

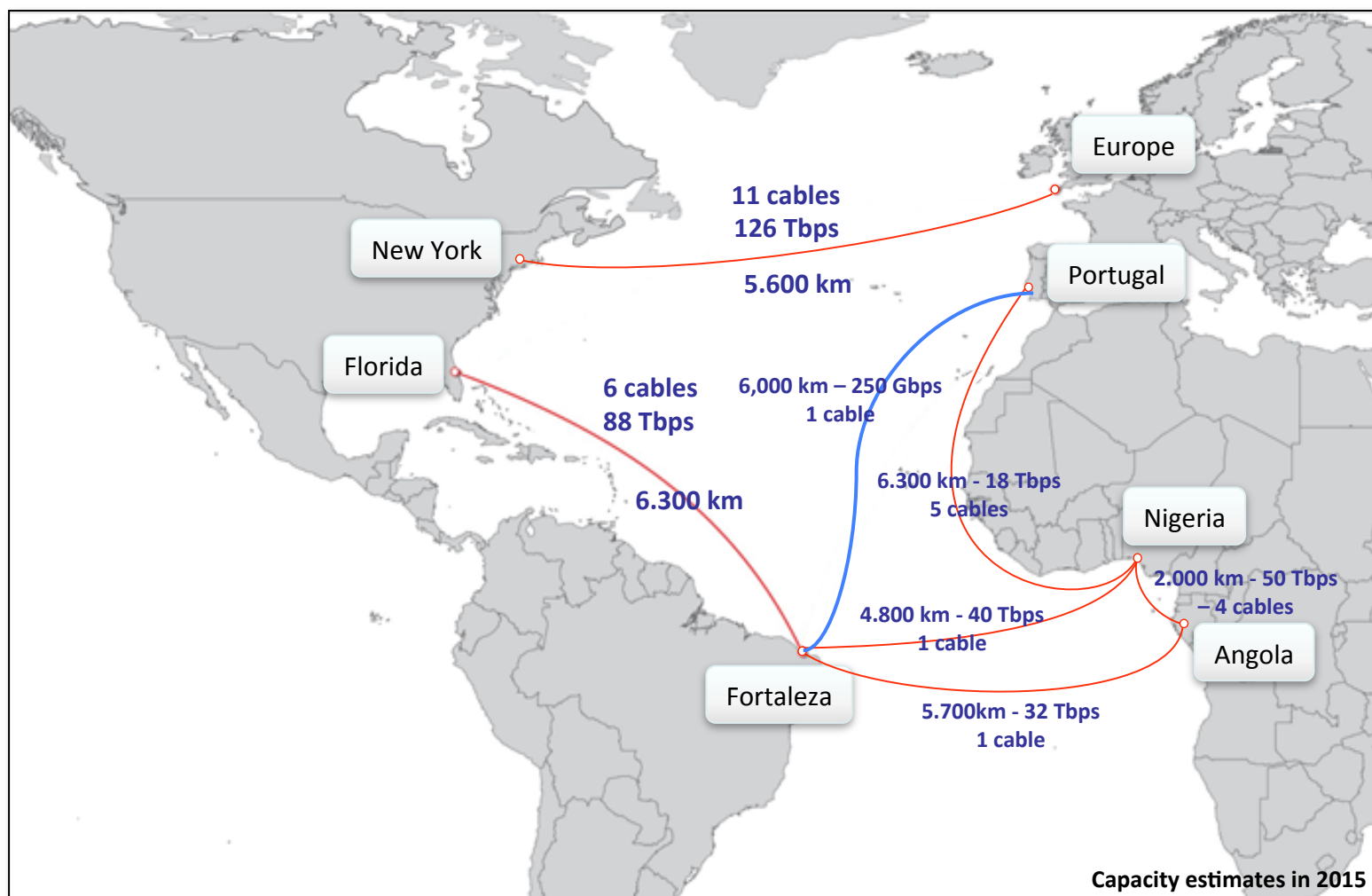
ELLA

**Feasibility Study for a direct
Europe Link with Latin America**



Breaking the digital *iron-curtain* surrounding
Latin America

Routes between Latin America and Europe



South America-1 (SAm-1)





Globenet offers the lowest latency route from Wall Street, NY to Bovespa, Brazil (110 ms)

South American Crossing (SAC) Latin American Nautilus (LAN)





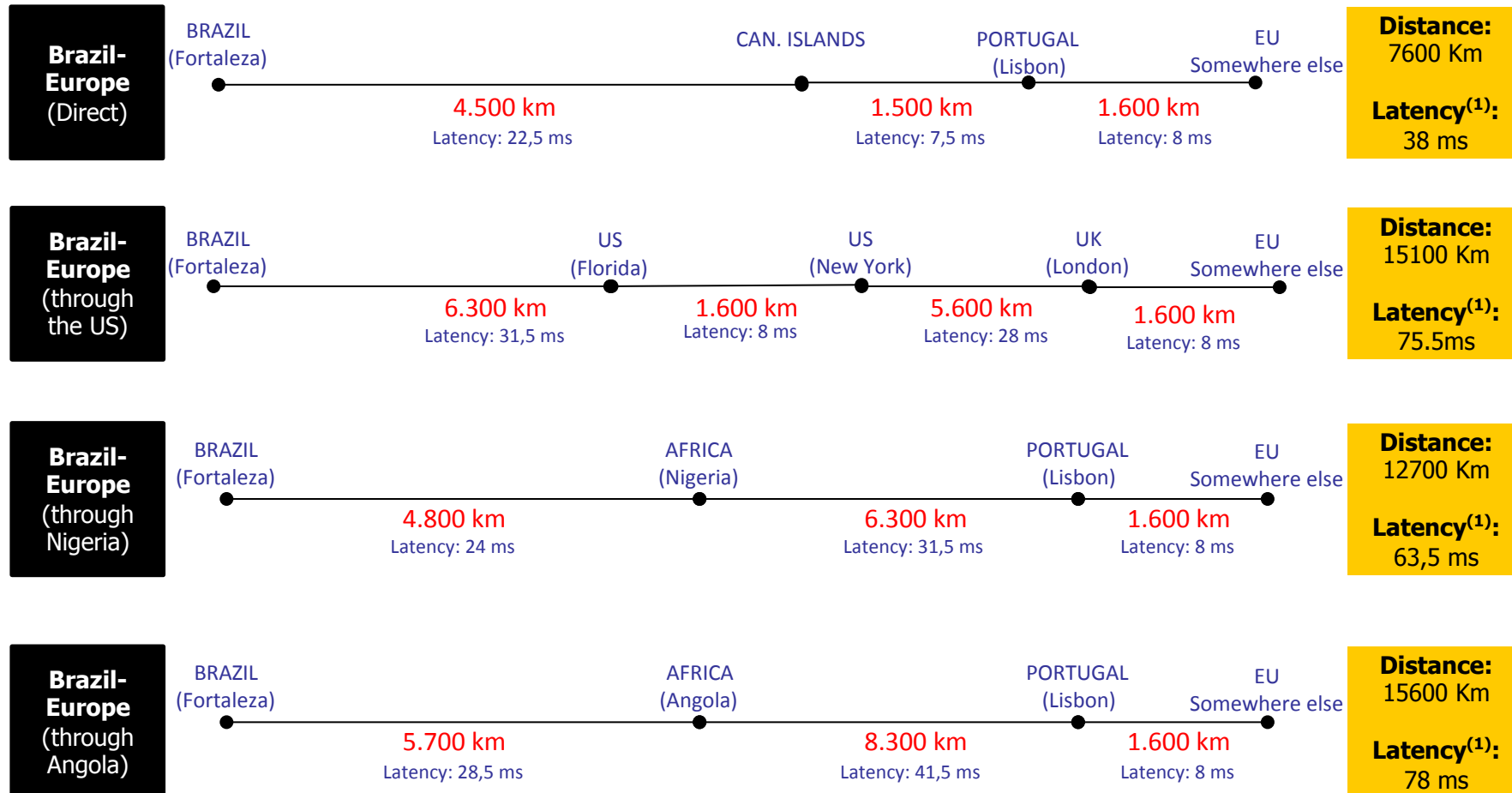


Alternative Routes from LA to Europe



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TOTAL DISTANCE

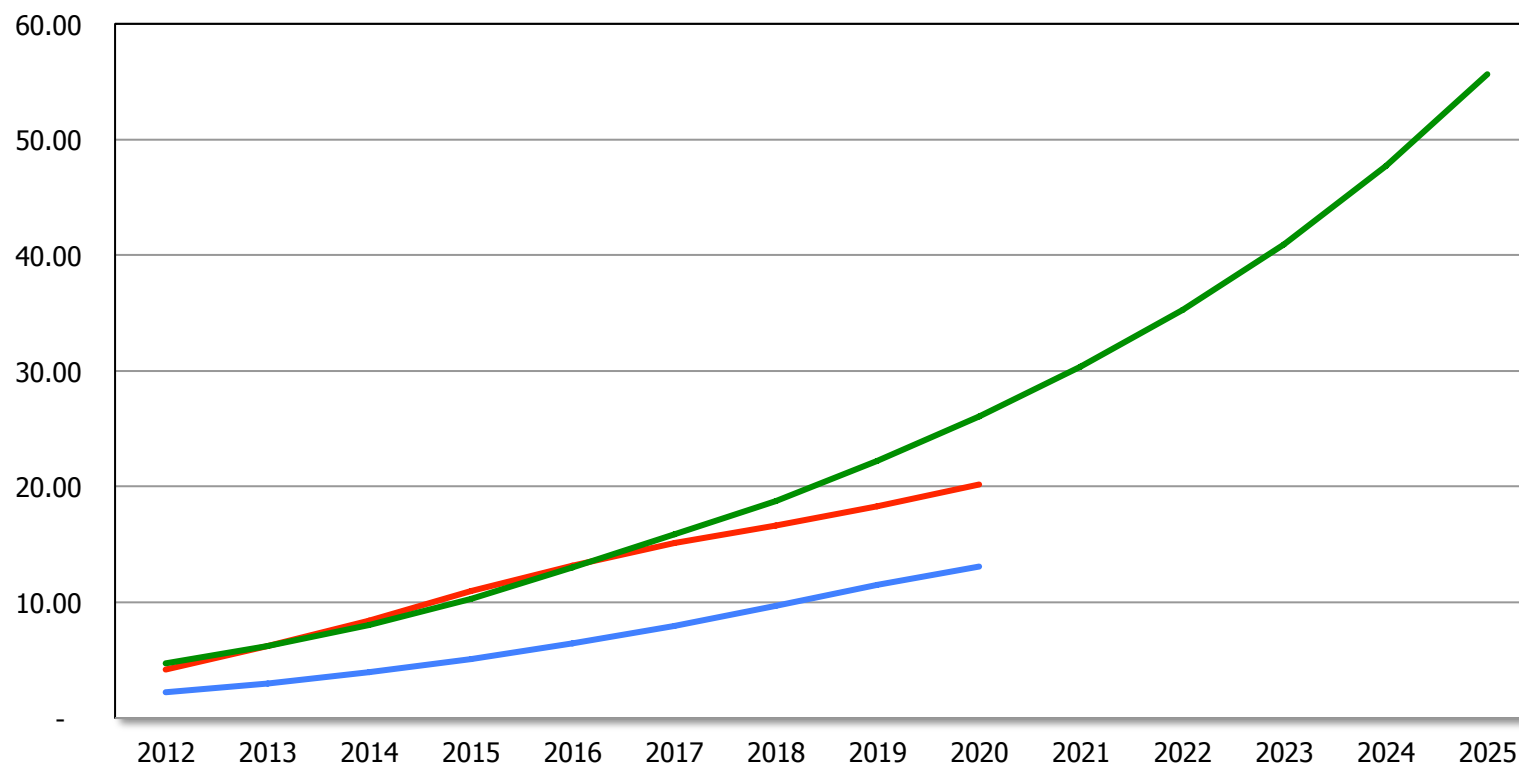


(1) Estimated as 5 ms / 1000 km

The LA intercontinental traffic growth

- Increasing by
 - 50%/year according to CISCO
 - 25%/year according to more prudent estimates
- Europe is 20% of this !
 - False, if we count the leased circuits
 - True, if we take into account
 - Global servers distribution
 - Commercial suppliers data on actual end-to-end traffic

Traffic Forecast Latin America to Europe (Tbps)



US-Europe

Cable	RFS	Landing stations (US)	Landing stations (EU)	Current capacity (Gbps)	2015 est. capacity (Gbps)
Atlantic Crossing-1 (AC-1)	1998	New York	Netherlands / Germany / UK	1000	1000
Columbus-III	1999	Florida	Spain / Portugal / Italy	160	320
Yellow/Atlantic Crossing-2 (AC-2)	2000	New York	UK	320	1280
FLAG Atlantic-1 (FA-1)	2001	New York	France / UK	2400	2400
Hibernia Atlantic	2001	Massachusetts	UK/ Ireland	1920	5080
TAT-14	2001	New Jersey	Denmark / UK / Netherlands / Germany / France	1000	1600
Tata TGN-Atlantic (VSNL)	2001	New Jersey	UK	960	2560
Apollo	2003	New Jersey / New York	UK/ France	640	3200
Project Express	Q2-2013	Massachusetts/ New York	UK	0	8800
Emerald Express	Q4-2013	New York	Ireland / Iceland	0	60000
WASACE Europe	Q4-2014	Virginia	Spain	0	40000

Massive increase in capacity

8.400

126.240

Prices for the route are expected to drop severely

Brazil-US

Cable	RFS	Landing stations (BR)	Landing stations (US)	Current capacity (Gbps)	2015 est. capacity (Gbps)
Americas-II	2000	Fortaleza	Florida / Puerto Rico / Virgin Islands	80	80
GlobeNet	2000	Rio de Janeiro / Fortaleza	Florida / New Jersey	1.280	7.000
South American Crossing (SAC)/ Latin American Nautilus (LAN)	2000	Rio de Janeiro / Fortaleza / Santos	Virgin Islands	1.440	1.440
South America-1 (SAm-1)	2001	Rio de Janeiro / Fortaleza / Santos / Salvador	Florida / Puerto Rico	2.200	10.000
WASACE Americas	2014	Rio de Janeiro / Fortaleza / Santos	Florida / Virginia	0	40.000
America Movil-1 (AM-1)	2012	Rio de Janeiro / Fortaleza	Puerto Rico / Florida	0	30.000 ⁽¹⁾
				5.000	88.520

Massive increase in capacity

Brazil-Europe / Africa

Cable	RFS	Landing stations (BR)	Landing stations (EU / AF)	Current capacity (Gbps)	2015 est. capacity (Gbps)
Atlantis-2	2000	Fortaleza	Senegal / Cape Verde / Portugal	40	40
SAEx	Q2-2013	Fortaleza	Angola / South Africa / Saint Helena	0	32.000
WASACE Africa	2014	Fortaleza (Rio de Janeiro through WASACE Americas)	South Africa / Nigeria / Angola	0	40.000
				40	72.040

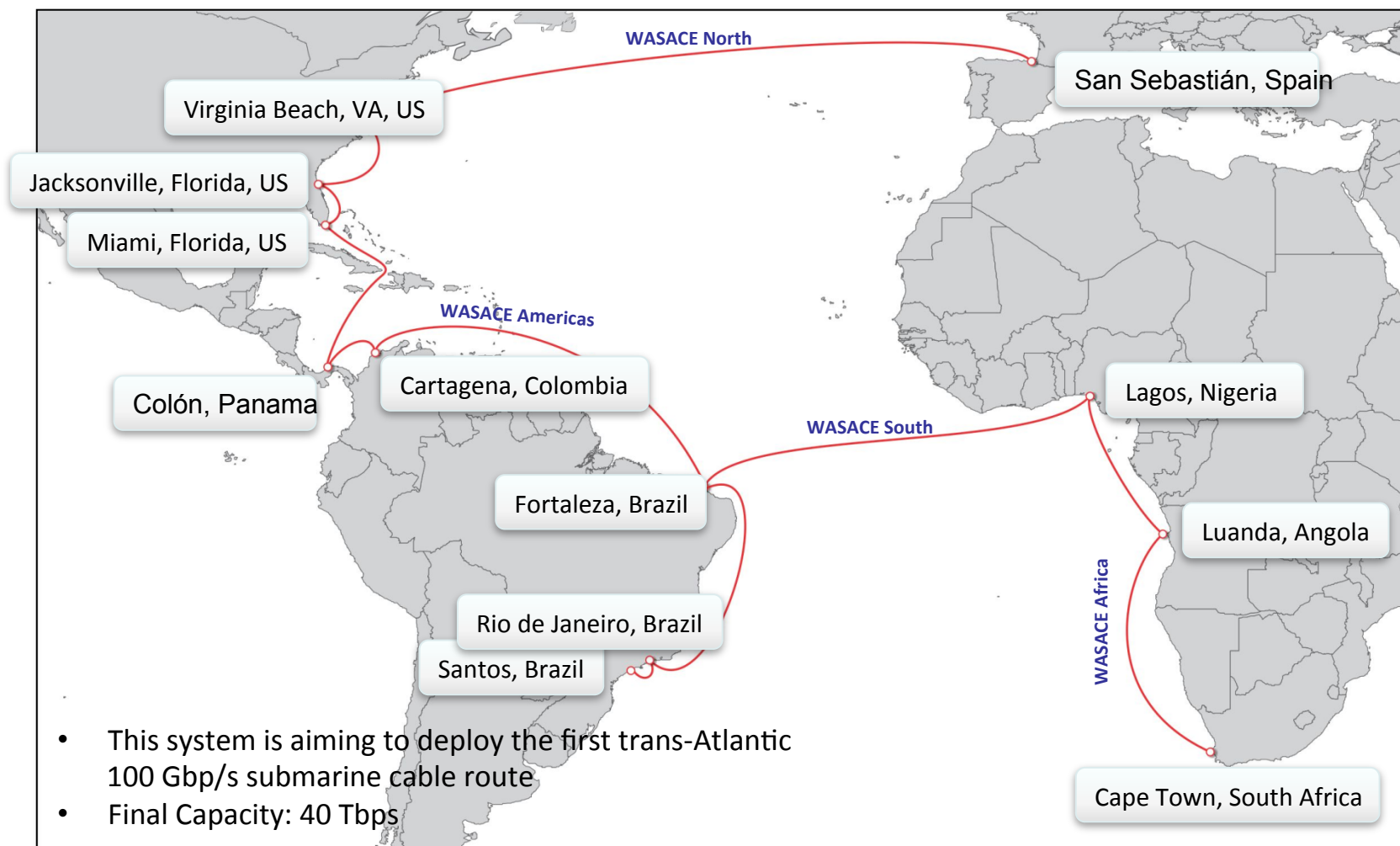
Massive increase in capacity

(1) Estimated. Based on cables with similar RFS dates

America Movil-1 (AM-1)



WASACE System (planned)



Questions to answer about a new cable

- Which technology?
 - 100 Gbps lambdas
 - “Short” legs (less than ~ 5000 km)
- Where should it land in Europe?
 - Europe is sufficiently well connected to make this choice not critical ...
- Where should it land in South America?
 - Cost is the most important factor ...

Cost: Alternative 1



Cost: Alternative 2



Cost: Alternative 3



Cost: Alternative 4



Cost: Alternative 5





The backhaul problem



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- The cost to interconnect the “wet” capacity with the terrestrial network
- An hidden monopoly that we must fight
- Today to exit from the landing station can cost more than the cost of the transoceanic capacity
- Could landing stations become free exchange points?

Who will finance the cable?

- Commercial providers
 - The economic contingency is not the best possible
 - The business case is quite solid and reassuring
 - The income perspectives are very attractive
 - Can we aim at about 90%
- European Commission, Governments, NRENs
 - The strategic impacts is enormous
 - Can we aim at about 10%?

Our Window-of-Opportunity

- We need a lot of lobbying work to collect the public contribution(s)
- In exchange we can get "*unlimited*" capacity
 - The equipment needed to build a new 100 Gbps lambda costs about 500 k€
 - With the right to create as many lambdas as we need (up to 10% of the cable capacity)

An aggressive schedule

- Sep 2012: Feasibility study submitted to the EC
- End 2012: final go/no-go decision
- 2013: start cable-deployment
- 2014: end cable-deployment
- 2015: ready for service