

West Africa (Submarine) Cable System (WACS)

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Africa Undersea Cables

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Introduction

Liberalisation of the telecommunications sector has led to evolution of internet, VOIP, mobile market & integrated network solutions.

It is therefore necessary that an appropriate infrastructure is developed to carry the rapidly increasing traffic.

Institutions are currently dependant on extremely expensive bandwidth for the enhancement of Research and Education though there is already in existence the SAT – 3 Submarine Cable

Current Scenario

Along the Coast of West Africa are the ff.

- SAT₃
- Main One
- Glo – 1
- ACE
- WACS

The Opportunity

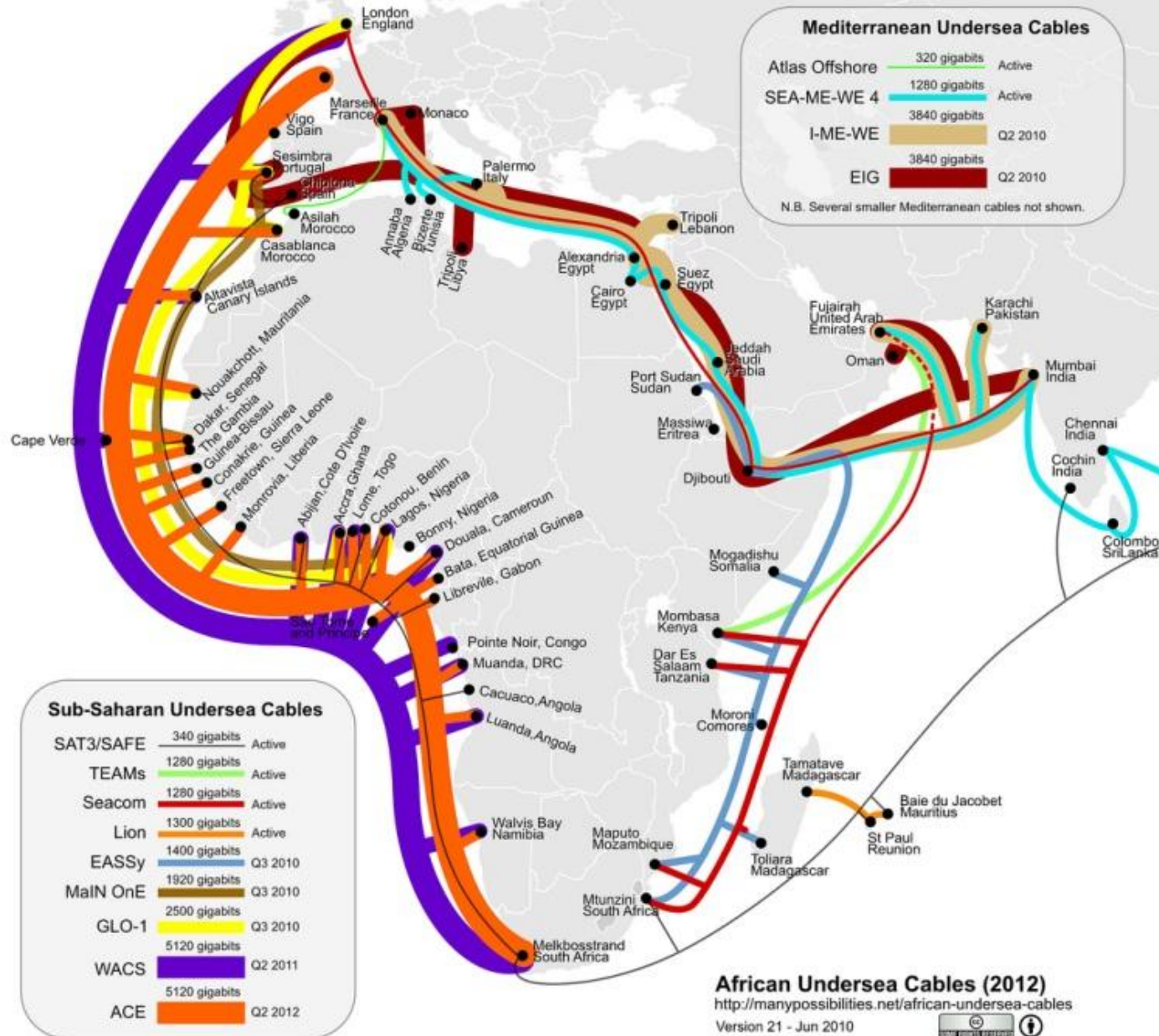
High quality broadband international connectivity reaching Southern Africa, Europe and America

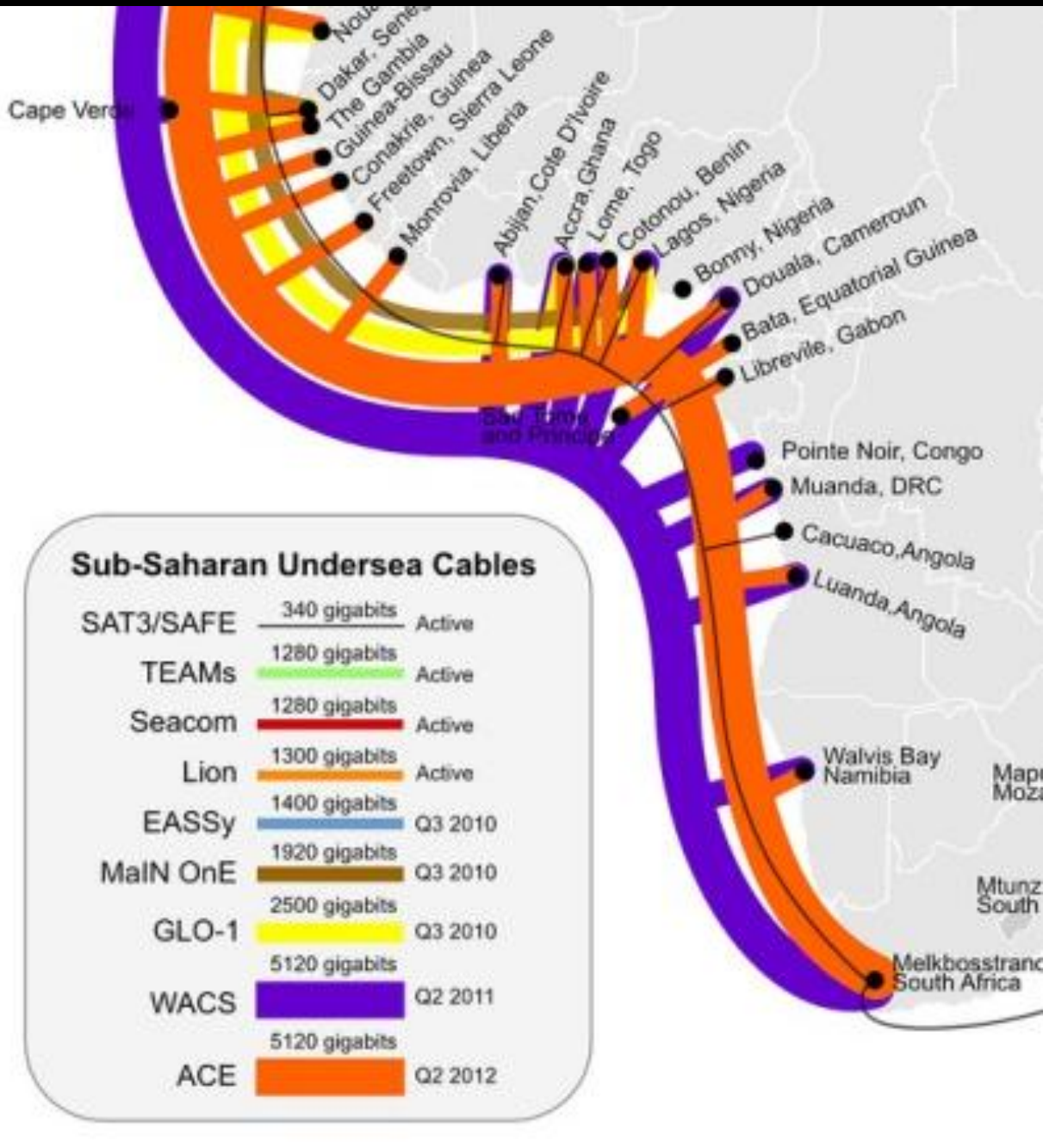
Access to untapped emerging markets in voice, mobile and Internet technologies

Reduce Region's dependency on Satellite and also lower network costs at higher bandwidth

Promote Research & Education and also Improve Technology Exchange

Africa Undersea Cables

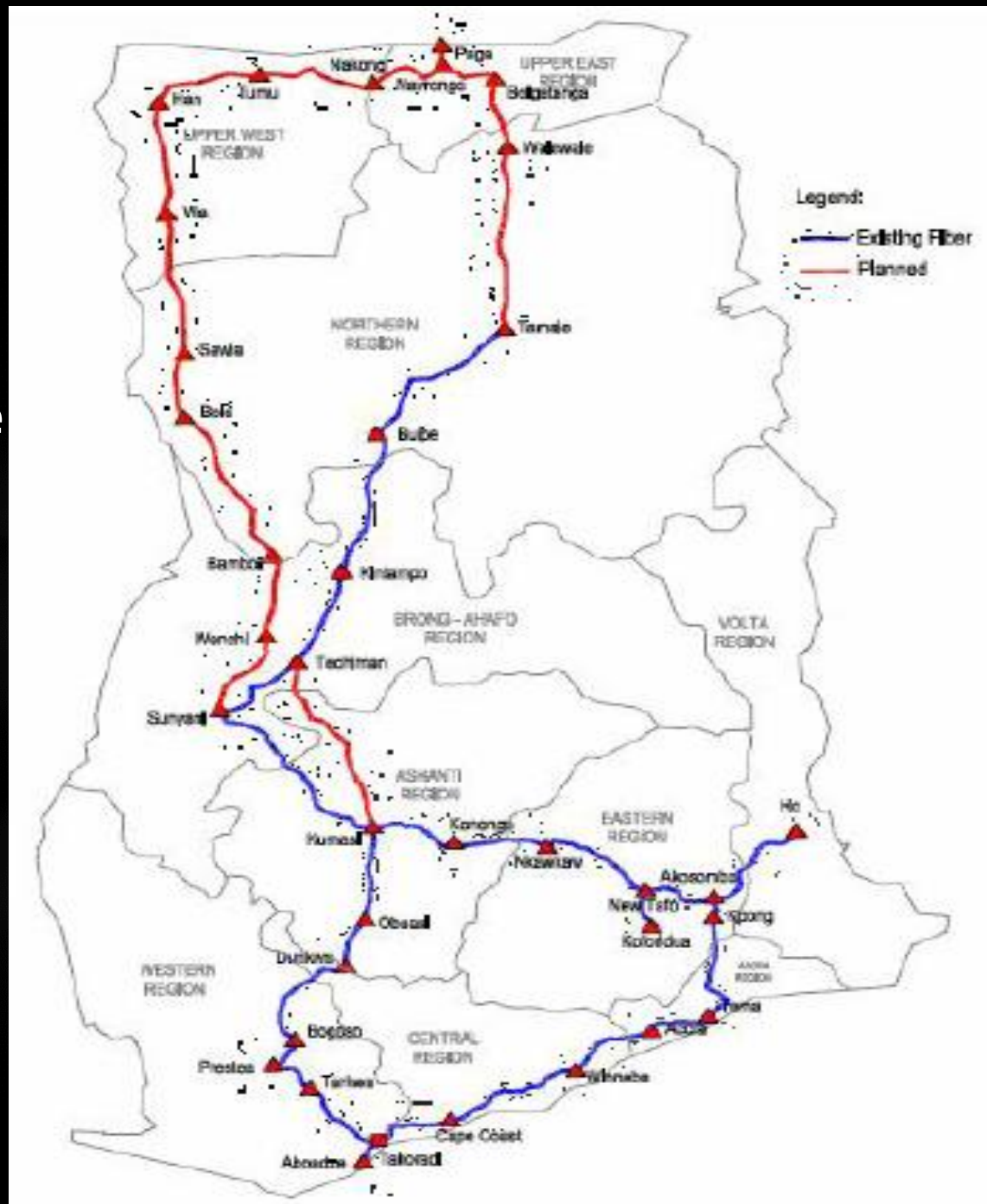




West Africa Cable System

Ghana - Fibre Network by August 2010

3 Public Universities
Currently linked by Fibre
Backbone for GhARNET



The internet's undersea world

The vast majority of the world's communications are not carried by satellites but an altogether older technology: cables under the earth's oceans. As a ship accidentally wipes out Asia's net access, this map shows how we rely on collections of wires of less than 1cm diameter to link us all together

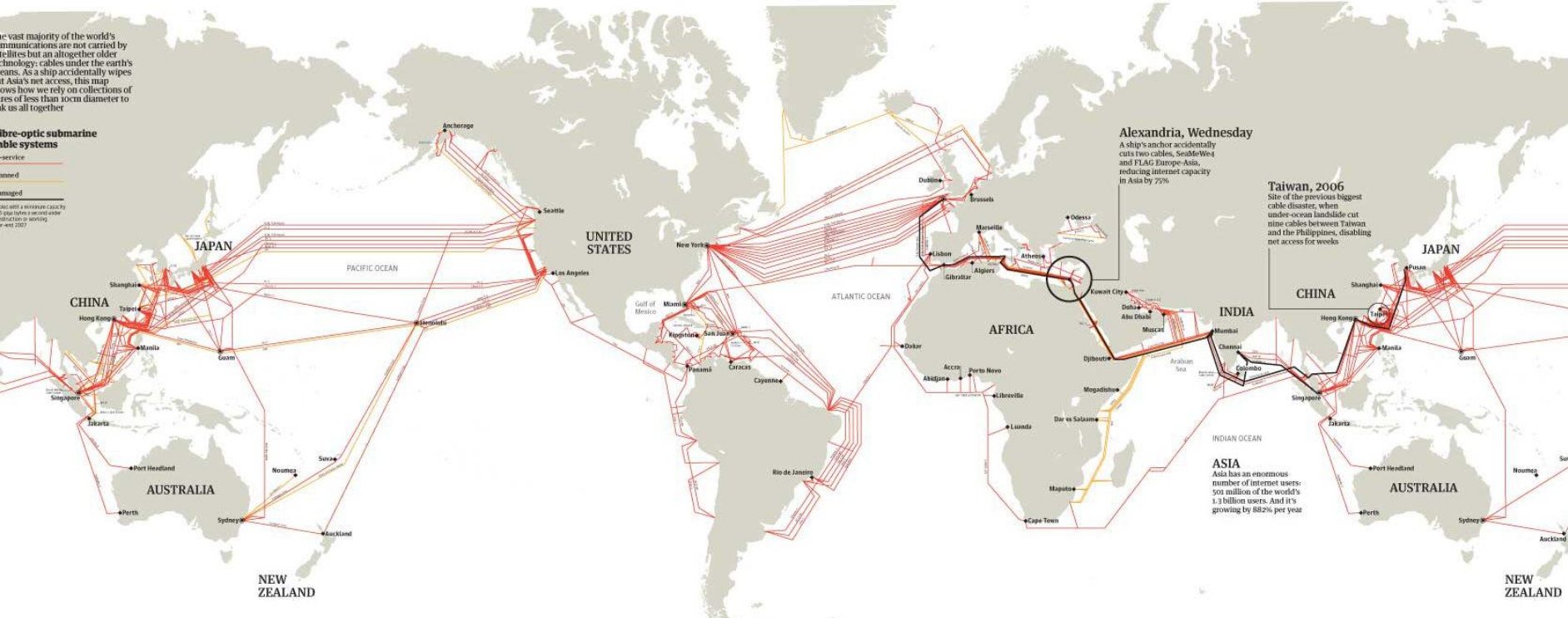
Fibre-optic submarine cable systems

In-service

Planned

Damaged

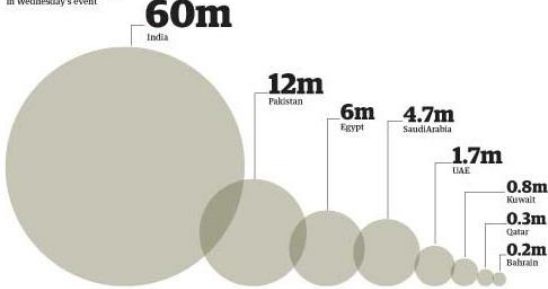
Cables with a reserve capacity of 50% were reported under construction in working year-end 2007



Alexandria, Wednesday
A ship's anchor accidentally cuts two cables, SeaMeWe4 and FLAG Europe-Asia, reducing internet capacity in Asia by 25%

Taiwan, 2006
Site of the previous biggest cable disaster, when under-ocean landslide cut nine cables between Taiwan and the Philippines, disabling net access for weeks

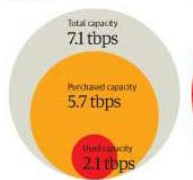
Internet users affected by the Alexandria accident
The main countries affected in Wednesday's event



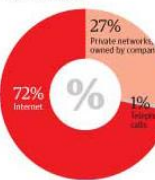
World cable capacity

Submarine cable operators light (turn on) capacity on their systems to sell bandwidth to other carriers. Carriers buy extra capacity, mainly to hold in reserve. On the trans-Atlantic route 80% of the bandwidth is purchased, but only 29% is used

Capacity in terabytes a second



What makes up "used capacity"?



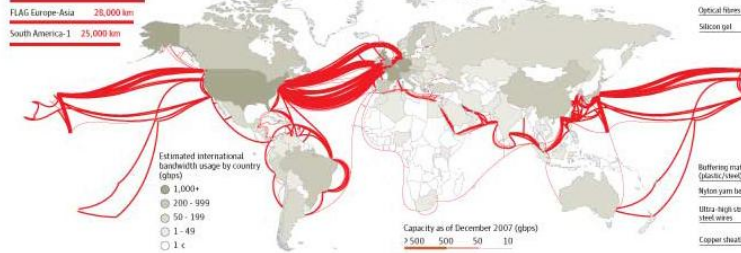
The longest submarine cables

The SeaMeWe-3 system from Norden in Germany to Jeju, South Korea connects 32 different countries with 39 landing points

SeaMeWe-3	39,000 km
Southern Cross	30,500 km
China-US	30,476 km
FLAG Europe-Asia	28,000 km
South America-1	25,000 km

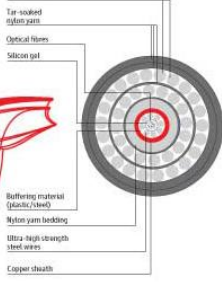
The world's cables in bandwidth

The first intercontinental telephony submarine cable system, TAT-1, connected North America to Europe in 1958 and had an initial capacity of 640,000 bytes per second. Since then, total trans-Atlantic cable capacity has soared to over 7 trillion bps



Cross-section of a cable

Cables of this strength are typically 60 mm in diameter and weigh over 10,000 kilograms a kilometer. In deeper waters, lighter and less insulated cables are used



SOURCE: TD ERESEARCH/COM GLOBEWIRE CABLE MAP 2008; INTERNET STATISTICS FROM INTERNETWORLDMETRICS.COM

Investment Interests

The following (12) Telcos have signed the Memorandum of Understanding (MOU) for the development of the system:

- Telkom
- Vodacom
- MTN
- Tata Communications (Neotel)
- Broadband Infracore
- Cable & Wireless
- Portugal Telecoms
- Congo Telecoms (formerly Sotelco)
- Telecom Namibia
- Togo Telecom
- OCPT (Office Congolais des Postes et Telecommunications)
- Angola Telecom

Status, Ownership and Cost of West Africa Submarine Cables

	Seacom	EASSy	TEAMs	WACS	Main One	GLO1	ACE
<i>Cost (Millions of USD)</i>	650	265	130	600	240	250	700
<i>Length (km)</i>	13,700	10,000	4,500	14,000	7,000	9,500	14,000
<i>Capacity</i>	1.28Tb/s	1.4 Tb/s	120Gb/s - 1.28Tb/s	5.12Tb/s	1.92 Tb/s	2.5 Tb/s	5.12 Tb/s
<i>Completion</i>	July 2009	June 2010	Sept 2009	Q3 2011	Q2 2010	Q2 2010	Q2 2010
<i>Ownership</i>	USA-25% SA -50% Kenya - 25%	African Telecom Operators - 90%	TEAMs (Kenya) - 85% Etisalaat (UAE)- 15%	Telkom Vodacom MTN Tata (Neotel) Infracor et al	USA Nigeria AFDB		France Telecom Orange Baharicom Equatorial Guinea Gabon Et al

Monthly Bandwidth Costs - Ghana

Company	Bandwidth	Cost (USD)/Month
Vodafone	1 Mb/s	3,000
MTN	1 Mb/s	3,000
MainOne *	155.52 Mb/s (STM - 1)	70,000
	622.08 Mb/s (STM - 4)	48,125
iBurst Africa	1 Mb/s	3,000

- * 1Mb/s on Main One for the STM-1 comes to about \$451/month
- * 1Mb/s for STM-4 comes to about \$77 /month

Benefits to Africa

Improved high capacity optic fibre connectivity within Africa and the rest of the world.

Enables new services and products not possible before due to bandwidth restrictions

Contributes towards the socio-economic development of the region

Reduced unit costs (capital and operational) for global connectivity, leading to increased profits

Reduced out payments to foreign telecommunications (satellite) facility providers.

Direct routes through own infrastructure eliminates the need for transits through Third Parties

Expansion in inter-Africa trade, facilitated by better communication in the region.

Conclusion

The successful implementation of the West Africa (Submarine) Cable System is expected to make significant contribution to the development and provision of ICT services and facilitate the intra-regional as well as international trade.

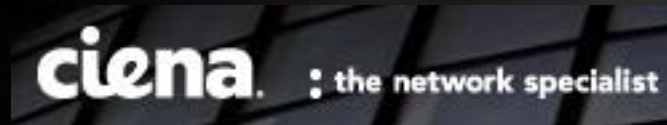
And would also promote Research and Education



Network Startup Resource Center



Association of
African Universities



Thank you! Midaase! Asante! Gracias! Arigato!

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