

Case Studies in Achieving Resilient Timing in Mission- Critical Networks

Where Theory Meets Reality

WSTS 15 March 2023 Daniel B. Burch- Sr Manager Business Development



The most important 15 minutes of 2023!



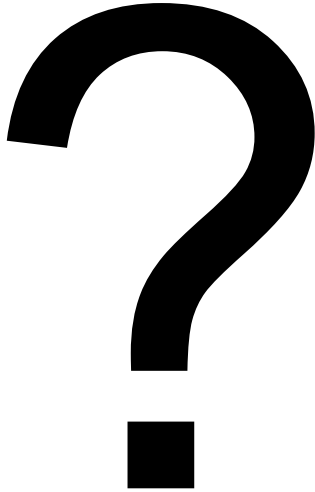
WORKSHOP
ON
SYNCHRONIZATION
AND
TIMING SYSTEMS
MARCH 13-16 | VANCOUVER, BC

Join my talk
Case Studies in Achieving Resilient Timing in Mission-Critical Hybrid Networks

 Daniel B. Burch
Sr Manager, Business Development NA
Oscilloquartz by Adtran

wsts.atis.org

1 January 1984



EXPLOSION OF OPPORTUNITY

1 January 1984



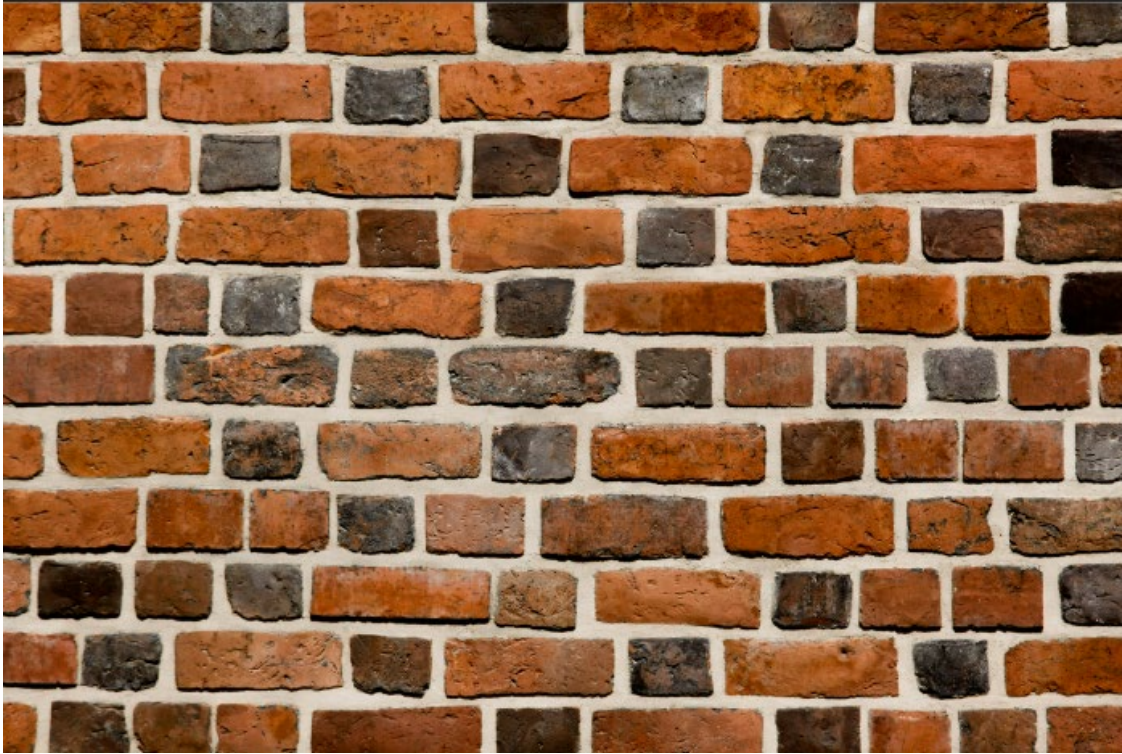
VENDORS DREAM COME TRUE

Telcos spent money like water over Niagara Falls



MELTDOWN!

Telco spending hits a brick wall



IN SEARCH OF.....MARKETS

Where do vendors go next?

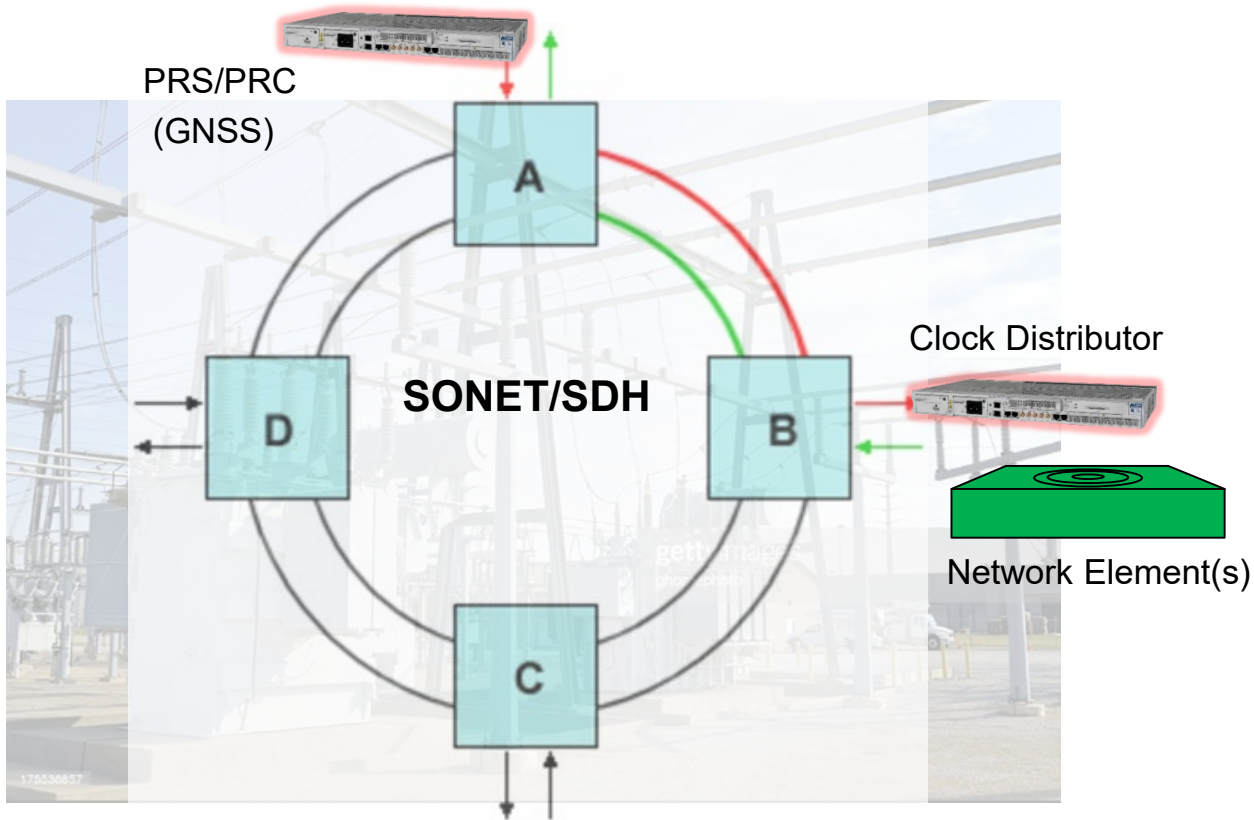


POWER UTILITIES

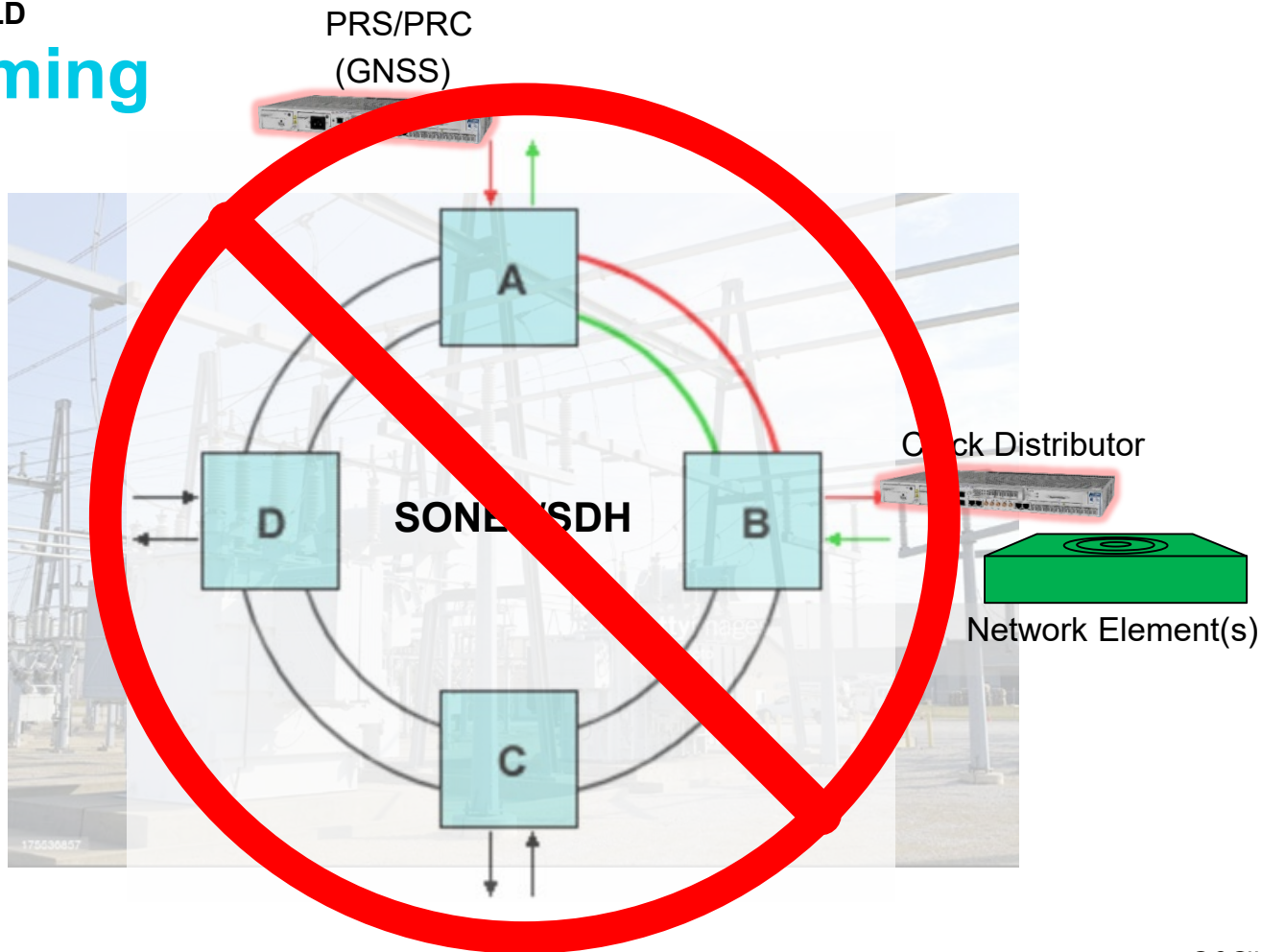


LIKE THE GALLERY FOLLOWING TIGER WOODS TO THE NEXT HOLE.....

Power Utilities Under Siege!

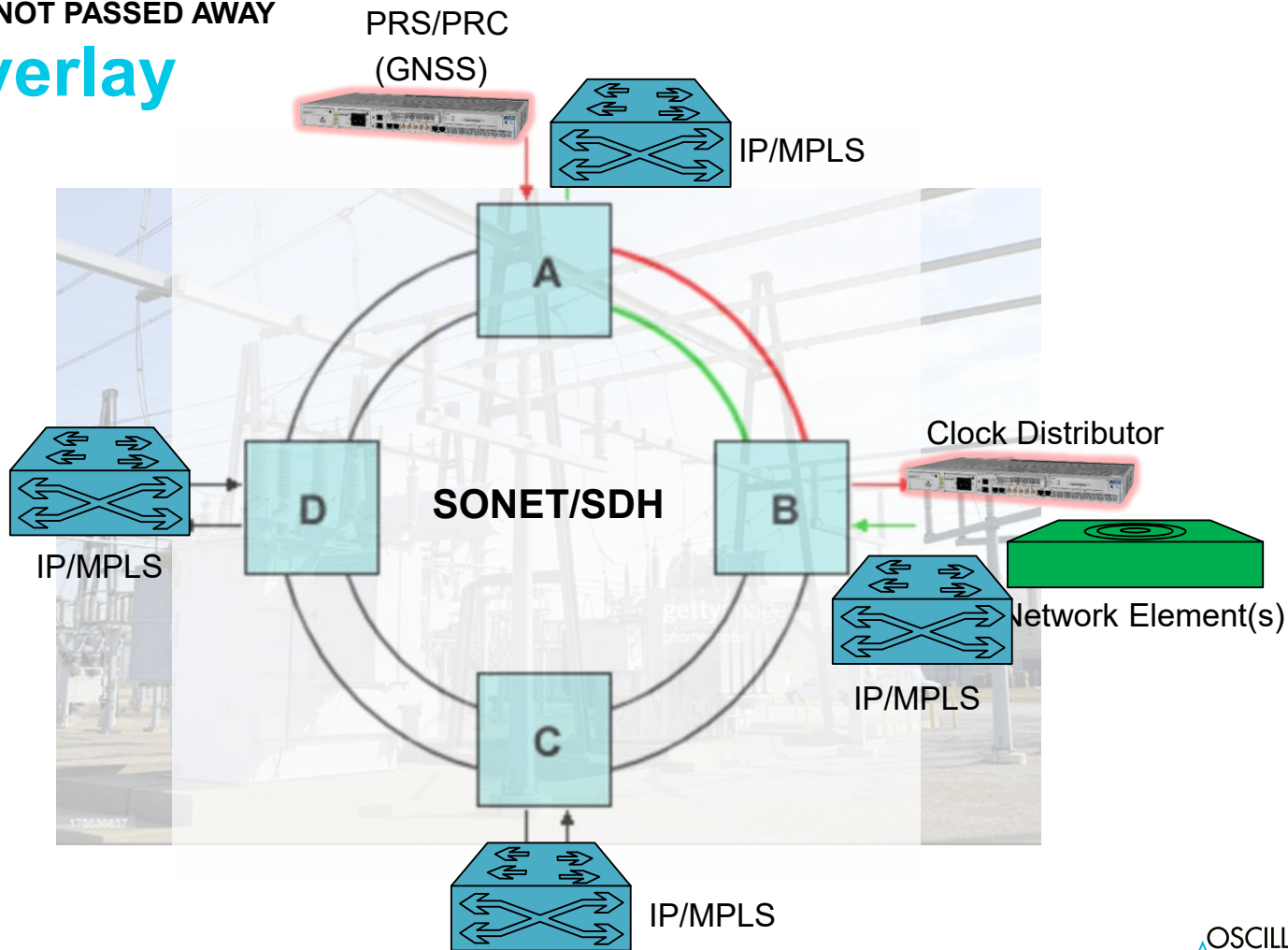


Legacy Timing



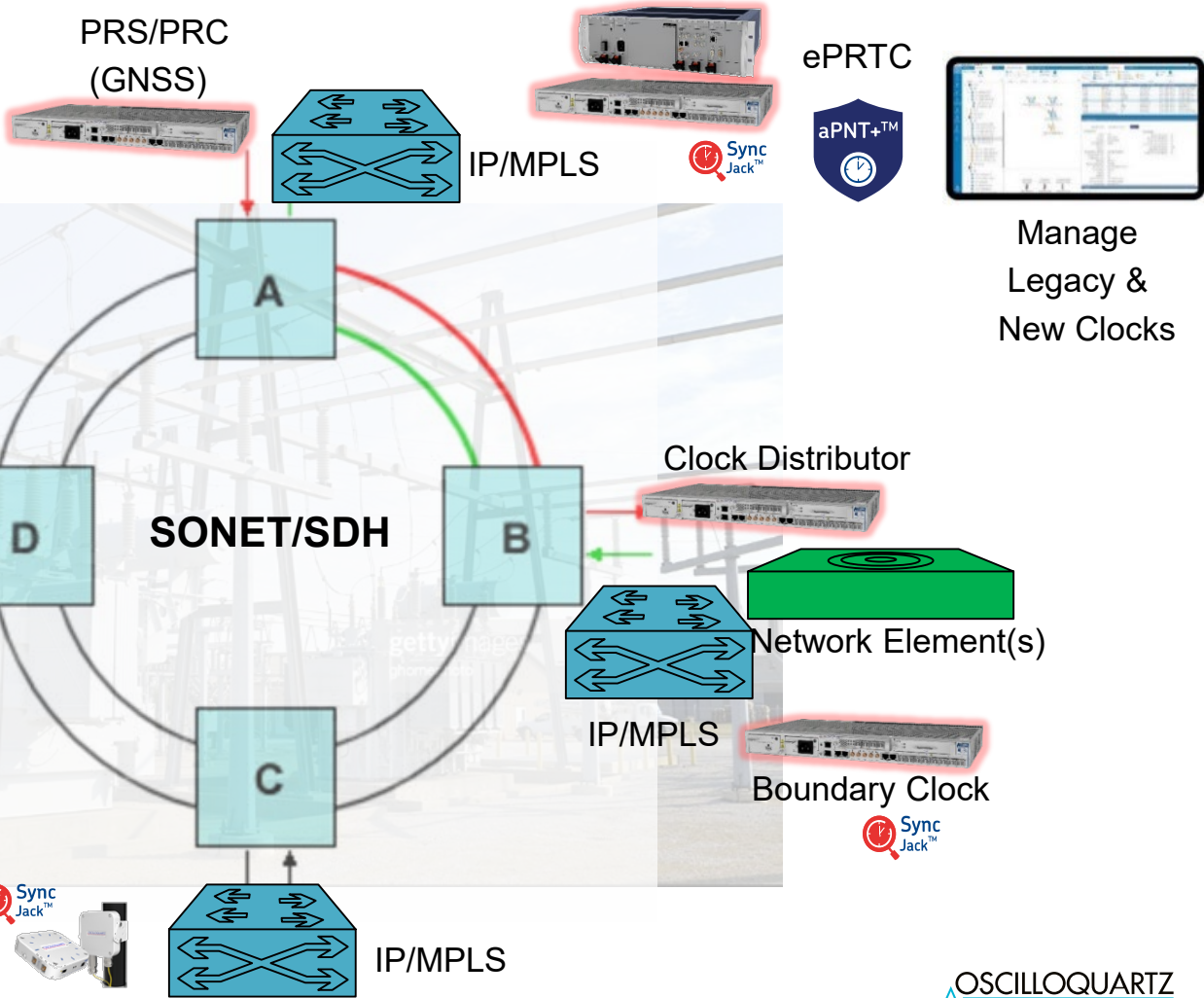
OLD THINGS HAVE NOT PASSED AWAY

MPLS Overlay



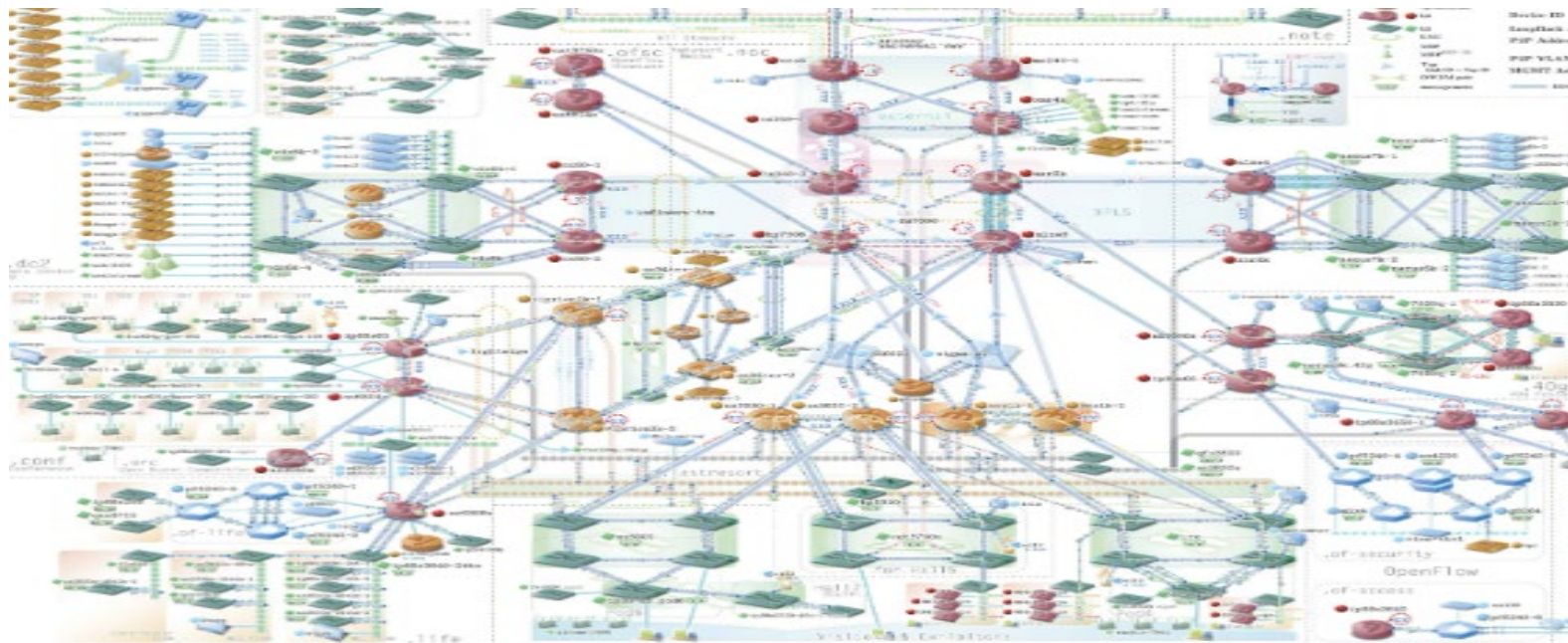
OLD THINGS HAVE NOT PASSED AWAY

MPLS Overlay



HELP!

Complex Hybrid Networks

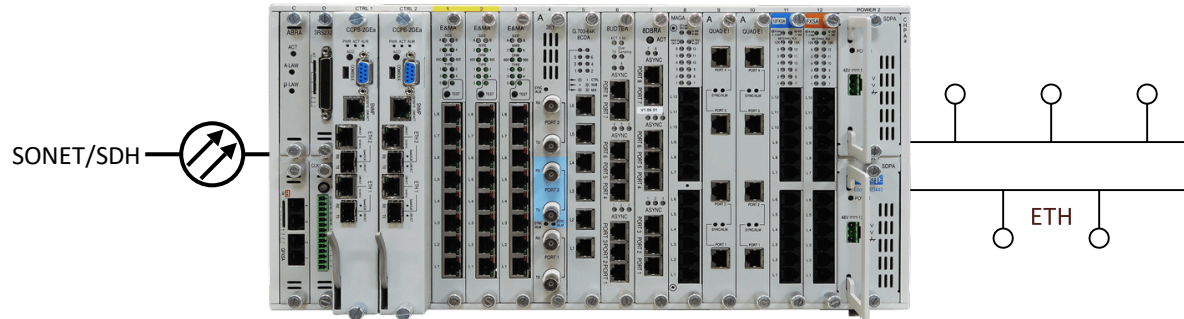


I WANT IT ALL!

SONET/SDH/ETH HYBRID

Multi-function Service Chassis

WHY?



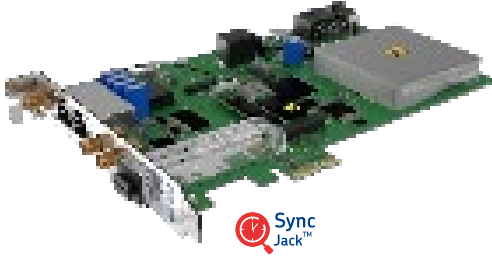
Timing/Sync Implications?



“Brand X Inside” to Reduce Number of Boxes



Brand “X” GM Micro Module



Brand “X” GM Server Blade



The Ultimate-
Total Timing/Sync
in Brand “X” Software



Paths to Resilient, Assured PNT

SOLUTIONS

- ePRTC
- Low Earth Orbit
- Terrestrial
- Timing over Fiber
- Local RF Relay
- eLORAN
- Timing as a Service over ETH
- Timing Backup as a Service

ADVANTAGES

- ✓ Zero Trust Concept
- ✓ Risk Aversion
- ✓ Growing Markets
 - ✓ availability

DISADVANTAGES

- ✓ Some are fee-based
- ✓ Any RF can be disrupted/jammed
- ✓ Fibers can be cut/damaged (routinely)
- ✓ Diversity requires 2x everything
 - ✓ Including diverse routes

Capital vs Expense

- ❖ Capital-intensive businesses prefer one-time payment
- ❖ Expense budgets are shrinking
 - ❖ Avoid recurring, incurred expenses

Timing/Sync Trends

- Packet-only vs All-In-One clocks
 - Packet-only- 5G
 - All others All-In-One
- ePRTC now standard requirement
 - No longer a “hard sell”
 - Is a Capital item
- Optical Cesium the New Norm
 - New RFQ’s demand Optical Cesium- no mags
 - Why?
 - Partnerships a must
- Universal Management
 - Health of Legacy & New Clocks
 - Self & Port Probing
- Hybrid Networks the Norm
 - 5 Years
 - Manage Sync During Transitions

THANK YOU!

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AUTHOR BIO



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Daniel B. Burch has enjoyed a 47-year, award-winning career in Telecommunications, serving roles with national responsibility at GTE/Verizon Communications, Director of Research & Development at Teradyne Broadband Test Division and senior positions in multiple Silicon Valley firms with expertise in Timing & Synchronization, portable and remote automated expert testing solutions, and developing new methods for analyzing complex circuits and services. Burch is now responsible for Oscilloquartz business development in Federal, Smart Grid, Transportation & Public Safety/911 markets.



Our Cessna Citation II - 1993

THE FIRST TIMING WHITEPAPER IN 2023 TO GO VIRAL!

Can you handle the TRUTH?

Establishing “Truth” in Network Synchronization

NETWORK TIMING & SYNCHRONIZATION IN AN UNTRUSTWORTHY WORLD

By Daniel B. Burch- Sr. Manager Business Development NA

For electronic copy of this popular whitepaper, visit our booth or email request to dburch@adva.com

THANK YOU! dburch@adva.com