

Ninth Eastern Caribbean Network Technical Group (E/CAR/NTG/9) &

Seventh Eastern Caribbean Radar Data Sharing Ad hoc Group (E/CAR/RD/7) Meetings

July 14, 2020



AGENDA

ECAR NETWORK FEATURES

Three (3) aspects of the network

01

MANAGED SERVICE CAPABILITIES

Three (3) Elements of Managed Services

02

NETWORK PERFORMANCE ANALYSIS

ECAR Reporting Statistics

03

UPGRADE & RECOMMENDATIONS

Issues identified along with proposed solution

04

ECAR Network

Features

ASPECTS OF THE ECAR NETWORK

WAN Solution for Aeronautical Fixed Service (AFS) Network:

1

Regional Circuits

Regional MPLS circuits
with Cisco WAN edge
routers

2

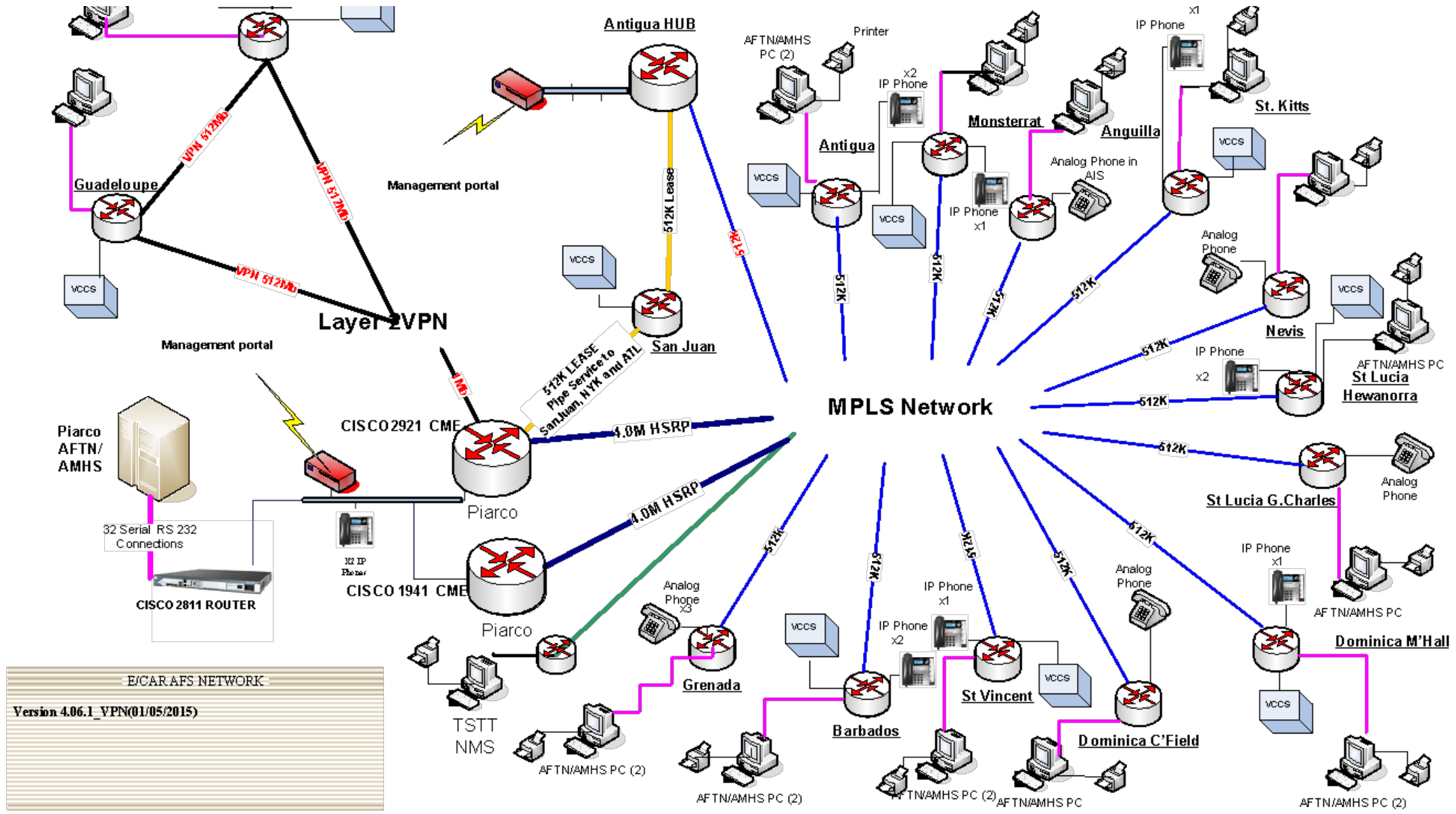
Convergence

Converged Voice and
Data

3

Redundancy

Redundant paths and
standby devices



E/CAR.AFS NETWORK
 Version 4.06.1_VPN(01/05/2015)

Managed Service --- Capabilities

MANAGED SERVICE SOLUTION



Monitor

Fault Management,
Availability & Performance Monitoring



Analyze

Fault Analysis,
Remediation



Remediate

Configuration changes,
Upgrades

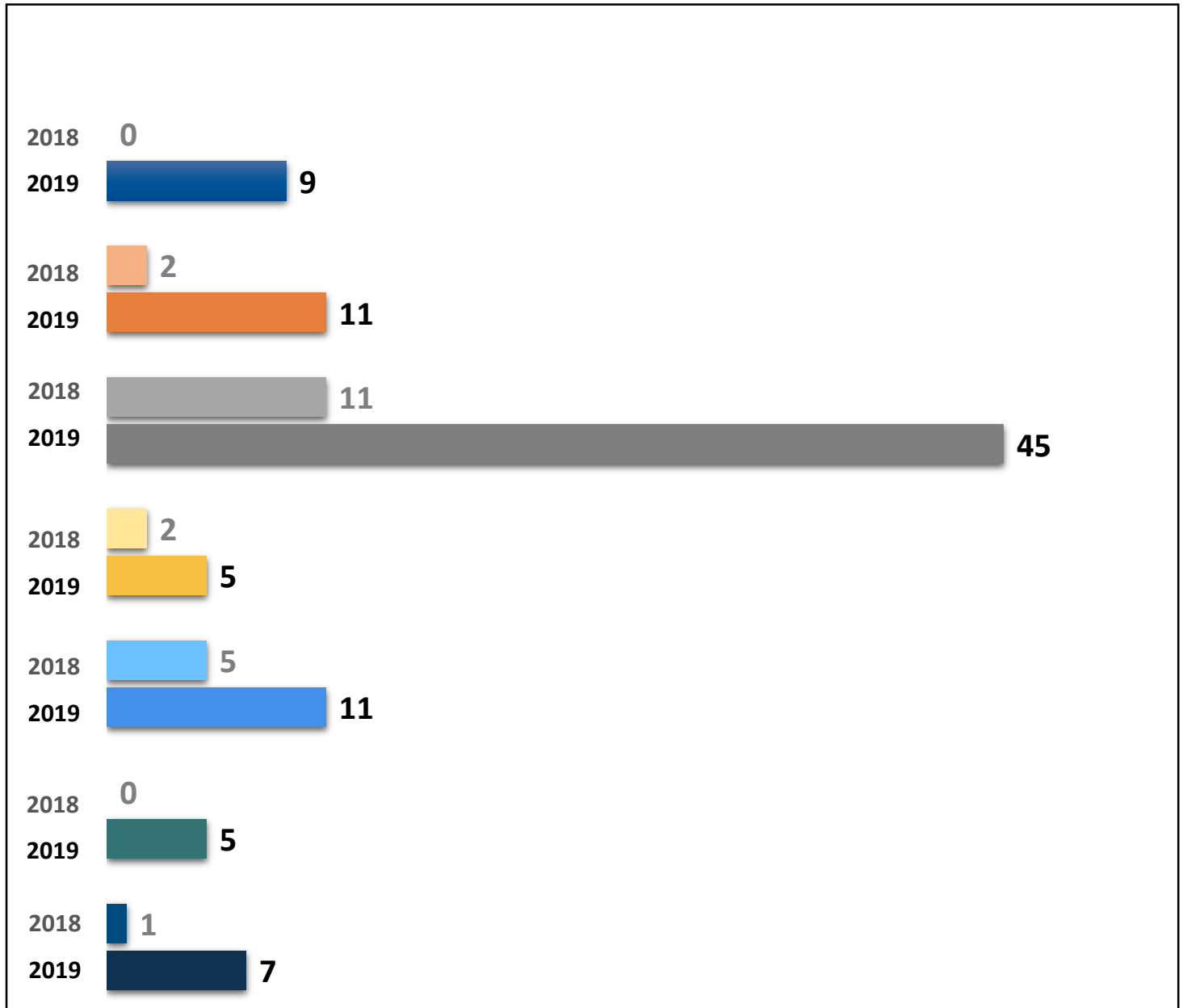
Network Performance

Analysis

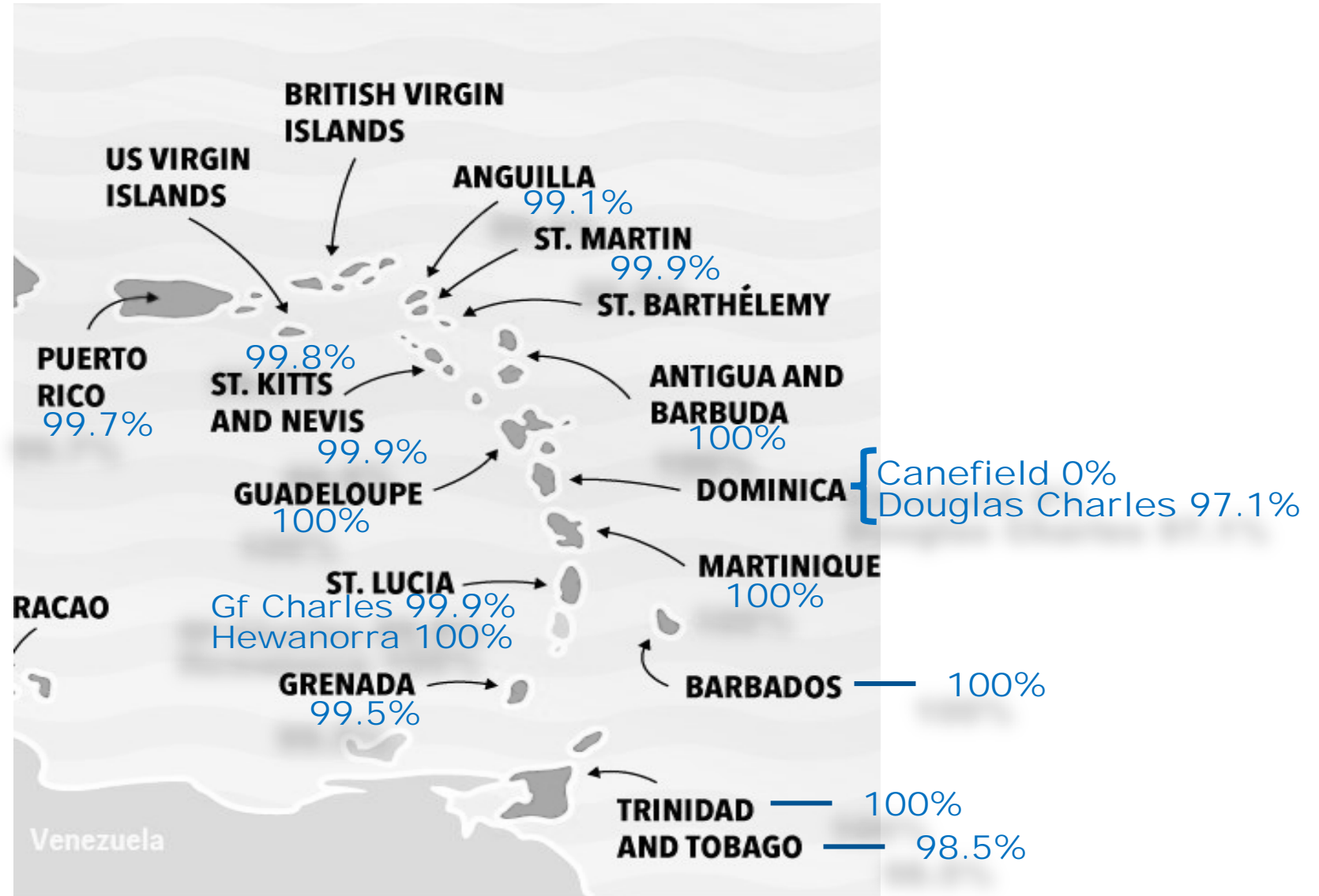
ECAR FAULTS BY TYPE

Jan - Dec 2018 vs Jan - Dec 2019
21 Reported Faults vs 93 Reported Faults

- Web Portal/App**
Issues related to the applications web portal.
- Power**
Loss of power related faults
- Voice**
Voice related faults
- Data/Configuration**
Issues related to system configurations and/or data
- Link**
Outage of links
- Router**
Router related issues and/or troubleshooting
- No Fault Found**
No actual fault found



% Availability by Country 2019/20



Number of Faults by Territory

2017- 2019

	2017	2018	2019
Anguilla	2	0	1
Antigua	9	5	3
Barbados	3	0	2
Dominica-Canefield	7	0	0
Dominica Douglas Charles	2	0	3
Grenada	1	1	3
Guadeloupe	12	5	3
Martinique	13	3	9
Montserrat	13	0	23
Nevis	1	0	1
Piarco	26	4	18
Puerto Rico-San Juan	24	3	17
Saint Kitts	3	0	1
Saint Lucia-G F Charles	0	0	1
Saint Lucia-Hewanorra	3	0	4
St. Vincent and the Grenadines	1	0	2
Tobago	0	0	2

Anguilla	98.3%	96.0%	99.1%
Antigua	98.9%	98.8%	100.0%
Barbados	100.0%	100.0%	100.0%
Dominica-Canefield	5.0%	0.0%	0.0%
Dominica Douglas Charles	5.0%	68.8%	97.1%
Grenada	100.0%	100.0%	99.5%
Guadeloupe	99.5%	99.5%	100.0%
Martinique	99.8%	99.8%	100.0%
Montserrat	96.6%	93.8%	95.2%
Nevis	99.1%	99.1%	99.9%
Piarco	100.0%	100.0%	100.0%
Puerto Rico-San Juan	0.0%	93.2%	99.7%
Saint Kitts	99.2%	99.2%	99.8%
Saint Lucia-G F Charles	99.9%	99.9%	99.7%
Saint Lucia-Hewanorra	99.7%	99.7%	99.7%
St. Vincent and the Grenadines	99.9%	99.9%	99.8%
Tobago	100.0%	100.0%	99.5%
	2017	2018	2019

% Availability ECAR YOY Comparison

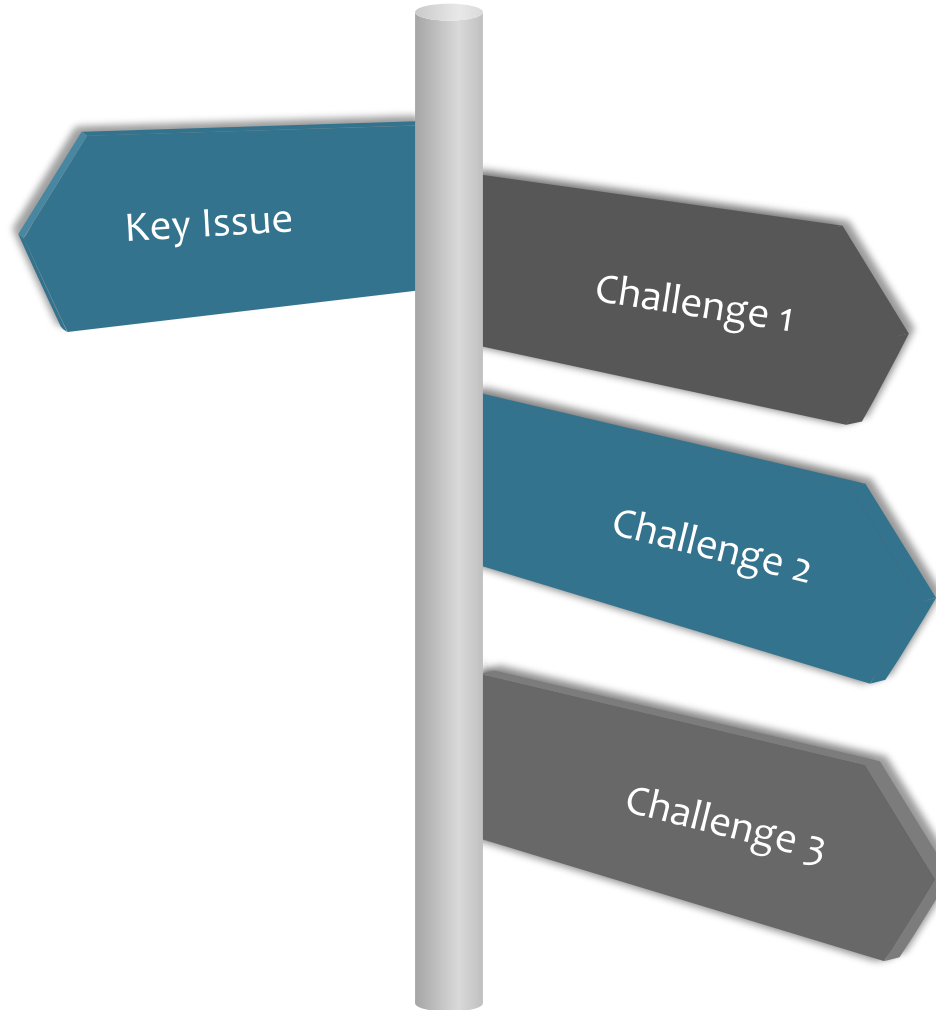
2017- 2019

Upgrade & Recommendations

Key Issue & Challenges

Hurricane Impact

Hurricane conditions affected some AFS nodes (IRMA Sep 2017)



Cisco End of Life

Cisco has announced at end of December 2017 EoL for cisco 2900 series components

Voice Porting

There has been a high frequency of voice port resent to many EACR states

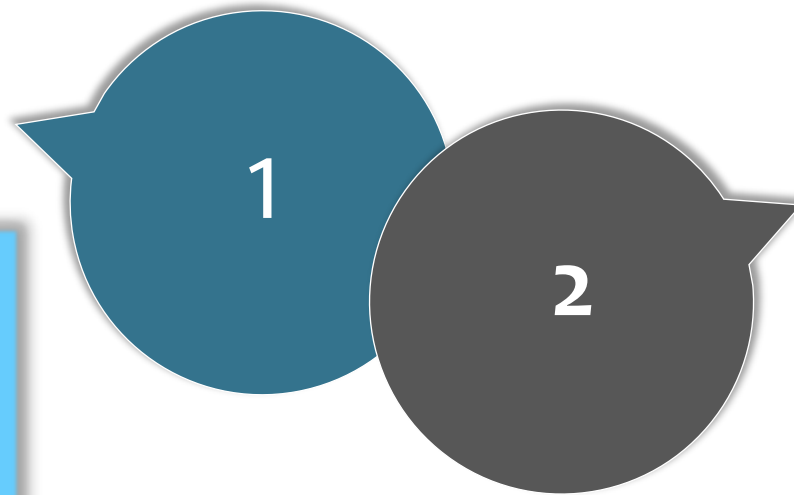
Failover Issue

There is a requirement for analog voice service failover at sites in event of hardware failure

Environmental issues

St Lucia

Hewanorra Airport ECAR Node
has current router issue
performing in single availability



Dominica Node

Dominica Canefield Node Replacement



NEW PROPOSED SOLUTION



**Automatic
Services Failover**



**Enhance Monitoring
& Management**



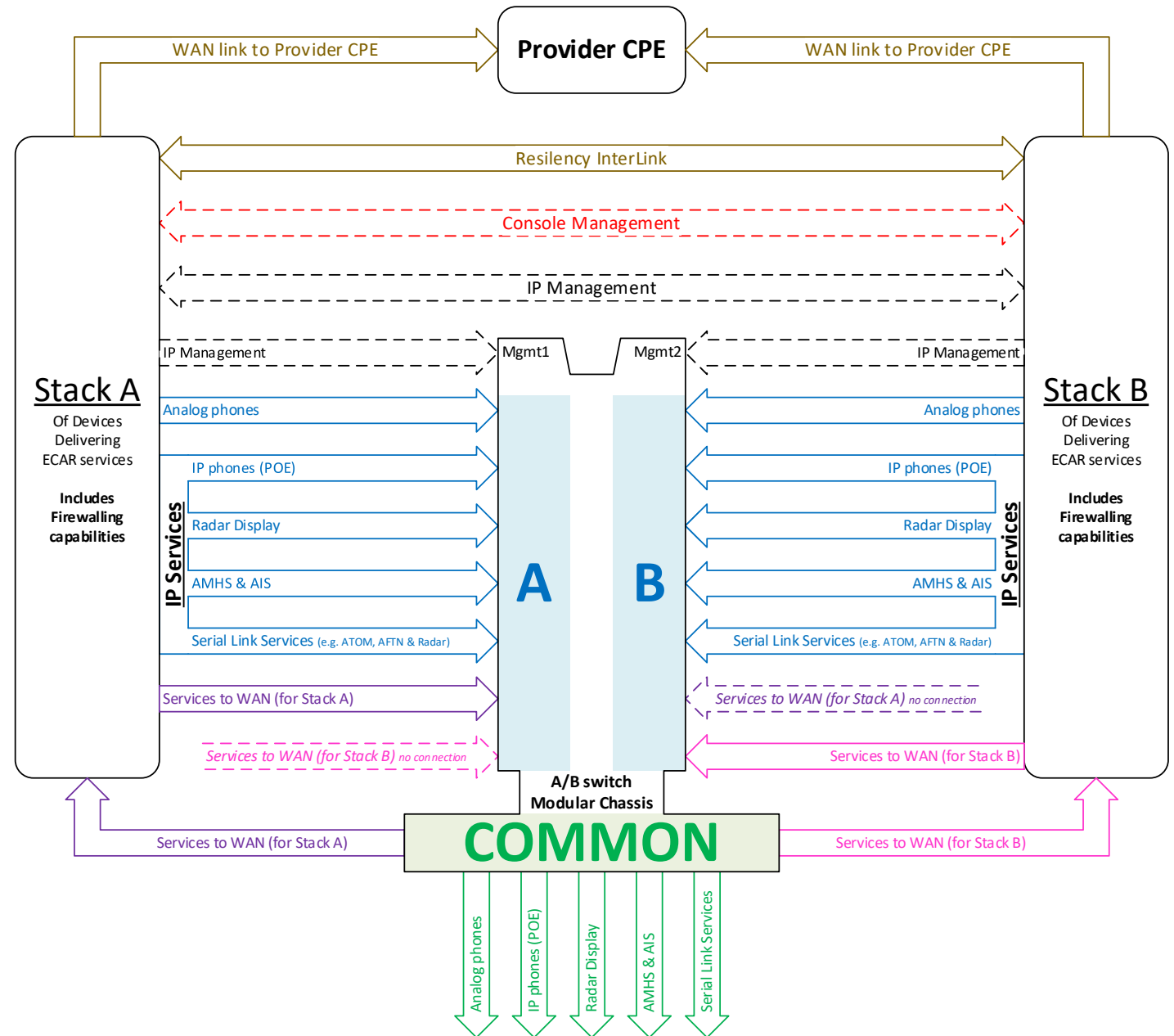
**Firewall &
Security**



**Power
Management**

TYPICAL NETWORK DEPLOYMENT AT ECAR SITE

- 2 Independent Stack Of Devices
- An A/B Switching System with Dual powered chassis
- Local Network services delivered by cards within the A/B chassis
- Matching of Ports with Device Stack
- Easy to change source of local services
- Secured IP services



C & W LIME MPLS Layer3 VPN

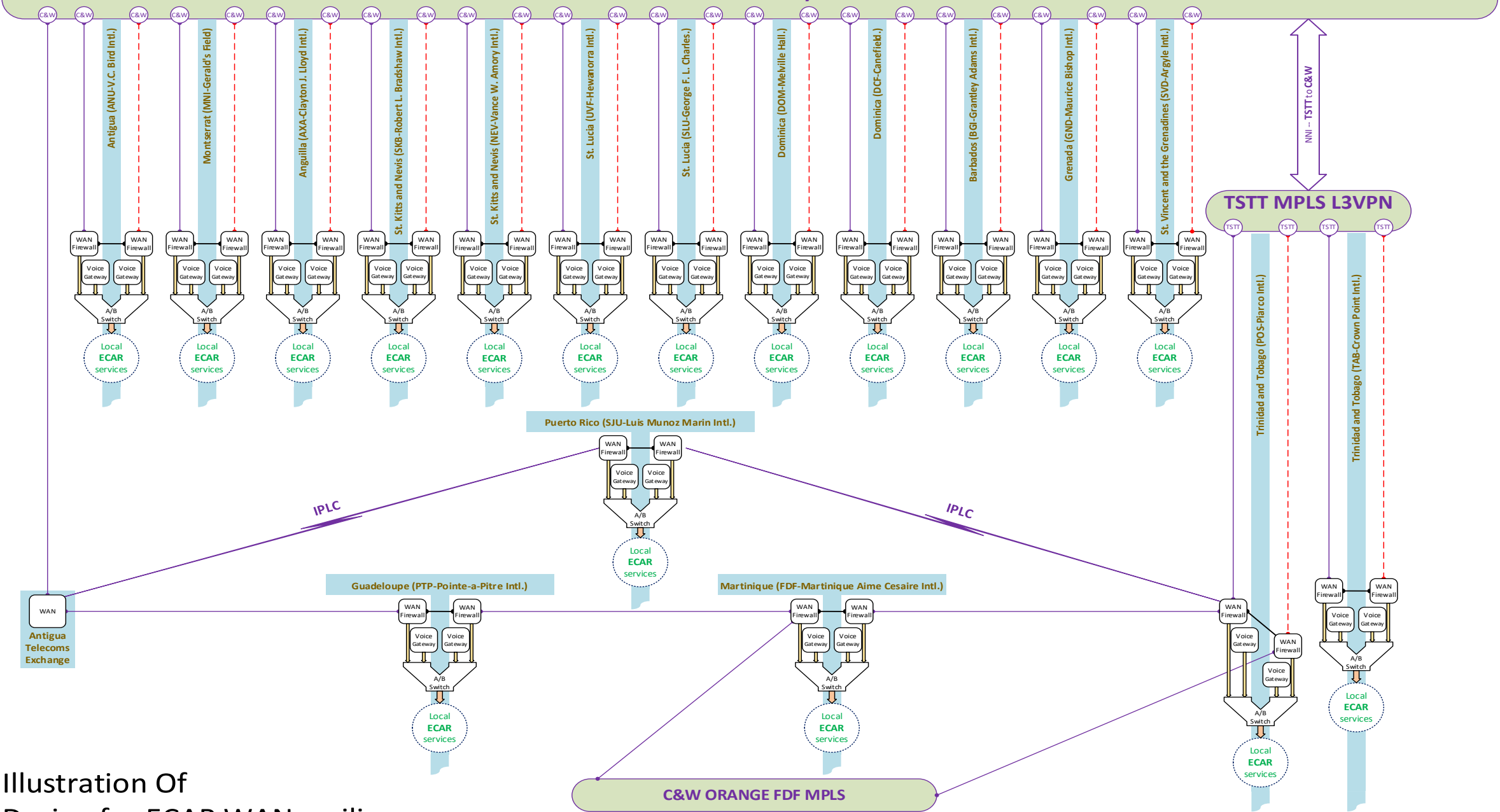


Illustration Of Design for ECAR WAN resiliency

Project notes

Delays in project deployment as a result of travel /company restrictions due Covid-19

Any?

Questions

End-of-Sale and End-of-Life Announcement for the Cisco 2900 Series Integrated Services Routers

EOL11158 - Amended

Cisco announces the end-of-sale and end-of-life dates for the Cisco 2900 Series Integrated Services Routers. The last day to order the affected product(s) is December 9, 2017. Customers with active service contracts will continue to receive support from the Cisco Technical Assistance Center (TAC) as shown in Table 1 of the EoL bulletin. Table 1 describes the end-of-life milestones, definitions, and dates for the affected product(s). Table 2 lists the product part numbers affected by this announcement. For customers with active and paid service and support contracts, support will be available under the terms and conditions of customers' service contract.

Table 1. End-of-Life Milestones and Dates for the Cisco 2900 Series Integrated Services Routers

Milestone	Definition	Date
End-of-Life Announcement Date	The date the document that announces the end-of-sale and end-of-life of a product is distributed to the general public.	September 9, 2016
End-of-Sale Date	The last date to order the product through Cisco point-of-sale mechanisms. The product is no longer for sale after this date.	December 9, 2017
Last Ship Date: HW	The last-possible ship date that can be requested of Cisco and/or its contract manufacturers. Actual ship date is dependent on lead time.	March 9, 2018
End of SW Maintenance Releases Date: HW	The last date that Cisco Engineering may release any final software maintenance releases or bug fixes. After this date, Cisco Engineering will no longer develop, repair, maintain, or test the product software.	December 9, 2020
End of Routine Failure Analysis Date: HW	The last-possible date a routine failure analysis may be performed to determine the cause of hardware product failure or defect.	December 9, 2018
End of New Service Attachment Date: HW	For equipment and software that is not covered by a service-and-support contract, this is the last date to order a new service-and-support contract or add the equipment and/or software to an existing service-and-support contract.	December 9, 2018
End of Vulnerability/Security Support: HW	The last date that Cisco Engineering may release a planned maintenance release or scheduled software remedy for a security vulnerability issue.	December 8, 2020
End of Service Contract Renewal Date: HW	The last date to extend or renew a service contract for the product.	March 9, 2022
Last Date of Support: HW	The last date to receive applicable service and support for the product as entitled by active service contracts or by warranty terms and conditions. After this date, all support services for the product are unavailable, and the product becomes obsolete.	December 31, 2022

HW = Hardware OS SW = Operating System Software App. SW = Application Software