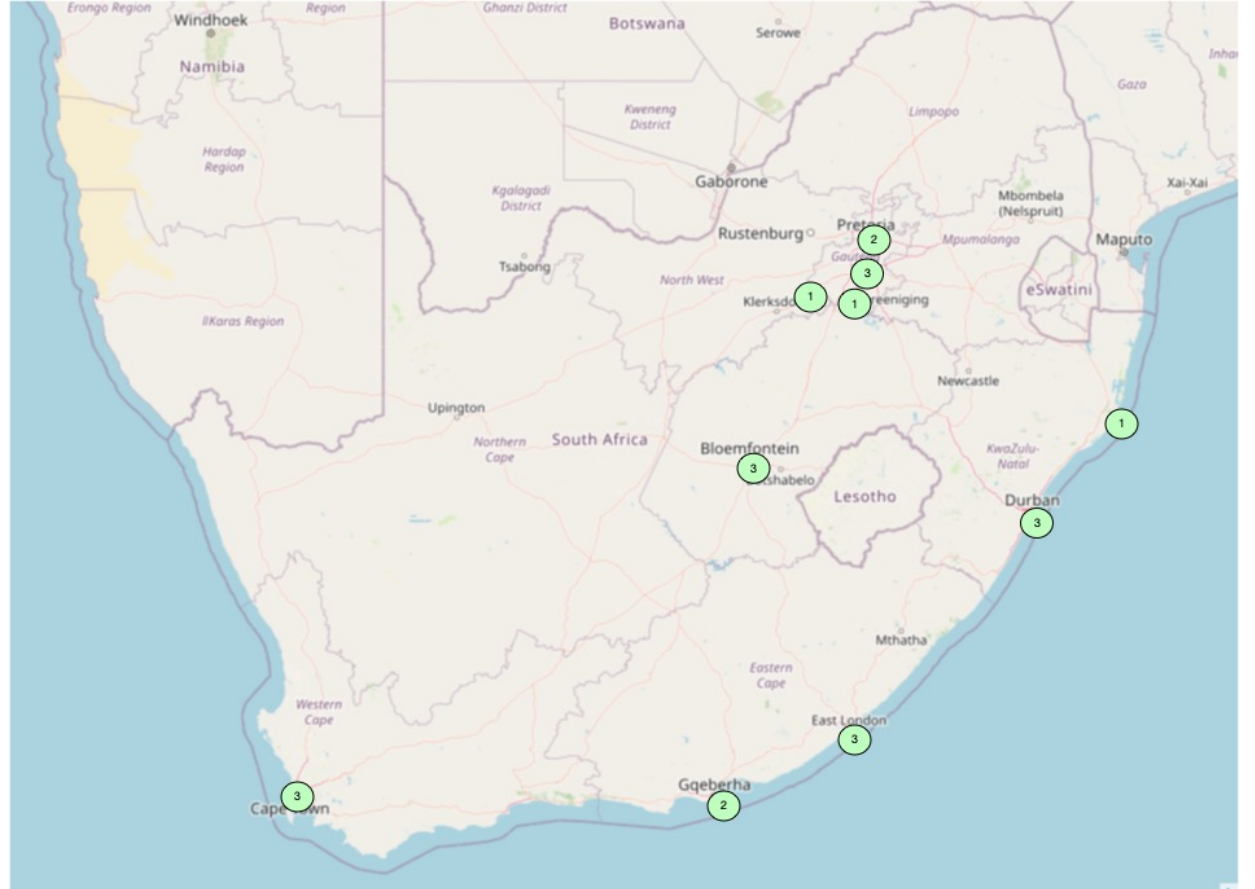
National Connectivity Managed 100G Backbone

- 100G Managed Link to improve resilience
- Close DWDM Spurs
- Using alternate fibre routes



National Connectivity 100G Router Upgrade

- All backbone Nodes Required Upgrades
 - 3 Nodes Remaining
- Migrate from production 10G platform



National Connectivity

100G Router Upgrades

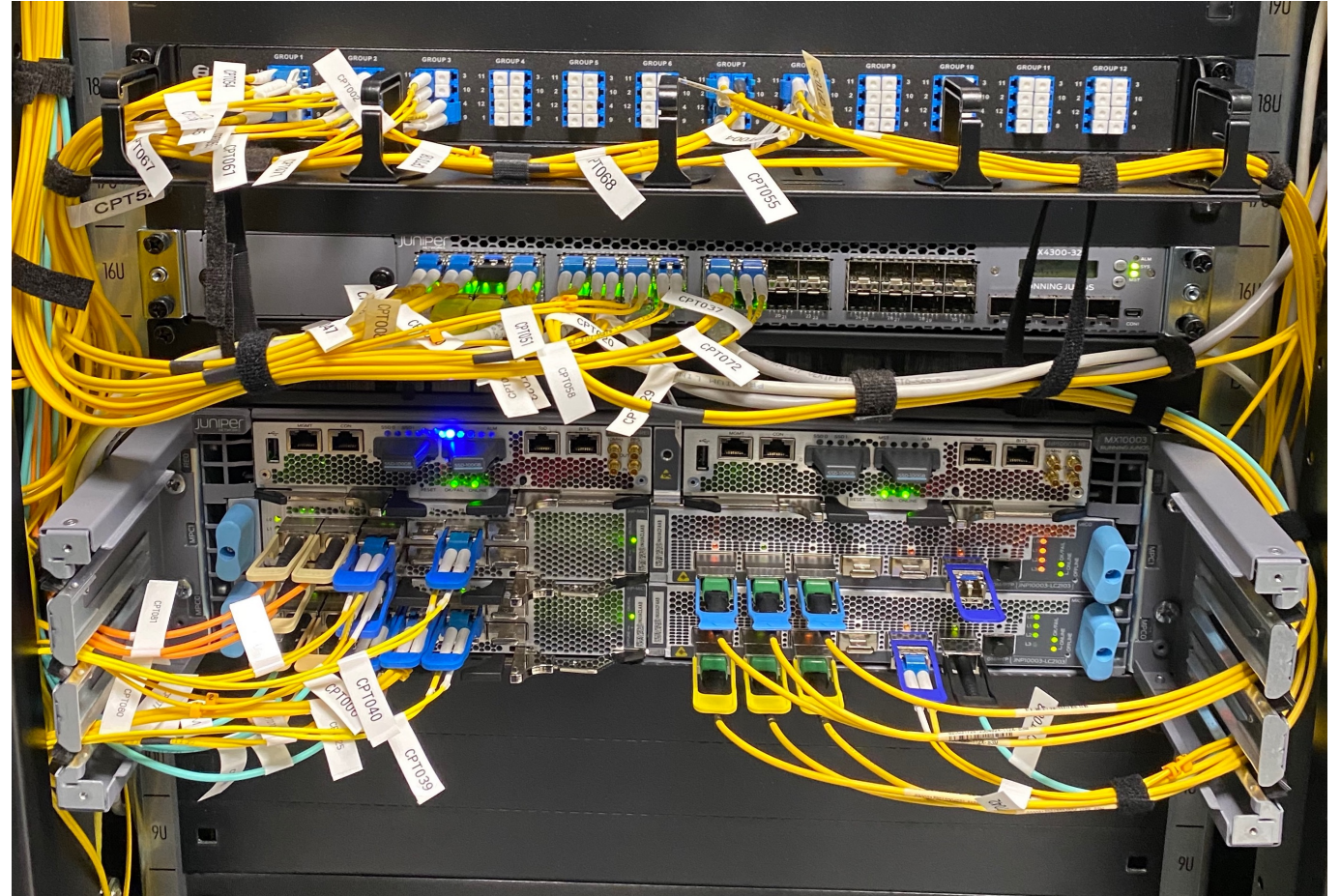
- Medium Density 100G Routing Platform
- Terminate DWDM and managed 100G links
- Terminate 10G and 1G links



National Connectivity

100G Router Upgrades

- Full Node
 - MPO breakout panel
 - 1G Satellite Node
 - 100G Router
- Footprint reduction from 21U to 7U



Thank you

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