



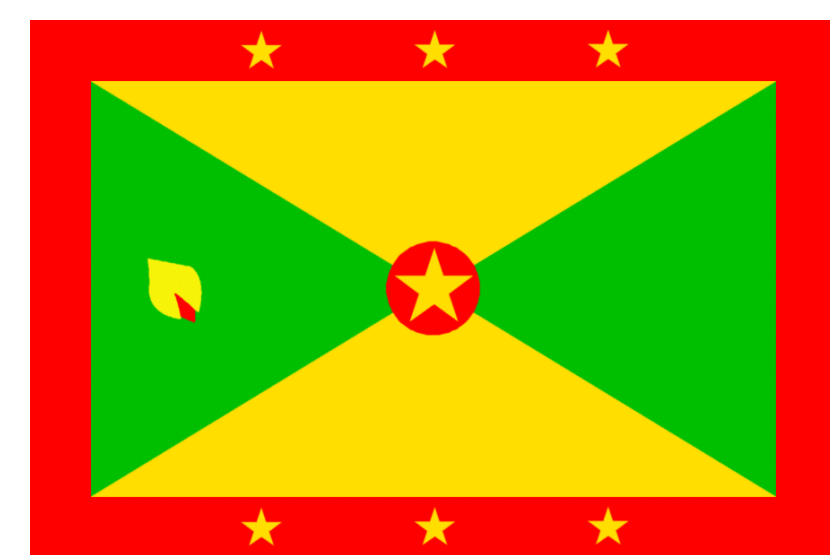
THE WORLD BANK



THE CARIBBEAN TELECOMMUNICATIONS UNION

Caribbean Communications Infrastructure Program (CARCIP) to Increase Regional Broadband Connectivity and Promote ICT-Led Innovation Services in the region

“Supports the Advancement of the Connected Caribbean Initiative Through Regional ICT Connectivity”



CARCIP Aligned to the Broader Regional ICT Agenda

STRONGLY ANCHORED

in CARICOM's
Regional
Digital
Development
Strategy
(RDDS)

DESIGNED

to support a
regional
approach to
holistic
development of
an ICT-enabled
framework

HARMONIZED

Regional
programmatic
design,
allowing
countries to
join individually,
on a need and
readiness basis

SPECIFIC

components built
to allow countries
to start with a core
set of activities
tailored to their
particular needs
but fitting into the
broader regional
strategy

CARCIP Focuses More on the Wholesale vs the Retail Side of the Network...

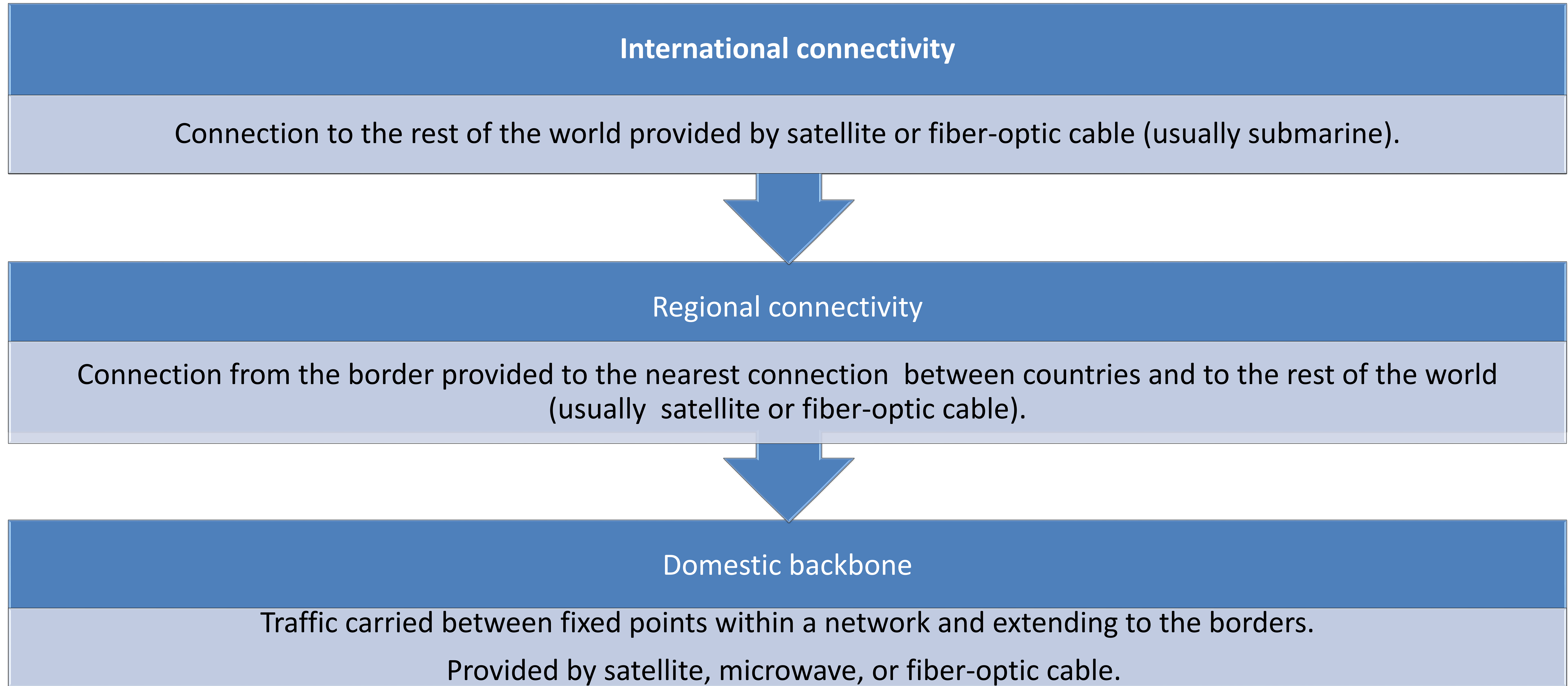


Figure 1: Supply Chain Activities. Source: Adapted from Broadband for Africa, Mark Williams

CARCIP Focuses More on the Wholesale vs Retail Side...

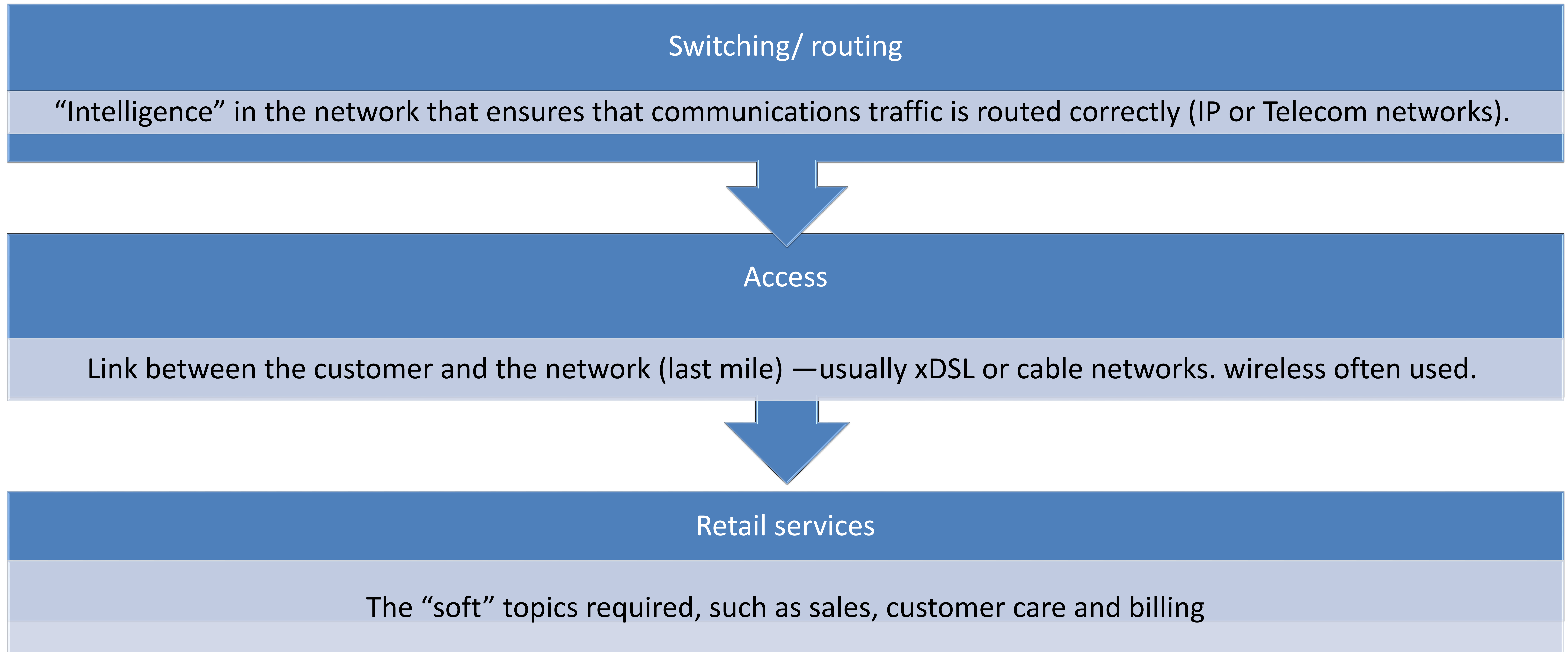


Figure 1: Supply Chain Activities. Source: Adapted from Broadband for Africa, Mark Williams

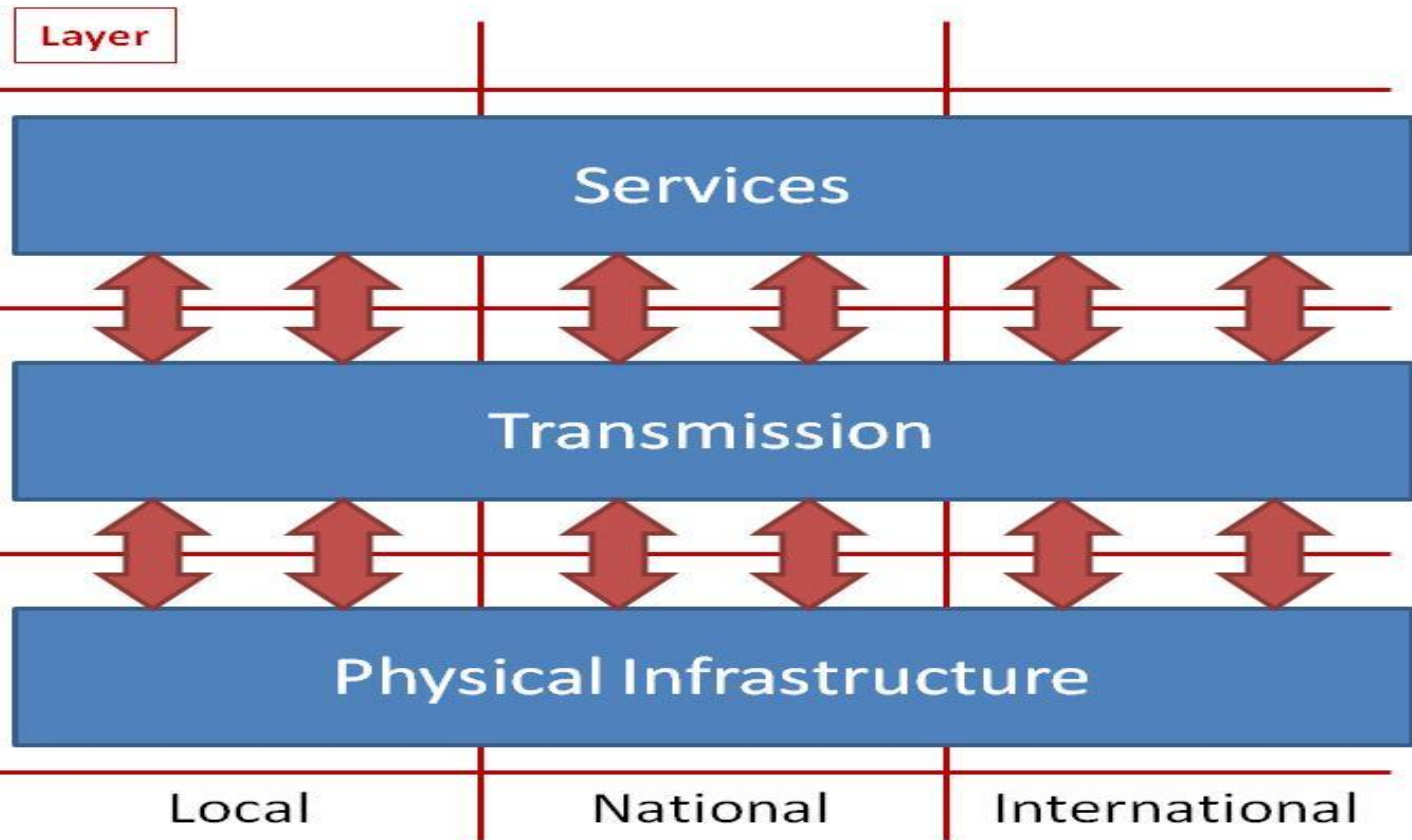
Anyone can play

Technological

Neutrality

Fair and non-discriminatory competition at all layers

Transparency to ensure fair trading within and between layers



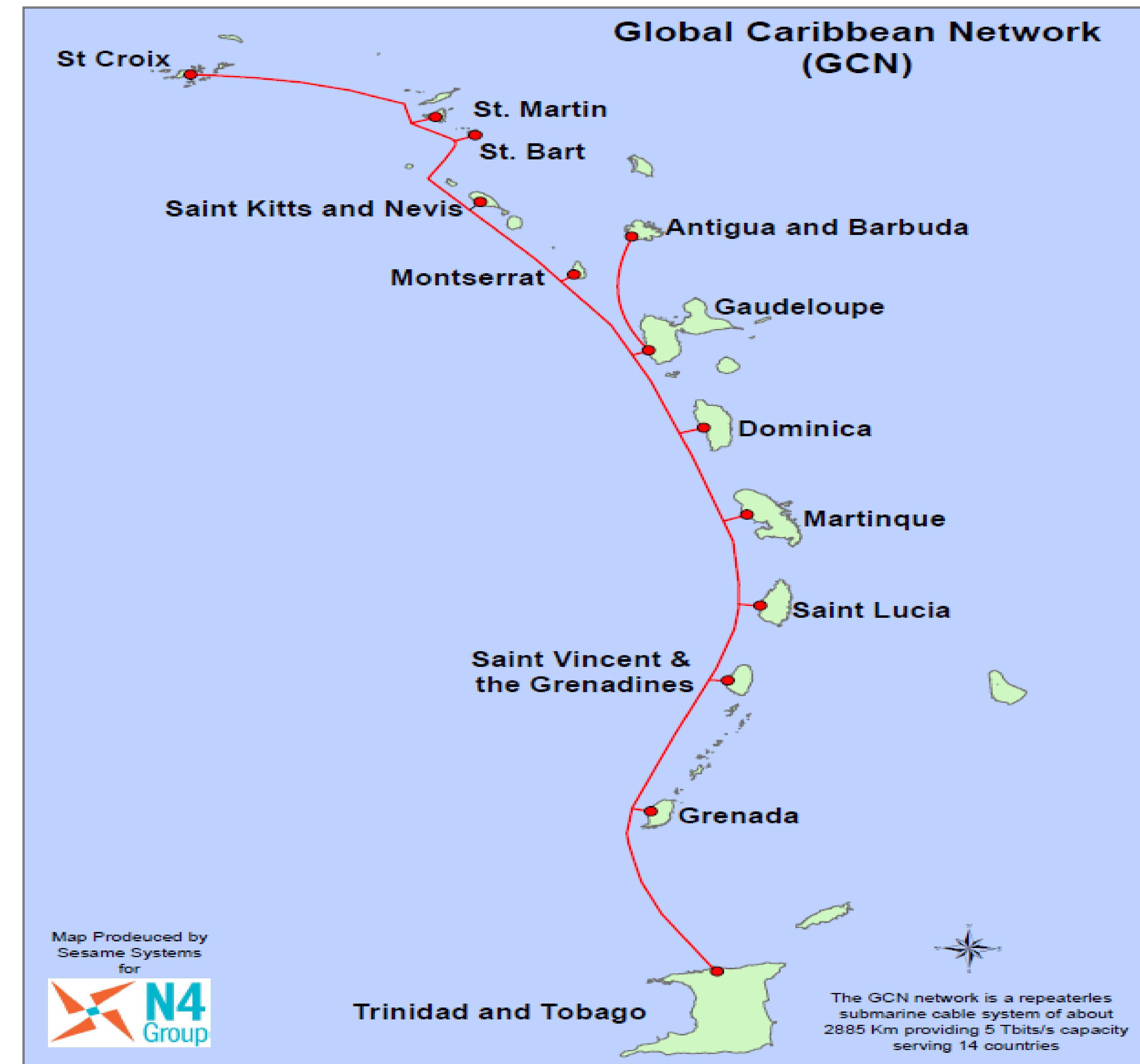
Everyone can connect to everyone else at the layer interface

Devolved rather than centralized solutions

Spintrack AB. 2005. Open Access Models: Options for Improving Backbone Access in Developing Countries. Washington, DC: infoDev / World Bank. Available at: <http://www.infodev.org/en/Publication.10.html>

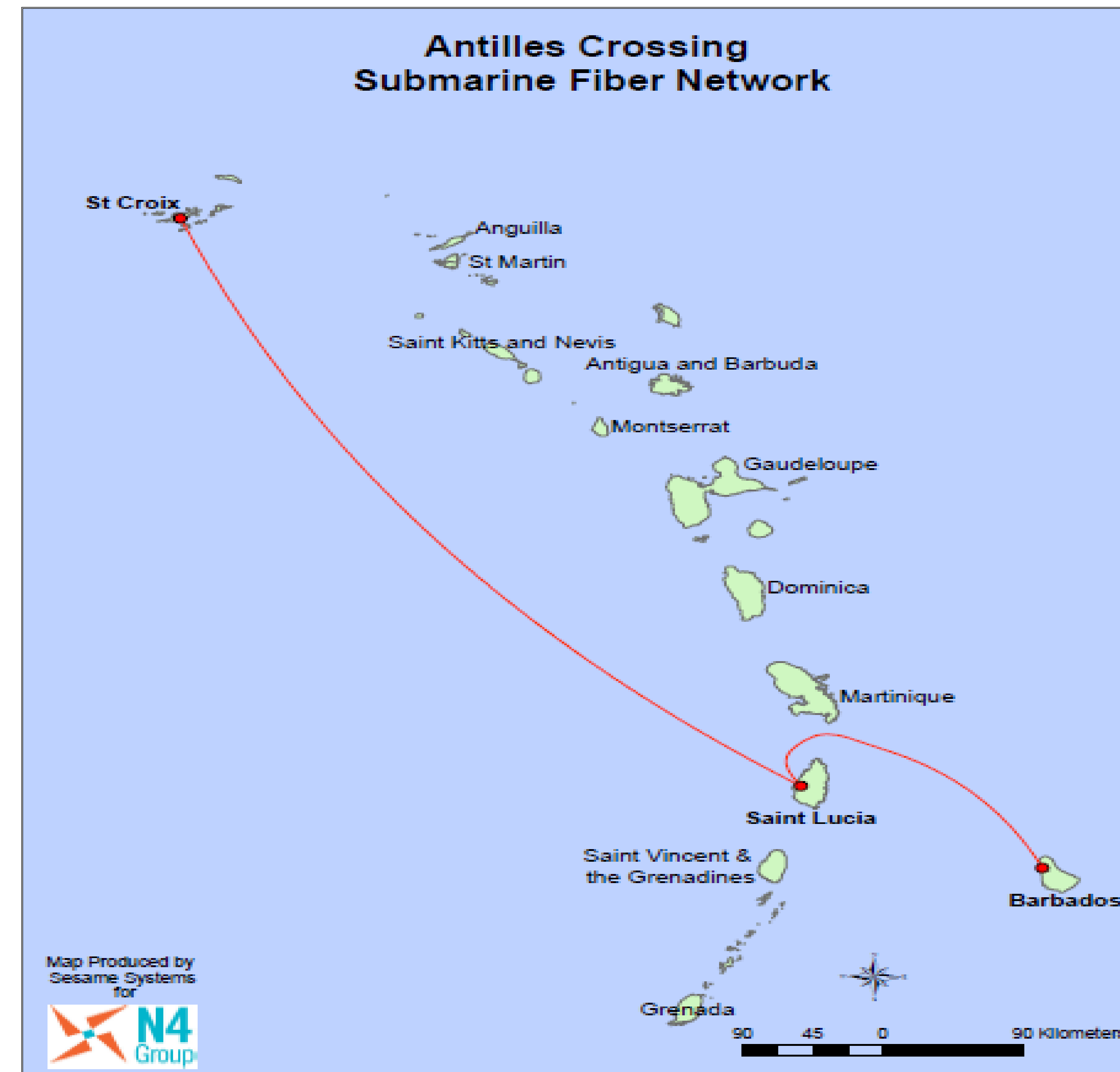
Global Caribbean Network (“GCN”)

System Name:	Global Caribbean Network
Landing Points:	Baie-Mahault (Guadeloupe), Baliff (Guadeloupe), Basseterre (St. Kitts & Nevis), Bridgetown (Barbados), Canefield (Dominica), Dickenson Bay (Antigua), Galisbay (St. Martin), Hams Bluff (Virgin Islands), Kingston (St. Vincent), Le Lamentin (Martinique), Macqueripe (Trinidad), Poer Castries (St. Lucia), Port Salines (Grenada)
RFS Year:	2004
Est. End of Service Date:	2029
Total Length (km):	2,100
Initial Capacity:	1.2 Tb / s
Est. Cost (US\$)	\$17,520,000
Owners:	The Loret Group
System Supplier:	Alcatel Submarine Networks
System Installer:	Alcatel Submarine Networks



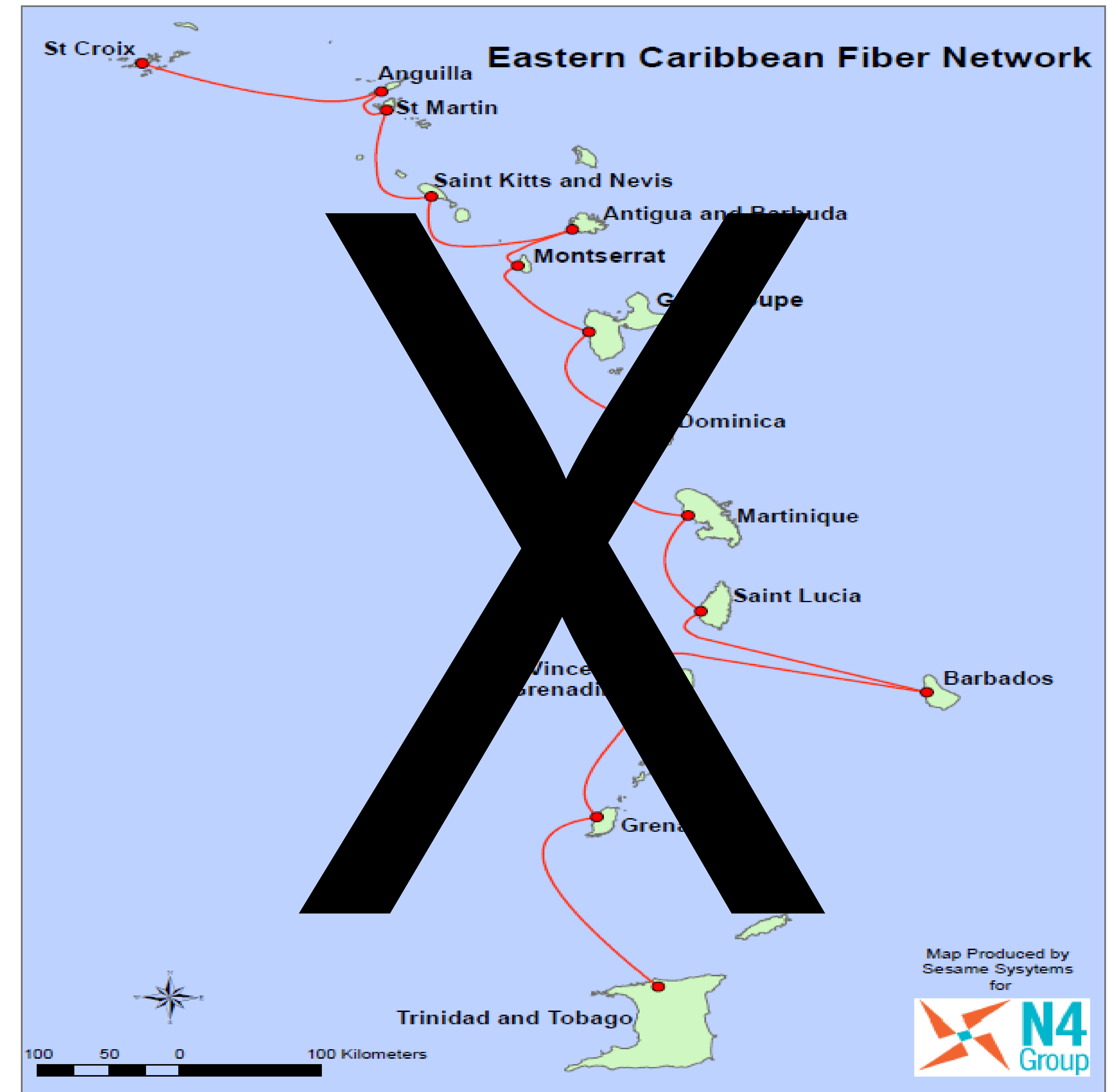
Antilles Crossing

System Name:	Antilles Crossing
Landing Points:	Bridgetown (Barbados), Hams Bluff (Virgin Islands), Port Castries (St. Lucia)
RFS Year:	2006
Est. End of Service Date:	2031
Total Length (km):	972
Initial Capacity:	40 Gb / s
Design Capacity:	80 Gb /s
Owners:	Leucadia, Barbados Light & Power, Telebarbados
System Supplier:	Tyco Telecommunications SSI
System Installer:	Tyco Telecommunications SSI



Eastern Caribbean Fiber Network (“ECSF”)

System Name:	Eastern Caribbean Fiber System (“ECFS”)
Landing Points:	Anguilla (Anguilla), Baliff (Guadeloupe), Basseterre (St. Kitts & Nevis), Bridgetown (Barbados), Canefield (Dominica), Dickenson Bay (Antigua), Kingstown (St. Vincent), Martinique (Martinique), Montserrat (Montserrat), Port Salines (Grenada), St. Lucia (St. Lucia), St. Martin (Netherlands Antilles), Tortola (British Virgin Island), Trinidad (Trinidad).
RFS Year:	1995
Est. End of Service Date:	2020
Total Length (km):	1,729
Initial Capacity:	2.5 Gbps
Owners:	AT&T, BET (Barbados), Cable & Wireless, France Telecom, TSTT
Est. Cost (US\$):	\$60,000,000
System Supplier:	Alcatel Submarine Networks
System Installer:	Cable & Wireless Marine (Cablesip: Mercury)

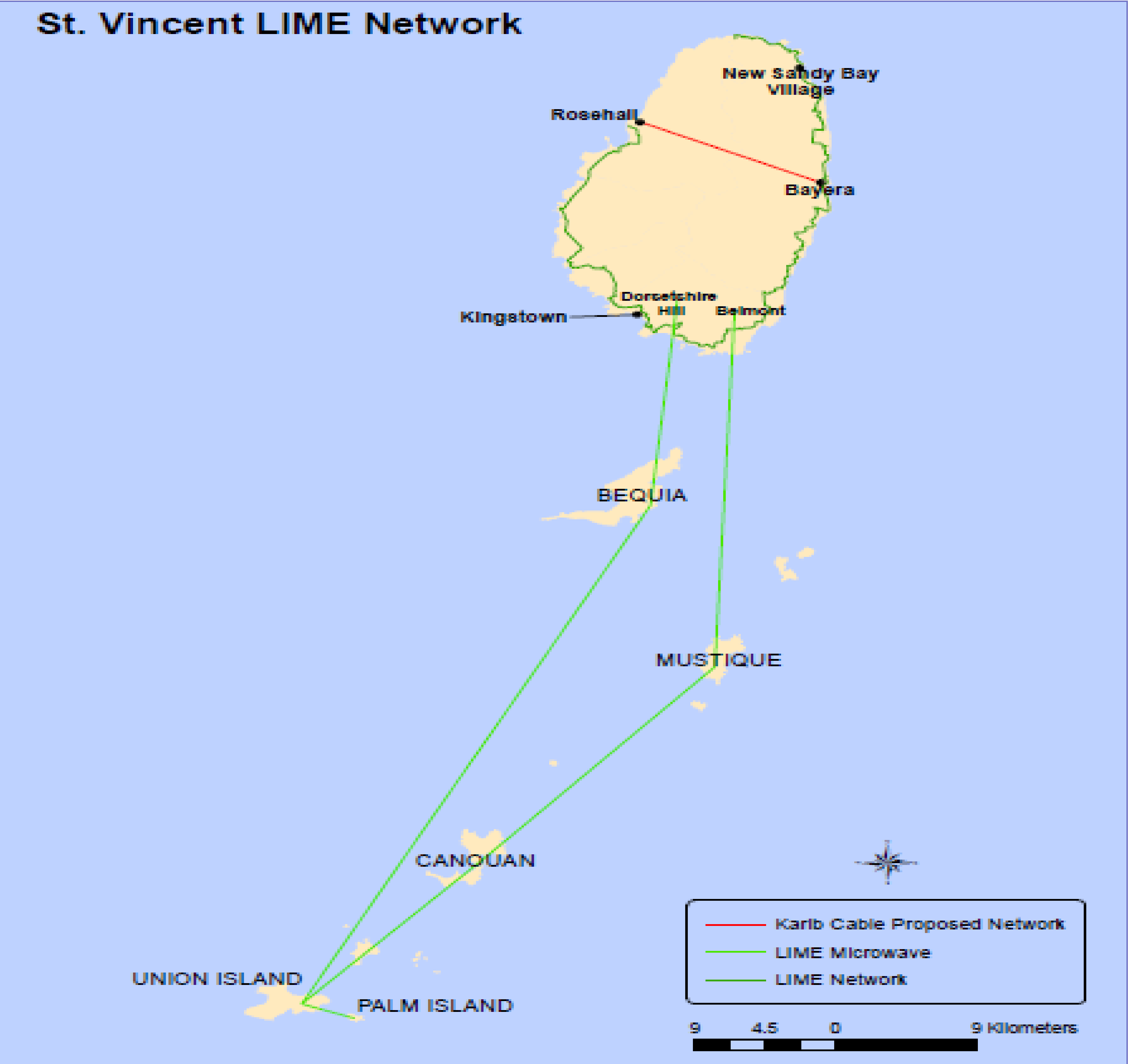


Grenadines Existing Microwave Network

Multi-Service Access Nodes (“MSAN”) to deliver business and residential service.

Typically located in population centers throughout the Country.

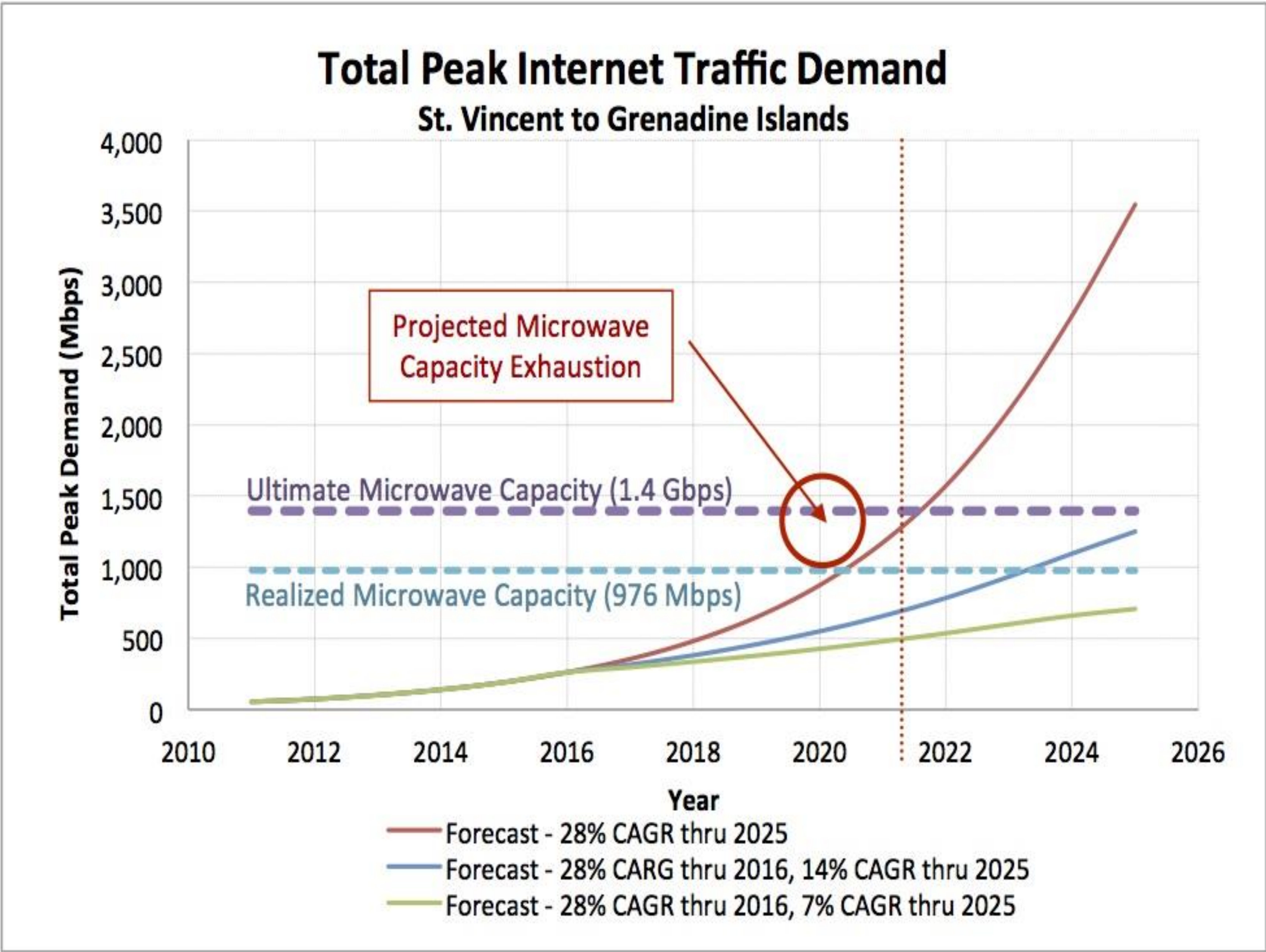
MSANs connect customers' telephone lines to the core network, to provide telephone, ISDN, and broadband



Gap Analysis – St. Vincent to Grenadine Islands

Demand Forecast analysis, current and projected households utilizing existing Internet and telecommunications services

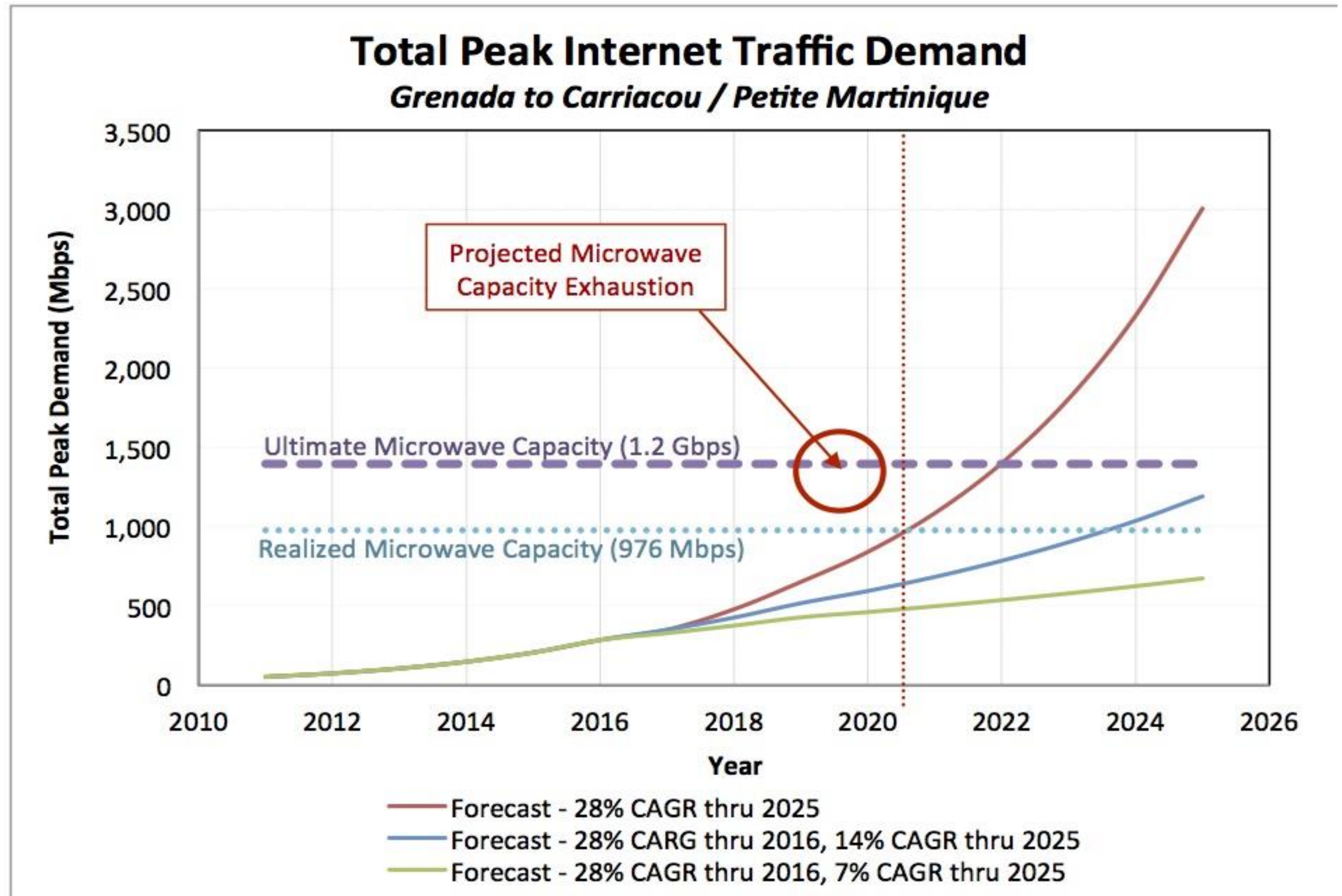
Microwave spectrum could be optimised support the traffic requirement until 2019 meet the forecasted capacity of 1.395 Gbps



Gap Analysis - Grenada to Carriacou and Petit Martinique

Demand Forecast analysis, current and projected households utilizing existing Internet and telecommunications services

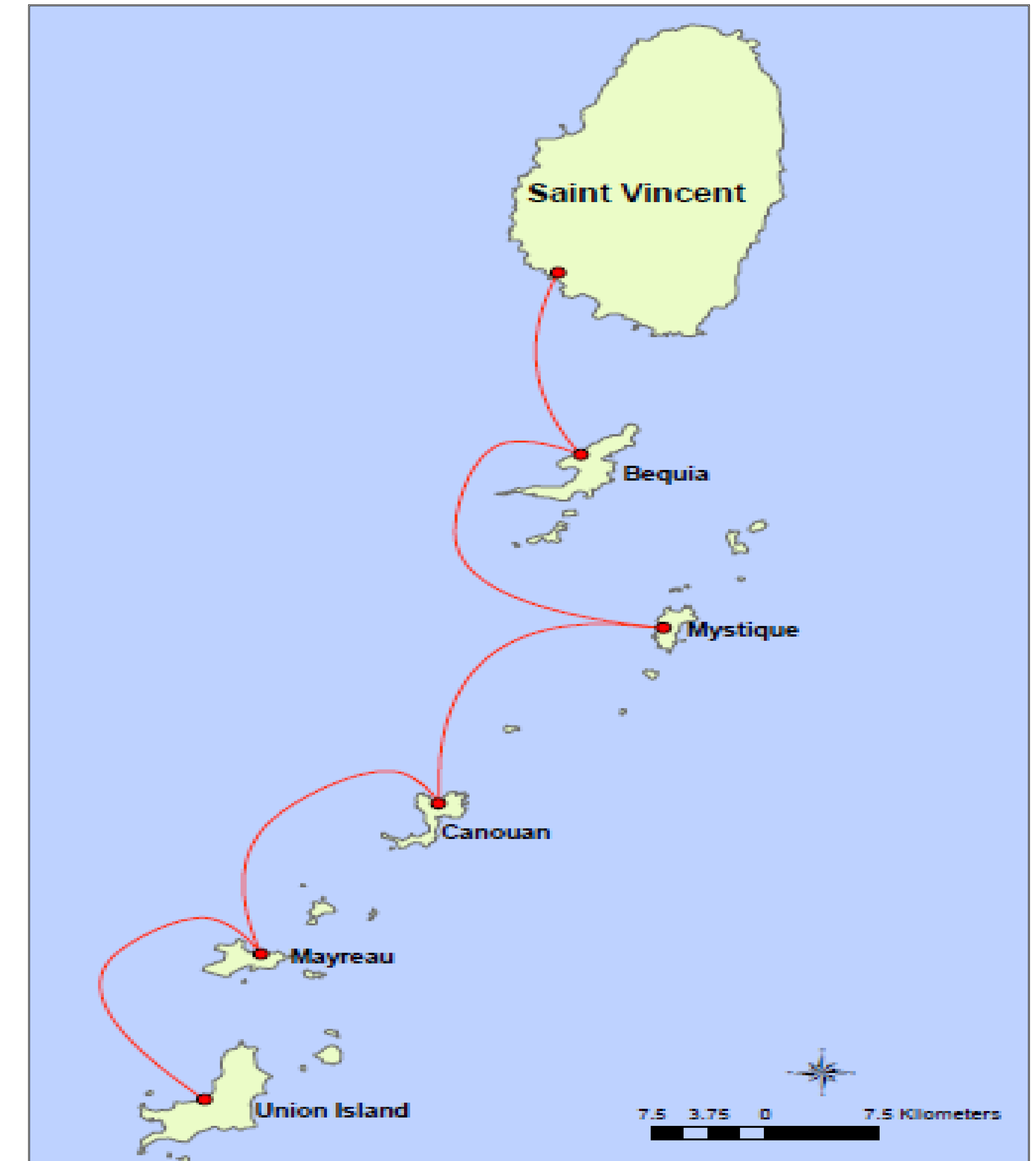
Microwave spectrum could be optimised support the traffic requirement until 2019 meet the forecasted capacity of 1.2 Gbps



Intra-Regional Forecast

St. Vincent and the Grenadines Islands

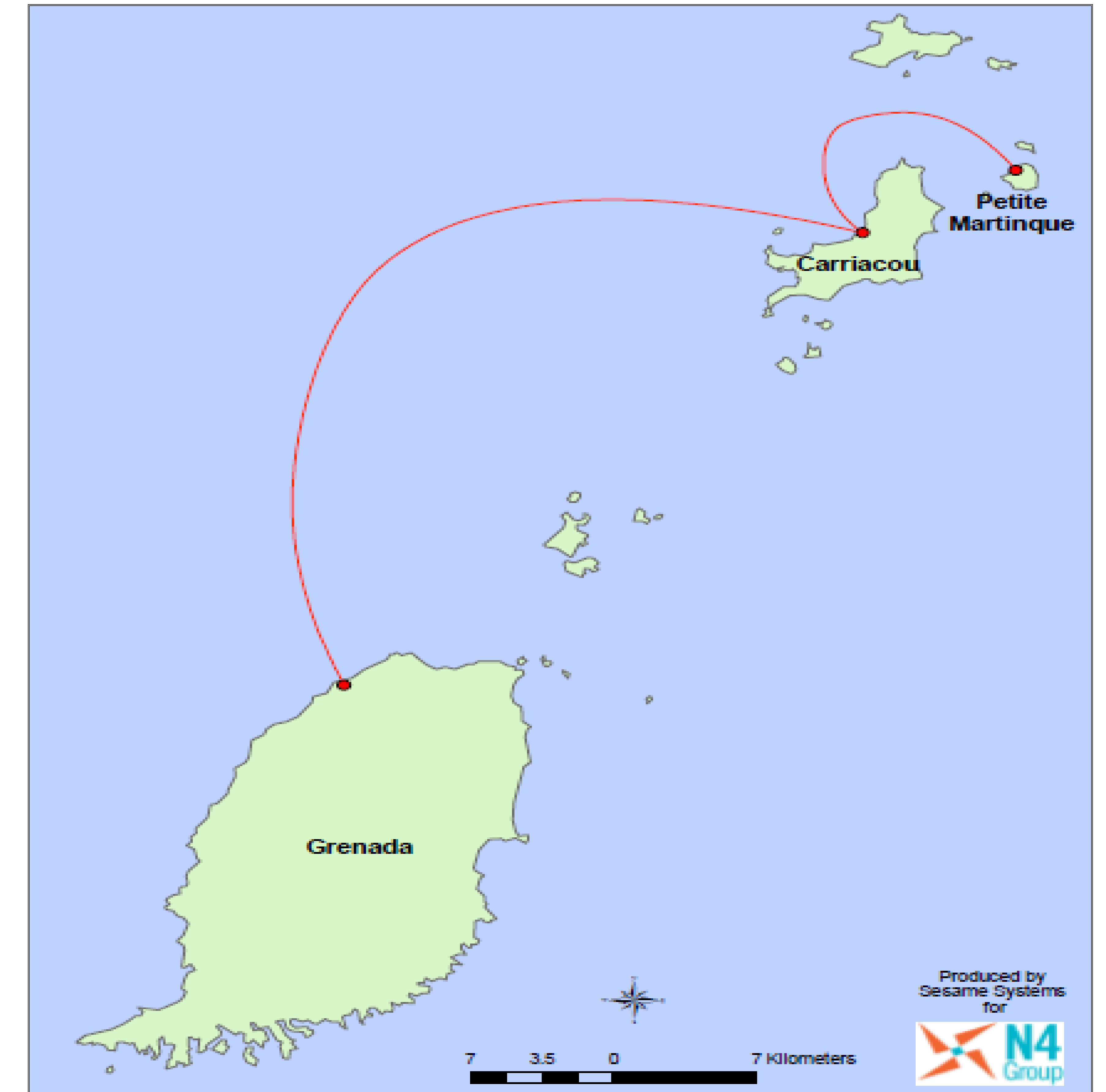
A Site	B Site	Total Miles	Estimated Cost
St. Vincent	Bequia	10.7	\$1,157,774
Bequia	Mustique	20.0	\$2,164,064
Mustique	Canouan	15.2	\$1,644,688
Canouan	Mayreau	7.3	\$789,883
Mayreau	Union Island	4.1	\$443,633
Totals		57.3	\$6,200,042
Annual Operating Expenses			\$155,000
Annual - Projected Revenue (@ yr5)			\$540,000
<i>Projected Break-Even (in Years)</i>			16.1



Intra-Regional Forecast

Grenada to Carriacou / Petite Martinique

A Site	B Site	Total Miles	Estimated Cost
Grenada	Carriacou	41.0	\$4,436,323
Carriacou	Petite Martinique	2.6	\$281,328
Totals		43.6	\$4,717,650
<i>Carriacou</i>	<i>Union Island</i>	8.3	\$898,085
Annual Operating Expenses			\$117,950
Annual Projected Revenue (@ yr5)			\$577,988
Projected Break-Even (in Years)			10.2



Carrier Ethernet Reference Model – Adopted for GovNet

By adopting a Carrier Ethernet model, GovNet could easily leverage existing fiber optic infrastructure already deployed by the service providers in each respective Country, reducing the overall cost of deploying GovNet.

MEF's Carrier Ethernet Reference Model embraces emerging Cloud-Base services and allows for both public and private networks.

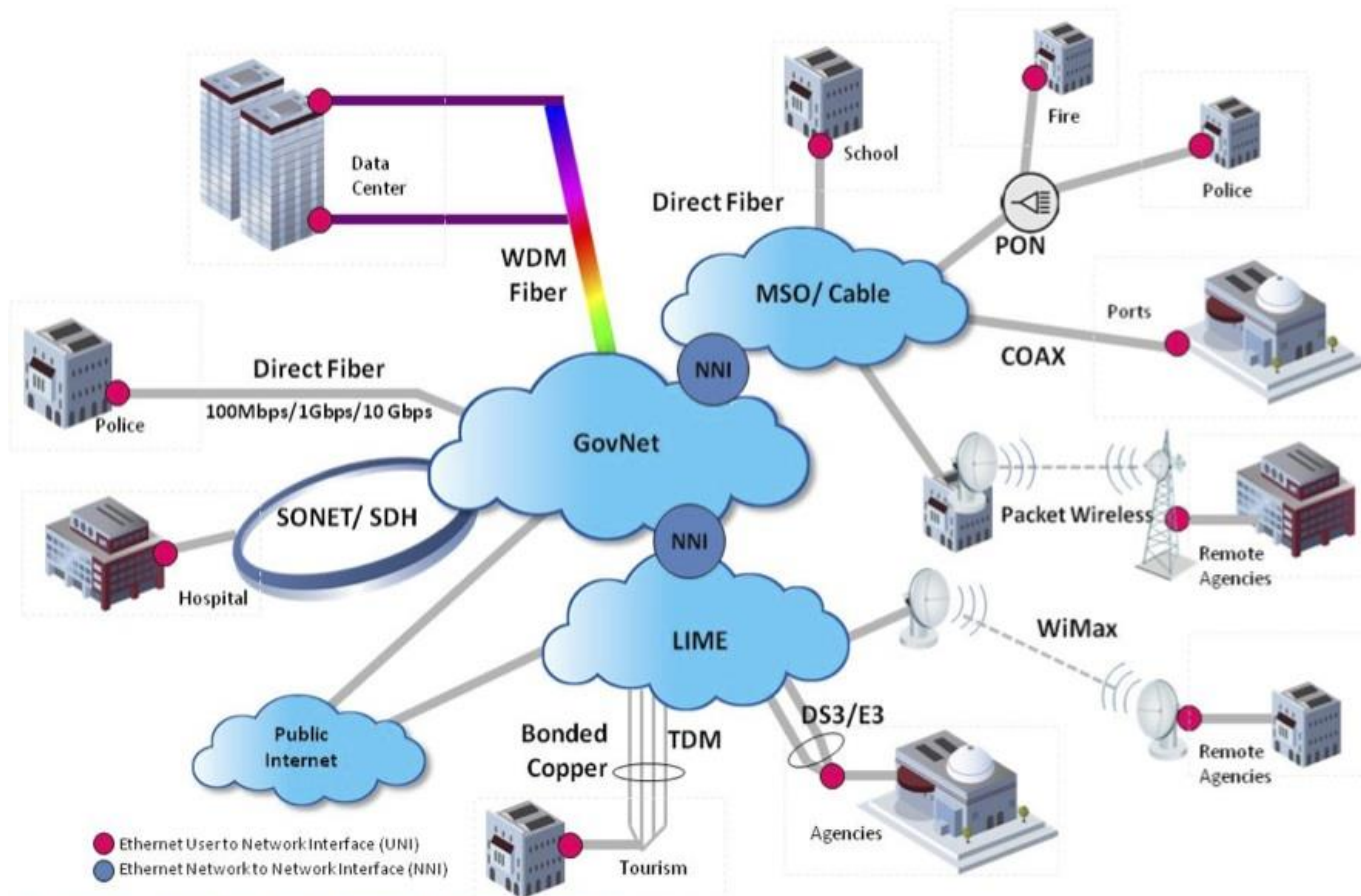


Figure 37 - MEF Carrier Ethernet Reference Model

Internet Exchange / Data Center - International Traffic “Offload” / Local Content Strategy

Off-Load International Traffic from Submarine Infrastructure / Transit

- International Traffic / Transit is Costly
- Improve Quality / Latency

Combine Regional Internet Exchange with Data Center

- Content is Critical to IXC Success

Position Region for Cloud Computing Trends

- Cloud Computing offers Compelling IT Value Proposition
- Virtualization of Servers and Devices (Reduce Costs via Scale and Resource Pooling)
- Business, Government and Educational Opportunities

Attract Content Sources / Content Delivery Networks (“CDN”)

- Smart Caching
- Infrastructure as a Service (“IaaS”)
- Software as a Service (“SaaS”)

ICT Employment Opportunities

- Cloud and Virtualization
- Application Development & Web Hosting



CARCIP Strategic Objectives



**Integrated, Connected &
ICT Enabled Region**

ICT-Led Innovation

**Regional Infrastructure
Connectivity**