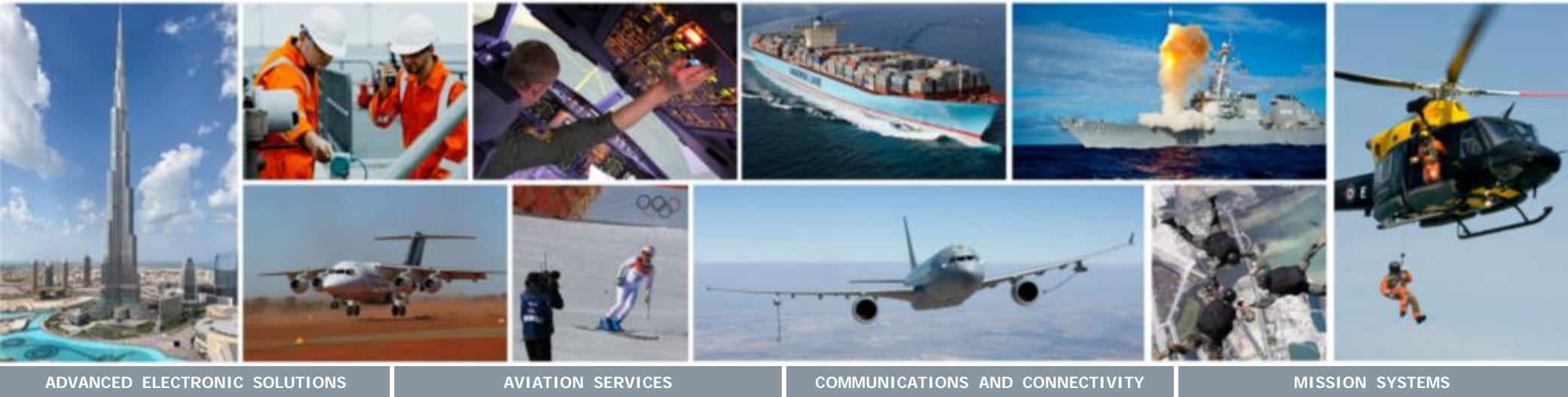


The most important thing we build is trust



Radio Test Considerations for SCA Platform

Stan Pierson

Marketing Director, Military RTS
Cobham AvComm
316-529-5271
stan.pierson@cobham.com

- Who We Are – Cobham AvComm
- What We Do for Military Radio Test
- Where We Are Going in Radio Test



- World leader in commercial and military radio and avionics test solutions and services
- Decades of experience teaming with top radio manufacturers and users worldwide
- Products support development, conformance, production, depot and field test/diagnostics

Leader in Automated Test

- 7200 (radio ATE-in-a-box)
- IFF7300s (avionics ATE-in-a-box)
- Radar Modules
- Satellite Payloads



Leader in Avionics Test

- IFR4000 (NAV/COM)
- IFR6000 (TCAS/TACAN)
- 424(v)5 (IFF)
- GPS/GLONAS
- Radio Altimeter



Leader in LMR Test

- 3920B Digital Radio Test Set
- 35XX Portable Radio Test Sets
- 8800 Portable Radio Test Set



Leader in Military Radio Test

- Field Radio Test
- Depot Radio Test



- We developed the world's first all-in-one radio test set more than 35 years ago
 - More than 50,000 radio test systems sold
 - More than 1,000,000 US military radio assets maintained by our radio test systems
 - Supports radio manufacturers and end-users through multiple radio life cycles and evolutions of waveforms, protocols, and form factors
 - Several OEM's sell our systems for logistics support of their radios

Military Tactical Radio Test Set Evolution

AN/GRM-114A



TS-4317



AN/GRM-122
GRM AV Kit



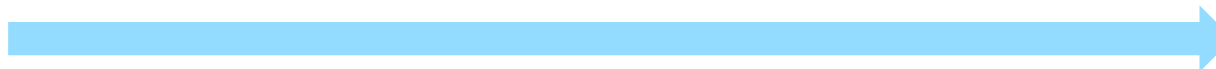
7200/GRMATS



SCA Platform
Next Gen RTS

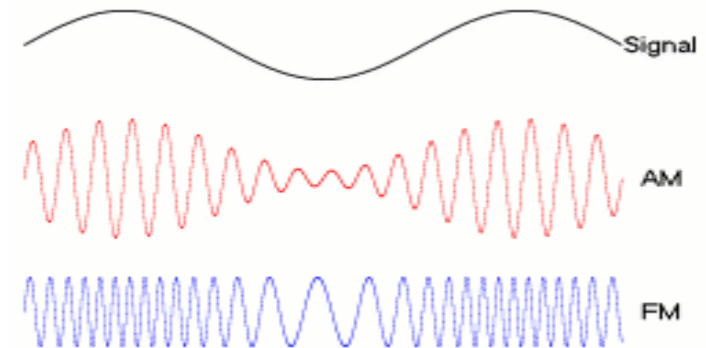


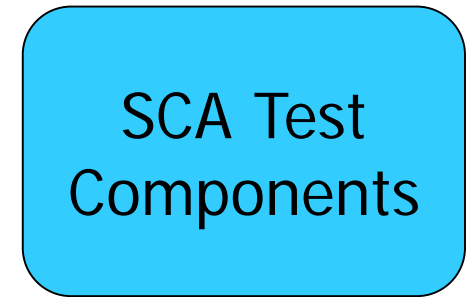
1979



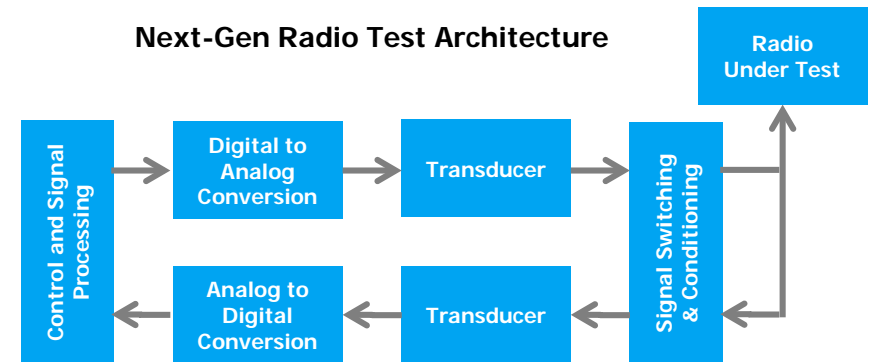
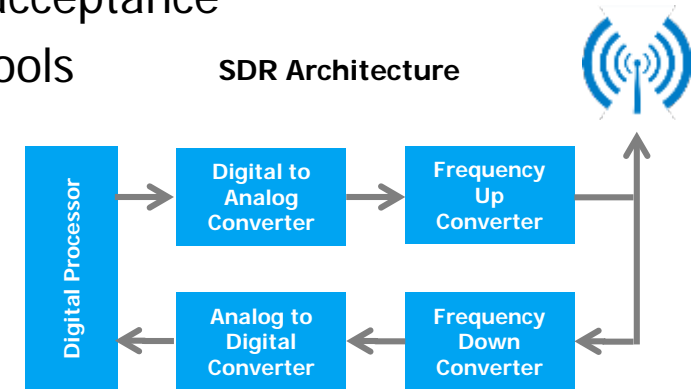
2016+

- Military Radio Test Systems
 - Depot Test – Bench-top test and calibration
 - Field/Ramp Test – Mission-readiness verification
- Each new Radio Test System must include legacy
 - Example: US Army solicitation for Next Gen
 - Must support ALL legacy PLUS new and future radios
- A Radio Test solution consists of:
 - Parametric (Power, Frequency, Modulation, Noise)
 - Protocol (enough to make parametric measurements)
 - Presentation (UI, API)
 - Test Application (User apps, test program sets)
- *How do we best use our development resources to meet the test requirements without re-inventing the wheel?*

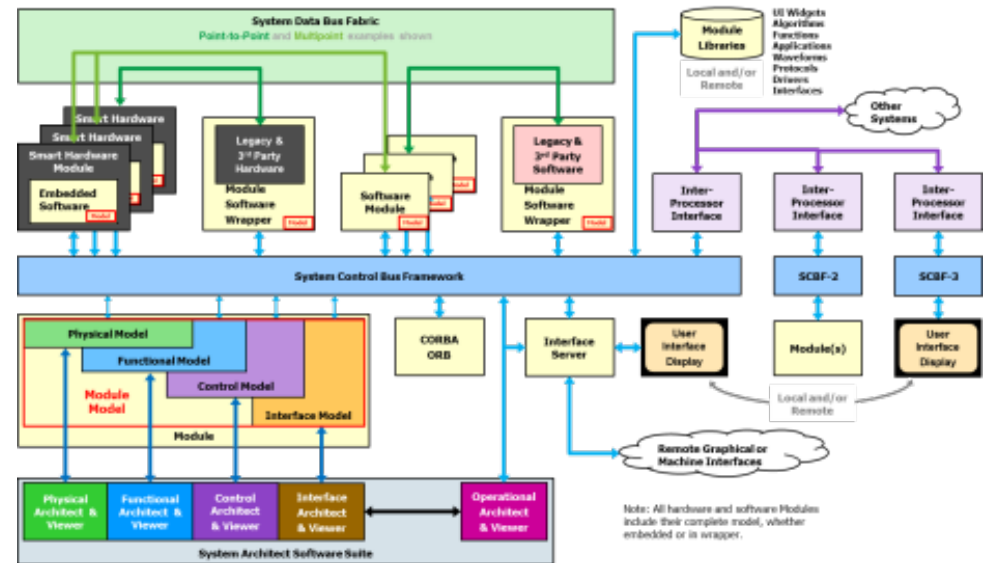


COBHAM

- The Software Communications Architecture (SCA) was selected as the core software component framework for our next-generation systems because:
 - Maturing international open standards have worldwide acceptance
 - Opportunity to purchase a commercial framework and tools instead of making our own
 - Aligns with our core markets in radio test
 - Advances our software defined systems approach –
 - The core of our SCA Platform is essentially a calibrated and tightly controlled Software Defined Radio (SDR)
 - It is more granular so we can scale it to provide many different combinations of hardware and software components
 - It also has more generic and flexible interfaces suitable for many different applications
 - By using the SCA framework our next-gen RTS becomes an instrumentation grade SDR



- Well defined interfaces provide scalable, upgradable and reconfigurable solutions
- Smart CORBA/SCA “aware” hardware modules provide plug-n-play environment
- Massively scalable processing options support embedded and distributed CPU, FPGA, GPU & DSP modules
- Ultra-wide bandwidth real-time communications and between multiple modules as well as between chassis
- Scaleable from simple to complex multi-channel and multi-function systems
- Software components, waveforms and applications are plug-n-play and configurable at runtime
- SCA 2.2.2 and 4.1 Compliant



Chassis

- Co-creator of the AXIe standard
- Industry's highest bandwidth
 - Implemented all optional features
 - 32 GB/s per slot, 1.5 Tb/s aggregate chassis BW
- Exclusive Switch Fabric overlay
 - Heterogeneous multi-host capability
 - Fully AXIe standard compliant
- 2 and 5 slot chassis versions, 200 W per slot

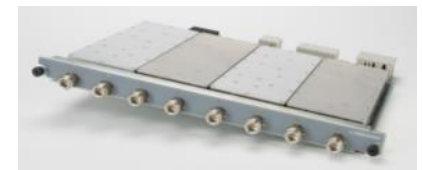
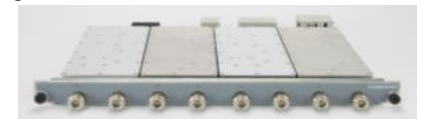


Modules

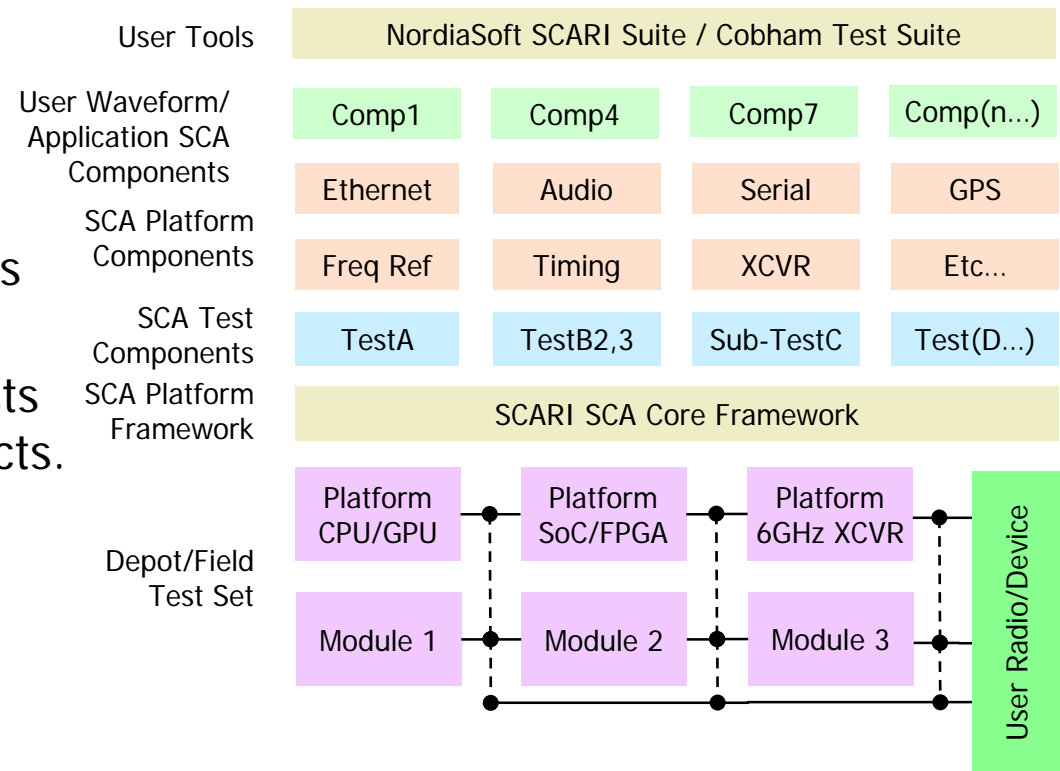
- Processing
 - 2 CPU modules + $\frac{3}{4}$ PCIe card
 - CPU, GPU, FPGA, DSP, memory, and storage
 - Future: more CPU processing per blade



- Receivers, Generators and Transceivers
 - 1 MHz-6 GHz, 200 MHz BW, fully calibrated instrument grade
 - Gen, Rec with high and low power duplex ports
 - Industry's highest density RF
 - Future: higher frequency, wider bandwidth



- Previously developed test and diagnostics waveforms, applications and algorithms used in production test transition seamlessly to other SCA-based depot and field test sets
 - Tests and diagnostics functions are tailored to provide the fastest test speeds (save \$)
 - This provides an unprecedented level of test traceability and significant opportunities to reduce no-fault-found problems in the field—this could even support “availability” type contracts for OEM’s knowing that there will be more predictability in field test and diagnostics
 - Our experience of more than +35 years and more than 50,000 fielded radio tests sets also stands behind all of our products.





*Production
Test Systems*



*Bench Instruments
and MicroATE Systems*



Portable Test Sets



*R&D Simulation, Development,
Emulation and Certification Test
Systems*



*Handheld and Field
Monitoring, Emulation, Test
and Diagnostics*

Thank you for your time!

Questions?