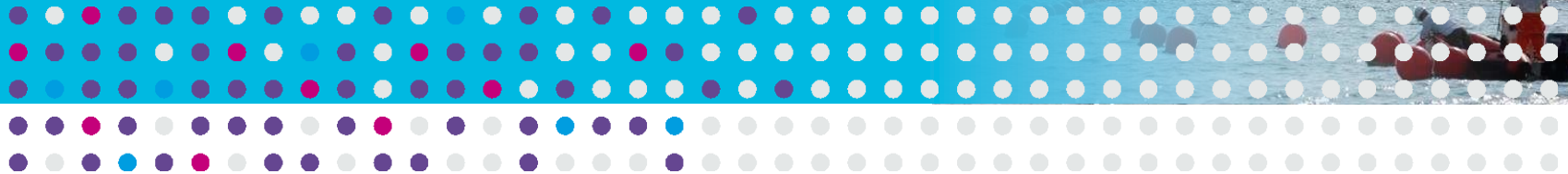


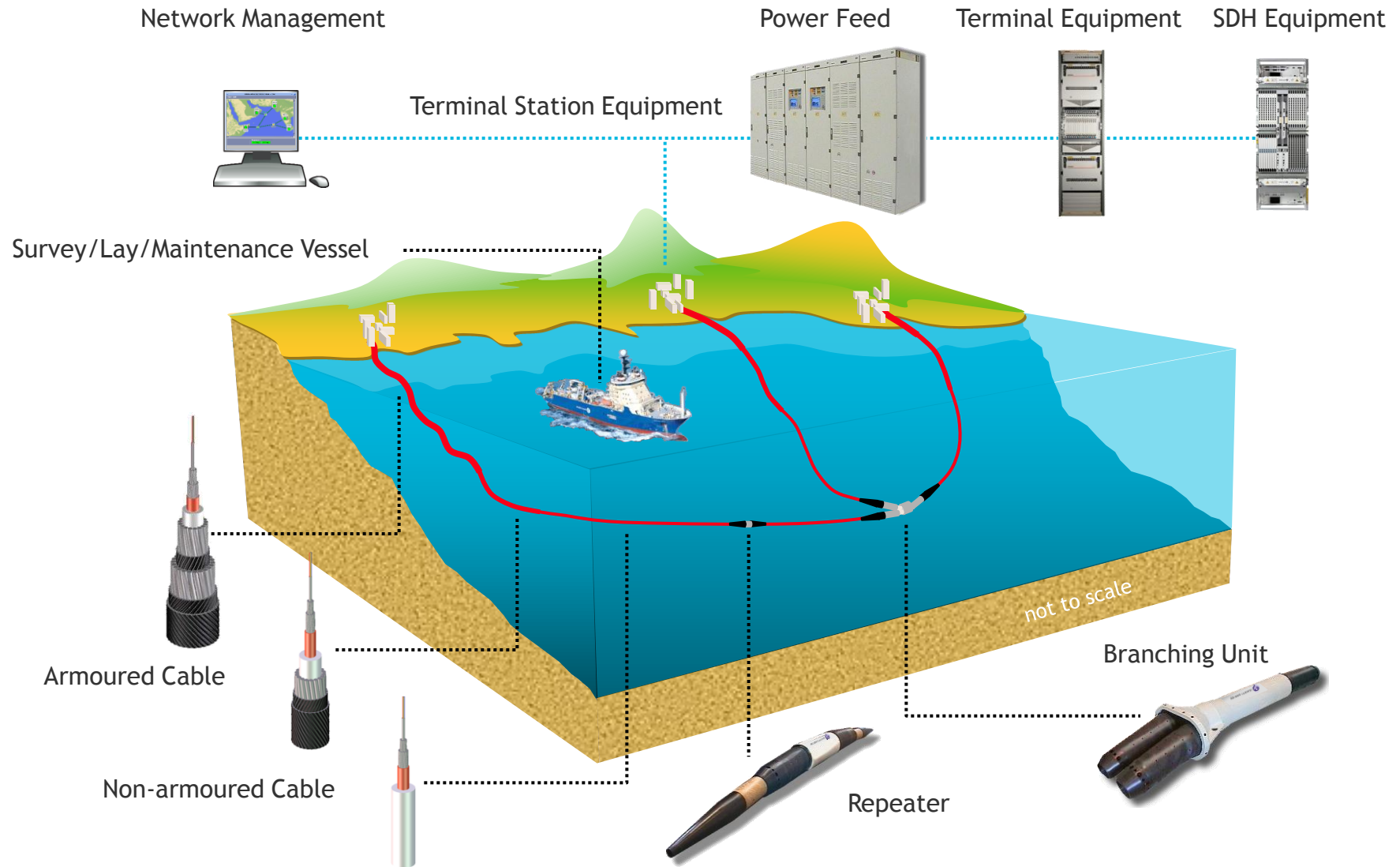
# Alcatel-Lucent Submarine Networks



Gary Waterworth

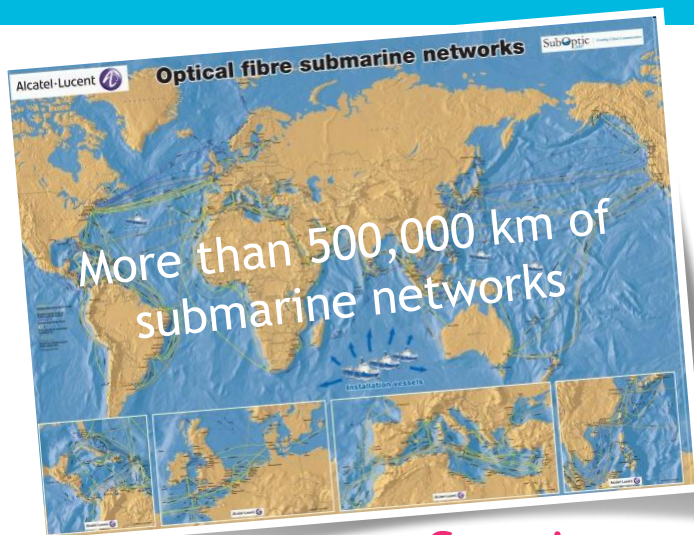
Regional Director EMEA

# We build submarine networks



# Full Turnkey Portfolio

- Solutions tailored to customer needs
- Traditional & emerging market segments
- Transoceanic & regional networks
- Upgrades
- Unrepeated networks
- Offshore Applications



- Design, Planning, Manufacturing
- Marine and Equipment Installation
- Project Management, Test, Commissioning
- Wet & Dry Operations and Maintenance Services for whole of system life

Crossing oceans to connect the planet

# Submarine Cable Projects

## Project Models



### *Consortium*

- A number of owners jointly own and operate the network



### *Private*

- Privately owned and operated network



### *Special Purpose Vehicle (SPV)*

- A Company specifically created to own and operate the network



### *Hybrid*

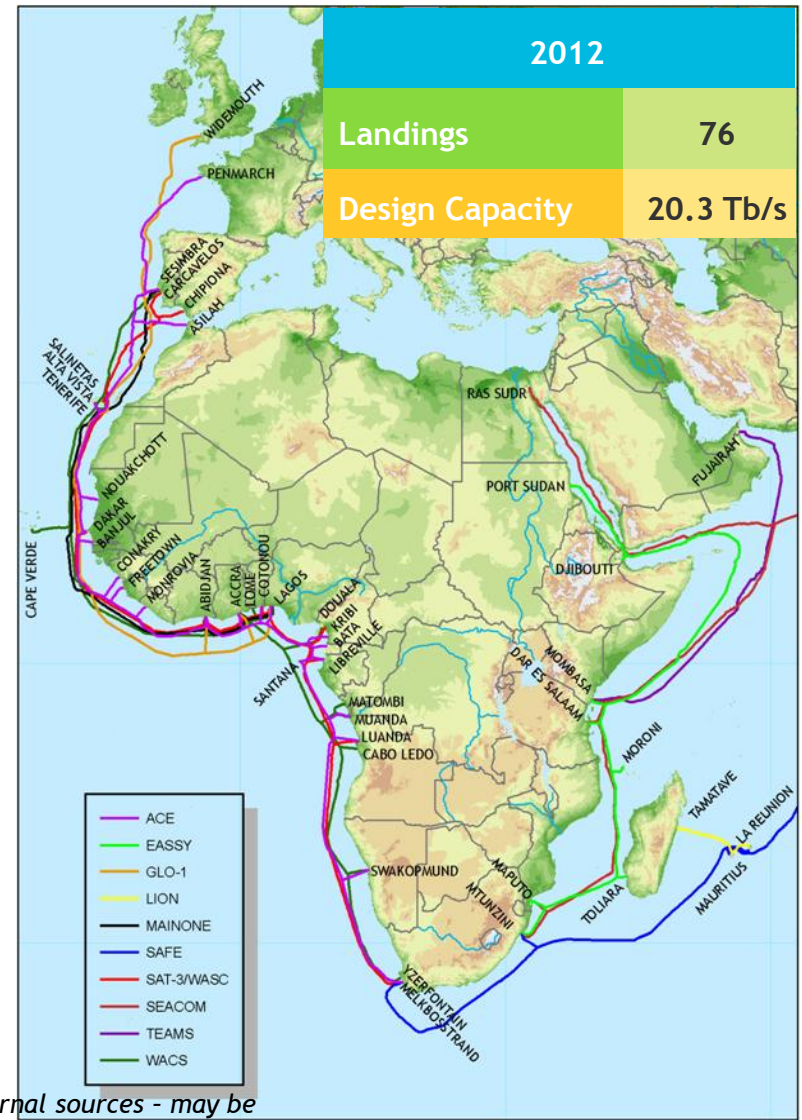
- A Consortium Project where one or more of the owners is a SPV



### *Mixed Ownership - Open Access Model*

- Funded by Carriers and Development Financial Institutions
- Developmental Objectives:
  - Open Access
  - Competition
  - Non-discriminatory bandwidth pricing in line with market rates
- Carrier involvement guarantees financial success as customers and traffic are guaranteed
- Governments can play an important role (TEAMS, SEAS, WACS etc.)

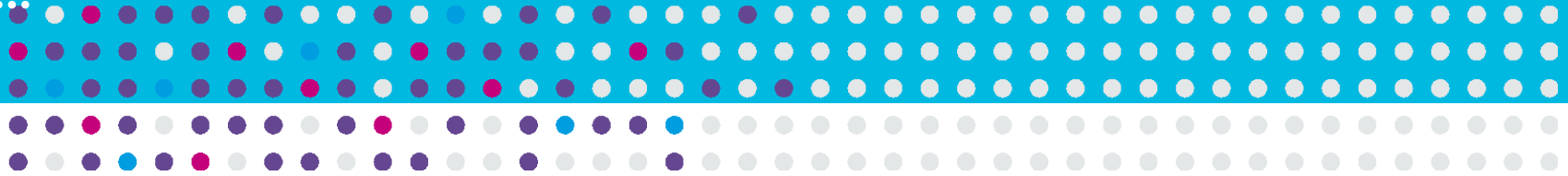
# By 2012, Africa will be solidly connected to the Internet Backbone



Information from various public and internal sources - may be approximate



# Some example systems



# Bringing Faster Connectivity

## West Africa Cable System (WACS) Consortium

### Meeting the needs for increased capacity on a 14,000 km submarine cable route

- Opening access to faster connectivity
- Providing the first direct connection between Africa and Europe
- Supporting innovative IP-based services such as video applications for e-education and healthcare
- Delivering a capacity of 5.12 Tb/s

### Benefits & Services

- Further reducing the digital divide
- Opening access to faster connectivity
- Lowering the costs for broadband access



*WACS has brought together a multitude of nations and some of the world's most influential telecommunications players in a joint effort to use state-of-the-art technology in linking more people more efficiently than ever before. WACS will enable these countries to improve communications and Internet services that are crucial for a social and economic development. Alcatel-Lucent combines field-proven experience, reliability and the customer focus we need for such an exciting new project.*

**Kobus Stoeder, Chairperson of the WACS Management Committee**

# Reducing the Digital Divide

## *Africa Coast to Europe (ACE) Consortium*

### ***\$US700M project for ultra fast, lower-cost broadband connectivity***

- Ultimate design capacity of 5.12 Terabit/s
- 17,000 km with 21 landing points
- Bringing broadband optical data connectivity for the first time to the people of Mauritania, Gambia, Guinea, Sierra Leone, Liberia, Sao Tome and Principe, and Equatorial Guinea.
- High-speed data network leveraging 40Gbit/s capability based on Alcatel-Lucent's advanced coherent technology
- Cost-effective support of innovative broadband services such as e-education and healthcare applications



*ACE is further proof of the need for faster and more cost-effective capacity and alternative route to provide everyone with broadband access, so crucial to social and economic development. Alcatel-Lucent combines field-proven experience, reliability and the customer focus we need for such a crucial project that will set a new milestone in the development of the African communication infrastructure.*

***Yves Ruggeri, Chairman of the consortium's Management Committee***

# Developing the African loop

## East Africa Submarine Cable System (EASSy) Consortium

### *Satisfying broadband needs for years to come ...*

- Spanning 10,000km to link eight countries in East Africa
- Original design capacity more than doubled before system completion by introduction of technical innovations
- Delivering a regional capacity of 1.4 Tb/s

### *Benefits & Services*

- Enabler for economic development and reduction of the digital divide
- Supporting infrastructure for other submarine networks in the region



*This increase in final system capacity is another important step in the development of the African communication infrastructure, where there is a very strong need for affordable capacity.*

*Alcatel-Lucent further proves itself as a trusted partner for its turnkey expertise and cooperation on accommodating the design change without impact on the final delivery date.*

*Trevor Martins, MTN International, Chairperson of the EASSy Management Committee*

# Direct link between Kenya and United Arab Emirates

## *The East Africa Marine System Ltd (TEAMS Ltd)*

### *Enhancing bandwidth to bring broadband to all users*

- A flexible and reliable submarine solution, designed with an ultimate capacity of 640 Gb/s
- Full support to new high-quality broadband services, such as free Internet for schools, and ethernet-based services
- An innovative network to position Kenya as a new communication hub



### *Benefits & Services*

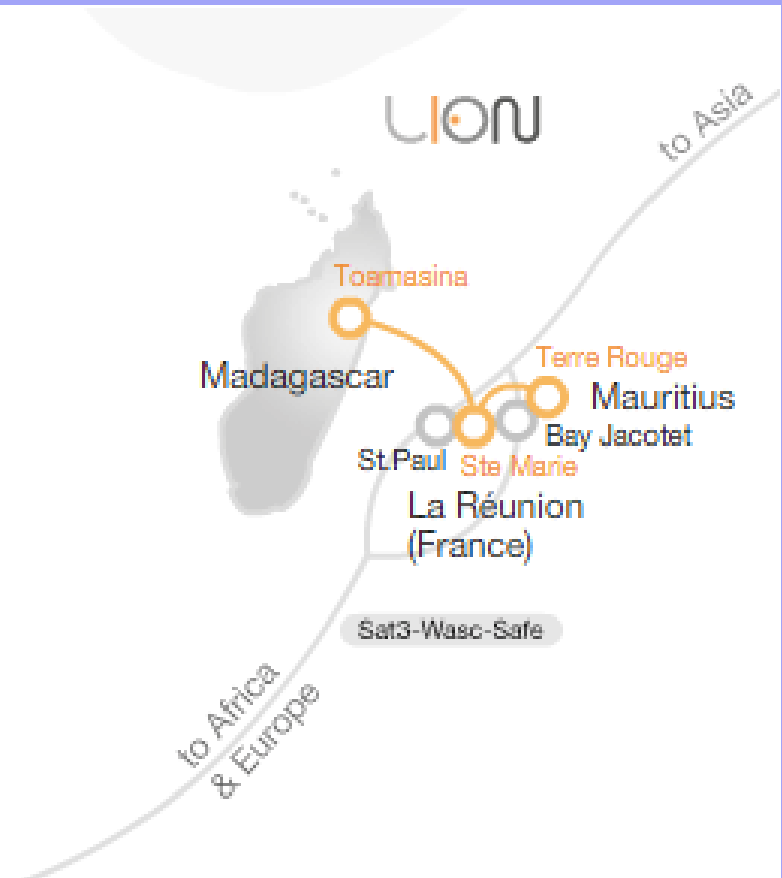
- Further encouraging social and economic development
- Supporting cost-effective delivery of innovative services
- Dramatically increasing the regional communication capabilities
- Bringing down the cost of Internet connectivity and international calls

# Enhancing connectivity to islands in the Indian Ocean

## *LION - Lower Indian Ocean Network*

*A 1,000 km link bringing high-speed Internet and international connectivity*

- Operated by a consortium including France Telecom, Orange Madagascar and Mauritius Telecom
- Provides Madagascar with a high-speed internet connection
- Strengthens international connectivity for la Réunion and Mauritius
- Contributes to the economic, social and cultural development of the islands in the Indian Ocean
- Two connection points to the SAT-3/WASC/SAFE cable system, which links Europe to Asia via South Africa
- LION is structured around 2 segments:
  - Mauritius to Reunion Island
  - Reunion Island to Madagascar
- Cable landing stations in Mauritius (Terre Rouge), La Réunion (Sainte Marie) and Madagascar (Toamasina)



# Reducing the Digital Divide

## *Seychelles to East Africa System (SEAS)*

### *Benefits & Services*

- Bringing broadband optical data connectivity for the first time to the people of the Seychelles
- Supporting cost-effective broadband services for commerce, government, healthcare and entertainment applications

### *Low latency, high performance, high reliability link to internet backbone*

- 1900km link from Seychelles to Dar Es Salaam in Tanzania
- Ultimate design capacity of 320Gbit/s
- Optimised network design leveraging Alcatel-Lucent's solution for Regional Systems



*This new connection will provide faster Internet and improved access to telecommunications, providing a cost-effective reliable solution that will give us an alternative to satellite connections, which we are almost completely dependent on now.*

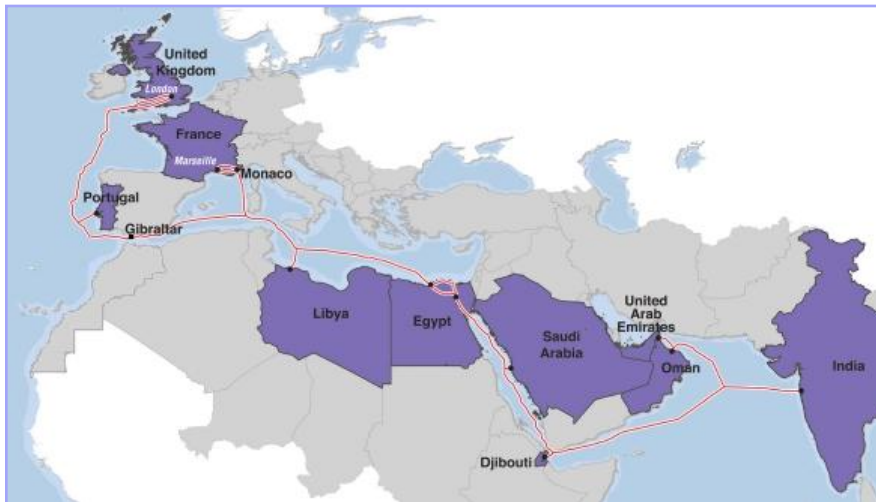
**Benjamin Choppy, Principal Secretary, Department of ICT in the Vice-President's Office of the Seychelles**

# Boosting capacity between Europe, Middle East and India

## *Europe-India Gateway Consortium (EIG)*

### *A 15,000 km Atlantic-Mediterranean submarine cable system*

- The first direct, high-bandwidth optical-fiber submarine cable from the United Kingdom to India, interconnecting with major cable systems linking Europe, Africa, Asia and North America
- Significantly enhancing capacity and diversity between countries on three continents
- Delivering an ultimate capacity of up to 3.84 Tb/s
- Providing terabit transmission capabilities to accelerate the delivery of broadband services and applications
- Upgradeable transmission facilities that support Internet, e-commerce, video, data and voice services demand



*EIG utilises the most advanced submarine cable system technology to provide a high quality solution to help meet the continued growth of broadband adoption rates around the world. Alcatel-Lucent's turnkey expertise and technological lead in the build of submarine networks will help us deliver a highly flexible and scalable infrastructure that will support the delivery of innovative applications across the regions.*

***John Russell, chairman of the EIG Consortium Management Committee***

[www.alcatel-lucent.com](http://www.alcatel-lucent.com)

