Tactical Communications Standards

Presentation to WInnComm

1 December 2021

Agenda

Tactical Communications Standards (TCS) Project Background

TCS Project Status

TCS Proposed Tasks

Summary

Tactical Communications Standards Project

- **Affords an opportunity to expand SDS support of emerging architectures with "SCA like" goal and initiatives**
  - Target alternate architectures
  - Collaborate with additional external organizations
- **Project initially proposed as a group to complement the Joint Tactical Networking Center (JTNC) Modular Radio Architecture approach**
  - Early plan was to develop a communications white paper
  - Targeted recipients were the Sensor Open Systems Architecture (SOSA™) Consortium and the U.S. Army Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance (C5ISR)/Electronic Warfare Modular Open Suite of Standards (CMOSS) team
- **Early discussions included identifying group objectives, considering waveform**
  - Afforded group with opportunity to learn about CMOSS and its affiliated standards
- **Group activities were a catalyst for the MOA between WInnF and SOSA™**

WINNF TCS Project Status

January 2020

- **Developed paper outline, intended to initiate conversation between WInnF, CMOSS, and SOSA™**
  - Addressed pertinent aspects of communications applications and analysis of architectural alternatives

Summer 2020

- **Release of SOSA™ snapshot 3 made some of the content OBE**
  - Paper became focused on communications applications

Fall 2020

- **Finalization of WInnF/SOSA™ agreement provided opportunity to have direct conversation between the two organizations**

WINNF TCS Project Status (cont.)

December 2020

- **TCS held project meeting with SOSA™ representatives**
  - SOSA™ leadership representatives provided suggestions on collaboration opportunities
    - Identified a specific customer for the working group

January 2021

- **TCS identified two candidate group contributions and sent them to SOSA™ for concurrence**

Summer 2021

- **TCS project members developed and briefed overviews of two WInnF facilities to SOSA™**
  - Transceiver and Timing

TCS Project Proposal (Analytical)

- **Leverage SDR standards, to include SCA, concepts to address comms modality gaps (not started)**
  - Look within gaps related to the communications modality that are not adequately addressed within the SOSA™ specification (e.g., deployment).
  - WInnF can leverage expertise to identify areas and express them as high-level concepts.

TCS Project Proposal (Modeling)

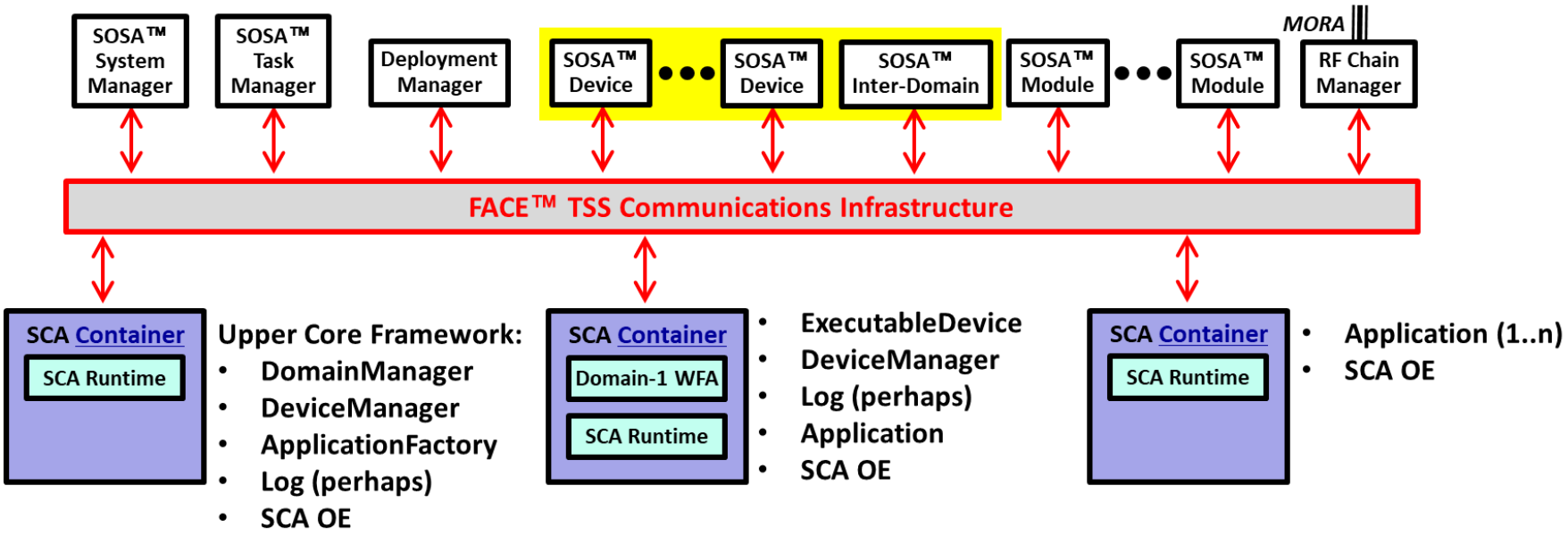
- **Demonstrate SCA/SOSA™ compatibility**
  - Show compatibility and interoperability between the two specifications.
  - Demonstrate how SCA-based communications products fit within a SOSA™ environment
  - Demonstrate how native SCA capabilities can be integrated
  - Develop capability iteratively / to address high priority, practical scenarios

SCA/SOSA™ Compatibility Modeling Effort

Scenario – Use SCA application in SOSA™ Environment

- **SCA application**
  - Uses capabilities provided by the SOSA™ OE infrastructure
  - Uses underlying RTOS / SCA OE that is compliant w/the SCA CF rules
  - Not contained within a SOSA™ module
  - Objective, maximize reuse of SCA apps
- **SOSA™ physical device**
  - Objective, don't introduce additional requirements on devices
- **SCA CF**
  - Communicates w/SCA assets over SOSA™ interconnect (w/SOSA™ protocols) or directly (via native SCA approach)
  - Responsible for making changes to accommodate the cross-framework interactions (to minimize impact on components)
  - Only manages the SCA components
- **SOSA™ management infrastructure**
  - Keeps track of all SOSA™ modules
  - Does not manage the SCA assets

SCA Deployment on SOSA™ Platform



SCA/SOSA™ Compatibility Desired Outcome(s)

- **Develop model that describes approach for interoperability between SCA applications within a SOSA™-aligned infrastructure**
  - **Use model as supporting evidence to develop a change proposal to include a reference to the SCA within the SOSA™ specification**
- **Potential follow-on activities to expand the number scenarios addressed to validate the interoperability model**
- **Potential implementation efforts to validate the interoperability model and its performance**

Summary

Benefits

- **TCS activities expand WInnF awareness of new DoD architectural approaches and priorities**
- **WInnF SDR expertise provides valuable insight to mature communications modality architectures**
- **WInnF contributions can help expand scope of SOSA™ Technical Standard include SCA products**

Opportunities

- **International / Industry inputs can advance prospect of achieving convergence of communications standards**
- **Provides awareness of SOSA™ specification to new community to expand number of product developers or consumers**

Challenges

- **WInnF international members can't take part in official SOSA™ Consortium meetings**

End of the presentation

Any questions?

Contacts:

- kwrich@mitre.org