REDHAWK Software Defined Radio Framework

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What is REDHAWK?

- REDHAWK is a software-defined radio (SDR) framework designed to support the development, deployment, and management of real-time software radio applications

- Benefits
  - 100% Government owned IP, Free and Open Source: http://redhawksdr.org
  - Scalable and distributed operations
  - Application reuse amongst across differing hardware products
  - Rapid prototyping, code generation and testing
  - Standardized receiver interfaces (FEI 2.0)

- Developed by DoD to facilitate rapid fielding, innovation software reuse and standardization for SDR applications
Features

▼ Core Framework to provide run time control and configuration of SDR applications

▼ IDE and Code Generators to rapidly create components and waveforms from a GUI

▼ Sandbox for script based prototyping and testing of components and waveforms

▼ Standardized interfaces to hardware (FEI 2.0) and inside of components (BulkIO/BurstIO)
  ▪ Translation component to VITA49
Updates

▼ Military REDHAWK Centers of Excellence
  ▪ We assist the Navy/USMC with REDHAWK adoption, training, acquisition and software development

▼ REDHAWK becoming an “official” standard:
  ▪ Unified Cryptologic System Standards View, Appendix A
  ▪ Gig Technical Profile under development
  ▪ REDHAWK being integrated into emerging Tactical Open Architecture standard

▼ REDHAWK 2.0 Released
  ▪ redhawksdr.org

▼ HAWKATHON training event held April 2015.
  ▪ Participants from all services and many interest areas.
Industry Assistance

- Migration of legacy waveform capabilities to REDHAWK CF
- Integration of additional RF Transceivers/Receivers
- Advanced SDR processing algorithms
- REDHAWK on small embedded radio platforms
  - Resource constrained platform integration
  - Embedded OS based development
- REDHAWK and heterogeneous processing (GPU's)
- REDHAWK and FPGAs
  - RFNoC
  - Dynamic Partial Reconfiguration
  - Co-Soft & Hard core development
- Beamforming
- Analytic and Cognitive Radio algorithms
- Spectrum Sensing
- Dynamic and Adaptive Spectrum Allocation
- Cyber/EW fusion
- Comms/Electronic Support fusion
Questions?