

TWELFTH EASTERN CARIBBEAN NETWORK TECHNICAL GROUP MEETING - E/CAR/NTG/9

July 24-25th 2023



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

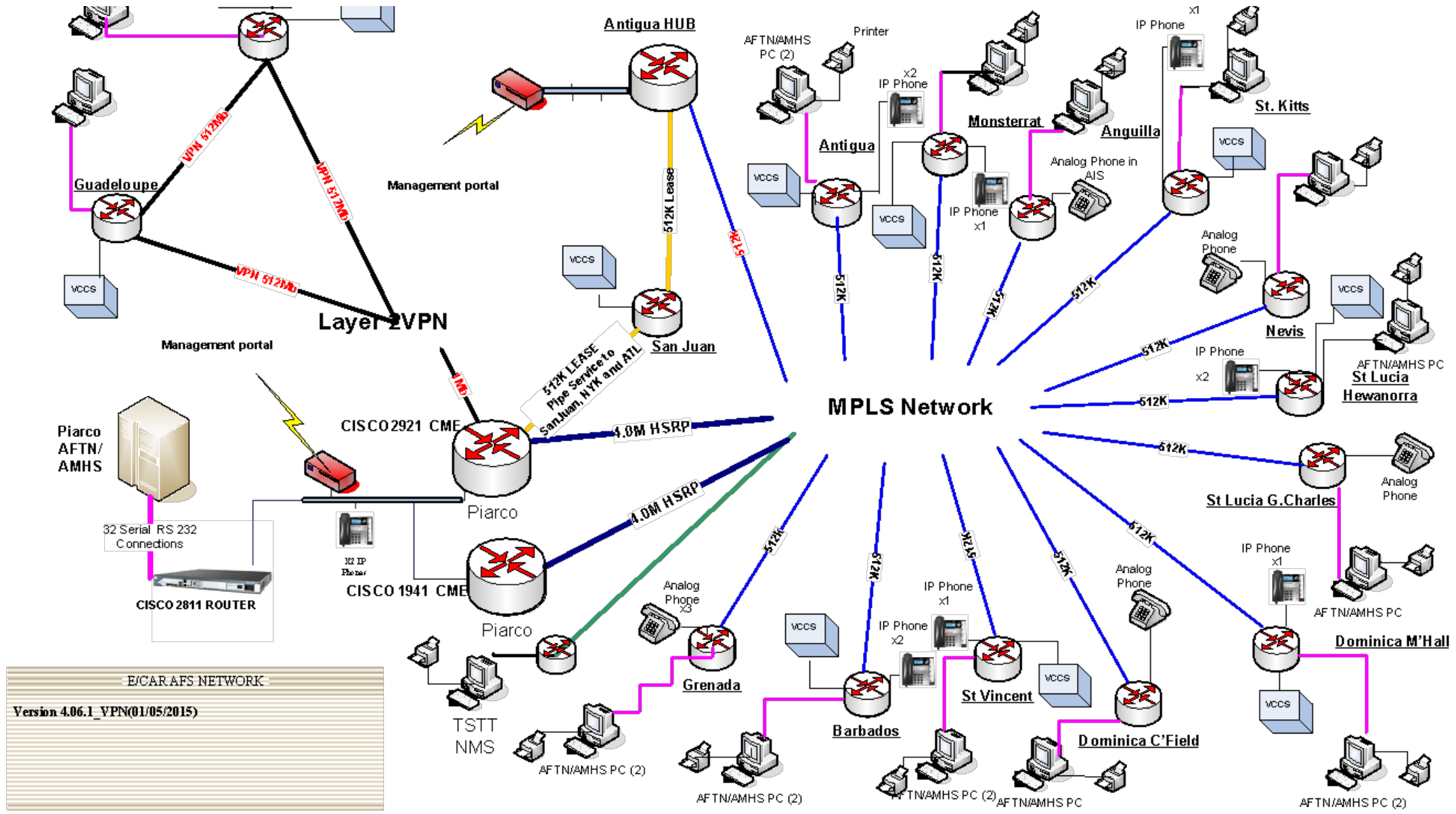
Convergence

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 2021

vs

Jan - Dec 2022

65 Reported Faults

87 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



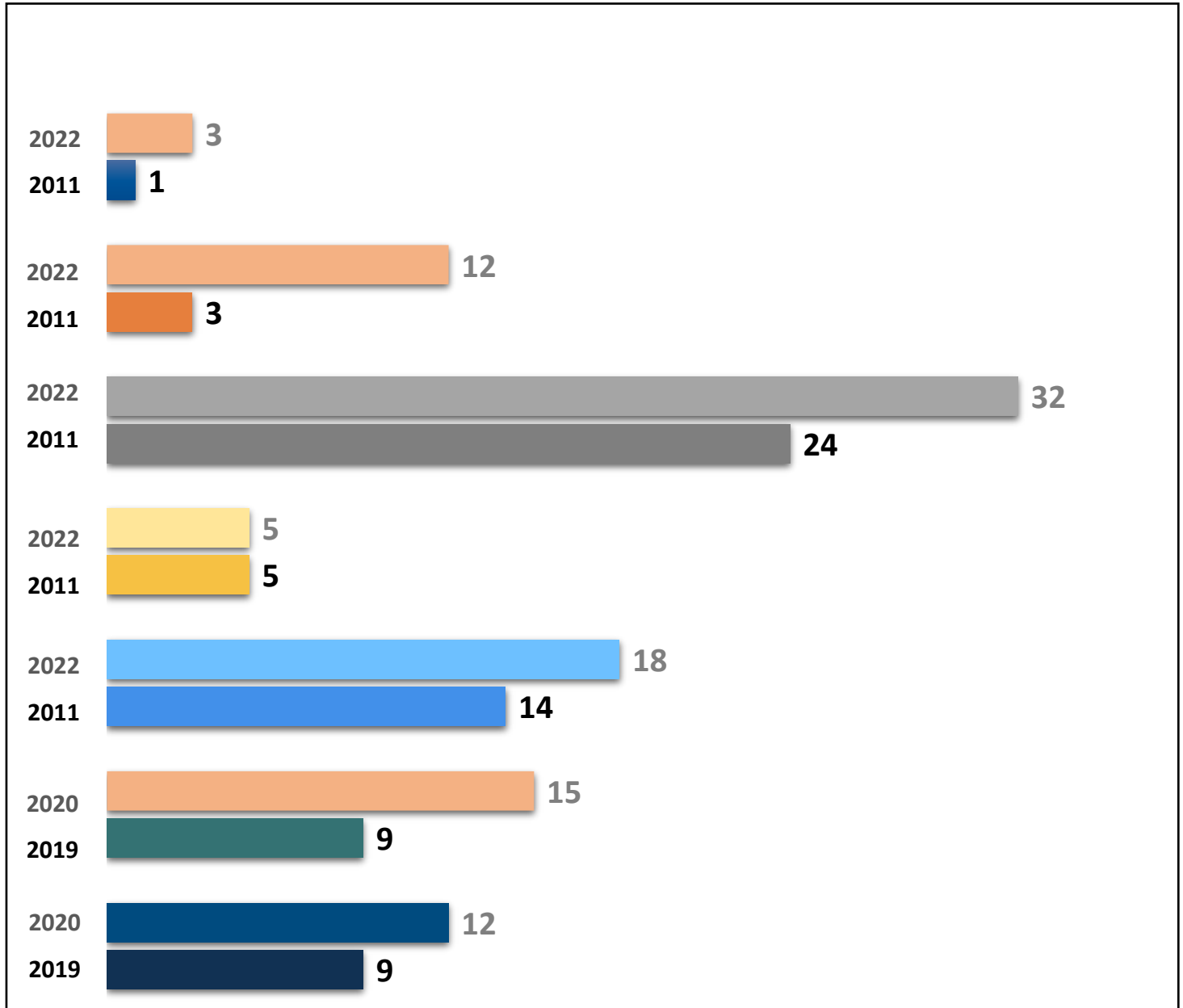
Router

Router related issues and/or troubleshooting

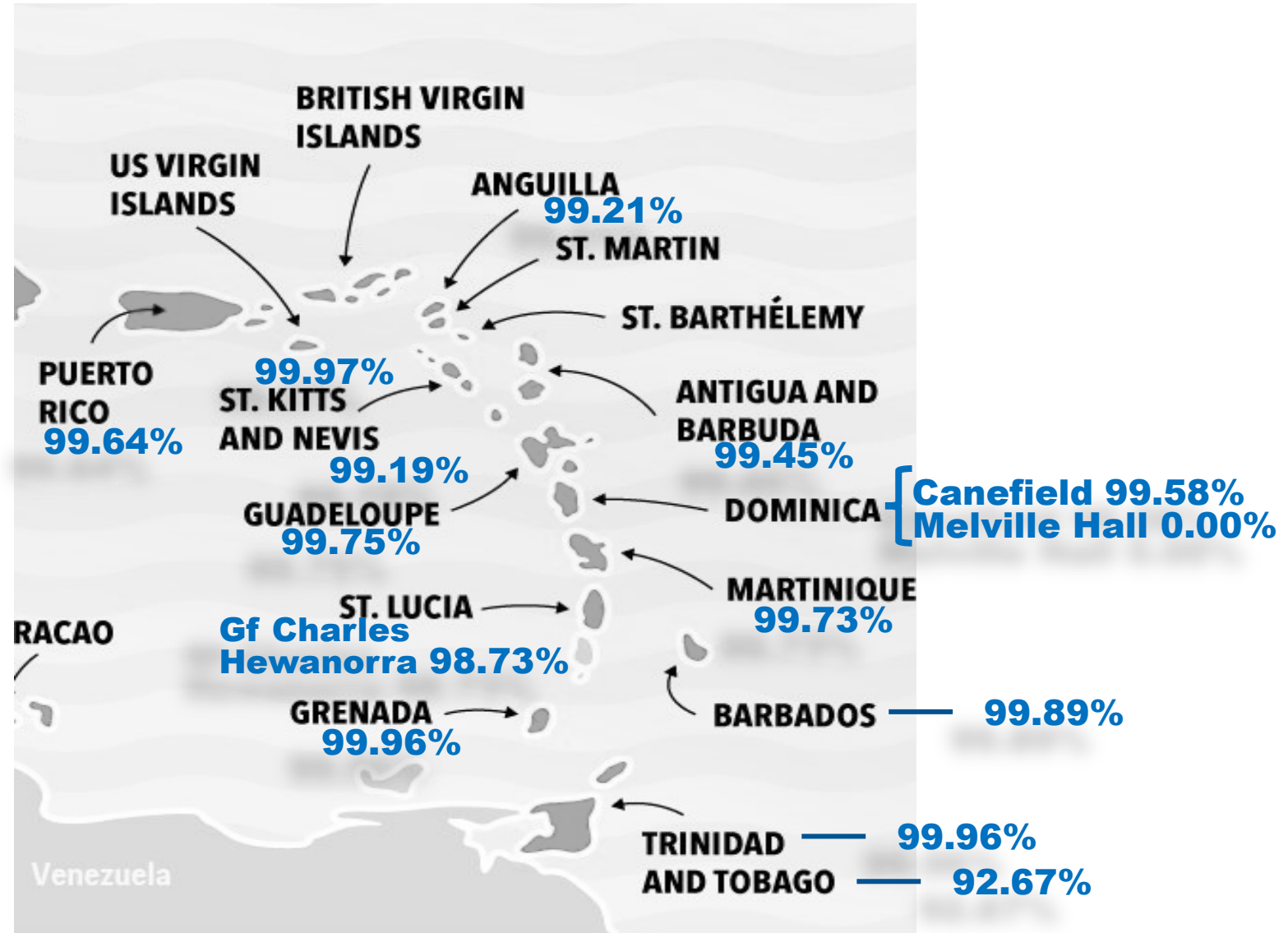


No Fault Found

No actual fault found



% Availability by Country 2022



Number of Faults by Territory

2021-2022

FAULTY PER TERRITORY	2021	2022
COUNTRY		
ANGUILLA	3	3
ANTIGUA	7	11
BARBADOS	4	12
DOMINICA - CANEFIELD	2	11
DOMINICA - MELVILLE HALL	0	0
GRENADA	0	0
MARTINIQUE	4	6
MONTserrat	2	8
NEVIS	1	1
PIARCO	7	9
SAN JUAN	20	10
ST KITTS	1	1
ST LUCIA - GF CHARLES	0	0
ST LUCIA - HEWANORRA	4	2
ST VINCENT	4	3
TOBAGO	2	6
GUADELOPUE	4	4

AVAILABILITY	2020	2021	2022
Column1	Column2	Column3	Column4
COUNTRY			
ANGUILLA	99.56%	99.14%	99.21%
ANTIGUA	99.77%	99.96%	99.45%
BARBADOS	99.85%	99.96%	99.89%
DOMINICA - CANEFIELD	94.52%	97.05%	99.58%
DOMINICA - MELVILLE HALL	0.00%	0.00%	0.00%
GRENADA	99.82%	99.49%	99.96%
MARTINIQUE	99.85%	99.97%	99.73%
MONTSERRAT	97.78%	95.23%	99.94%
NEVIS	99.43%	99.88%	99.19%
PIARCO	99.94%	99.97%	99.96%
SAN JUAN	99.59%	99.73%	99.64%
ST KITTS	99.29%	99.84%	99.97%
ST LUCIA - GF CHARLES	99.91%		
ST LUCIA - HEWANORRA	95.84%	99.96%	98.73%
ST VINCENT	99.65%	99.75%	99.91%
TOBAGO	92.67%	98.51%	99.98%
GUADELOPUE	99.85%	99.95%	99.75%

% Availability ECAR YOY Comparison

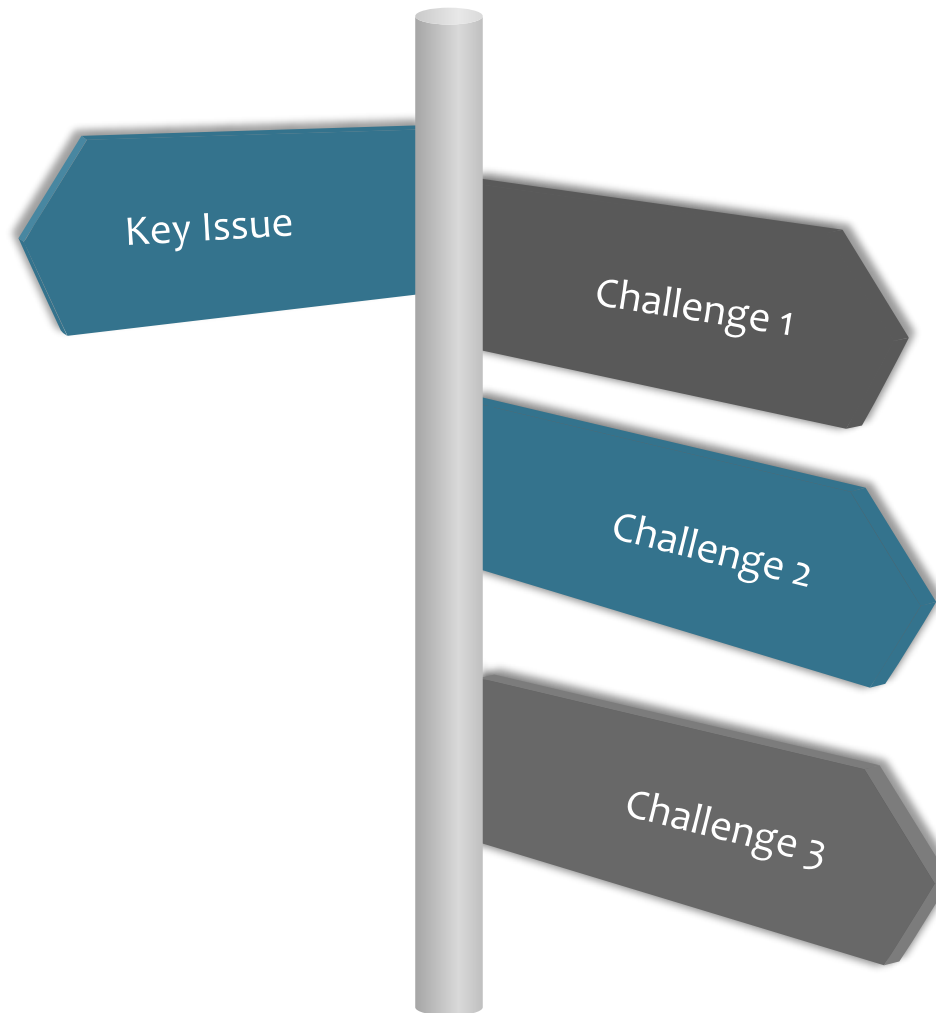
2020-2022

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

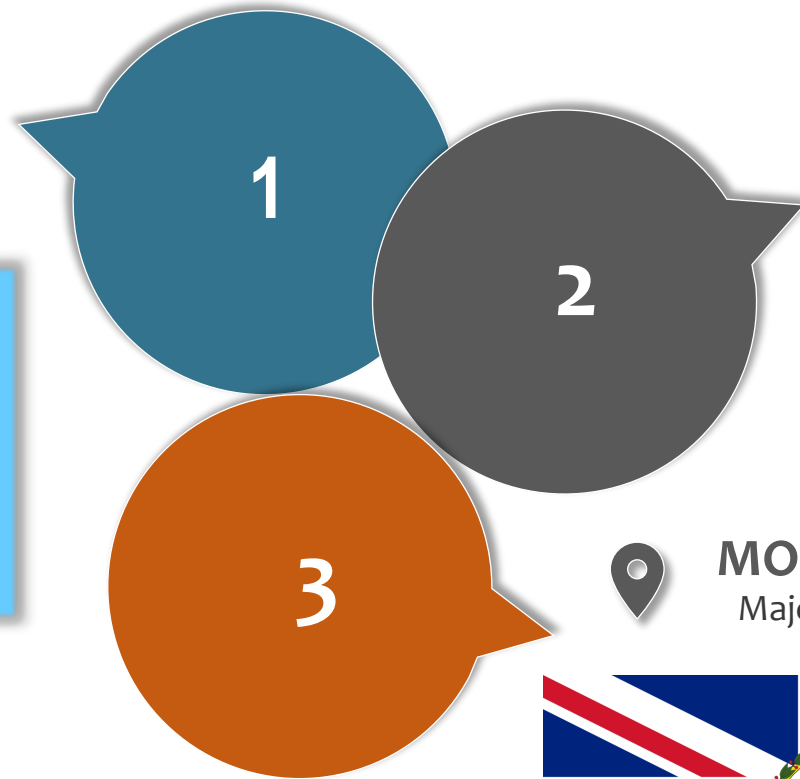
Failover Issue

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

Environmental issues

St Lucia

Hewanorra & GF CHARLES
AirportS ECAR Node has current
router issue performing in single
availability



Dominica Node

Dominica Canefield Node Replacement



MONTSERRATT Node

Major power disruptions to components onsite



NEW PROPOSED SOLUTION



**Automatic
Services Failover**



**Enhance Monitoring
& Management**



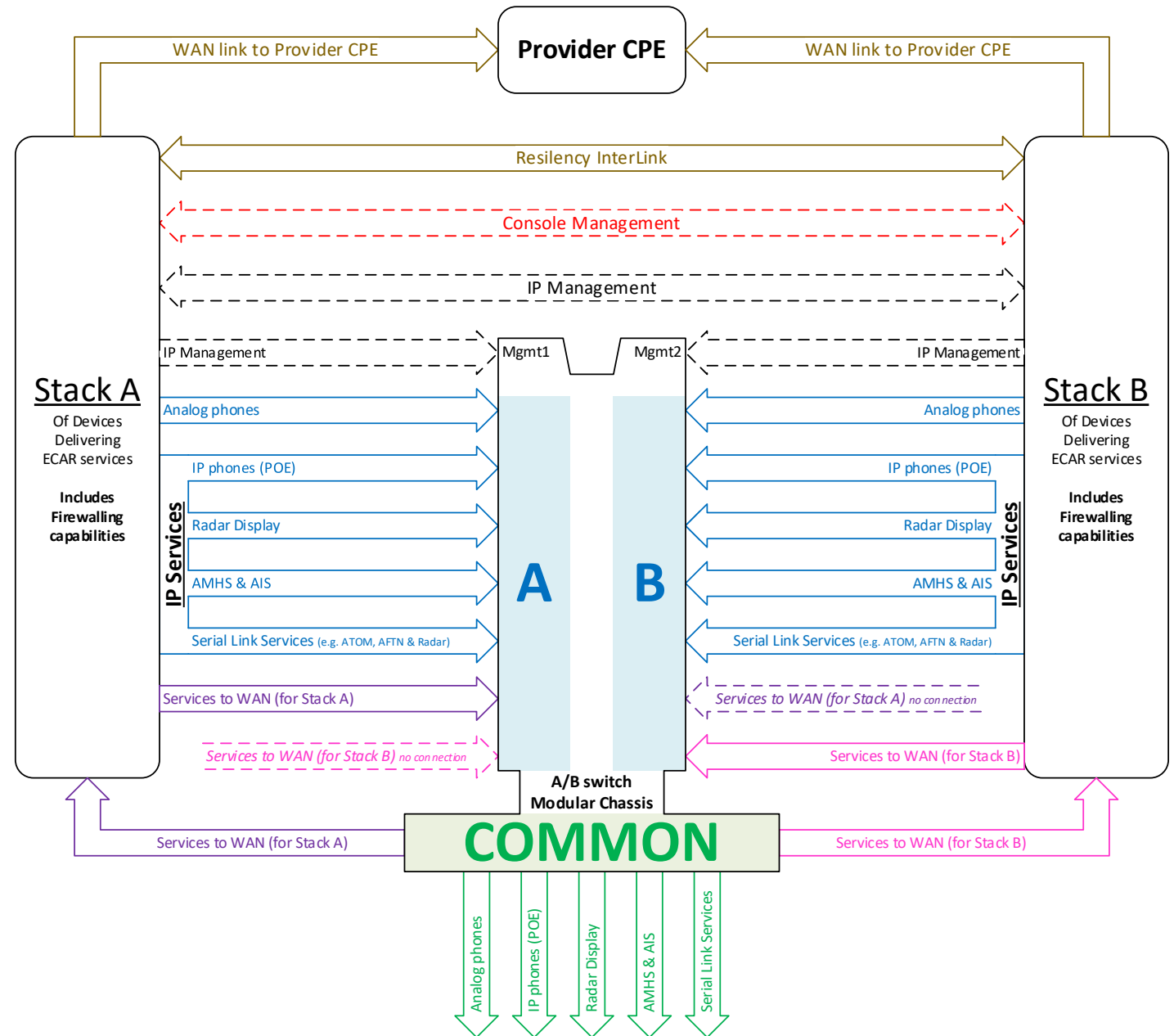
**Firewall &
Security**



**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

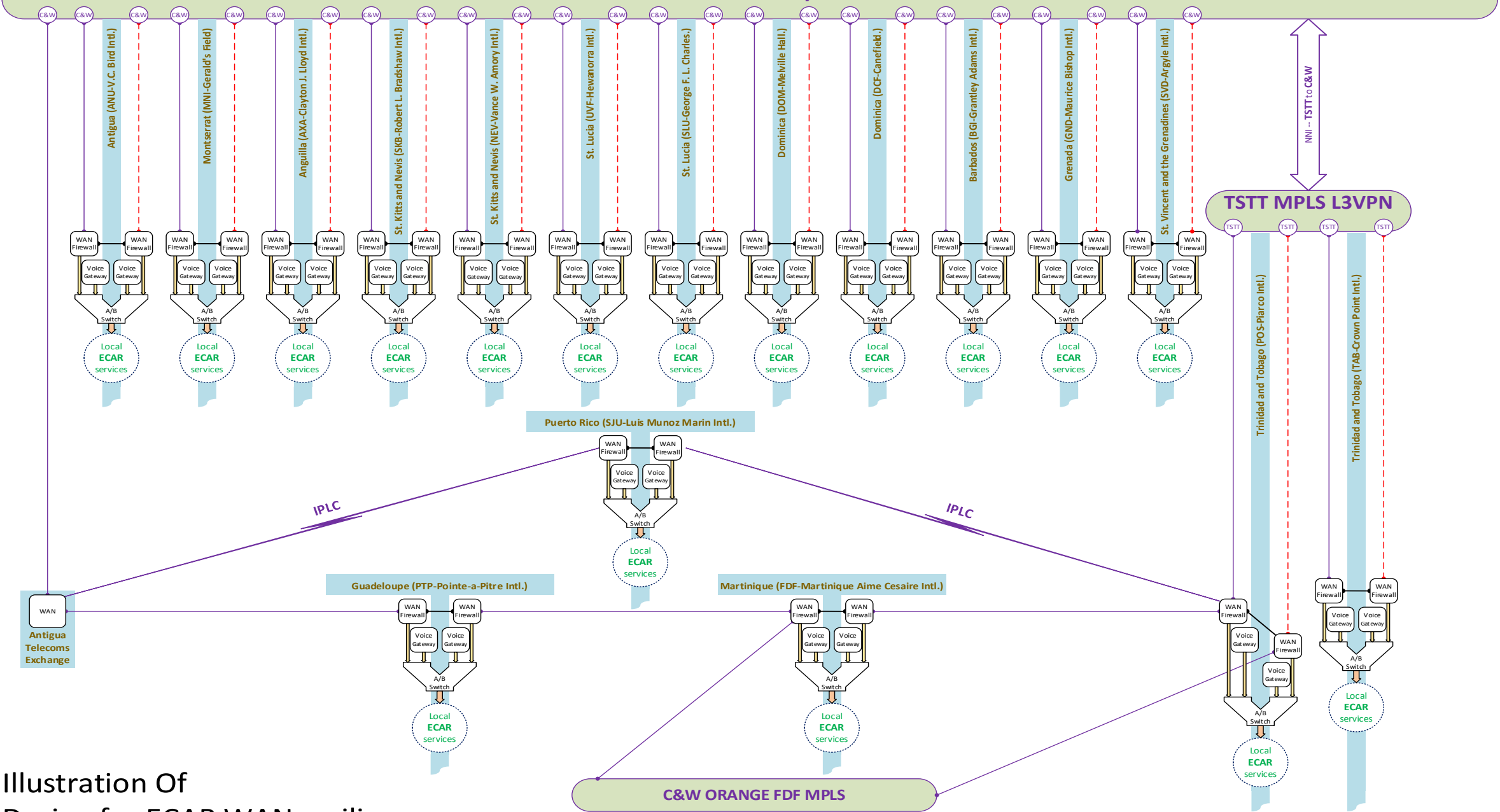


Illustration Of Design for ECAR WAN resiliency

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