South Atlantic Cable System - SACS
The Impact on the Internet

WTR POP-BA/RNP 2018 – Lightning Talk

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angola cables

Monet
24Tbps

SACS
40Tbps

WACS
5,12Tbps

SACS

SOUTH ATLANTIC CABLE SYSTEM

Is the first transatlantic cable system crossing the South Hemisphere, connecting Africa and the Americas

SACS - Allows for low latency between North and South Hemisphere

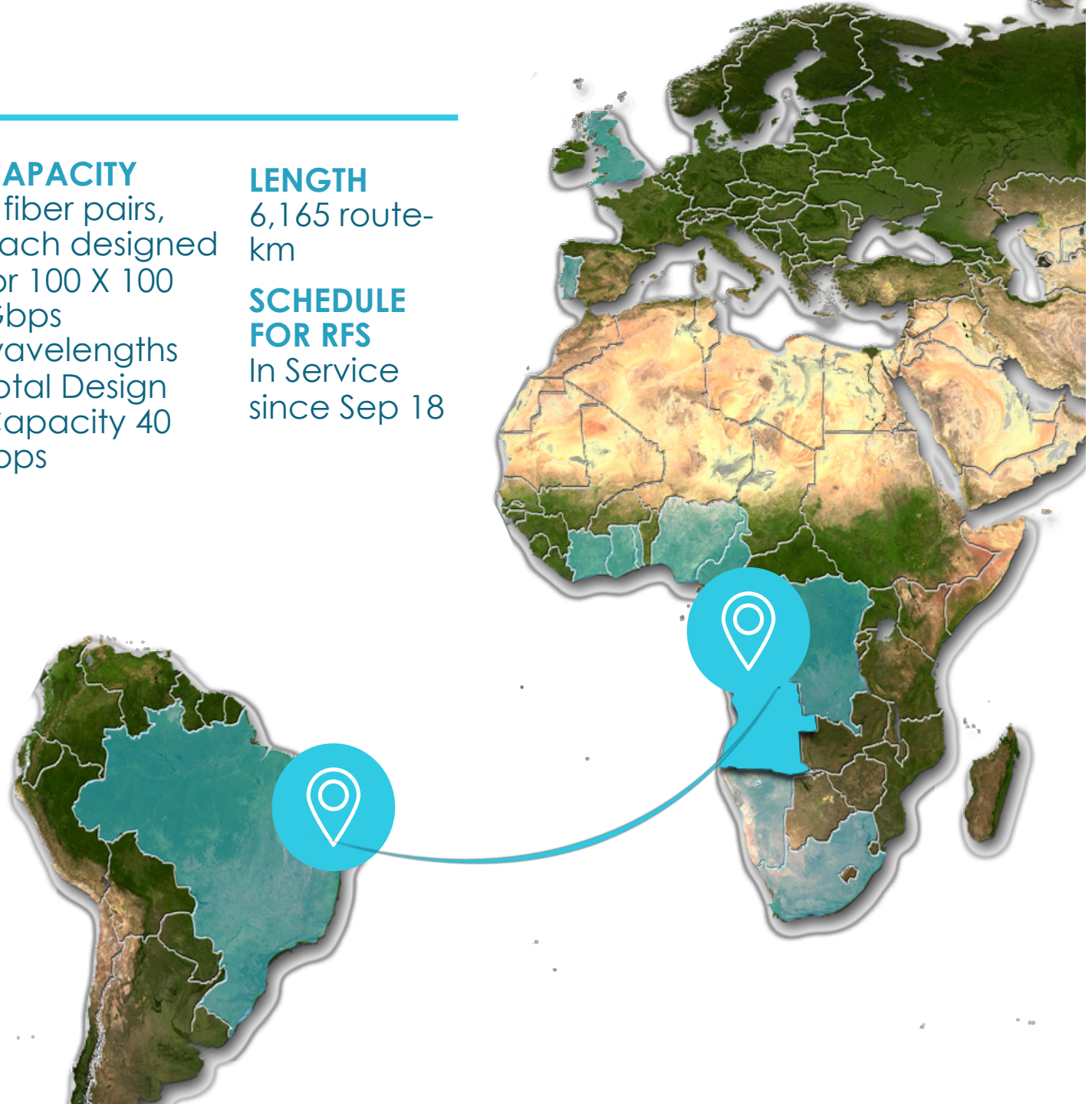
Redundancy path for **North bound trans-Atlantic** routes

Shortest path between **Africa** and **Americas**

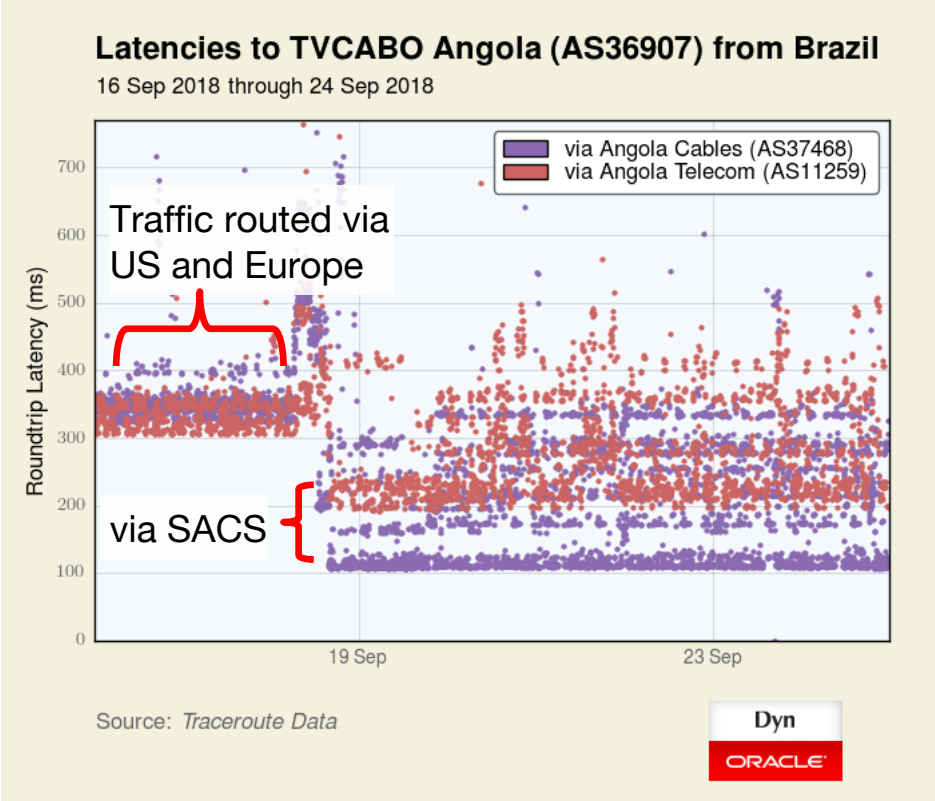
CAPACITY
4 fiber pairs, each designed for 100 X 100 Gbps wavelengths Total Design Capacity 40 Tbps

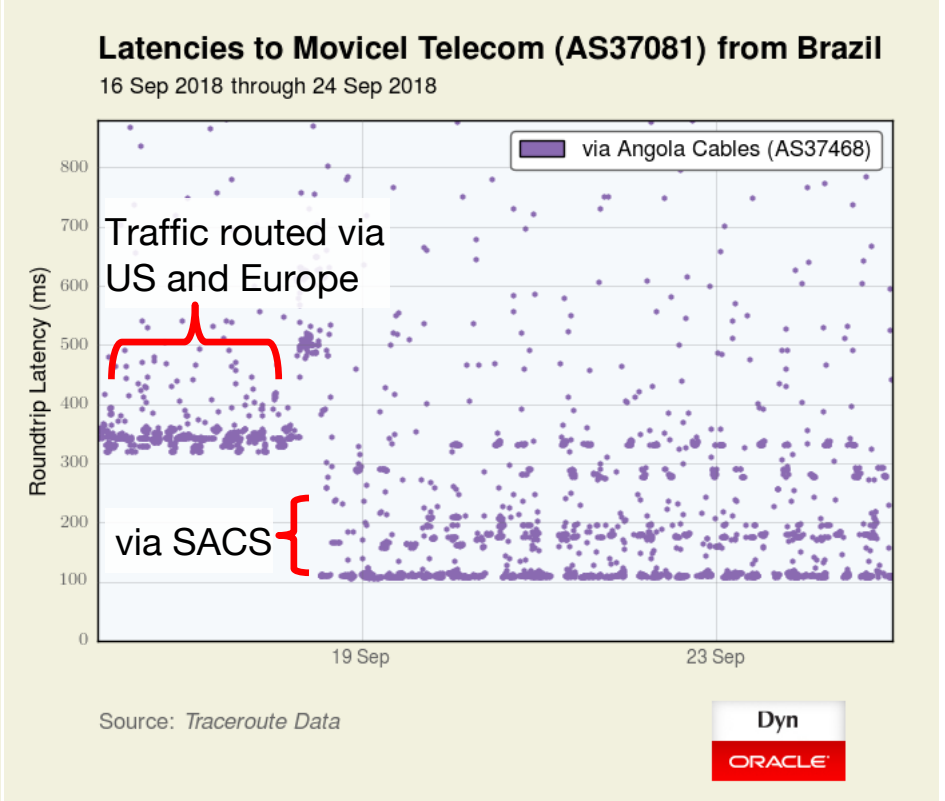
LENGTH
6,165 route-km

SCHEDULE FOR RFS
In Service since Sep 18

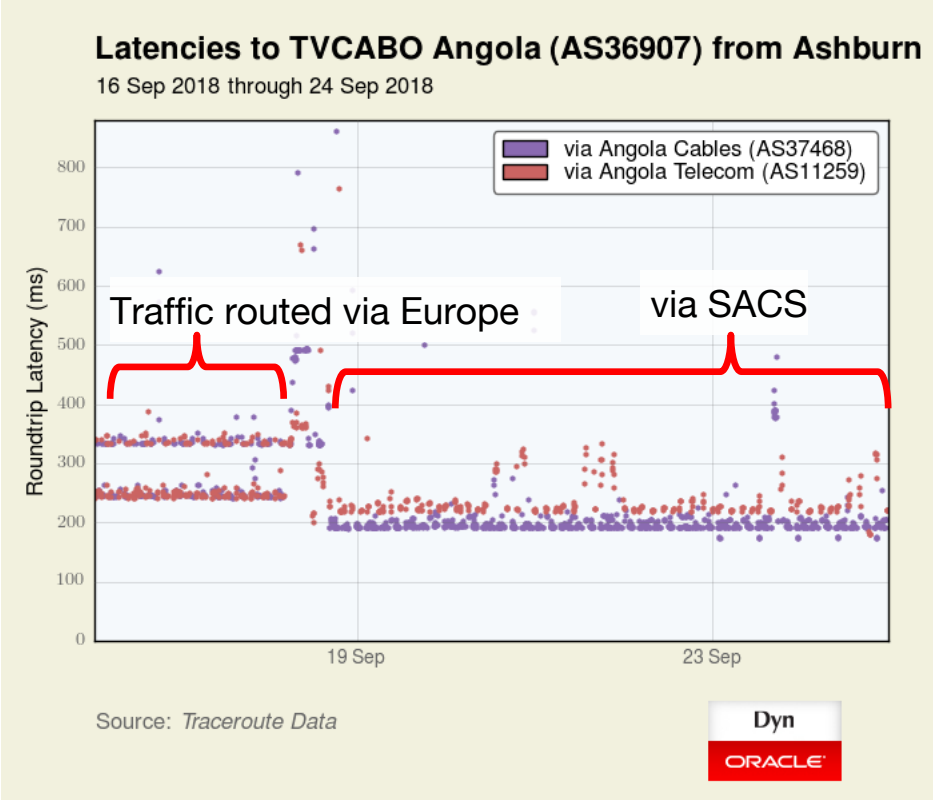


- Latency measurements between Oracle/Dyn servers in various Brazilian cities and Luanda, Angola decreased from over 300ms to as low as 100ms.





- Latencies to Angola from other locations outside Brazil also experienced improvements upon activation of the SACS cable



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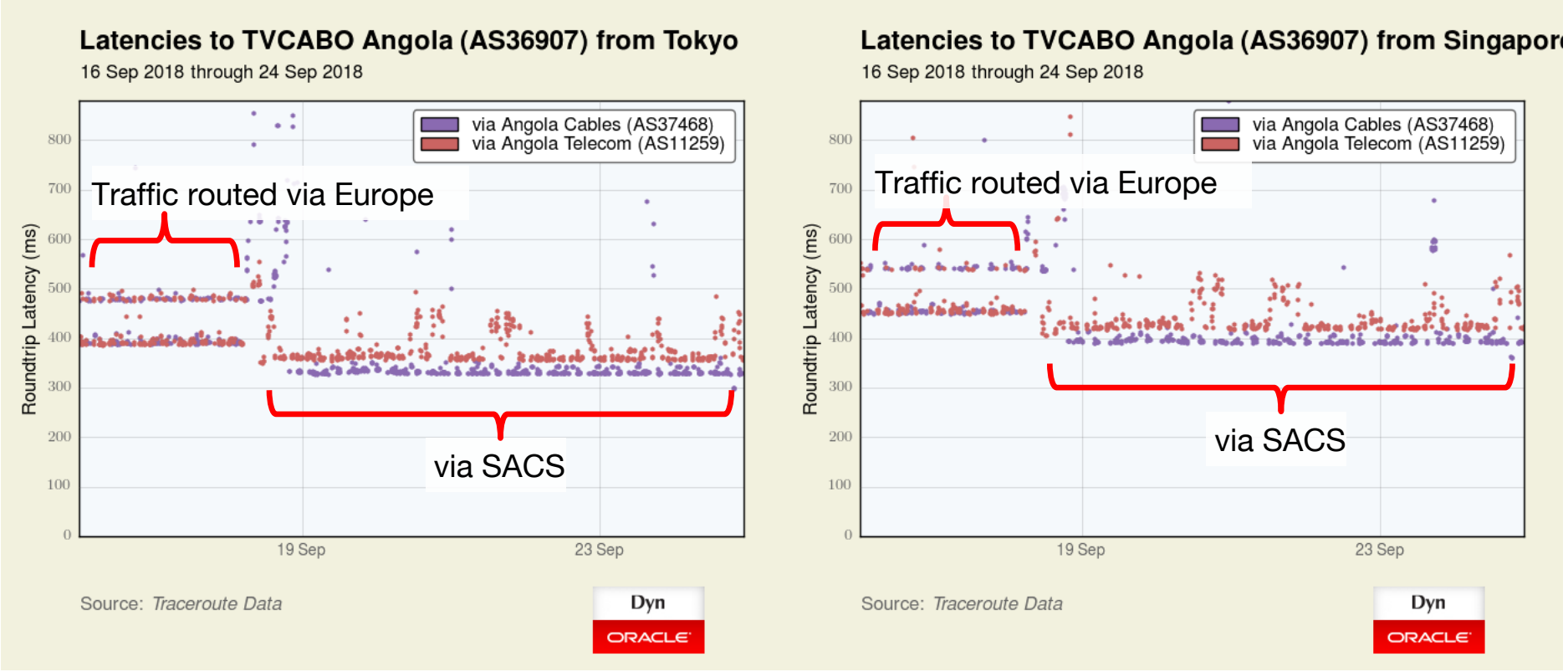

RTT
Router to router

Origin	Destination	RTT (ms) Before SACS	RTT (ms) After SACS	Gain RTT (ms)
Miami	**Luanda**	**278**	**128**	**-150**
Fortaleza	London (UK)	172	150	-22
Fortaleza	Lisbon (PT)	193	162	-31
Fortaleza	Madrid (ES)	208	173	-35
Fortaleza	Cape Town (ZA)	337	112	-225
Fortaleza	**Luanda**	**350**	**63**	**-287**
São Paulo	London (UK)	212	190	-22
São Paulo	Frankfurt (DE)	222	200	-22
São Paulo	Johannesburg (ZA)	384	130	-254
São Paulo	Cape Town (ZA)	377	152	-225
São Paulo	**Luanda**	**380**	**109**	**-271**

Traceroutes to reach São Paulo from Angola

Before SACS

1 4 ms 192.168.100.1
2 <1 ms 172.20.0.9
3 1 ms 192.168.0.3
4 2 ms 197.149.149.1
5 3 ms pe2-nc021.ang.lua.as37468.angolacables.ao [197.149.151.4]
6 4 ms pe2-nc025.ang.sgn.as37468.angolacables.ao [197.149.149.154]
7 157 ms pe2-nce022.pt.lis.as37468.angolacables.ao [185.148.112.22]
8 188 ms pe1-nce014.uk.lon.as37468.angolacables.ao [185.148.112.101]
9 348 ms pe2-nce011.us.bca.as37468.angolacables.ao [170.238.232.45]
10 361 ms 170.238.232.9
11 389 ms pe1-nce012.br.spa.as37468.angolacables.ao [170.238.232.22]
12 429 ms as16509.saopaulo.sp.ix.br [187.16.218.79]

With SACS

1 4ms pe2-nc026.ang.sgn.as37468.angolacables.ao (197.149.149.162)
2 61ms 170.238.232.149 (170.238.232.149)
3 64ms pe1-nc013.br.ftz.as37468.angolacables.ao (170.238.232.81)
4 106ms pe2-nce022.br.spa.as37468.angolacables.ao (170.238.232.69)
5 106ms pe1-nce014.br.spa.as37468.angolacables.ao (170.238.232.61)
6 109ms as16509.saopaulo.sp.ix.br (187.16.217.20)

Conclusion

- SACS represents an unprecedent achievement to the Internet community in Africa and Brazil
  - Dramatic change in the landscape of the commercial Internet ecosystem
  - Brings new business opportunities to ISPs in both continents
  - New R&E alliances opportunities between Americas and Africa, as well as to Europe

Thanks!

Questions? Comments?