

Outbriefs from the Technical Exchange Meetings Held in Conjunction with SDR-WInnComm 2014 11 to 14 March 2014

The various work groups, task groups and special interest groups of the Wireless Innovation Forum's Spectrum Innovation Committee and the Coordinating Committee on International SCA Based Standards met in conjunction with SDR-WInnComm 2014 to advance their various projects. This document provides the outbriefs from those meetings, organized by committee.

The agenda for these meetings can be found at:
<http://groups.winnforum.org/2014-Agenda>

Spectrum Innovation Committee Project Meetings

A summary of the project ongoing within this committee can be found here:
http://groups.winnforum.org/spectrum_innovation_committee

Education SIG

James Neel, representing Cognitive Radio Technologies, hosted a meeting of the Education Spectrum Interest Group. During this meeting, the group explored new project concepts for the SIG moving forward. The group agreed to focus efforts on developing an SDR/CR textbook and to arrange for related webinars or training modules.

Context Aware Cognitive Radio Project

James Neel also led a meeting of the Cognitive Radio Work Group. The focus of this meeting was the continued development of two papers: "Big RF for Tactical Networks", which is planned for MILCOM 2014, and "Big Data in 5G Wireless Networks", which is planned for IEEE Network Magazine. Both of these papers are being developed in support of their project on Context Aware Cognitive Radio, which is being developed for researchers and developers of complex information systems with intelligent automated behaviour who need to incorporate diverse and varying information sources into their automated decision processes, represent the current state of their systems, consider how to expand and enhance them from a process perspective, and analyze opportunities to interact with other systems with similar, but independently developed and evolved characteristics. The project intention of the project is to provide structural models, tools, and processes for analyzing, designing, and deploying contextually aware complex systems that will aid in defining, designing and selecting Cognitive Radio processes relevant and useful to Information System stakeholders and facilitate an improved understanding of the structure, meaning, and relationships between Information Systems that span operational domains to enable or improve communications across their systems.

Dynamic Spectrum Sharing Annual Report Project

Lee Pucker, representing the Wireless Innovation Forum, hosted a meeting of the Dynamic Spectrum Sharing Annual Report Project Group. This report is being created for Regulators, Policy Makers, Spectrum Managers, Network Planners, and Wireless Researchers who need to understand the state of technologies such as dynamic spectrum access and their ability to facilitate spectrum sharing. The report will act as a reference guide to clearly identify and synthesize a harmonized view of the results of spectrum sharing research and trials, identify what is in development, and articulate what issues are being addressed and what issues still need to be resolved. The meeting began with an update on the “Levels of Spectrum Sharing” developed by the group, with modifications made to address new inputs. During the meeting, Junsung Choi, representing Virginia Tech, provide an update on the report section focusing on test beds and trials, Louise Lamont, representing CRC, provided an update on the report section focusing on products and technologies, and John Glossner, representing Optimum Semiconductor Technologies, provided an update on the report section focused on Spectrum Occupancy. During this latter presentation, the group agreed to change the focus to Spectrum Measurement, with an additional emphasis on identifying issues with measurements and bands where Spectrum Sharing should not be considered.

Cognitive Radio Ontology Project

Mitch Kokar, representing VISTology, led a joint meeting of the Modeling Language for Mobility work Group with IEEE P1900.5 standards group. The main purpose of this meeting was to give an update on the progress of the P1900.5 efforts. An overview of the P1900.5.1 draft standard was given by Mitch Kokar. The overview included most of the submission by MLM/Winn Forum of August 2013. It was updated with the new developments in this effort. John Stine, representing MITRE, gave an update on P1900.5.2, indicating that a draft standard has been developed, and that the group John is working on a tutorial. The group went on to discuss plans on extending the Cognitive Radio Ontology (CRO). Mitch presented some possible directions for updating/extending the Cognitive Radio Ontology. First, work is underway to incorporate Spectrum Consumption Model Markup Language (SCMML) into the CRO. Second, VISTology’s work on expressing device capabilities might be incorporated, subject to permission by the sponsor (DARPA). Finally, a call was issued seeking more participation from the Forum members in this effort.

Open Standard Spectrum Resource Format (SSRF) Project

Jesse Caulfield, representing Keybridge Global, held a formation meeting for the Forum’s new Open SSRF Project. This project is being developed for commercial, government and military wireless service and spectrum administrators, frequency coordinators, device and application developers and end users world wide who require or may otherwise benefit from a standardized strategy and toolkit to describe, store and exchange wireless service information. The project will produce and open, cross-domain standard specification and open-source reference implementation based on the SSRF. During the meeting, Jesse presented an overview of this project including the planned milestones and deliverable. There was significant discussion on the relationship between SSRF, IETF PAWS, IEEE P1900.5.1, IEEE P1900.5.2 and the White Space Database Administrators (WSDBA) database to database protocol, and the group agreed to develop a relationship diagram as a project

deliverable. The group also agreed to focus on extracting use cases from the PCAST Report and the FCC 3.55 GHz Citizens Broadband Service proceedings as a baseline for further development.

Other Meetings

A meeting was also held by the public safety special interest group, led by Daniel Devasirvatham of Idaho National Labs, advancing their project on “Elements of Context for Cognitive Radio Based Public Safety Communications Systems” and by the Receiver Performance Guidelines Project Group, led by Bruce Mueller of Motorola Solutions. Out briefs for these meetings are not available at this time.

Coordinating Committee on International SCA Standards Project Meetings

A summary of the projects ongoing in this committee can be found here:

http://groups.winnforum.org/SCA_Committee

Business Models for New Entrants in the SDR Tactical Radio Market Project

David Renaudeau, representing Thales, led a meeting of the International Tactical Radio Special Interest Group Meeting to advance their project to update and complement the previous report on “Business Models for New Entrants in the SDR Tactical Radio Market” issued in March 2013 (WINNF-13-P-0001). This update will define the market evolution in the last two years, emphasizing that SDR is a reality in the tactical communications market, and providing a market report on the SDR Ecosystem. The report will also look to extend into other domains, including the airborne and tactical data link domains, and will work to feed the business model chapters with additional examples and testimonials.

SCA 4.1 AEP Improvements

The SCA 4.1 AEP Improvements Project Group, led by Eric Nicollet representing Thales, held discussions concerning the specification positioning and approach. A strawman was prepared. The group then reviewed the DSP AEP support discussion excel sheet, and based on this planned 2 specific teleconferences; one dedicated to addressing architectural consistency (Device IO, Timing, Memory SIllocation, etc.), and a second dedicated to detailed programming aspects. The group also established a need to evaluate the schedule and Advisory Council recommendations regarding the work plan.

SCA 4.1 Backwards Compatibility Project

The SCA Backwards Compatibility Task Group, led by Steve Bernier representing NordiaSoft, met in two sessions. The first session was used to review the goals of the work group and to summarize the work accomplished so far, including the list of uses cases that

describe the different scenarios where the SCAv4.0.1 specification requires changes to be backwards compatible with the SCAv2.2.2 specification. The remainder of the first session was used to go over a proposal introduced by Jerry Bickle, representing Raytheon. During the weeks leading to the meeting, this proposal generated a good debate via the group's online discussion forum. It also led to a number of counter proposals. The presentation provided a good opportunity for the group to have an interactive debate and explore sources of disagreement.

The second session was used to discuss the concept of components scalability. This topic is unrelated to backwards compatibility, but still very relevant to SCAv4. The discussion revolved around different approaches that could be used to allow SCAv4 components to not implement every component interface.

During the meeting, the group was able to reach agreement over a modified proposal believed to offer full support for the use case identified as the most important amongst all use cases: being able to run an unmodified SCAv2.2.2 application on a SCAv4 platform. The proposal is also believed to address issues identified with the support for other use cases related to backwards compatibility. The group set plans to create a new document that will describe the agreed upon proposal. The group also began developing plans for supporting other use cases and making new proposals. This work will be coordinated via the group's conference calls. The group also agreed to create a new list of issues regarding SCAv4; issues that are unrelated to backwards compatibility but are perceived as serious issues that need to be addressed.

State of the Art in Waveform Portability Project

SCA Implementers Work Group, led by Alberto Quintana representing Indra, met to advance the state of the art in waveform portability project. This project is for Waveform developers, radio platform manufacturers and radio system integrators who need to reduce the cost, effort and time needed to perform the porting of waveforms among different processing architectures (i.e: DSP, FPGA, GPP). The "State of the art review of waveform application portability (2012)" will be a report that will identify the latest developments and trends in the field of waveform portability in SCA based standards and will provide a common understanding of the main challenges involved in application portability using SCA based architectures. Unlike other existing documents which are based on a specific architecture support and offer a limited view of the portability problem without taking into account the overall needs of the waveform development (i.e. architecture-centric approach), this report will provide a consolidated view of the waveform portability problem in SCA based architectures and will set the common ground needed to provide an updated set of recommendations for developing waveforms independently of the underlying architectural framework, resulting in an easily portable source code.

During the meeting, Alberto provided a status update, and the group then reviewed the reports terms and definitions. The group then reviewed new references by including the recent ESSOR paper and ISO Report (ISO/IEC TR 9126-3).

SCA Test Lab

The SCA Test and Evaluation Group, led by James Ezick of Reservoir Labs, reviewed the status and progress on the current SCA Test Lab document. The purpose of this project is to develop a report that provides an overview understanding of an SCA Test Lab, and sets out to identify artifacts that are the inner workings for a SCA Test Lab’s existence. The report will identify the business case as it pertains to the financial concerns as a business entity.”

During the meeting, a high-level overview of the document was provided, including a review of the current outline and structure. The meeting then focused on topics/questions that should be addressed in the document. Participants in the meeting also discussed how the document could better address WINNF Most Wanted Innovation #2: Certification Process for Third Party Waveform Software. The group closed by discussing plans for advancing the report further.

Other Meetings

Meetings were also held by the SCA 4.1 IDL Profile Improvements and Transceiver Facility Workgroups, Led by Eric Nicollet, representing Thales. Out briefs for these meetings are not available at this time.