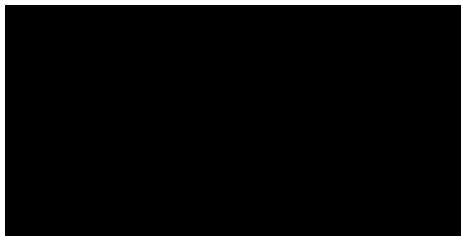






Modular Open RF Architecture (MORA): Expanding the OpenVPX Market

David Jedynak – CTO, COTS Solutions




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RDECOM

HW/SW Convergence Incremental Capabilities and Demonstrations

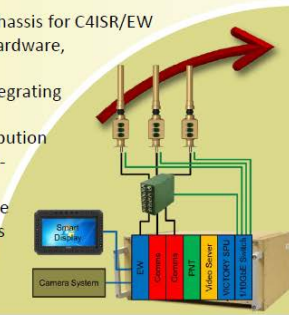


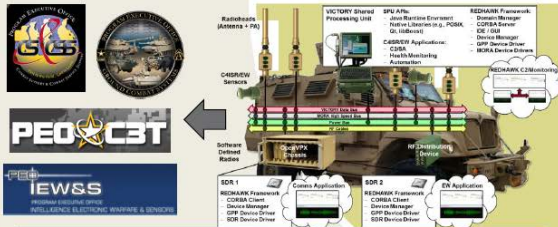
Phase 1 (FY14-15)

- Improve SWaP via a common chassis for C4ISR/EW
- Define an architecture at the hardware, software, and network layers
- Validate the architecture by integrating EW, Comms, PNT, and Sensors
- Develop standards for RF distribution
- Select a high speed bus for real-time coordination
- Research and select a backplane
- Investigate IA and EMI concerns with a common chassis
- Tabletop demo in April 2015

Phase 2 (FY15-16)

- Utilize backplane to minimize external wires and facilitate two-level maintenance
- Integrate Mission Command, Assured PNT, and additional EW and Comms
- Implement standard software environment to host waveforms
- Implement required IA controls
- Develop standards for shared processing resources
- Define backplane extensions for C4ISR/EW
- Vehicle demo in Nov 2016

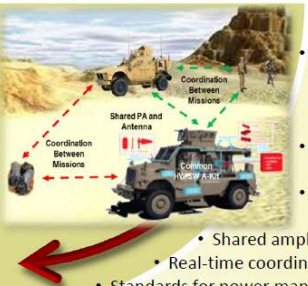




SPU ATR: Joint Mission Processor, RFNet, Liberator, g. POSB, G2, Liberator, C4ISR/EW Applications, GPS, Health Monitoring, Assured PNT
 REDHAWK Framework: C4ISR/EW, GPS, DMR, DMR Manager, GPS Sensor Driver, REDHAWK Device Driver
 REDHAWK C2 Monitoring
 SOR 1: REDHAWK Framework, C4ISR/EW, GPS, DMR, DMR Manager, GPS Sensor Driver, REDHAWK Device Driver
 SOR 2: REDHAWK Framework, C4ISR/EW, GPS, DMR, DMR Manager, GPS Sensor Driver, REDHAWK Device Driver

Phase 3 (FY16-17)

- Utilize open interfaces to demonstrate compatibility, interoperability and resource sharing
- Integrate additional EW and Assured PNT capabilities
- Port legacy waveforms using standard SW environment
- Shared amplifier for missions
- Real-time coordination between missions
- Standards for power management and resource sharing
- Cross Domain Solution implementation and MLS study
- Tabletop demo in June 2017, Vehicle demo in September 2017



Develop and mature specifications for a converged architecture during the FY14-17 timeframe. Transition resulting standards to the acquisition community for inclusion in future solicitations and requirements.

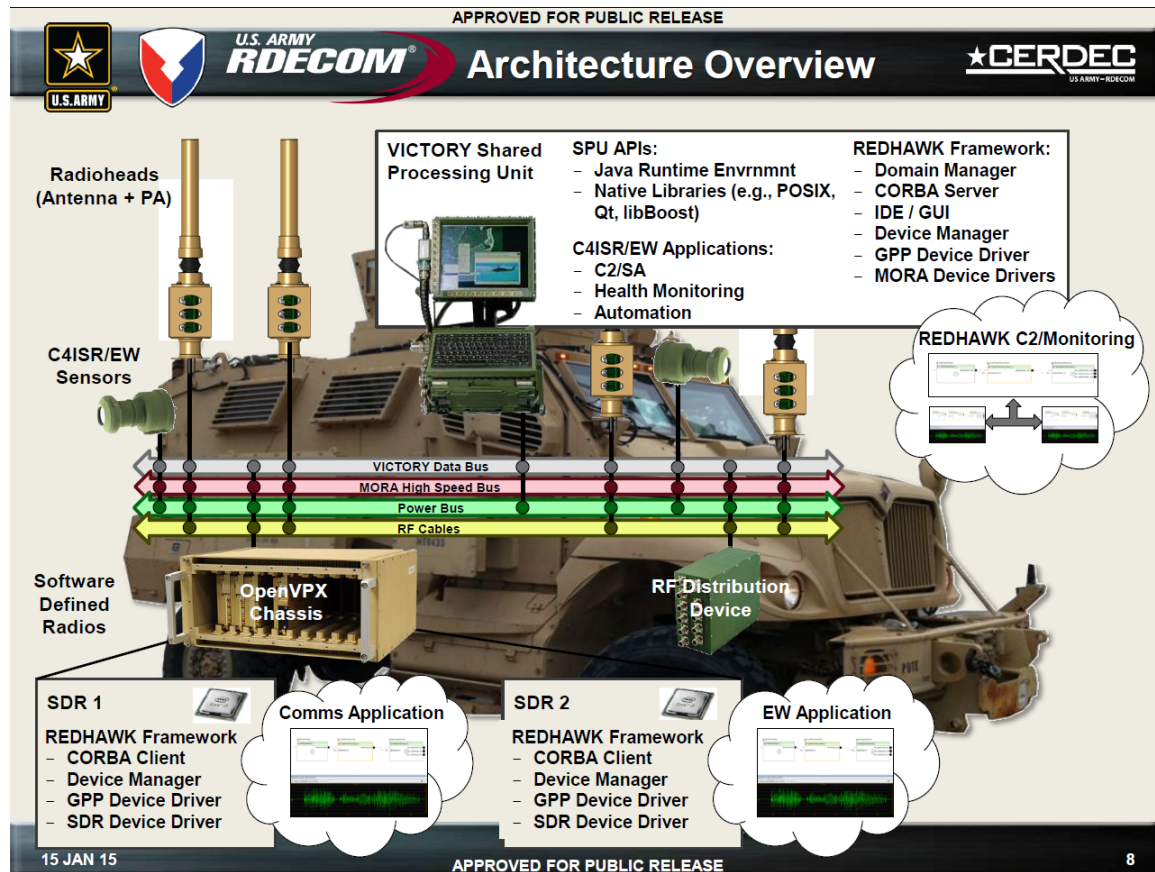
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Last Year at ETT

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Why is this important?

- Who is our customer – really?
- Weapon Systems Acquisition Reform Act of 2009 – a fundamental shift for DoD Systems Engineering

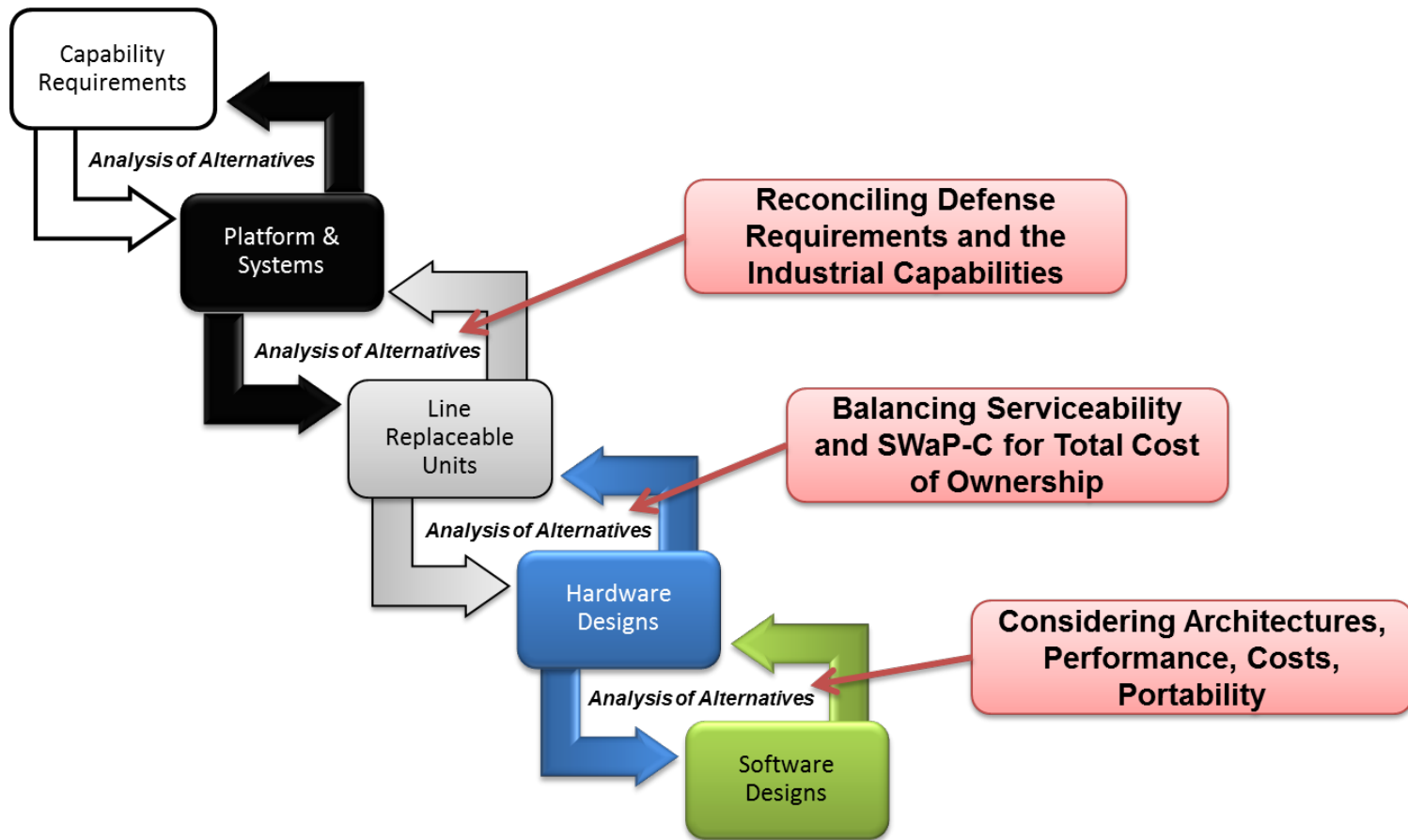
Line Replaceable Unit
(LRU)



Modular Open Systems

“What’s in the box?”

Buying Decisions in the Defense Market....



Technology and Market Alignment

- **Aligning Goals – It's an Ecosystem in a Walled Garden**
 - Defense isn't quite a traditional commercial market – restrictions everywhere
- **Aligning Perceptions – A lot of Stakeholders**
 - Lots of eyes... one "failure" outweighs a lot of success
- **Aligning Incentive - Succeeding together**
 - What's your ROI?

So, where are we today with MORA (and OpenVPX)?

2013

- No Board / Backplane standard for US Army CECOM
- But the ground guys (TACOM and TARDEC) had already started using it
- Lots of stovepipe equipment from CECOM on TACOM platforms (SWaP overburden and duplicative equipment)
- Many years of CECOM (via CERDEC) looking for a standard to bring it all together

2016

- US Army CERDEC is Board Member of VITA
- Working with other DoD agencies
- Creating profiles, issuing RFIs
- Heading to a demo
- Starting the transition from R&D to Acquisition community = Programs of Record
- Introducing the standard to the ground guys... 😊

The End

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Q&A

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