

FY2022 Operations Plan

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Table of Contents

1	INTRODUCTION – THE WIRELESS INNOVATION FORUM FY2021 OBJECTIVES.....	4
1.1	BRAND THE WINNFORUM AS THE PREFERRED VENUE FOR TECHNICAL COLLABORATIVE EXCHANGES ON INNOVATIVE SOLUTIONS FOR WIRELESS SYSTEMS	4
1.2	POSITION THE WINNFORUM AS THE PREFERRED VENUE FOR THE INTERNATIONAL SPECTRUM SHARING COMMUNITY.....	4
1.3	EXECUTE ON THE STRATEGIC PLAN OF THE SOFTWARE DEFINED SYSTEMS COMMITTEE (SDS)	5
1.4	EXECUTE ON TEST AND CERTIFICATION STRATEGIES FOR WINNFORUM STANDARDS	6
1.5	ESTABLISH RELEVANT PROJECTS	6
2	WIRELESS INNOVATION FORUM ORGANIZATIONAL OVERVIEW	9
2.1	FY2022 ORGANIZATIONAL STRUCTURE.....	9
2.2	FORUM CORPORATE ADMINISTRATION.....	12
3	6 GHZ COMMITTEE (6 GHZ) (CHAIR: MARK GIBSON, COMMSCOPE).....	14
3.1	CHARTER AND STRUCTURE	14
3.1.1	<i>Steering Group</i>	15
3.1.2	<i>Subcommittee/Working Group Operations and Procedures</i>	17
3.1.3	<i>Document Approval</i>	18
3.1.4	<i>Partner Organizations</i>	18
3.2	FY2022 OBJECTIVES	19
3.3	FY2022 PROJECT PLAN	19
4	ADVANCED TECHNOLOGIES COMMITTEE (ATC) (CHAIR: JOHN GLOSSNER, OPTIMUM SEMICONDUCTOR) .	21
4.1	CHARTER AND STRUCTURE	21
4.1.1	<i>Brand the WinnForum as the Preferred Venue for technical collaborative exchanges on innovative solutions for wireless systems</i>	21
4.1.2	<i>Position the WinnForum as the Preferred Venue for the International Spectrum Sharing Community</i> 22	22
4.1.3	<i>Establish Relevant Projects</i>	22
2.	FY2022 PROJECT PLAN	22
4.1.4	<i>Advanced Technology Committee Watch List</i>	23
4.1.5	<i>The Forum’s Top 10 Most Wanted Wireless Innovation List</i>	23
4.1.6	<i>Advocacy Agenda</i>	24
4.1.7	<i>Regulatory Advisory Committee</i>	24
4.1.8	<i>Academic Outreach</i>	25
4.1.9	<i>ATC Staff Support</i>	25
4.1.10	<i>3100 - 3550 MHz Project Support</i>	25
4.1.11	<i>Drone Project Evaluation</i>	25
5	SOFTWARE DEFINED SYSTEMS COMMITTEE (SDS) (CHAIRS: KEN DINGMAN, L3HARRIS AND ERIC NICOLLET, THALES)	26
5.1	CHARTER AND STRUCTURE	26
5.2	FY2022 OBJECTIVES	27
5.2.1	<i>Promote Software Defined Radio Standards and Technology World-wide</i>	27
5.2.2	<i>Drive worldwide convergence to a common suite of SDR standards</i>	28
5.2.3	<i>Standards certification</i>	29
5.2.4	<i>Roadmaps</i>	29
5.3	FY2022 PROJECT PLANS	30
5.3.1	<i>Harmonized Time Service</i>	30
5.3.2	<i>Transceiver Facility PSMs</i>	30

5.3.3	<i>Tactical Communications Standards</i>	30
5.3.4	<i>Harmonized Audio Port</i>	31
6	SPECTRUM SHARING COMMITTEE (CHAIRS: PRESTON MARSHALL, GOOGLE AND RICHARD BERNHARDT, WISPA)	32
6.1	CHARTER AND STRUCTURE	32
6.2	FY2022 OBJECTIVES	34
6.3	FY2022 PROJECT PLANS	35
6.3.1	<i>SSC Work Group 1: Operational and Functional Requirements (Chair: Andrew Clegg, Google)</i>	35
6.3.2	<i>SSC Work Group 3: Protocol Specifications (Chair: Navin Hathiramani, Nokia)</i>	36
6.3.3	<i>SSC Work Group 4: CBRS Test and Certification (Chair: Masoud Olfat, Federated Wireless)</i>	38
6.3.4	<i>SSC Work Group 5: Operations (Chair: Richard Bernhardt, WISPA)</i>	40
	<i>FY2022 Goals:</i>	42
7	BOARD OF DIRECTORS	43
7.1	GENERAL GOVERNANCE.....	43
7.2	STRATEGIC PLANNING	44
8	INFRASTRUCTURE AND SUPPORT SERVICES	45
8.1.1	<i>Continued Product Execution</i>	45
8.1.2	<i>Marketing Strategy</i>	46
8.1.3	<i>Member Retention</i>	46
8.2	EXPANDING ACCREDITATION SERVICES	47
8.3	MANAGING THE CBRS INFORMING INCUMBENT PORTAL.....	47
8.4	MEMBER SERVICES AND GROUP SUPPORT	48
8.4.1	<i>Project Support</i>	48
8.4.2	<i>Project Promotion and Committee Brand Management</i>	49
8.4.3	<i>News & Opportunities E-mail</i>	50
8.5	SUMMIT MANAGEMENT AND PROMOTION	50
8.6	AWARDS.....	50
9	OTHER CORPORATE ADMINISTRATION	50
9.1	ANNUAL MEETING OF THE MEMBERS.....	50
9.2	CORPORATE FILINGS	50
9.3	INSURANCE	51
9.4	FY2023 PLANNING	51

1 Introduction – The Wireless Innovation Forum FY2021 Objectives

The Wireless Innovation Forum (WInnForum) Board of Directors has established the following six items as high-level objectives for the Forum for the period from July 1, 2021 through June 30, 2022 in executing on the WInnForum’s Strategic Plan¹:

1.1 Brand the WInnForum as the Preferred Venue for technical collaborative exchanges on innovative solutions for wireless systems

The WInnForum’s Advanced Technology Committee (ATC) will execute on the “platform strategy” defined in FY2016 exploring potential new markets relevant to the Forum’s mission. In FY2022, the ATC will work with the WInnForum’s members and external industry experts to identify new market areas where a community of practitioners could be gathered to initiate at least one new project. The ATC and 6 GHz committee will also work on advancing and formalizing partnerships with end user community in existing and new market areas.

WInnForum’s ATC will seek appropriate relationships with government and quasi-governmental groups to find members of the academic community undertaking projects (proposed or underway) which embrace the technology objectives of the WInnForum. WInnForum through the ATC may reach-out to such project teams to see if a good fit may be present for a combined academic/WInnForum project. Such projects may include technical white papers and presentations, combined effort projects, or such materials and work products as is appropriate for both the academic entity and WInnForum.

The CTO and CMO will increase outreach to the academic community through, for example, attendance at relevant academic conferences, direct communication with academic groups, and awareness efforts among academic research funding agencies.

Define and execute a strategy for reaching out to proposers for the NSF spectrum innovation center and offer opportunities for collaboration to the winning team.

1.2 Position the WInnForum as the Preferred Venue for the International Spectrum Sharing Community

The WInnForum will work to maintain and strengthen its success in the Spectrum Sharing Committee (SSC), Regulatory Advisory Council (RAC), and 6GHz Committee to further foster community and ensure continued success.

In addition, the WInnForum will undertake the following:

¹ https://www.wirelessinnovation.org/assets/documents/wireless_innovation_forum_2018_to_2022_strat_plan_-_final.pdf

- a. Broaden focus of standards, processes and regulatory frameworks developed for the Citizens Broadband Radio Service (CBRS, FCC Part 96) to other frequency bands.
- b. Leveraging the experience in the CBRS, position the WInnForum as the venue where licensed and unlicensed communities can collaborate on how to share spectrum.
- c. Identify international shared-spectrum opportunities and determine whether and how the WInnForum can participate, to include monitoring the 3450-3550MHz band, and developing a strategy to address Informing Incumbent Capability (IIC) in any relevant band.
- d. For those international shared-spectrum opportunities that WInnForum decides to participate in, work with stakeholders to determine how to position the WInnForum to offer maximum benefit.
- e. The 6 GHz committee will develop technical standards and testing methodologies, subject to WInnForum's IPR protections in collaboration with other SDO's as appropriate.
- f. Continue to support the 6GHz MSG as a venue for providing and receiving input from the 6GHz Committee.

1.3 Execute on the Strategic Plan of the Software Defined Systems Committee (SDS)

The WInnForum will focus on international harmonization of extensions to the Software Communications Architecture (SCA); development and advancement of related API facilities as developed within the US JTNC and programs such as ESSOR and SVFuA in Europe and the WInnForum; definition and integration of frameworks and architectural approaches as the basis of next generation of software defined radio standards; tactical radio interoperability and acceptance of the SCA 4.1. Specific goals to accomplish this include:

- Provide a venue for International Community to collaborate on US Standards such as the Sensor Open Systems Architecture (SOSA™) and the SCA.
- Development and standardization of APIs and associated facilities relevant to software defined systems.
- Maintain its position as the international venue for SCA standards development and harmonization through the execution of projects focused on harmonizing the SCA extensions.
- Coordinate with SOSA to identify areas for collaboration and inputs to be provided by the WInnForum. Develop content as agreed upon. Development

of a strategy for integrating products based on existing software defined radio frameworks and architectural approaches.

- Address SCA 4.1 certification policy to satisfy international SCA certification requirements.

Projects, relationships with key domestic and international standards organizations and programs and independent positioning will showcase the WInnForum as the leading organization to influence and direct the development of interoperable solutions based on industry developed open standards, providing the incentive to attract new members.

1.4 Execute on Test and Certification Strategies for WInnForum Standards

Previously, the SSC committee established certification programs for Certificate Authorities, CBSD Test Labs and Certified Professional Installer Training Program Administrators to facilitate the development of an ecosystem support the Release 1 specifications. In FY2021, the SCC will work to enable Release 2 certifications, including establishing a program allowing self-testing to claim conformance for features that do not impact Release 1 certifications, and working with the FCC to establish a model for permissive changes and re-certification for those things that do impact Release 1 certifications.

The strategy for the 6 GHz functional specification is to create a 6 GHZ AFC Functional Specification Working Group. The 6 GHz T&C WG will develop a functional specification for AFC testing and certification in collaboration with the efforts of the full WInnForum 6 GHz Committee. Participation in the WG will be open to all WInnForum members. The goal of the WG is to have a functional specification completed in time consistent with the FCC's plans to test and certify AFCs.

1.5 Establish Relevant Projects

The Forum's Advanced Technologies Committee, Software Defined Systems Committee, and Spectrum Sharing Committee will form both member driven projects addressing immediate needs and roadmap driven projects advancing the Forum's Advocacy Agenda or supporting the Top 10 Most Wanted Wireless Innovations list:

- The Forum's Software Defined Systems Committee shall publish and maintain its own roadmap as defined in the Committee Charter², and initiate projects developing extensions to the SCA and domain related API standards

2

<https://sdsw.memberclicks.net/assets/docs/SDS%20Charter%20V4%200%200%20-%2029%20January%202018.pdf>

that address any gaps between the defined evolution roadmap and Forum accepted specification variants.

- The Forum’s Spectrum Sharing Committee shall publish and maintain its own roadmap as defined in the Committee Charter³, and initiate projects supporting that charter focused on the development and advancement of spectrum sharing technologies required for interoperable systems in applicable bands of interest worldwide.
- The Forum’s 6 GHz Committee shall publish and maintain its own roadmap as defined in its charter and initiate projects supporting that charter.
- The Advanced Technology Committee (ATC) will seek input from the Software Defined Systems Committee, the Spectrum Sharing Committee, and the 6GHz Committee on the current listed innovations for its 2021 review of the Wireless Innovation Forum Top 10 Most Wanted Innovations. Members of the ATC will also be invited to submit contributions that could be promoted as new innovations. The ATC will review each innovation to determine if it should (1) remain unchanged; (2) be updated with newer information; (3) be deleted because no longer an issue; (4) be superseded with other more important innovations that are required to solve more important shortcomings. A project of the Advanced Technologies Committee will be to publish a revision of the “Top 10 Most Wanted Wireless Innovations” list in FY2021.
- The WinnForum’s Advanced Technologies Committee will continue to maintain the Advocacy Agenda of the Forum and will coordinate activities with the Software Defined Systems Committee, the Spectrum Sharing Committee, and the 6GHz Committee as well as external stakeholders such as regulatory agencies, standards bodies, and other government agencies worldwide.
- Review and evaluate the WinnForum’s strategic plan with revision by June 2022.

The success of this goal will be measured by evaluating the level of member participation in each project.

This document presents specific plans for achieving these high-level objectives in separate sections dedicated to the FY2021 Meeting Plan, and the respective work plans of the Advanced Technologies Committee, the Software Defined Systems Committee, the Spectrum Sharing Committee, The 6 GHz Committee, the Board of Directors, and the Forum’s Corporate

³<https://winnf.memberclicks.net/assets/SSC/spectrum%20sharing%20committee%20scope%20and%20operations%20-%20v1.0.0.pdf>

Administration. The budget necessary to support these objectives is also addressed in the last section of this document.

2 Wireless Innovation Forum Organizational Overview

2.1 FY2022 Organizational Structure

The FY2022 Organizational Structure of the Wireless Innovation Forum is presented in Figure 1. The Forum is organized around four standing committees, whose responsibilities are summarized as follows:

- The role of the 6 GHz Band Multi-stakeholder Committee is to serve as an industry body to study and specify sharing arrangements in spectrum designated for unlicensed operation within all or part of the 6 GHz band (5925-7125 MHz). The Committee will provide technical input to inform the FCC's 6 GHz rulemaking and will facilitate the interpretation and implementation of the rulemaking that allows industry and regulators to collaborate on implementation of a common, efficient and well-functioning 6 GHz ecosystem.

The approach to the committee's work will emphasize the technical aspects of sharing while simplifying interfaces and requirements. This is done to advance innovative and competitive sharing approaches and to increase deployment speed of AFC systems.

- The role of the Advanced Technologies Committee (ATC) is to advocate for the innovative utilization of spectrum, and advancing radio technologies that support essential or critical communications:
 - Works with wireless end users and their representatives, including network operators, government acquisition authorities and research sponsors to validate concepts and requirements against technology readiness, to document domain specific requirements, use cases and business models.
 - Supports member organizations in identifying new opportunities for next generation products and services in each defined market domain.
 - Works with the regulatory and public policy community to establish a global regulatory framework promoting the adoption of emerging technologies for advanced wireless systems.
 - Provides a venue for the exchange of information on emerging radio technologies important in wireless networking and produces reports, specifications and recommendations supporting the development and deployment of advanced wireless system and next generation radio devices

Management and oversight of this committee is provided by a Steering Group working in collaboration with a [Regulatory Advisory Committee](#). The Steering Group is comprised of the [Forum's Officers](#), and is responsible for drafting the Forum's "Top 10 Most Wanted Wireless Innovations" list and setting the Forum's "Advocacy Agenda" based on

member input. These documents will be distributed to the members of the Forum for ballot following the Forum's standard process.

- Software Defined Systems Committee (SDS): support the harmonization of SDS standards at the international level for the mutual benefits of all stakeholders to include:
 - Defining an industry driven SDS evolution roadmap for the international community
 - Profiling SDS specifications and related APIs to define internationally accepted variants that are hosted by the Forum
 - Developing extensions to SDS standards that address any gaps between the defined SDS evolution roadmap and Forum accepted SDS specification variants
 - Providing implementation and certification guides, tools etc. easing implementation and supporting proliferation
 - Establishing and managing industry led certification programs where appropriate

Management and oversight of this committee is provided by a Steering Group working in collaboration with an [Advisory Council](#).

- The role of the Spectrum Sharing Committee (SSC) is to serve as a common industry and government standards body to support the development and advancement of spectrum sharing technologies based on the three-tier architecture proposed for the 3.55 GHz rulemaking activities. While the 3.55 GHz band is the main focus on the initial activities, the Wireless Innovation Forum aims to advance this technology for all applicable spectrum bands that can benefit from it.

This Committee is intended to facilitate the interpretation and implementation of FCC rulemaking to a level that allows industry and government parties to collaborate on implementation of a common, efficient, well-functioning ecosystem around this technology.

The main activities that will be conducted in the committee include:

- Detailing common industry and government functionality and architecture for Spectrum Access Systems (SAS), sensors, and devices
- Interoperability requirements and protocol definition to allow for open competitive and well-functioning systems
- Common framework for testing and integration of components of spectrum sharing technologies to allow for rapid certification and deployment and

predictability, thus expanding the ecosystem and increasing utility of the spectrum

- Details of requirements, processes, and methods for protection of incumbent users as required by the spectrum rules
- Operational procedures definition for the well -functioning of the system as it pertains to spectrum assignment, managements, and interoperability

This committee is also managed by a [steering group](#), and includes observers necessary for the full operations and support of the system.

In addition to these standing committees, the Forum also has an India Regional Committee whose objective is to support the needs of the members in the India region and to create significant interest in the activities of the WInnForum in India.

These committees are managed by the Forum’s elected officers, which include the Chair and Vice Chair of the Forum, the Chief Technology Officer, Chief Marketing Officer, Chief Regulatory Officer, the Secretary, and the Treasurer.

Organizational Structure for The Wireless Innovation Forum

23 August 2019

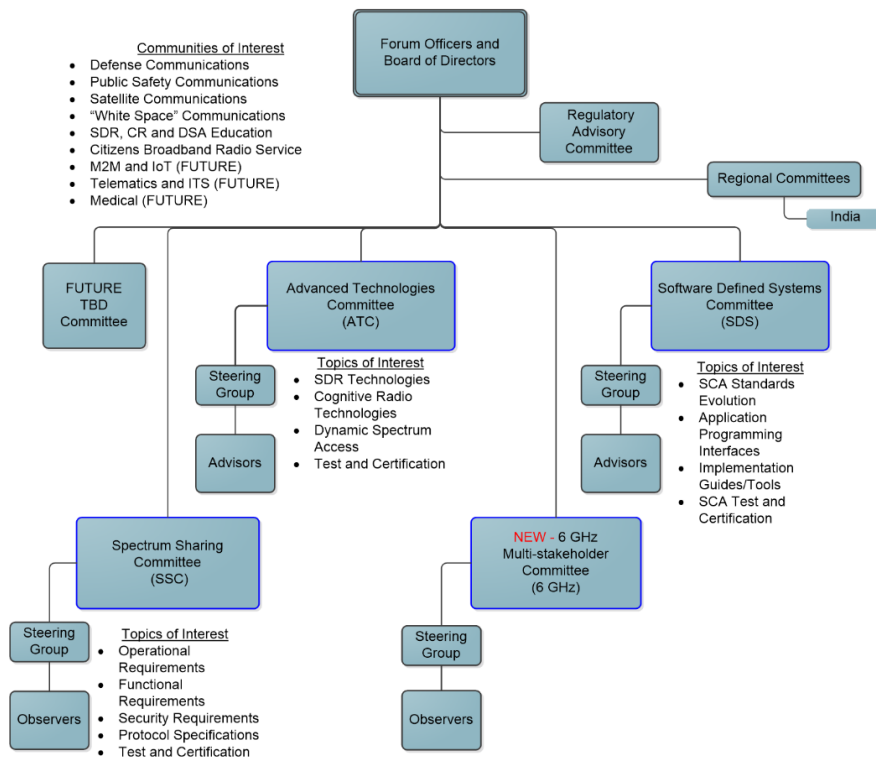


Figure 1: Wireless Innovation Forum FY2022 Organizational Structure

Management and oversight of the Forum as a whole, including the Forum’s corporate affairs, is performed by the Forum’s Board of Directors. These directors are elected on an annual basis, as defined in the [Bylaws](#). The elected slate of Directors for CY2021 is provided in Table 1.

Table 1: CY2021 Board of Directors of The Software Defined Radio Forum Inc. The positions of Chief Marketing Officer and Academic Representative are currently vacant.

Position	Candidate	Organization
Chair of the Board of Directors	Manuel Uhm	Xilinx
Forum Chair/President	John Glossner	Optimum Semiconductor Technologies
Forum Vice-Chair/ Vice President	Mark Gibson	CommScope
Secretary	Naotaka Sato	Sony
Chief Financial Officer/Treasurer	Ken Dingman	Harris
Chief Technology Officer	Andy Clegg	Google
Chief Marketing Officer	Richard Bernhardt	WISPA
Chief Regulatory Officer	Prakash Moorut	Nokia
Class Directors		
Large Company	Paul Challoner	Ericsson
Medium Company	Alberto Quintana	Indra
Small Company	Pierre Jean Muller	RED Technologies
Government/Non Profit	Dawn Szalc	MITRE
Academic	Vacant	Vacant
At Large Directors		
General	Claude Belisle	NordiaSoft
General	Jean-Philippe Delehaye	DGA
General	David Hagood	Cynosure
General	David Gurney	Motorola Solutions
General	Doug Knisely	Qualcomm
General	Raghavan Muralidharan	Tata Advanced Systems
General	Eric Nicollet	Thales
General	Vacant	Vacant

2.2 Forum Corporate Administration

Corporate administration and member services are provided to the Forum through a combination of employees, consultants, and third-party contractors. The Forum’s key personnel for FY2022 are as follows:

- Chief Executive Officer ([Lee Pucker](#)) – Reporting to the Board of Directors, the Chief Executive Officer’s primary responsibility is to maximize the value the Forum brings to its members. Accordingly, the CEO drives the development of the Forum’s Strategic Plan and supports the Forum’s other officers in executing on that plan. The CEO proactively identifies opportunities, solves the Forum’s critical problems, and makes an effort to anticipate future needs of the membership. The CEO assures that the organization and its mission, programs, products and services are consistently presented in a strong, positive image to relevant stakeholders, in particular to the Forum’s membership. The CEO, with the Treasurer, oversees the organization’s finances, ensuring the Forum’s member’s needs are met to the maximum extent possible while maintaining financial stability as a not-for-profit organization.
- Director of Marketing and Communications ([Stephanie Hamill](#)). The Director of Marketing and Communications (MarCom) has primary responsibility for managing communications for the Forum, including internet presence and member communications, and supporting the CEO in establishing and maintaining the Forum’s leadership in advanced wireless markets, evangelizing the Forum’s programs and services, and supporting the organizational objectives of the Forum’s membership. Reporting to the Forum’s CEO, the Director of MarCom helps assure that the Forum and its mission, programs, products and services are consistently presented in a strong, positive image to relevant stakeholders, in particular to the Forum’s membership.

The slate of key consultants and contractors retained by the Forum to support its members in FY2022 are as follows:

- 1) [Virtual Inc.](#) – Manager of the Forum’s Headquarters Operations
- 2) [InfoEx World Services](#) – Representative for the Forum in China
- 3) [BBD, LLP](#) – Audits and Finance
- 4) [Gesmer Updegrove LLP](#) – General Legal Counsel
- 5) [Hogan Lovells](#) – Communications Regulatory Counsel

In addition, the Forum retains a document editor on an as needed basis to support the creation of reports, specifications and recommendations by its members. Additional details on the Corporate Administration Work Plan for FY2022 can be found in Sections 8 and 9 of this plan.

3 6 GHz Committee (6 GHz) (Chair: Mark Gibson, *CommScope*)

The following high-level goals have been assigned to this committee by the Board of Directors:

- 1) Primary Goals:
 - a. Position the WInnForum as the Preferred Venue for the International Spectrum Sharing Community
 - b. Execute on Test and Certification Strategies for WInnForum Standards
- 2) Shared Goals:
 - a. Establish Relevant Projects

The project plans to support these goals are addressed in Sections 3.2 and 3.3 below.

3.1 Charter and Structure

The 6 GHz Committee (6 GHz) is a committee of The Wireless Innovation Forum that will serve as an industry body to study and specify sharing arrangements in spectrum designated for unlicensed operation within all or part of the 6 GHz band (5925-7125 MHz). The Committee will provide technical input to inform the FCC's 6 GHz rulemaking and will facilitate the interpretation and implementation of the rulemaking that allows industry and regulators to collaborate on implementation of a common, efficient and well-functioning 6 GHz ecosystem.

The activities to be conducted by the Committee include:

- Defining:
 - Interaction with FCC databases
 - Application of Interference Protection Criteria
 - Propagation Modeling
 - Spectrum Availability Determination
- Developing a Security Threat Assessment
- Creating an AFC Functional Specification
- Creating a Test & Certification framework

The approach to the committee's work will emphasize the technical aspects of sharing while simplifying interfaces and requirements. This is done to advance innovative and competitive sharing approaches and to increase deployment speed of AFC systems.

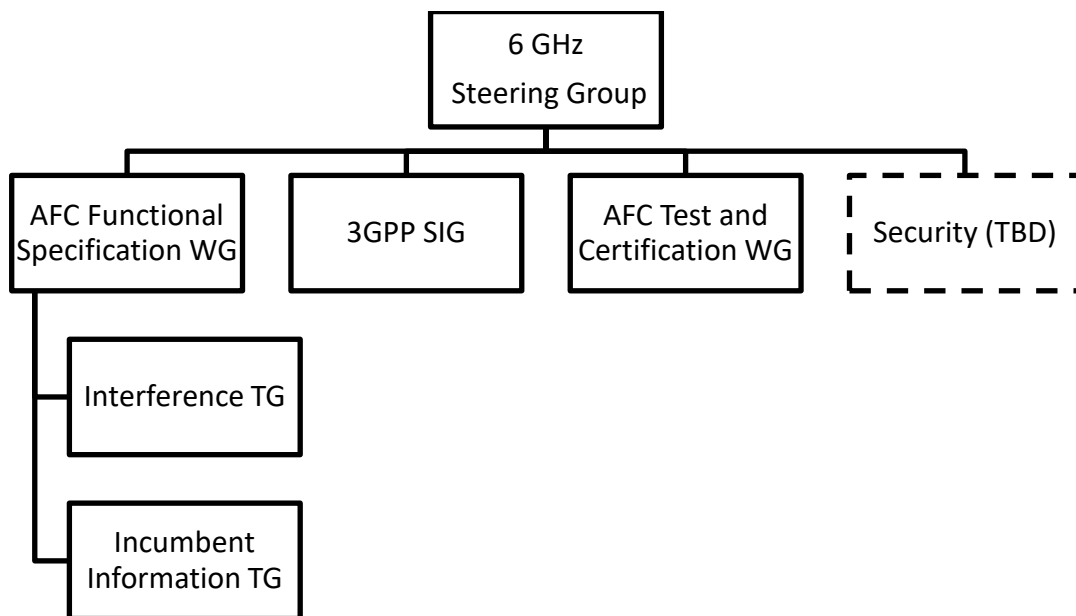
The Committee is ultimately a standards and technical implementation forum for industry stakeholders and developers of the spectrum-sharing technologies. The Committee will not address policy-making or liability management but may occasionally make formal technical recommendations to the FCC or other regulatory bodies following the Forum's standard policies and procedures.

The participants of this Committee will include, but not be limited to, the following:

- Developers and operators of wireless equipment and devices
- Developers and operators of spectrum sharing systems
- Operators and service providers interested in deploying in the spectrum
- Suppliers of systems and components operating in this spectrum
- General users of spectrum outside of main providers
- Policy makers, academics, and researchers

Liaisons from other standards groups with which joint work is desired or necessary.

The organizational structure is shown below:



3.1.1 Steering Group

3.1.1.1 Overview

The steering group is responsible for managing the overall activity flow and ensuring consensus and agreement with results from the discussions, such that progress can be made properly and timely to serve the interest of all the stakeholders. The main activities that the steering group is engaged in should include:

- Defining the necessary subcommittees and adding new ones as required
- Prioritization of work activities in the subcommittees
- Setting objectives and desired outcome from each subcommittee
- Approving activity scope and approach for each subcommittee
- Approving the recommendations of each subcommittee
- Recommending increase of scope towards a formal standard if so determined

- Managing the committee’s annual operating budget and presenting to the Board of Directors for approval

3.1.1.2 Membership and Rights

Membership of the Steering Group is comprised of the following:

- Committed AFC developers and operators (engaged in the development of the system and intend on participating in this market)
- Committed Device developers and wireless equipment suppliers (engaged in the development of the system and intend on participating in this market)
- Committed users and service operators (engaged in the development of the system and intend on participating in this market)

Membership in the steering group is by organization and all Steering Group members have voting rights at the committee level (1 vote per organization). Members of the Steering Group must be full Forum members or Trial members and must supply a letter of commitment prior to joining the group. Continued membership requires that an organization be represented at 3 of 5 Steering Group meetings on a rolling window basis.

Steering Group members include:

- AT&T
- CableLabs
- Charter
- Cisco Systems
- Comcast
- CommScope
- Ericsson
- Federated Wireless
- Google
- iPosi
- Midco
- Motorola Solutions
- Nokia
- Pathfinder Wireless
- Qualcomm
- RED Technologies
- Sony Corporation
- UWB Alliance
- WISPA

3.1.1.3 Observers

The Steering Group will also elect to include observers necessary for the full operations and support of the system. They include, but are not limited to, the following:

- Regulators that are engaged in the development of this system (i.e., FCC, NTIA, etc.)
- Researchers and academics with special knowledge and contribution
- Operators, users, and equipment providers with no declared intent to use the system but with interest in the topic
- Other relevant industry associations

Observers have no voting rights and will be invited and approved by the Steering Group members.

3.1.1.4 Officers

The Steering Group will elect, on an annual basis, a chair and vice chair, or alternatively 2 co-chairs, with duties and responsibilities as follows:

- a. The Chair(s) report to the Chair of the Forum for day-to-day operations.
- b. The Chair(s) manage the balloting process at the Committee Level.
- c. The Chair(s) oversee the meetings to ensure collaboration and manage contention.
- d. The Chair(s) typically don't vote on Committee matters unless there is a tie vote.
- e. The Chair(s) ensure compliance with Forum directives and follow-up on action items.

Election of chairs will be managed by Forum Staff following the Forum's standard policies and procedures. As per Forum policy, at least one chair will be invited to represent the committee as a member of the Wireless Innovation Forum Board of Directors.

The Chair may appoint from time to time, as required, other committee officers to include secretary or treasurer.

3.1.2 Subcommittee/Working Group Operations and Procedures

3.1.2.1 Charter

Subcommittees/working groups will be formed at the direction of the Steering Group. In doing so, the Steering Group will provide a charter defining the high-level mission and directives for each group. Initial working groups are defined in sections 2 and 3 of this charter. Additional subcommittees/work groups may be proposed to the steering group by members of the committee.

3.1.2.2 Membership

Membership in each working group shall be open to all Forum members, as per Policy 004 (http://www.wirelessinnovation.org/assets/documents/poli-Member_Benefits_Policy.pdf). Participation in a working group does not require membership in the Committee Steering Group. Membership in the group shall be maintained by an organization attending at least 3 of 5 meetings.

From time to time, the members of the working group may request participation by a non-member subject matter expert who is considered critical to the success of their project. Such

requests will be reviewed and approved by the Steering group following Policy 014 (<http://www.wirelessinnovation.org/assets/documents/pol%20-%20sdrf%20policy%20on%20policy%20-%20policy%20-%20participation%20by%20non-members%20-%20revision%202%201.pdf>)

3.1.2.3 Projects

Each project performed within a subcommittee/work group will be initiated through the creation of a detailed project proposal defining the project's objectives, scope, deliverables and schedule, and these project proposals will be approved by the steering group following Forum Policy 002 (http://www.wirelessinnovation.org/Project_Approval_Process). Proposals must support the Work Group's charter and the annual operations objectives established by the Steering Group.

3.1.2.4 Subcommittee Operating Procedures

Each subcommittee shall elect a chair from among its membership, and said chair will work to facilitate discussions and manage meetings. Appointment of the Chair will be ratified by the Steering Group, and the Steering Group may call for a new election should the sitting work group chair fail to advance the project.

Development of work products shall be contribution based, with the Chair soliciting contributions to be discussed at least one week in advance of each meeting. Meetings will be held by teleconference or face-to-face as required, although the Chair may designate that certain discussions be held via email using the subcommittee's list server.

Adoption of a contribution, in whole or in part, shall be by consensus. Once all contributions have been considered and the final work product complete, the work product shall be finalized by Forum staff and submitted to the Steering Group for ratification.

3.1.3 Document Approval

Approval of documents shall follow Forum Policy 001 (http://www.wirelessinnovation.org/page/Document_Approval_Process). Once work is completed, a document will be sent to the Steering Group for ratification. Once ratified by the Steering Group, the document will be submitted to the Chair of the Forum for formal adoption.

3.1.4 Partner Organizations

The Committee anticipates establishing partnerships with other organizations to advance their objectives. The Committee has executed liaison agreements with the Wi-Fi Alliance. Other partnerships envisioned include 3GPP and the IEEE 802 Committee. Establishment of these partnerships will be upon the direction of the Steering Group and will follow Forum Policy 003 (http://www.wirelessinnovation.org/assets/documents/poli-Documents_Sharing_Policy.pdf).

3.2 FY2022 Objectives

We are aware that work on AFC requirements is also being managed within other stakeholder groups such as the Wi-Fi Alliance. The primary objectives of the 6 GHz Committee for this year are listed below:

- Complete the AFC Functional Specification.
- Develop an AFC Test and Certification Specification.
- Identify Security needs and develop specifications as necessary.
- Continue to work with the Wi-Fi Alliance under the liaison agreement to minimize duplication of efforts and to support the Multi-stakeholder Group as necessary.
- Collaborate on the development of requirements and procedures regarding interference reporting and remediation.

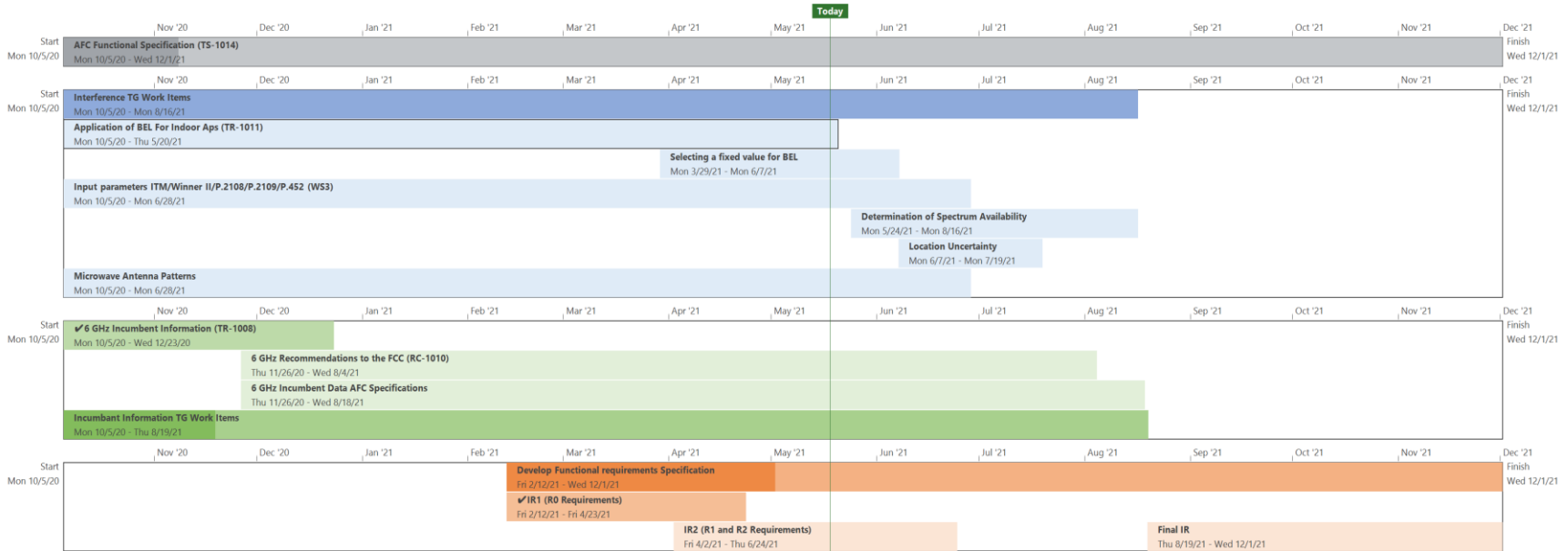
Additional objectives may be identified as the collaboration among stakeholder groups proceeds.

3.3 FY2022 Project Plan

The 6 GHz Committee has completed a high-level project plan. Nonetheless, we have identified the following tasks that should be completed:

- Application of propagation models
- Model input parameters
- Antenna patterns
- Determination of spectrum availability
- Support for mobility (TBD)
- ULS function & operation
- Data recommendations
- Canada & Mexico data (TBD)
- AFC Test Framework
- AFC Test Procedures
- AFC Interface Gap Analysis
- AFC Protocols for 3GPP
- 3GPP Device Test Case
-

The project plan and schedule to complete the above tasks is provided below:



4 Advanced Technologies Committee (ATC) (Chair: John Glossner, *Optimum Semiconductor*)

The following high-level goals have been assigned to this committee by the Board of Directors:

- 1) Primary Goals:
 - a. Brand the WInnForum as the Preferred Venue for technical collaborative exchanges on innovative solutions for wireless systems
 - b. Position the WInnForum as the Preferred Venue for the International Spectrum Sharing Community
- 2) Shared Goals:
 - a. Establish Relevant Projects

The project plans to support these goals are addressed in Sections 4.2 and 4.3 below.

4.1 Charter and Structure

The Advanced Technology Committee (ATC) is led by a Steering Group comprised of the Forum's Executive Committee and the Forum's Committee chairs. The primary role of the Steering Group is to identify projects of strategic relevance to the Forum membership, to prioritize and launch projects as appropriate, and to monitor those projects to ensure and support execution. The ATC will work with the WInnForum's members and external industry experts to identify new market areas where a community of practitioners could be gathered to initiate new projects.

The ATC has the responsibility to maintain and update, when appropriate, two Forum documents: the Forum's Top 10 Most Wanted Wireless Innovations list and the Advocacy Agenda.

The Advanced Technology Committee has established the following committee objectives for FY2021 to support the Forum's High Level Objectives:

4.1.1 Brand the WInnForum as the Preferred Venue for technical collaborative exchanges on innovative solutions for wireless systems

The WInnForum's Advanced Technology Committee (ATC) will execute on the "platform strategy" defined in FY2016 exploring potential new markets relevant to the Forum's mission. In FY2022, the ATC will work with the WInnForum's members and external industry experts to identify new market areas where a community of practitioners could be gathered to initiate at least one new project. The ATC will also work on advancing and formalizing partnerships with end user community in existing and new market areas.

WinnForum's ATC will seek appropriate relationships with government and quasi- governmental groups to find members of the academic community undertaking projects (proposed or underway) which embrace the technology objectives of the WinnForum. WinnForum through ATC may reach-out to such project teams to see if a good fit may be present for a combined academic/WinnForum project. Such projects may include technical white papers and presentations, combined effort projects, or such materials and work products as is appropriate for both the academic entity and WinnForum.

The CTO and CMO will investigate increasing outreach to the academic community through attendance at relevant academic conferences, direct communication with academic groups, and awareness efforts among academic research funding agencies.

4.1.2 Position the WinnForum as the Preferred Venue for the International Spectrum Sharing Community

The WinnForum will work to build on its success in forming and managing the Spectrum Sharing Committee (SSC) and 6GHz committee and strengthen those communities to ensure continued success. In addition, the WinnForum will undertake the following:

- 1) Broaden focus of standards, processes and regulatory frameworks developed for the Citizens Broadband Radio Service (CBRS, FCC Part 96) to other frequency bands.
- 2) Leveraging the experience in the CBRS, position the WinnForum as the venue where licensed and unlicensed communities can collaborate on how to share spectrum.
- 3) Identify international shared-spectrum opportunities and determine whether and how the WinnForum can participate.
- 4) For those international shared-spectrum opportunities that WinnForum decides to participate in, work with stakeholders to determine how to position the WinnForum to offer maximum benefit.

4.1.3 Establish Relevant Projects

The ATC will continue to maintain and update two of the Forum's documents, the 'Top 10 Most Wanted Wireless Innovations' and the 'Advocacy Agenda'.

In addition, the ATC will initiate a new project related to Spectrum Access in bands other than CBRS covered by the Spectrum Sharing Committee. As mentioned above, the ATC will also seek input from the Forum membership and its Advisory Council, to initiate at least one additional new project.

2. FY2022 Project Plan

The following describes the projects the ATC is planning to undertake in FY2022. In addition to those described here, the ATC is planning to initiate at least one new project to be defined in collaboration of the Committee Chairs and its Advisory Council.

4.1.4 Advanced Technology Committee Watch List

The Advanced Technology Committee Watch List is a document that outlines strategic projects the ATC believes should be undertaken in support of the Forum's Advocacy Agenda, the Forum's Top 10 Most Wanted Wireless Innovations List or the Forum's Platform Strategy. The list does not restrict the projects that Topic Sponsors may support but rather guides the Advanced Technology Committee to launch new projects that are aligned with the objectives of the Committee.

The CTO will work with the Advanced Technology Committee to develop and maintain the Watch List. This List shall be presented quarterly to the ATC SC.

4.1.5 The Forum's Top 10 Most Wanted Wireless Innovation List

The Advanced Technology Committee (ATC) is responsible for identifying/consolidating the 10 most wanted innovations in terms of technology, regulations, or business practices as identified by the Forum members. The ATC Committee will seek input from the Software Defined Systems Committee and the Spectrum Sharing Committee on the current listed innovations and members of the ATC will also be invited to submit contributions that could be promoted as new innovations.

The process that will be adopted by the Committee in FY2022 is as follows:

- 1) The Advanced Technology Committee (ATC) will seek input from the Software Defined Systems Committee, 6 GHz Committee, and the Spectrum Sharing Committee on the current listed innovations for its 2020 review of the Wireless Innovation Forum Top 10 Most Wanted Innovations.
- 2) Members of the ATC will also be invited to submit contributions that could be promoted as new innovations.
- 3) The ATC will review each innovation to determine if it should (1) remain unchanged; (2) be updated with newer information; (3) be deleted because no longer an issue; (4) be superseded with other more important innovations that are required to solve more important shortcomings.
- 4) A project of the Advanced Technologies Committee will be to publish a revision of the "Top 10 Most Wanted Wireless Innovations" list in FY2021.
- 5) The WInnF CTO will launch a campaign to WInnF members to propose new innovations topics.
- 6) The ATC Steering group will review the contributions gathered from each of the Committees and identify items on each of their roadmaps requiring investment in significant technical, business or regulatory innovation.
- 7) The Forum CTO, with the support of the ATC Steering group, will form a committee to review the 2020 list and reformulate or replace the innovation with input from the Innovation gathering process described above, to select the Top 10 that will make the 2020 list.

4.1.6 Advocacy Agenda

The Advanced Technology Committee of the Forum is responsible for the Advocacy Agenda and maintaining a consolidated list of proposed changes/additions to the Advocacy Agenda.

The process that will be adopted for updating the Advocacy Agenda in FY2022 is as follows:

- 1) The ATC Steering Group committee shall have a meeting agenda item as needed to discuss changes to the Advocacy Agenda.
- 2) The Chief Regulatory Officer is responsible for consolidating all Advocacy Agenda inputs from all Forum Committees. The procedure shall be as follows:
 - a. The CRO shall lead a discussion of the consolidated proposals. If changes to the Advocacy Agenda are presented by any Committee, a discussion of the merits of modifying the Advocacy Agenda shall be conducted.
 - b. Any changes to the Advocacy Agenda shall be balloted at the subsequent ATC Steering Group Meeting
 - c. In addition, the CRO shall maintain a consolidated Forum Advocacy Agenda proposed changes list based on inputs from all Forum committees.

4.1.7 Regulatory Advisory Committee

The objectives of the Regulatory Advisory Committee (RAC) are to:

- facilitate the exchange of knowledge on technical topics, not to advocate for one policy position or another.
- provide a venue for regulators, policy experts (advisors) and Forum members who have an interest in the development and deployment of advanced wireless technologies.
- foster Forum collaboration with the regulatory and public policy community.
- present an opportunity to enhance informal communications among the regulators and policy experts who are advisors.
- help Forum members better understand emerging regulatory trends across all ITU regions, and to help the advisors to understand emerging technologies that may impact, or be impacted by, the regulatory landscape.

The Chief Regulatory Officer (CRO) is responsible for organizing regular Regulatory Advisory Committee meetings and recruiting advisors worldwide. The CRO will define the topics to be covered at the meetings jointly with advisors and Forum members. Members and advisors will have opportunities to present their topics of interest to advance the objectives of the RAC. Topics for FY2021 include spectrum sharing initiatives in various countries worldwide. There can also be contributions to relevant regulatory bodies to inform about the work the Forum is doing and also

request information relevant to the RAC. RAC will also strive to hold at least one face-to-face meeting.

4.1.8 Academic Outreach

The CTO and CMO will investigate increasing outreach to the academic community through relationships with government(s) and quasi- governmental groups, attendance at relevant academic conferences, direct communication with academic groups, and awareness efforts among academic research funding agencies.

If the National Science Foundation issues an award for a Spectrum Innovation Center then the Wireless Innovation Forum will reach out to the principal investigator to offer means of collaboration.

Monitor spectrum sharing programs world-wide and engage with academics as appropriate to participate in discussions and/or projects.

4.1.9 ATC Staff Support

ATC will work with Forum staff to market the Forum by:

- 1) Promotion Package: Support staff in developing a promotion package.
- 2) Event Presence: Work with membership to identify potential trade shows/events. Prioritize one or two events where our target market is located and sign up to present/exhibit and/or co-sponsor for reduced exhibit/presentation fee.
- 3) General Advertising: Work with membership to identify appropriate vehicles for paid advertising. Help staff prioritize the opportunities and work with BoD to fund. Support goal of monthly blog produced by Forum staff and membership.

4.1.10 3100 - 3550 MHz Project Support

Work with NTIA to understand their plans for S3/IIC and support as appropriate based on input from member companies.

Monitor developments in the 3100-3450 MHz band and comment on relevant proceedings.

Work to understand the potential co-existence issues of 3450-3550 MHz operations on CBRS.

4.1.11 Drone Project Evaluation

The ATC will support the Drone Special Interest Group Steering in completing their first work product a technical report on “Technological State of the Industry on Wireless Drone Networking”.

5 Software Defined Systems Committee (SDS) (Chairs: Ken Dingman, L3Harris and Eric Nicollet, Thales)

The following high-level goals have been assigned to the committee from the Board of Directors:

- 1) Primary Goals:
 - a. Execute on the Strategic Plan of the Software Defined Systems Committee
- 2) Shared Goals:
 - a. Establish Relevant Projects

The project plans to support these goals are addressed in section 4.2 and 4.3 below.

5.1 Charter and Structure

The current mission of the Software Defines Systems (SDS) Committee is to “oversee the evolution and adoption, at the international level, of SDS standards for the development of essential and mission critical wireless systems”.

The SDS is comprised of 3 major organizational elements. A Steering Group (SG) that is responsible for coordinating the different activities within the SDS and ensuring that liaisons with the stakeholders and the Forum’s Board of Directors are maintained. An Advisory Council that acts as an advisory body to the SG, representing various Government stakeholders in the identification of requirements and development of visions to support their operations. A set of Working Groups that focus on identifying needs/issues and providing solutions, executing approved projects. For FY2022, there are two active Working Groups as follows:

- API Working Group
- SCA Evolution Working Group

The Tactical Communications Standards project is run directly from the Steering Group.

The structure of the SDS organization is provided in Figure 3 below in conjunction with the relationship of the SDS to other WINNF organizational elements. Steering Group Members include:

- A4ESSOR
- L3Harris Technologies
- Hitachi Kokusai Electric
- Indra
- Leonardo

- Collins Aerospace
- Rohde & Schwarz
- Thales

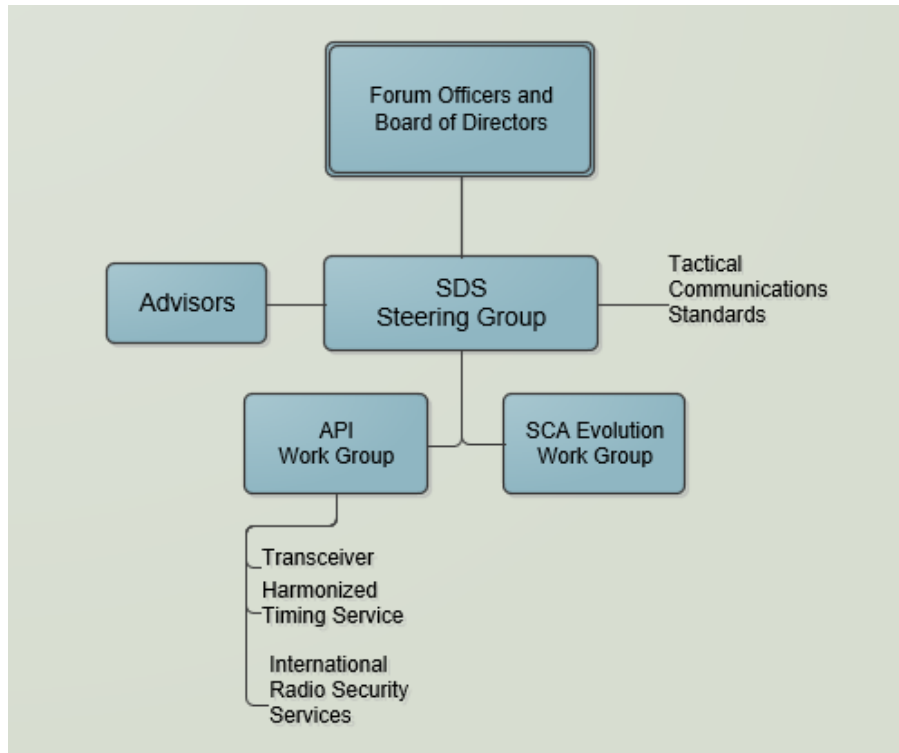


Figure 2: Software Defined Systems Committee Organizational Structure

5.2 FY2022 Objectives

5.2.1 Promote Software Defined Radio Standards and Technology World-wide

This objective relates to the Outreach foundational element of the Strategic Plan and maps to the “Execute the Strategic Plan” goal assigned by the Board of Directors.

For the past few years, there has been a proliferation of Open Architecture solutions being formulated, such as FACE, MORA, VICTORY, SOSA, OMS, VITA 49, ECOA, Lavosar, accompanying the SCA. SOSA has emerged as the leading cross service OSA specification in the US DoD. The SDS Committee will work with SOSA to provide an avenue for international collaboration on the SOSA specification and promote already accepted tactical communications standards such as the SCA, Transceiver and Time Service Facilities within the SOSA framework. The objectives of the collaboration are to harmonize and optimize standards to reduce redundancy where possible and

to accommodate the usage of multiple architecture frameworks when appropriate via integration strategies. All project interactions with SOSA will be done through Tactical Communications Standards project.

Support and advancement of the SCA will **continue to be a primary focus** of the committee. Through its Advocacy activities, the Committee will continue to promote the SCA, through activities such as placing articles in magazines and supporting expansion of the SCA into domains such as EW, SigInt and Radar.

5.2.2 Drive worldwide convergence to a common suite of SDR standards

This objective relates to the Standards Harmonization foundational element of the Strategic Plan and maps to the “Execute on the Strategic Plan of the SDS Committee” goal assigned by the Board of Directors.

5.2.2.1 Standard specifications development

The SDS committee will carry on past efforts to drive convergence towards an internationally supported suite of SCA-compatible SDR standards enabling reconfiguration of the products, portability of the developed applications and requisite support in the developed platforms.

The efforts are based on harmonization of existing standards developed at national or multinational levels, and development of new standards when needed. Leveraging the Advisors, the SDS Steering Group will solicit existing SDR programs to determine contributions they will be willing to submit in support of the harmonization effort.

The SDR standards of interest cover two main architecture areas:

- Software Support, for portable embedded software development and deployment on heterogeneous environments (encompassing the SCA Core Framework and Operating Environments, considering extensions towards DSP and FPGA environments...),
- Functional Support, for abstraction of hardware-dependent or mutualized capabilities supporting the radio applications (encompassing existing APIs and WInnF-developed Facilities -- that complement APIs software interfaces with behavioral and performance engineering features).

The SDS is active in the area of functional support, with a consolidating set of standards (TS-0008 Transceiver Facility and TS-3004 Time Service Facility) and recommendations (TR-2007 Principles for Facilities and TR-2008 PSMs Mapping Rules). Leveraging those achievements the intention is to move ahead in developing audio service facility.

5.2.2.2 Addressing networking capabilities / SDN

Recognizing the increasing interest for inter-networking capabilities required, in addition to the waveform capabilities implemented in radios, to take advantage of the breadth of radio

capabilities available on emerging systems, the focus of activities will eventually expand to software-defined support of networking applications (software defined networking - SDN), leveraging the SDR assets of the SDS committee.

The works under consideration, taking into account Advisor's recommendation, would be related to software support, with work on extensions to AEPs and selection of standard solutions for connectivity.

5.2.2.3 Standard specifications usage

Recognizing that worldwide convergence on harmonized standards is not only a question of standards development and availability, but also a question of standards usage, the SDS committee will develop an agenda focusing on developing usage recommendations and agreements for the WInnForum SDR Standards.

In this respect, the committee will seek **development of market-oriented profiles** oriented to vertical markets of interest (initially military tactical radios), that will specify, among the breadth of existing standards and the options or alternatives they allow, prescriptive requirements for conformant products, enabling the target market to actually benefit from the said standard, e.g. with regards to high portability of developed waveform applications.

The committee will seek **recognition of use of SDR standards or market-oriented profiles** by as wide as possible national or multinational communities. Official recognition in policy setting registries such as the US DISR or the EDA EDSTAR will be considered, and the once-expressed interest of NATO in SDR standards will be reinvestigated. Beyond, possibility for multinational endorsements of some SDR Standards will be discussed with Advisors.

The Tactical Communications Standards project will develop a WInnForum recommendation describing what the SDS Committee can bring to SOSA (Sensor Open System Architecture), for the mutual benefit of SOSA and WInnF SDS stakeholders. The initial specifications of interest will be the JTNC Software Communications Architecture (SCA), the WInnF Transceiver Facility specifications and the WInnF Time Service Facility specifications. The group will leverage its SCA knowledge to develop an approach to have the SCA introduced as a referenced specification within the SOSA Technical Standard.

5.2.3 Standards certification

The committee will engage with standards stakeholders, including JTNC and ESSOR, to evaluate establishing a **multinational accreditation approach** for SDR Standards **certification centers**.

5.2.4 Roadmaps

Based on the active and planned activities, roadmaps related to the committee activities will be established.

Elements of these roadmaps that require significant technical, business or regulatory innovation will be submitted to the Forum's Roadmap Committee for inclusion in the Forum's "Top 10 Most Wanted Wireless Innovations" report as defined in Section 4.1.5 of this Operations Plan.

5.3 FY2022 Project Plans

The SDS Committee plans to deliver multiple work products through a series of projects in FY2019. Specific work products and milestones delivered from existing and planned projects are presented below.

5.3.1 Harmonized Time Service

1. **Objectives:** harmonizing, completing and improving the JTNC Timing Service API into a WInnF Facility (= API + behavior + properties), based on multinational efforts and lessons learnt (namely encompassing the US, ESSOR Nations and Germany); complementing with timer capabilities.
2. **Work Group:** API
3. **Project Lead:** Eric Nicollet (Thales) and Marc Adrat (Fraunhofer FKIE)
4. **Milestones**
 - Plan Approved: May 2018
 - PIM completed : June 2020
 - PSMs completed: July 2021

5.3.2 Transceiver Facility PSMs

1. **Objective:** complement the Transceiver Facility 2.0 PIM Specification (Jul 2017) with PSMs for C, C++, FPGA and SCA.
2. **Work Group:** Transceiver
3. **Project Lead:** François Levesque (Nordiasoft) and Eric Nicollet (Thales)
4. **Milestones**
 - Plan Revised: Dec 2018
 - Completed: July 2021

5.3.3 Tactical Communications Standards⁴

1. **Objective:** a WInnF recommendation presenting what SDS Committee and JTNC SDR Standards can bring to SOSA (Sensor Open System Architecture), for the mutual benefit of SOSA and WInnF SDS stakeholders. Activities that will be performed are
 - Develop a model that demonstrates how the specifications can work together to enable the development of a realizable architecture where SCA waveforms can

⁴ Reorientation of the previous MRA (Modular Radio Architecture) project.

provide a compliant communications modality solution within the SOSA Reference Architecture.

- After the initial alignment has been performed, the group will explore additional technical pursuits to further demonstrate SCA / SOSA collaboration such as implementation models and SCA optimizations that can benefit the SCA and SOSA communities.
 - The capabilities of the WInnF specifications will be explained relative to their capabilities and the additional functionality that they could provide to the SOSA Reference Architecture and Reference Implementation Guide.
 - Develop a Change Proposal (CP) that will recommend the inclusion of the content of from the WInnF specifications within SOSA. As part of this the group will discuss the approach to integrate the specification as certain approaches might require the development of a conformance test capability.
2. **Work Group:** none, the project task group directly reports to the Steering Group.
 3. **Project Lead:** Kevin Richardson
 4. **Milestones**
 - Explanation of Transceiver & Timing Service Facility Capabilities to SOSA :: Aug 2021
 - Finalize and submit SCA / SOSA integration model: Sep 2021
 - Submit SOSA Change Protocol for Timing Service : Oct 2021
 - Adding SCA Reference : Dec 2021
 - Submit SOSA Change Protocol for Transceiver : Feb 2022
 5. SCA / SOSA implementation evaluation: Apr 2022

5.3.4 Harmonized Audio Port

1. **Objective:** Harmonizing, completing and improving the JTNC Audio Port API and ESSOR audio port device into a WInnForum Facility (= API + behavior + properties), based on multinational efforts and lessons learnt (namely encompassing the US, ESSOR Nations and Germany).
2. **Work Group:** API
3. **Project Lead:** Eric Nicollet (Thales) and Marc Adrat (Fraunhofer FKIE)
4. **Milestones**
 - Kick-off: September 2021

6 Spectrum Sharing Committee (Chairs: Preston Marshall, Google and Richard Bernhardt, WISPA)

The following high-level goals have been assigned to the committee from the Board of Directors:

- 1) Primary Goals:
 - a. Execute on providing a platform for Release 2 programs and a respective test and certification strategy for Release 2 Capabilities in WInnForum Standards
- 2) Shared Goals:
 - a. Establish relevant projects

The project plans to support these goals are addressed in sections 6.2 and 6.3 below.

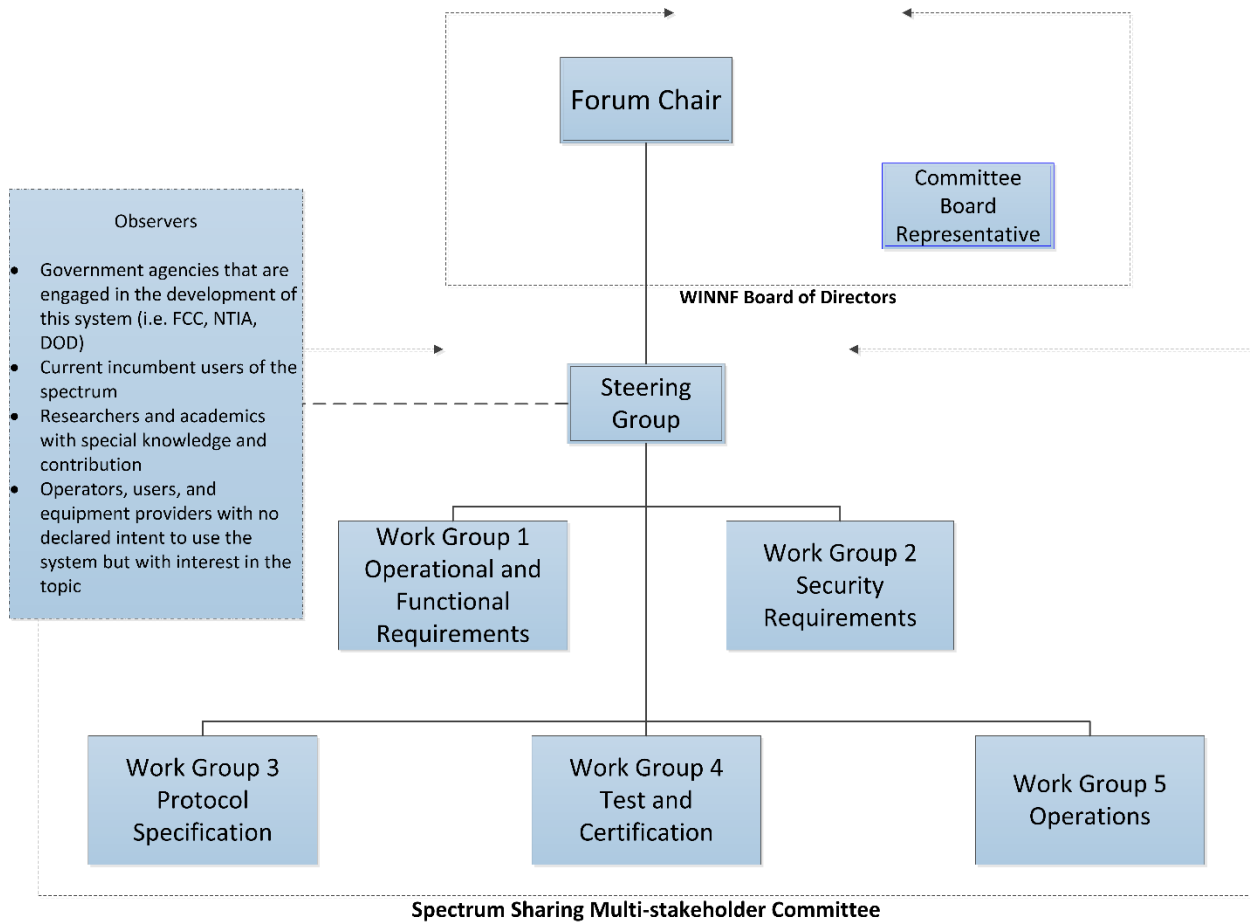
6.1 Charter and Structure

The Spectrum Sharing Committee (SSC) supports the development and advancement of spectrum sharing technologies based on the three-tier architecture proposed for the 3.55 GHz rulemaking activities. While the initial focus is on the 3.55 GHz Citizens Broadband Radio Service (CBRS), the Committee aims to advance this technology for all applicable spectrum bands that can benefit from it.

The charter for the Committee is to facilitate the interpretation and implementation of FCC rulemaking to a level that allows industry and government parties to collaborate on implementation of a common, efficient, well-functioning ecosystem around this technology. The primary activities of the Committee include:

- Detailing common industry and government functionality and architecture for Spectrum Access Systems (SAS), Environmental Sensing Capability (ESC), and CBRS devices
- Defining interoperability requirements and protocols to allow for open, competitive, and well-functioning systems
- Developing a common framework for testing and integration of components of spectrum sharing technologies to allow for rapid certification, deployment, and predictability, thereby expanding the ecosystem and increasing utility of the spectrum
- Establishing requirements, processes, and methods for protection of incumbent users as required by the spectrum rules
- Setting operational procedures definition for the well -functioning of the system as it pertains to spectrum assignment, managements, and interoperability

The approach to work activities by the Committee emphasizes system interoperability while achieving simplicity in interfaces and requirements. This is done to advance competitive and innovative approaches and to increase deployment speed of these systems.



The Committee is led by a Steering Group responsible for managing the overall activity flow and ensuring consensus and agreement with results from the discussions, such that progress can be made properly and timely to serve the interest of all the stakeholders. Membership of the Steering Group is comprised of the following:

- Committed SAS developers and operators (engaged in the development of the system and intend on participating in this market)
- Committed Sensor and/or Device developers and wireless equipment suppliers (engaged in the development of the system and intend on participating in this market)
- Committed users and service operators (engaged in the development of the system and intend on participating in this market)

Steering Group member companies include:

- Airspan
- AT&T
- CableLabs
- Charter

- Comcast
- CommScope
- CTIA
- Ericsson
- Federated Wireless
- Google
- Motorola Solutions
- Nokia
- Pathfinder Wireless
- Qualcomm
- RED Technologies
- Redline Communications
- Samsung
- Sony
- T-Mobile
- Verizon
- WISPA

The Steering Group identifies projects of strategic relevance to the membership; assigns, prioritizes, and launches new projects within subcommittee Working Groups; sets desired outcomes and monitors projects within the Working Groups to ensure their support and timely execution; and approves Working Group recommendations.

Further, the Steering Group ensures that activities are not directed at policy-making or liability management. While the Committee may, from time to time, make formal technical recommendations to the FCC or other regulatory bodies, following the Forum's standard policies and procedures, it is nonetheless a standards and technical implementation forum.

6.2 FY2022 Objectives

In FY2022, the Spectrum Sharing Committee will work towards the following key objectives in support of the WInnForum High Level Goals:

- a) **CBRS Release 2 Advancement:** Self-testing (Non-Regulatory Impacting or NRI) as well as added features and capabilities.
- b) **Efficiency and Expediency:** Concentration on areas of CBRS that can, based on lessons learned and operational expediency, improve access to spectrum or reduce impediments to access. Generally, we will look towards improving specifications which through review can provide a better experience without jeopardizing Part 96 or Forum objectives.
- c) **Fundamental Updates:** Examine areas which have been previously marked for consideration such as: a) propagation model improvements, CPE-CBSD aggregation of data (reducing perhaps the need for counting all CPE as a CBSD for aggregate interference)

- d) **Informing Incumbents Capability (IIC) Mechanism and Reduction of ESC and other Encumbrances:** Advancing the importance of IIC (NTIA originated Incumbent Informing Capable) to shield the lower portion of CBRS from ESCs being compromised due to the 3450-3550 MHz high power adjacent band.
- e) **Improved operational efficiency for advanced antenna forms:** Examine appropriate mechanisms to better leverage dynamic beamforming and MIMO capabilities
- f) **Improved Data Sharing/CPAS:** Consider SAS driven mechanisms to improve CPAS and the frequency and efficiency of CPAS, now conducted only one time a night at midnight.
- g) Study impacts of **C-Band and 3.45-3.55 GHz Band Power and Out of Band Emission Issues on CBRRS eco-system.**
- h) Each of the SSC Committees will be responsible for emphasizing these areas (may be modified as needed through the year) to effectuate a program of Release 2 new programs; and updates to specifications and best practices from Release 1 (as noted above) to improve the ecosystem.
- i) **Advance Standards and Recommendations for PAL Secondary Market:** Enable and establish standards and recommendations for the PAL secondary market support of the FCC Auction 105.
- j) **Enhancements:** Enable optimization of CBRS deployment through enhancements to the Release 1 standards (known as Release 2), to include Release 2 test and certification as defined in [SSC CBRS Release Plan](#)

The **SSC Awareness Task Group** will continue its efforts to educate the community and enhance the visibility of the work products the SSC committees have developed and seek to grow stakeholder membership in support of the planned work efforts. Additional direction shall be provided for the addition of PALs in the marketplace, secondary market, the complete CBRS ecosystem, and some upcoming challenges with adjacent bands, updating and adding new features, functions and capabilities to the band; providing visibility to the benefits of utilizing and deploying via WInnForum CBRS standards; providing case-study and successful deployment examples and highlights and providing insights into lessons learned and new growth directions with the band via the Standards.

6.3 FY2022 Project Plans

6.3.1 SSC Work Group 1: Operational and Functional Requirements (Chair: Andrew Clegg, Google)

The objective of this Working Group is to work on further defining Spectrum Access Systems (SAS) functional requirements as they relate to creating an interoperable system across the various providers of systems and equipment within the industry. There is no intent in this Working Group to define a common architecture and design for SAS systems. This Working Group will further track and articulate common functional questions that require industry consensus for further clarification and definition.

FY2022 Goal

WG1's FY2022 goals are to continue developing next-generation (Release 2) standards and requirements that will allow the CBRS community to advance the capabilities and features of SAS,

CBSDs, and related ecosystem components. The WG will work with the government to define and clarify certification requirements for Release 2 features.

Standards Deliverables:

In FY2022, the group will (1) address maintenance issues for the Release 1 standard; and (2) continue to develop, approve, and ballot Release 2 features. Below are some of the key features to be added or refined:

- **Capability exchange (complete)**
- **Enhanced group handling (complete)**
- **Support for 1D and 2D antenna patterns for non-incumbent protections (complete)**
- **1D and 2D antenna patterns for PAL and incumbent protection (in progress)**
- **Indoor penetration loss**
- **CPE-CBSD indicator (complete)**
- **Enhanced CPE-CBSD support for IAP**
- **Enhanced propagation models**
- **GAA coexistence support**
- **Grant update and flexible grant options (in progress)**
- **Passive DAS support (in progress)**
- **Registration enhancements**
- **Support for beamforming and unique antennas**

Delivery Plan:

Release 1 is intended to be in maintenance mode only. Release 2 is implemented as an extensible document in which new features are balloted and added as separate annexes. The features listed above that are not noted as complete are either in development or under discussion and work will continue in 2022, with the goal of getting several of these features added to Release 2.

Group member activity and participation are high, and the group regularly receives contributions of very high quality. In the opinion of the Group Chairs the stated deliverables have a high likelihood of successful completion by the scheduled date.

6.3.2 SSC Work Group 3: Protocol Specifications (Chair: Navin Hathiramani, Nokia)

The goal of this working group is to define the detailed protocols for data and communications across the various open interfaces within the system. The interfaces are limited to what is the minimum needed for implementation of an open and interoperable system. Other interfaces may be included later. The objective is to use common interfaces and as light of a protocol as possible to allow for innovation and development of the subsystems in a healthy competitive environment while preserving the openness of the system.

In FY2022 the group will maintain release 1 specifications in alignment with WG1 requirements and test specifications and work towards publication of release 2 specification point releases supporting new features defined in WG 1.

Deliverables:

Change requests for following policy documents and specifications:

- WINNF-SSC-0009 Spectrum Sharing Committee Policy and Procedure CBRS Grouping Information Registration
- WINNF-SSC-0010 Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): WinnForum Recognized CBRS Grouping Information
- WINNF-TS-0016 Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): Spectrum Access System (SAS) - Citizens Broadband Radio Service Device (CBSD) Interface Technical Specification
- WINNF-TS-0096 Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): Spectrum Access System (SAS) - SAS Interface Technical Specification
- WINNF-SSC-0012 Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): WinnForum Registry of CBRS Vendor/Admin IDs for Third-Party Proprietary Feature Prefixes
- WINNF-SSC-0013 Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): WinnForum CBRS Vendor/Admin ID Registration for Third-Party Proprietary Feature Prefixes

Incremental point releases and/or interim releases for the following specifications:

- WINNF-TS-3002 Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): Extensions to Spectrum Access System (SAS)-Citizens Broadband Radio Service Device (CBSD) Interface Technical Specification (Release 2)
- WINNF-TS-3003 Signaling Protocols and Procedures for Citizens Broadband Radio Service (CBRS): Extensions to Spectrum Access System (SAS)-SAS Interface Technical Specification (Release 2)

Delivery Plan:

WG 3 will continue to discuss and approve requirements for Release 2 capabilities and plans to have Release 2 specifications published within three months after the approval of the associated Release 2 WG1 requirements. Point releases of Release 2 specifications will be published incorporating new features specified in WG1 requirements and changes needed to address issues identified during certification/testing or by the industry. The point release specifications may be published together with new or point releases of policy documents when needed. WG 3 plans

to publish interim releases of the protocol specifications for new Release 2 features in response to industry interest. The prioritization of WG3 Release 2 feature delivery shall be industry driven. WG3 Release 1 specifications and all other policy documents will be in maintenance mode and changes shall be published as required.

6.3.3 SSC Work Group 4: CBRS Test and Certification (Chair: Masoud Olfat, Federated Wireless)

The goal of this working group is to define the test and certification standards for the SAS, CBSD, and Domain Proxy (DP) across the various interfaces within the CBRS system. The objective is to implement test framework that enables a competitive, innovative, and open environment for the development of the SAS and other ecosystem elements. The Release 1 certification for SAS and CBSD/DP has been already completed. Release 1 certification program has been limited to the minimum required test program to ensure CBRS products are part 96 compliant and can provide an open and interoperable interface with other CBRS entities. Currently, the certification program is addressing additional FCC rules that are not addresses in Release 1 (e.g., PAL Leasing) and is also extending to the requirements and specifications in Release 2 that are aimed to improve the performance of CBRS deployment, and address market requirements. Moreover, the working group is currently addressing the test developments for technical clarifications and functionalities as part of Release 1 CBRS specifications.

FY2022 Goal

The FY2022 goal for WG4 is to complete the support certification addressing CBRS Release 2 Standards to allow introducing new features and optimizing the functionality of CBRS ecosystem. During Fiscal Year 2021, the working group continues supporting change requests for FCC rules not addressed in Release 1 (such as PAL Leasing) and completing Release 2 certification publications for the Industry-Only features introduced as part of IR1. The WG is leading the process for defining the overall Release 2 Test and Certification Framework for Release 2, including both Industry-Only features and Part 96 impacting features.

Standards Deliverables:

The work group will address development of Test and Certification for Release 2 CBRS SAS functionalities, specially the features impacting part 96, and incumbent protection. The work group will also address development of Test and Certification for Release 2 CBRS CBSD functionalities. The group will also update the test code for these two releases in parallel with the specification work. In addition, the working group will continue addressing the change requests for Release 1 Test and Certification documents as a result of lab and field testing and new FCC rules or rules not addressed in Release 1 (e.g., PAL leasing), and new use cases requiring coordination with FCC (such as DAS, or handling CBSDs supporting both CAT A or CAT B). Moreover, the Work Group will implement the process defined in WinnForum to enable self-testing for CBSD and SAS. The self-testing will be applied to features not impacting Part 96. However, for features impacting Part 96, coordination with FCC is required.

WG4 deliverables in FY2021 are mainly focused on Change requests for the following policy documents and specifications to be published or incrementally updated during FY2021:

- Incremental update on WINNF-TS-0061: Test and Certification for Citizens 3 Broadband Radio Service (CBRS); Conformance and Performance Test Technical Specification; SAS as Unit Under Test (UUT); Addendum to Release 1
- Incremental update on WINNF-TS-0122: Test and Certification for Citizens Broadband Radio Service (CBRS); Conformance and Performance Test Technical Specification; CBSD/DP as Unit Under Test (UUT); Addendum to Release 1
- WINNF-TS-4003: Test and Certification for Citizens Broadband Radio Service (CBRS); CBRS Release 2 Test Specification for SAS as Unit Under Test (UUT);
- WINNF-TS-4005: CBRS Release 2 Self-Testing Policy

Test Code Development Deliverables:

Similar to the test code development activities for Release 1 test and certification program, the WG will continue the process of Test Code development in FY2021 for additional Release 1 features, and for all Release 2 features, whether they are Industry-only or impacting Part 96. The Test Codes include the required Test Harnesses to test CBSD/DP as the Unit Under Test (such as SAS Test Harness, Admin Test Harness, etc.), as well as Test Harnesses to test SAS as the Unit Under Test (such as CBSD Test Harness, Peer SAS Test Harness, Admin Test Harness, ESC Test Harness, etc.). The Test Harness will be delivered to the corresponding test labs consistent with the Release 2 overall Test plan. Moreover, the WG will manage the verification of Test Code.

Test Lab Authorization Deliverables:

In FY2018 and FY2019, the work group established a CBSD test lab authorization program with 4 test labs designated as “WinnForum CBRS Approved”. In FY2021, the group will continue to support this program and expand the list of approved test labs. Moreover, the group will follow the process of self-testing proposed initially for Industry-Only features, and may be applied to part 96 impacting features, upon FCC approval.

Delivery Plan:

The WG is publishing the first version of WINNF-TS-4003, and WINNF-TS-4004, addressing IR1 by the end of FY2020.

- Delivery of the Point Releases of WINNF-TS-4003, specifically for additional Industry-Only features as part of IR2, and Part 96 impacting features depends on WG1 and WG3 development plan. In general, upon the completion of WG1 and WG3 activity for a group of, WG4 expects 4-5 months for completion of relevant test cases.

- In addition, completion of test cases for Part 96 impacting features depends on FCC approval of WinnF proposed plan.
- Delivery of the Point Releases of WINNF-TS-4004, specifically for additional Industry-Only features as part of IR2, and Part 96 impacting features depends on WG1 and WG3 development plan. In general, upon the completion of WG1 and WG3 activity for a group of, WG4 expects 4-5 months for completion of relevant test cases.
 - In addition, completion of test cases for Part 96 impacting features depends on FCC approval of WinnF proposed plan.
- The publication of WINNF-TS-4005 for Industry-Only features will be completed by the end of FY2020. The possible modification and implementation of such document for Part 96 impacting feature will be completed within 2-3 months beyond FCC approval.
- Test Codes development for Industry-Only features as part of IR1 will be completed by the middle of Q4'2020. The development and completion of Test codes for additional Industry-Only features (as part of IR2) and Part 96 impacting features depends on the development plans in WG1 and WG3 and required FCC approvals.

6.3.4 SSC Work Group 5: Operations (Chair: Richard Bernhardt, WISPA)

Working Group 5 Objectives:

SSC Working Group 5 (CBRS Operations) considers and renders guidance, direction, and work-product towards the operationalization of CBRS and the next phases of CBRS standards deployment. WG5 continues to provide updates on Release 1 as needed (such as with urgent change requests (CRs) and dot and expediency updates; and concurrently is working on development of Release 2 operational projects. WG5 provides adjustments and changes to standards and also offers Technical Reports (TRs) for informative guidance.

WG5 focuses on creating and continuing a vital and flexible ecosystem and providing operational guidance throughout the Band. As needed, Task Groups (TGs) are to work on specific subject area projects some of which are single topic in duration others of which have ongoing responsibilities and review tasks.

At the time of publication WG5 had the following operations Task Groups – included is a summary of some of the subjects covered:

CPI Accreditation and CPI System TG: This TG oversees the substance, curriculum, changes, required and optional knowledge and fundamentals around the WinnForum Certified Professional Installer (CPI) specification. In the prior year, this TG offered the curriculum, Request for Proposal, and methodology to verify and accredit Training Program Administrator vendors to facilitate the creation of sufficient trained and approved CPIs. In this FY, this TG will

adapt and facilitate any required changes in training, and/or training or knowledge CPIs should have to properly conduct their role. This includes providing information on Release 2 features, functions, operations.

CPI Proposal Review TG (Training Program Administration): This TG creates the criteria for the establishment and ongoing operations of the Training Program Administrators who train, maintain records, and hold the relationship with CBRS CPIs. The task group establishes RFPs and agreements with TPAs, provides change requirements, maintains an operational database, and more.

GAA Co-Existence Methods TG: As the CBRS ecosystem becomes substantially populated it will do so with a wide variety of uses, geographic and topographical differences, indoor and outdoor networks, and a variety of potentially competing or non-compatible technologies. The operational methods that SASs deploy and CBSD operators use to operate cooperatively in the band is the ongoing task of this WG Task Group. In the prior year and for Release 1, WG5 published a series of Technical Reports (TRs) providing SAS Administrators with guidance on approaching co-existence between GAA operators and cooperation in the Band. Continuing in this coming year and in Release 2, this TG may provide additional guidance for more effective methodologies and treatments of features, functions and capabilities offered in Release 2.

CA-PKI Accreditation and Administration TG: This TG establishes the standards and requirements for accrediting and approving Certificate of Authority and Public Key Infrastructure operations with the CBRS ecosystem. It works with viable professional independent suppliers of such services and sets forth the criteria ongoing for the “approved vendor” status and ongoing operations of CBRS verification and validation security. In Release 1, this TG created the verification methodology for adopting approved CA-PKI vendors and set forth the operational criteria for those vendors offering security and validation products to meet WinnForum specifications. In this operational year, this WG5 TG will proffer changes and updates to the WinnForum security specification best practices consistent after deployment and following any changes provided by the FCC and WinnForum to maintain security and trust factors in the Band.

WG2 Security and Communications: The Steering Group of SSC has appointed WG5 to oversee security and secured communications operational aspects of the deployment of CBRS. While functionally a Working Group within SSC, WG2 matters are addressed by WG5 including the COMSEC document and related matters. In the prior year, WG5 through WG2 proffered changes consistent with FCC rules and adopted changes for greater efficiency and protection in the Band. In this year, WG5 will provide similar coverage of the ecosystem as matters arise requiring security guidance and/or specification modification.

PAL Secondary Market and Leasing TG: This TG is creating the functional and operational framework, databases, and approaches for implementing the permitted and required Part 96 secondary market, leasing and disaggregation of the PAL spectrum following the initial auction to establish initial PAL holders. In this FY, this TG will work to deliver a functional pathway for the

technical support of a secondary market for PAL spectrum inclusive of leasing, disaggregation, and a variety of possible approaches (for short and long term offerings, small and larger geography, and varying amounts of offered spectrum). The TG will further endeavor to provide methods of maintaining records, providing avenues for validation, potential for market makers to create and offer a robust CBRS PAL secondary market.

PAL Channel Mapping TG: This TG was established and directed by the WinnForum Board of Directors to provide potential methodology and operational possibilities for the dynamic assignment of PAL spectrum blocks following the PAL auction. Its objective surrounds creating Technical Reports from stakeholders summarizing possible approaches or methodologies for SAS Administrators (collectively) to use in the assignment of PAL spectrum blocks.

FY2022 Goals:

Working Group 5 will focus on maintaining and updating the WinnForum baseline specifications adopted in Release 1. Further it will develop new guidance in the Band by providing operational direction in the Release 2 platform. Above the work above ascribed for the Task Groups, WG5 will entertain operational documentation and specification enhancements or changes that provide for Release 2 functionality and the continued real-world adjustments needed to keep the CBRS ecosystem functional and efficient.

Standards and Document Deliverables:

Standards updates based on operations needs in all areas will be provided on an on-demand basis. Release 2 operations updates will be provided in FY2022 as well. Further concentration on ways to provide support through standards for the CBRS Secondary Market will be considered for advancement.

Delivery Plan:

Technical Reports on PAL Secondary Market as well as Channel Allocation will be published, based on cleared balloting in the middle portion of 2021. Updated CRs will be published in the areas of CA and CPI as balloted or needed in FY2021-2022. WG5 will provide guidance and documentation as needed for Release 2 based on requirements set forth in Working Group 1. Other TRs and recommendations to other WGs will be provided on an as needed basis throughout FY2021-2022.

7 Board of Directors

7.1 General Governance

A primary responsibility of the Board of Directors in FY2022 is monitoring the operations of the Forum ensuring compliance with the 2018 to 2022 Strategic Plan and this Operations Plan. Meetings of the Board of Directors are planned for the following dates:

- Web conferences the second Thursday of each month at 10AM Eastern US Time

Additional interim Board Meetings may be scheduled as required.

An additional key role of the Board of Directors is monitoring the financial performance of the Forum. The CEO will send the status of membership and the updated FY2022 financial forecast to the Finance Committee monthly. In addition, the financial performance is reviewed following the schedule below:

- October 2021 Board Meeting – Review the audited financial results for FY2021 to be presented to the members at the Annual, and the Q1 FY2021 forecast with projections for the remainder of the year.
- Annual Meeting of the Members – Present FY2021 audited financial results to the members, present updated FY2022 projections
- January 2022 Board Meeting – Review Q2 FY2022 unaudited financial results and projections for the remainder of the year.
- April 2021 Board Meeting – Review Q3 FY2022 unaudited financial results and projections for the remainder of the year.
- June 2020 Board Meeting – Review the FY2022 forecast and approve the FY2023 Operation Plan and Budget and submit to the membership for approval.

Additional work by the Board to monitor performance and explore strategy is undertaken by the following Board committees:

- **Audits Committee** – Provides board oversight of the organization’s annual financial audit, including reviewing the adequacy and reliability of the Forum’s internal controls and financial reporting, review the independence of and performance of the Forum’s external auditor, review alleged violations of the Forum’s stated policies, and reports to the board on recommendations. Chair: Assigned by the Chair of the Board
- **Finance Committee** – Provides board oversight of the Forum finances including recommending financial policies and internal controls, reviewing the annual budget prepared by staff and recommending it to the full board for approval, and monitoring financial reports prepared by the staff, including monitoring of investments, against the approved budget. Chair: Treasurer

- **Employee Compensation and Contractor Performance Committee (ECCP)** – as defined in the Forum’s [Bylaws](#)
- **Governance and Policy Committee** – provides oversight and assessment of the Board, identifies requirements for Board orientation and education. Reviews current best practices and governance trends and makes recommendations to the full board on bylaws and policies. Chair: Secretary
- **Nominating Committee** – As defined in the Forum’s [Bylaws](#). The CY2017 Nominating Committee is formed by the Chair of the Board of Directors on or before the start of the June General Meeting, and presents the proposed slate of Directors to the Board at the October 2017 Board meeting.
- **Outreach Committee** – provides input to the Board on venues and events that the Forum should have representation in attendance.

7.2 Strategic Planning

The Wireless Innovation Forum is currently operating under a 5 year strategic plan that runs through CY2022⁵. The Executive Committee of the Board of Directors will evaluate progress against this plan, the WInnForum’s position within the market, and the ongoing needs of the members to develop a revised plan, execution of which will commence in FY2023.

⁵ [wireless innovation forum 2018 to 2022 strat plan - final.pdf](#)

8 Infrastructure and Support Services

High Level Objectives Supported:

- Brand the WInnForum as the Preferred Venue for Technical Collaborative Exchanges on Innovative Solutions for Wireless Systems
- Position the WInnForum as the Preferred Venue for the International Spectrum Sharing Community
- Execute on the Strategic Plan of the Software Defined Systems Committee (SDS)
- Execute on Test and Certification Strategies for WInnForum Standards
- Establish Relevant Projects

In FY2017, the WInnForum developed a Platform Strategy supporting the following positioning:

*For individuals striving to set their organization apart and achieve their market goals in their particular wireless industry, **who** need an ideal setting for incubating and advancing new potentially disruptive technologies, specifications or guidelines, **the Wireless Innovation Forum is a member driven, standards development organization that brings together groups of leading organizations from across multiple market segments around the world and at all levels of the wireless value chain to collaborate in advocating for the innovative use of spectrum and advancing radio technologies that support essential or critical communications worldwide.***

Unlike** other group collaboration organizations that are focused on lobbying for a specific segment of the wireless market, **the Forum will act as an honest broker in advancing technology supporting an ecosystem that spans multiple markets and bring you together with other thought leaders in a multi-stakeholder community to create highly recognized reports, specifications and recommendations.

Also unlike** other standards bodies focused on supporting the wireless market, **the Forum is agile, providing a venue for thought leaders to quickly build an ecosystem and rapidly advance projects under a proven development model that can be tailored to your specific needs and under IPR terms aligned with Industry best practices.

Elements of the Platform Strategy to be executed in FY2022 are included in the below.

8.1.1 Continued Product Execution

Per the Platform Strategy, Forum staff will continue to work to complete the following in FY2022:

- The Forum will evaluate staff required to support the commercialization framework and make adjustments as required to meet member needs.
- Forum Staff will work with the Board of Director's Governance Committee to review relevant policies and make associated recommendations to the Board.
- Forum staff will strengthen the member experience by providing tools, instructional webinar(s), and reference materials.

- Forum staff will support the ATC in new project creation by preparing promotional literature and materials for use on an as needed basis for exhibit booths, speaking opportunities, etc.

8.1.2 Marketing Strategy

For FY2022, Forum staff will focus on developing promotional materials and executing a marketing mix that will most effectively and efficiently promote the Forum. Possible event opportunities for promoting the Forum will be evaluated and explored with each Committee. Marketing projects will include:

8.1.2.1 Video blog/podcast

"Setting the Standard" is a video podcast about WInnForum projects and advanced radio technologies standards development, featuring interviews with Forum members. This project was launched in January 2021 to help promote name recognition of the Forum and establish the Forum as the premier source for standards development in the wireless space. Published episodes have explored topics from all four committees; future episodes are being planned continually. The videos and audio have nearly 200 views as of this writing. In the coming year, we will schedule episodes to cover prominent Forum work products, events and other noteworthy topics in the wireless communications space.

8.1.2.2 Monthly Non-member Email

A monthly events email will continue to be sent out to our entire database to inform non-members of current activities and promote joining. They consistently rate above industry average in opens and engagement.

8.1.2.3 Committee Sell Sheets

Forum staff will develop sell sheets for each committee that highlight work products as well as promote becoming a member. These sell sheets will be distributed at events, in recruitment contacts, on each committee's web page, and via email where appropriate.

8.1.2.4 Sponsorship

Forum staff has developed a sponsorship prospectus to be used to promote sponsor opportunities and garner more sponsors in FY 2022.

8.1.3 Member Retention

To retain current members, member representatives need to be engaged in Forum activities. To achieve this, staff will review membership engagement quarterly and create a communications plan to re-engage inactive member representatives, including a quick poll to initiate contact and determine any reason for disengagement. In addition, staff will update the membership benefits page to better reflect and highlight current benefits as well as promote these to current members on a regular basis in the member newsletter.

Staff will also personally contact member organizations that are forecasted at below 100% retention confidence to discuss what can be done to increase their satisfaction with their membership.

Also important to member retention is member onboarding. Forum staff will schedule three and six month follow up reach-outs through Oasis to new members to ensure they have all the information they need to get involved fully as well as highlight member benefits they may not be utilizing.

8.2 Expanding Accreditation Services

High Level Objectives Supported:

- Execute on Test and Certifications Strategies for WInnForum Standards

In FY2020 the WInnForum completed work on three initial certification programs required to establish the CBRS ecosystem:

- Accreditation of Public Key Infrastructure Root of Trust Certificate Authorities
- Accreditation of Certified Professional Installer (CPI) Training Program Administrators and set up of the CPI database
- Accreditation of CBSD Test Labs to run the WInnForum Protocol Testing

In FY2022, WInnForum staff will continue to maintain these programs in support of its members, including maintaining the CPI Database, providing access to application materials and requirements, receiving application materials and maintaining database of applicants, maintaining schedule of re-accreditations needed, and sending re-accreditation notices as needed. In addition, WInnForum staff will support the Spectrum Sharing Committee in establishing an industry self-certification program for CBRS Release 2 standards. WInnForum staff will also support the 6 Ghz Committee in establishing a test and certification program for AFC functional requirements and other specifications as appropriate.

8.3 Managing the CBRS Informing Incumbent Portal

WInnForum Staff will continue supporting the CBRS Informing Incumbent portal as a convenience to its members.

8.4 Member Services and Group Support

8.4.1 Project Support

Forum staff will support each steering group in the establishment and maintenance of project roadmaps, including identifying and presenting a “watch list” of strategic issues that must be evaluated and tracked to each steering group on a monthly basis. Staff will also collect additional data pertaining to each watch list issue, as required for follow up by the steering groups.

The Forum’s staff will work with Forum leadership to provide the facilities, infrastructure and services necessary for the members of the Forum’s standing Committees to collaborate as required to achieve the objectives stated in this operations plan. Specific services defined for FY2022 as necessary in achieving the high-level goals comes are:

- Remote Collaboration Services. Much of the work of the Forum’s members is done using electronic utilizing the following tools provided by the Forum:
 - Webconferencing: A Go-To-Meeting account has been established for each committee. In addition, the Forum maintains a Go To Webinar account which can be used to host online workshops as required.
 - Online Communities: In FY2020 The Wireless Innovation Forum switched from Higher Logic Workspace to Causeway for member collaboration. In FY2022, staff will work to optimize Causeway to best meet with member needs.

Forum staff will support its members in making use of these services as required, including supporting group leaders in maintaining online communities, scheduling and hosting web meetings, and organizing workshops.

- Face to Face Meeting and Event Services. The Forum will provide complete meeting and event services as required, including planning, registration management, site selection and facilities management, speaker management and agenda/program development for ad-hoc project meetings, committee meetings, and webinars. Current meeting plans are as follows:
 - January/February: General Meeting of all WinnForum Committees
 - May/June: Joint meeting of the SSC and 6 GHz Committees.
 - May June: Meeting of the SDS Committee in Europe, possible co-located with the EU Spectrum Conference and a meeting of the Regulatory Advisory Committee

Staff will create and maintain the supporting communication vehicles for the events including web presence and print publication as well as promotion through press releases, email campaigns, social media and sell sheet distribution when applicable.

- Project Facilitation and Management Services. Forum staff will provide services throughout the lifecycle of member projects as follows:
 - Project Initiation, including supporting the development of project proposals
 - Project Support, including schedule and budget management, tracking risks, soliciting contributions, following up on action items with volunteers and reporting
 - Editorial services, including graphics design, to ensure project reports, recommendations and specifications have a professional look and feel
 - Document Advancement and Electronic Balloting

8.4.2 Project Promotion and Committee Brand Management

For FY2022, Forum staff will support the creation of an umbrella awareness committee that contains all the Forum's committees in order to grow participation and gain new members. Projects to be undertaken in this committee will include:

- Rolling updates to external web page for each committee highlighting work products and committee goals
- Press Releases announcing projects and final work products and events
- Social media and email campaigns updating project progress in order to grow participation
- Webinars promoting content of relevant work products, archived on YouTube and promoted
- Editorial pitches where appropriate to promote activities and Forum work products
- Top Ten Most Wanted Wireless Innovations promotion including document design, edit and publicity campaign
- Advocacy Agenda, including document design, edit and publicity campaign

In providing these services, Forum staff will leverage the WInnForum Standards logo to establish a brand extension for each committee where required.

In addition, staff will undertake an ongoing review of the Forum's communication vehicles to ensure a dynamic and efficient response to member needs and opportunities for member promotion using these vehicles, such as product announcements, event announcements, etc.

8.4.3 News & Opportunities E-mail

Feedback provided by members in satisfaction surveys and one on one interviews indicates that the daily news feed provided by the Forum is a key value provided by the Forum and so as a part of our member retention strategy, Forum staff will continue this service in FY2022.

8.5 Summit Management and Promotion

Building on the success of the Fall 2021 Spectrum Sharing Workshop, Forum staff will host a fall event, with expanded interaction opportunities, including breakout rooms. Forum staff will manage the production as well as promote the event through press release, social media and emails.

8.6 Awards

Awards for FY2022 will be managed on an ad hoc basis.

9 Other Corporate Administration

9.1 Annual Meeting of the Members

The Annual Meeting of the Members, as described in the Forum [Bylaws](#) will be held in in November 2021.

9.2 Corporate Filings

The Forum will continue to evaluate and improve internal office functions related to financial controls and reporting, archival storage of documents, and membership initiation and renewal. Finance and Accounting Procedures are updated to reflect the change in banks, change in accounting software, and modifications of the membership renewal processes.

In addition, the Forum shall ensure filings as follows:

- 990 filing with the IRS – 15 May 2022
- California Tax Exempt Return – 15 May 2022
- Canadian Information Return – 15 November 2021
- Canadian Extra-Provincial Annual Report – 2 January 2022
- 1099s to recipients – 31 January 2022
- 1099 and 990s to IRS – 28 February 2022
- SAM Renewal – 24 August 2021
- Foreign Bank Account Report Form – 15 October 2021
- Fairfax County, VA Business, Professional, Occupational License-01 March 2022
- Fairfax County, VA Personal Property Tax-01 May 2022 – filing only; no tax paid
- Virginia Corporate Commission Report - 30 April 2022
- Virginia Corporate Commission Registration Fee -30 April 2022

9.3 Insurance

In addition, the Forum shall perform an insurance review (D&O, E&O, Liability, etc.) to be completed in advance of the renewal date.

- Error and Omissions plus Certification Insurance: April 2022
- General Liability Insurance: August 2021
- Directors and Officers Insurance: January 2022

In addition, the Forum will secure cancellation insurance, as appropriate, for each major event.

9.4 FY2023 Planning

The FY2023 Operation Plan will be developed on the following schedule:

- Board Approval of High Level Goals for FY2022 – March 2022
- High Level Goals and Ops Plan Process Presented to Group Leaders –March 2022
- Draft Budget Presented to the Finance Committee – May 2022
- Draft Plan Submitted to Officers – May 2022
- Final Draft Approved by Forum Chair and CEO – June 2022

The final plan will be presented to the Board of Directors for their approval during the June 2022 Board Meeting and will be submitted to the membership for final approval immediately thereafter.