DARE1

DJIBOUTI AFRICA REGIONAL EXPRESS

Djibouti
DJIBOUTI

BOSASO
SOMALIA

Mogadishu
SOMALIA

Mombasa
KENYA

DARE1 CABLE SYSTEM

INTRODUCTION

▶ In early 2015, Djibouti Telecom decided to build a new regional submarine cable system DARE1 (Djibouti Africa Regional Express1).

▶ Landing across 3 countries and 4 cities, the network will cover 5,000km and will have a capacity per wavelength of 100Gbps.

▶ Owned by a consortium of East African telecom operators the project is estimated to cost $86m.

▶ As part of the Djibouti Vision 2035 strategy this project will bring much needed fibre optic to the region and has unanimous support across all stakeholders.
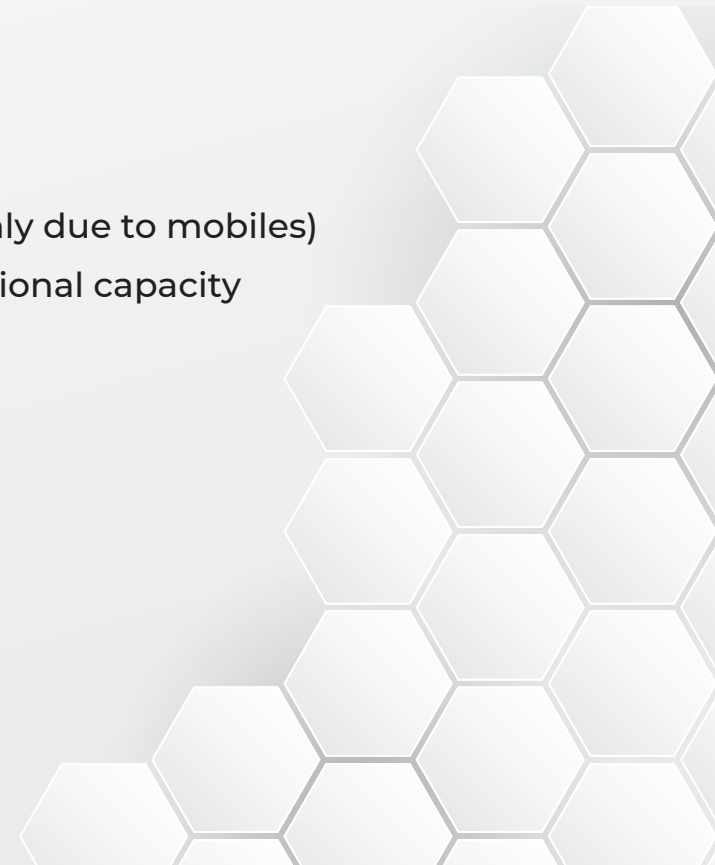
WHY THIS INITIATIVE?

▶ **While we promoted international connectivity, our region is still widely underserved**

- Single optical connection to Mogadishu (EASSy)
- No consortium's cable landing in Yemen for more than 20 years

▶ **Strong Regional ICT Sector Growth**

- Clearly recognized as "the" driver for economic growth in Africa (mainly due to mobiles)
- Growth extremely sensible to the availability of large & cheap international capacity
- Near future capacity forecasts expressed in multiple Gbps

▶ *Fiber optic cable networks are the only viable option*

DJIBOUTI: THE "IDEAL" CABLE HUB

▶ **Intense & constant involvement in subsea cable systems**

- 30 years experience in fiber-optic submarine cables
- Robust investment in many consortium's cables: SMW3, EIG & EASSy, recently AAE-1 & SMW-5
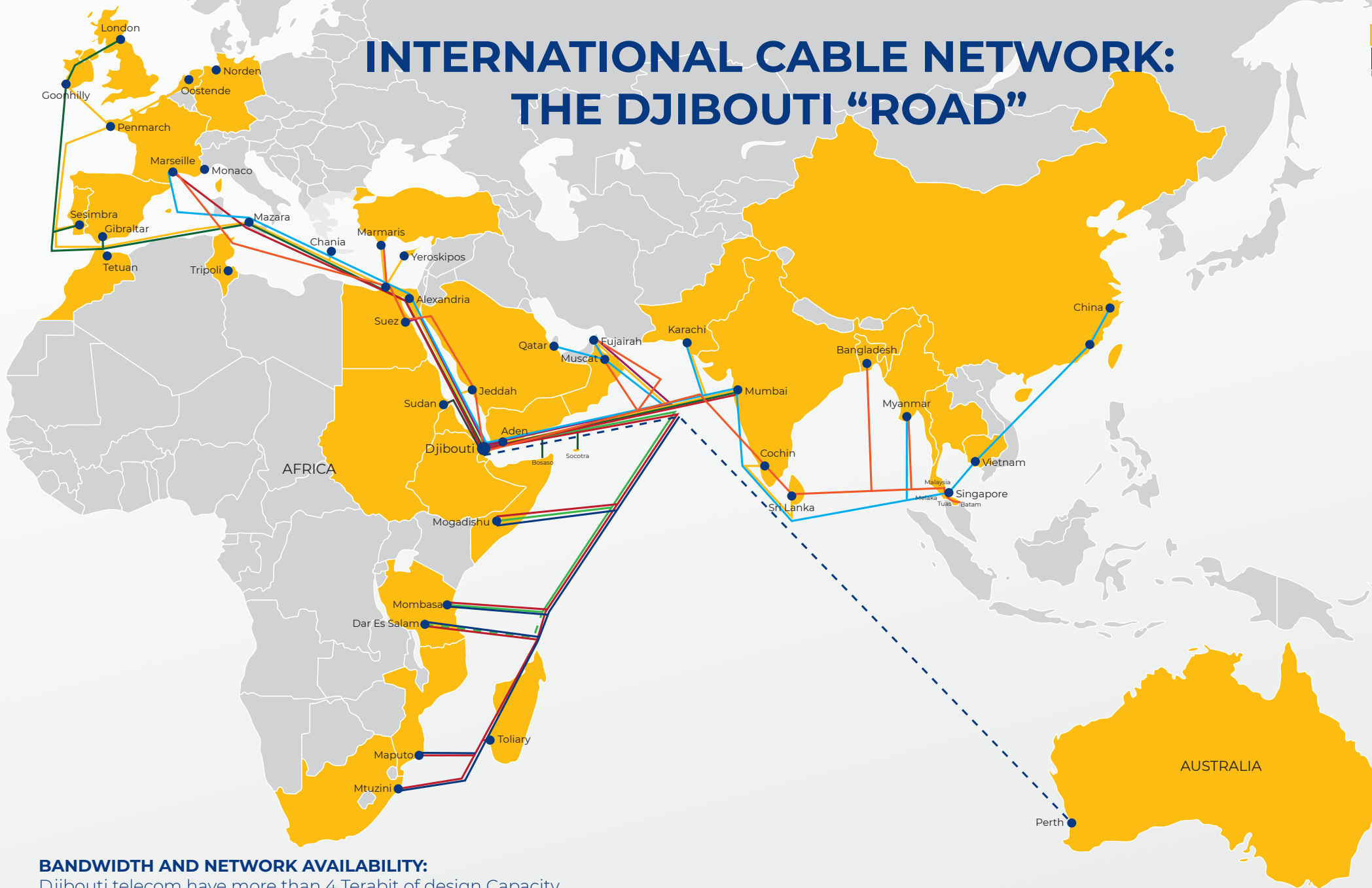
▶ **One of the safest landing in the World!**

- **ZERO** cable fault in Djibouti shore end over the last 30 years!
- Security further enhanced by two distinct landing points & two distinct interconnected CLSs
- Technical submarine know-how (Experienced team, knowledgeable on many equipment types)
- Economic & political stability

▶ **Top connectivity to the Global Fiber Network**

- Protected access to telecom markets in Europe, Middle East and Asia through multiple cable systems SMW3, EIG, SMW5, AAE-1
- Protected access to telecom markets in East & South Africa through two cable systems EASSy, SEACOM
- Capacity cost partly subsidized by long-haul traffic streams
- Direct access to more than **50 countries**

INTERNATIONAL CABLE NETWORK: THE DJIBOUTI "ROAD"

BANDWIDTH AND NETWORK AVAILABILITY:
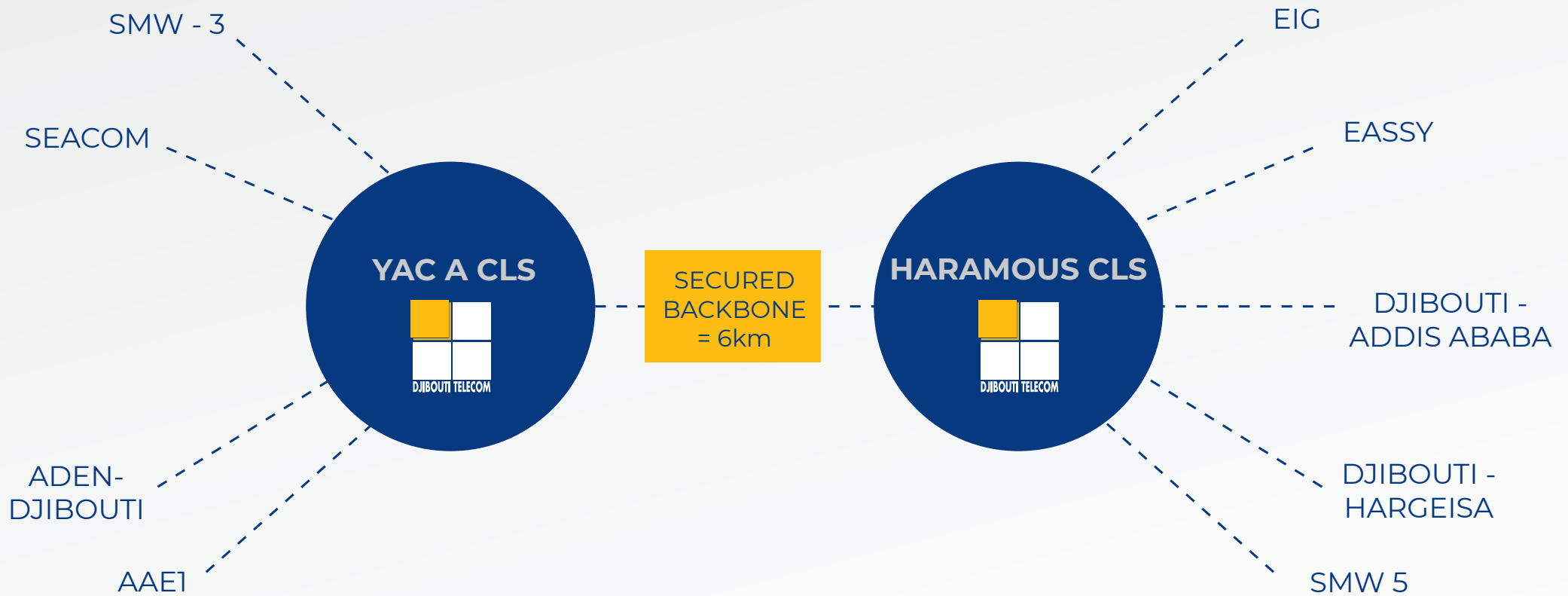Djibouti telecom have more than 4 Terabit of design Capacity.

SUBMARINE CABLE SYSTEMS:
7 Operational submarine cable systems and 2 on-project cable systems.

Legend:
- Seamewe 3
- EIG
- Seacom
- Aden - Djibouti
- EASSY
- AAE1
- Seamewe 5
- AWE (Soon)
- DARE (Soon)

Map labels: London, Norden, Oostende, Goonhilly, Penmarch, Marseille, Monaco, Sesimbra, Gibraltar, Tetuan, Mazara, Chania, Marmaris, Yeroskipos, Tripoli, Alexandria, Suez, Qatar, Fujairah, Muscat, Karachi, China, Bangladesh, Jeddah, Sudan, Aden, Djibouti, Bosaso, Socotra, Mumbai, Myanmar, Cochin, Vietnam, Sri Lanka, Malaysia, Melaka, Tuas, Singapore, Batam, Mogadishu, Mombasa, Dar Es Salam, Toliary, Maputo, Mtuzini, Perth

Regions: AFRICA, AUSTRALIA

DJIBOUTI;
A DEPENDABLE & SAFE INTERCONNECTION POINT

SMW - 3

SEACOM

EIG

EASSY

YAC A CLS
DJIBOUTI TELECOM

SECURED BACKBONE = 6km

HARAMOUS CLS
DJIBOUTI TELECOM

DJIBOUTI - ADDIS ABABA

ADEN-DJIBOUTI

AAE1

DJIBOUTI - HARGEISA

SMW 5

PROJECT DESCRIPTION

PROJECT DESCRIPTION

▶ Technical

- Proposed connection in Somalia (Bosaso, Mogadisho), Kenya (Mombasa) Over 5000 km of 3-fiber cables paired with standard international protection (armoring, burial, etc.)
- Connection via BU-ROADM
- The initial technology based on Nx100G wavelength (10G client interface)
- Capacity Design supported by two pairs of fibers: a Total of 36 Terabits per Second

▶ Commercial

- Consortium model
- Interconnection open to Djibouti and Mombassa
- 10G DWA interface access for Internet connectivity

SYSTEM DETAILS

2020
RFS Year

2045
EOS Year

5,000
Length (km)

36
Design
Capacity (Tbps)

3
Fibre Pairs

$86,000,000
Estimated System Cost (USD)

150
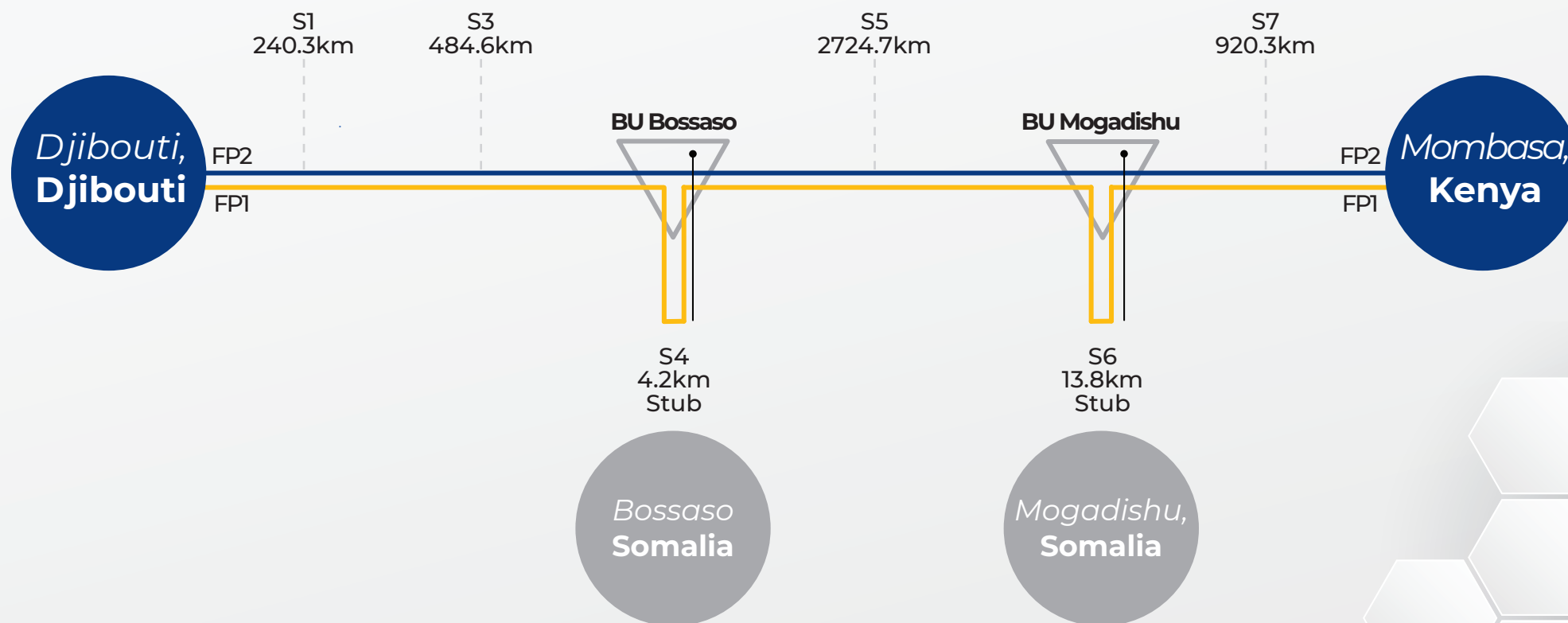Wavelengths per
Fibre Pair

100
Capacity per
Wavelength (Gbps)

Owners
Djibouti Telecom, Somtel, Hormuud Telecom & Telkom
Kenya as Landing Party in Kenya.

System Supplier
SubCom

Region
Horn and East Africa

Landing Points
Djibouti City (Djibouti) • Bosaaso (Somalia)
Mogadishu (Somalia) • Mombasa (Kenya)

PROJECT DESCRIPTION

Djibouti, Djibouti

Mombasa, Kenya

FP2

FP1

S1
240.3km

S3
484.6km

S5
2724.7km

S7
920.3km

BU Bossaso

BU Mogadishu

S4
4.2km
Stub

S6
13.8km
Stub

Bossaso **Somalia**

Mogadishu, **Somalia**

DARE1 PROJECT OWNERSHIP

▶ The **DARE1** Cable System is composed of a "Core System", and branches connected to the Core System.

▶ Core System will be shared by Djibouti Telecom and Somtel. The system will be connected in Djibouti to provide onward connectivity with Other cables.

▶ **DARE1** shall be also connected in Mombassa with Telkom Kenya facility in Nyali.

▶ The system has planned with field proven DWDM (Dense Wavelength Division Multiplexing) 100G Coherent Technologies.

▶ **DARE1** System has Cable Landing Stations at Mogadishu (Somalia), and Mombasa (Kenya).

PROJECT MILESTONES

PREPARATION

Bilateral Meeting with Somali Operators and Kenya.

Development of the specifications.

Q4/2014 - Q1/2015

APRIL 2015

PROJECT DEVELOPMENT

1st Reunion MOU in Djibouti.

Initial Presentation (configurations, base rules, PoW, MoU, etc.).

MOU PHASE

Development of the C & MA Framework Contract

Supplier contract

At least 17 IPG meeting, C & MA, SC in Nairobi, Djibouti and hargeisa

Q3/2015 - Q2/2016

26 MAY 2016

Signature of the C & MA supplier contract

Contract in force since

21 DECEMBER 2017

JULY 2018

Marine Survey work began.

Cable laying is scheduled for

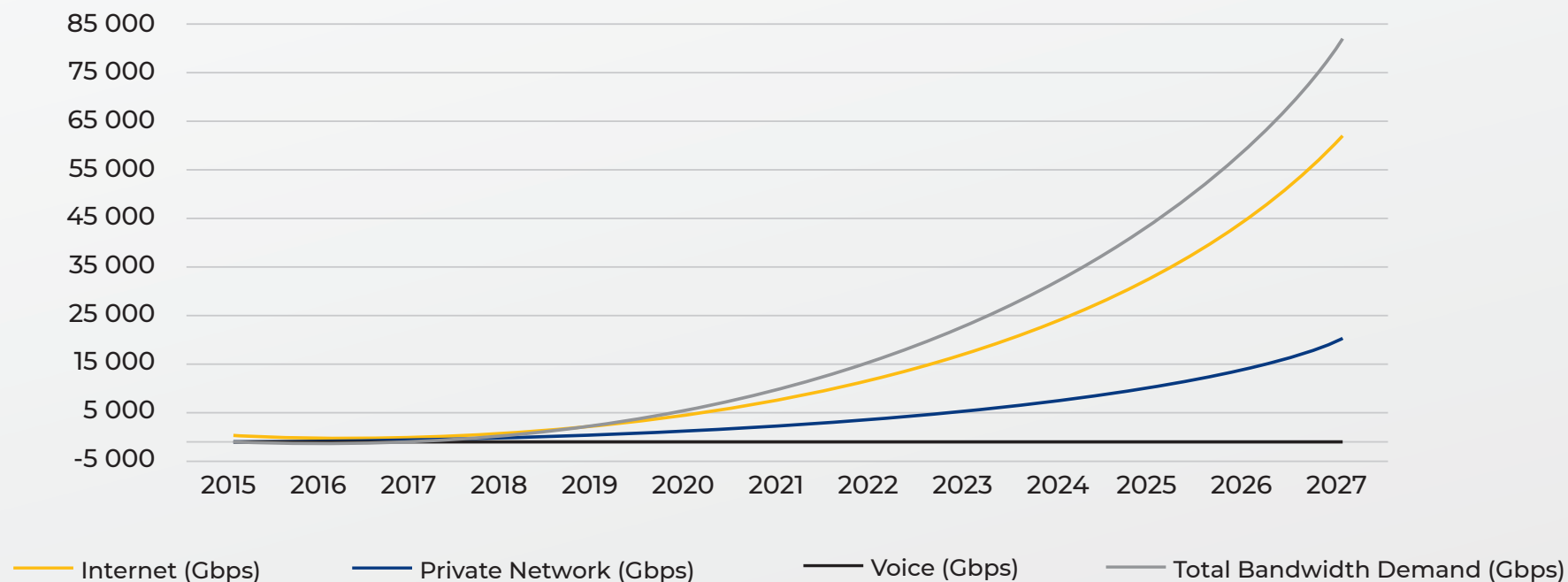**NOVEMBER 2019**

JANUARY 2020

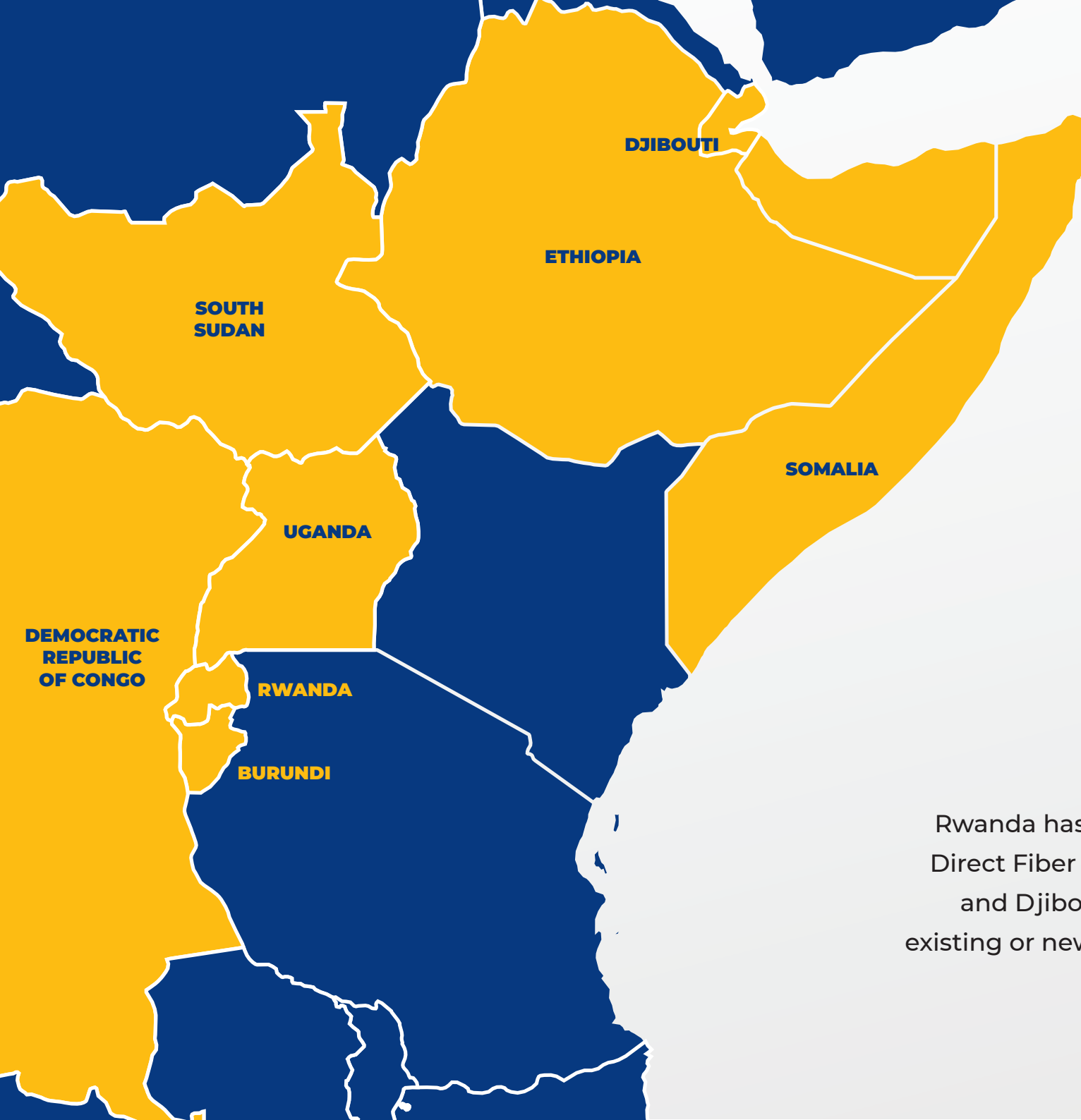**Commissioning planned**

FUTURE POTENTIAL

DARE1 PROJECT STATUS

By 2028, the projected data traffic from East African countries will reach 80 Terabit per second. This request will require the construction of 5 to 6 submarine cables over the next 12 years. DARE1 Will be one of these cables that will handle safely this regional traffic to Datacenter available in Djibouti and extension to Europe, Asia, or USA through existing international cables

FORCASTED INTERNATIONAL BANDWIDTH DEMAND: KENYA AND TRANSIT COUNTRIES
Uganda: 6%   Rwanda: 1.2%

Legend:
— Internet (Gbps)   — Private Network (Gbps)   — Voice (Gbps)   — Total Bandwidth Demand (Gbps)

POTENTIAL ACCESS TO DARE1

Rwanda has the opportunity today to acquire a Direct Fiber between Dar Es Salam / Mombassa and Djibouti. From Djibouti, Rwanda can use existing or new cables, or even invest as a consortium member on Future cables
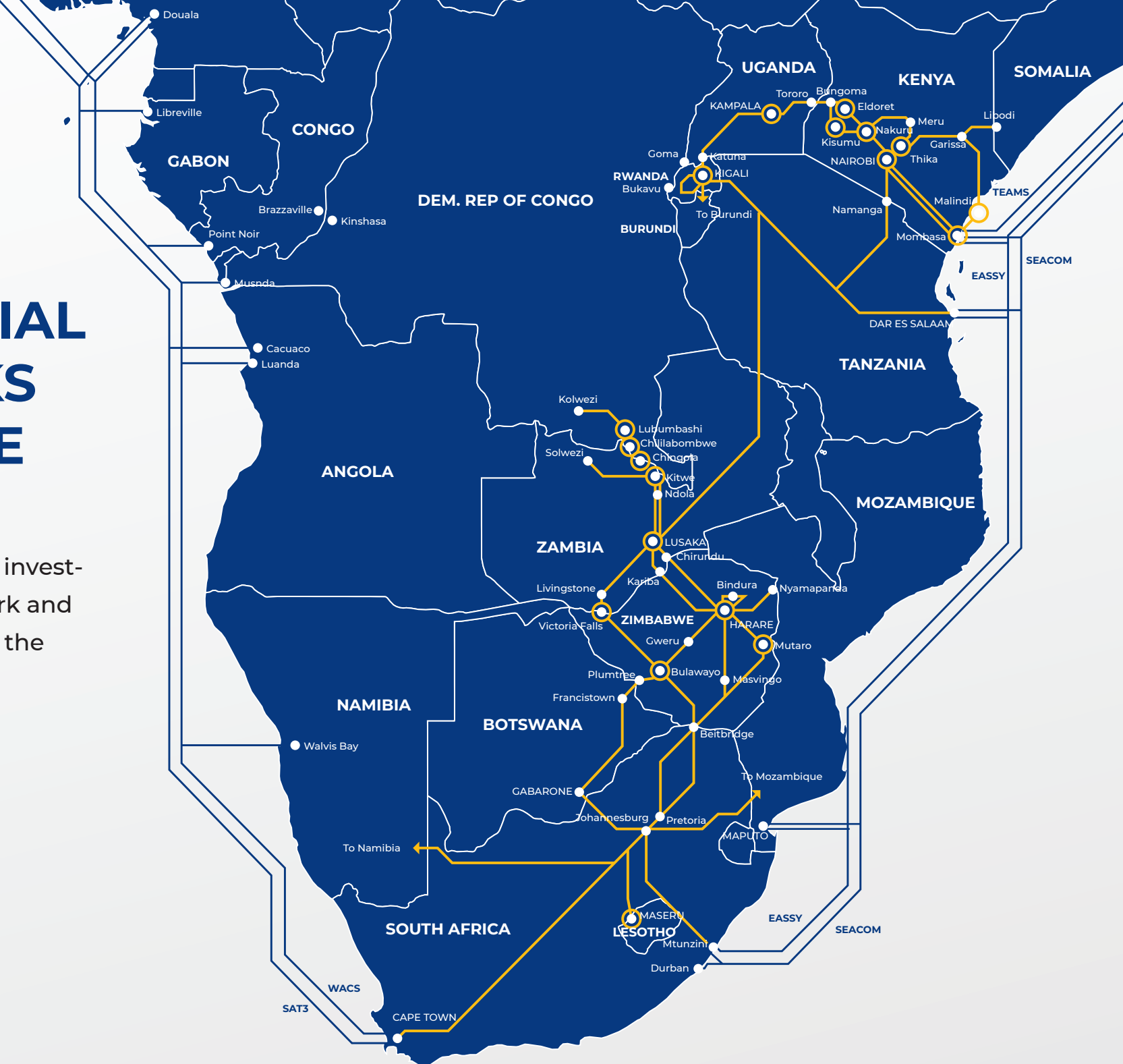
NETWORK IN TANZANIA AND ENCLAVE COUNTRIES

Tanzania has borders with Rwanda, Uganda, Zambia, Malawi and Mozambique.

Tanzania has developed optical terrestrial networks

Legend:
- Point of Presence (POP)
- National ICT Broadband Backbone

Labels on map: UGANDA, RWANDA, BURUNDI, DRC, ZAMBIA, MALAWI, MOZAMBIQUE, KENYA, TANZANIA, Lake Victoria, Lake Tanganyika, Lake Nyasa

POP/city labels: Mutukula, Bukoba, Rusumo, Kabang, Manyavu, Kigoma, Uvinza, Tabora, Sumbawanga, Tunduma, Kasumulo, Mbeya, Makambako, Songea, Tunduru, Biharamulo, Shinyanga, Nzega, Singida, Mwanza, Musoma, Sirali, Namanga, Moshi, Arusha, Babati, Horohoro, Dodoma, Iringa, Morogore, DSM, Lindi, Mtwara, Mikindani, Kilwa Kivinje, NORTHERN RING, WESTERN RING, SOUTHERN RING

SEACON OFC, EASSY OFC, Pemba, Zanzibar, Dar Es Salaam

OTHER TERRESTRIAL NETWORKS AVAILABLE

Liquid Telecom has also invested in a terrestrial network and has PoPs in countries in the Great Lakes region.

THANK YOU

DJIBOUTI TELECOM

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