Annual Meeting Software Defined Radio Forum, Inc

4 November 2014





Annual Meeting Software Defined Radio Forum, Inc

Spectrum Innovation Committee Report

4 November 2014

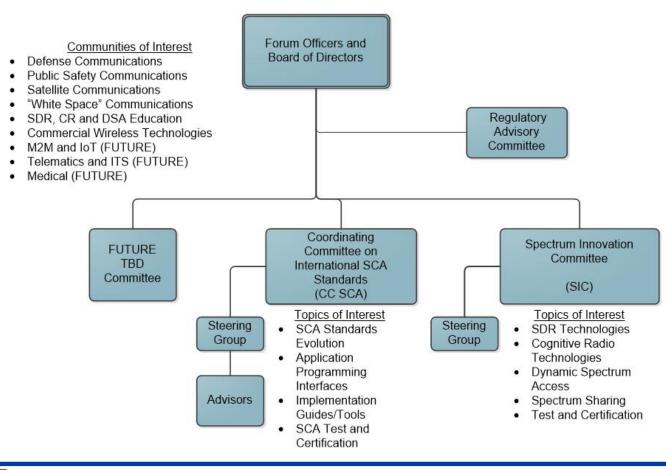




Current Structure: Connecting Experts with Experts

Organizational Structure for The Wireless Innovation Forum

17 April 2013







SIC Activities (FY2013)

- What was accomplished in FY2013 (1 July 2012 to 30 Jun 2013)
 - Reports:
 - Assessment of Cognitive Radio Technologies for Public Safety Communications (Document WINNF-13-P-0003-V1 0 0)
 - Top 10 Most Wanted Wireless Innovations 2013
 - Recommendations:
 - Wireless Innovation Forum Advocacy Agenda (Document WINNF-R-12-0007-V1 0 0)
 - WInnF FCC NPRM 3_5GHz Comments (Document WINNF-13-R-0002-V1 0 0)
 - Response to FirstNet NOI (Document WINNF-12-R-0006-V1 0 0)
 - Wireless Innovation Forum Announces Broad Support of the PCAST Recommendations on Spectrum Sharing (Document WINNF-12-R-0004-V1 0 0)





Top 10 Most Wanted Wireless Innovations

Innovation #1: Techniques for Efficient Software Porting Between Heterogeneous Platforms and Generic Development Tools for Heterogeneous Processors

Innovation #2: Certification Process for Third Party Waveform Software

Innovation #3: Receiver Specifications

Innovation #4: Low Cost Wide Spectral Range RF Front-End (Multi-octave Contiguous) (Tx,Rx)

Innovation #5: Techniques to Minimize Power Amplifier Spectral Regrowth in Noncontiguous Spectral Environment

Innovation #6: Increase Communications Time on Battery Charge by an Order of Magnitude

Innovation #7(NEW): Context Aware Cognitive Radio

Innovation #8: Interference Mitigation Techniques

Innovation #9: Standardized computer interpretable policy language for cognitive

radio

Innovation #10: Flexible Regulatory Framework for Temporary, Cooperative and Opportunistic Access



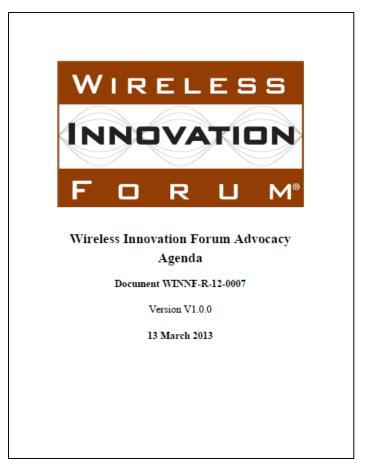


Advocacy Agenda

Essential and Critical Communications

Innovation & Competition Spectrum Security Interoperability

http://groups.winnforum.org/advocacy







The Forum's Position:

The Forum advocates a regulatory model that includes combinations of licensed and unlicensed, sharing and hierarchical, cooperative and co-existent domains for the optimal utilization of spectrum.

The Forum advocates the unified active management of spectrum (terrestrial / air / space / maritime) to maximize spectrum utilization.

Source: http://groups.winnforum.org/advocacy





SIC Activities (FY2014)

- Planned for FY2014 (1 July 2013 to 30 June 2014)
 - Context Aware Cognitive Radio
 - PAWS Reference Implementation
 - PCAST 3.5 GHz Support
 - Database expansion
 - Network models
 - Priority access models
 - Dynamic behavior



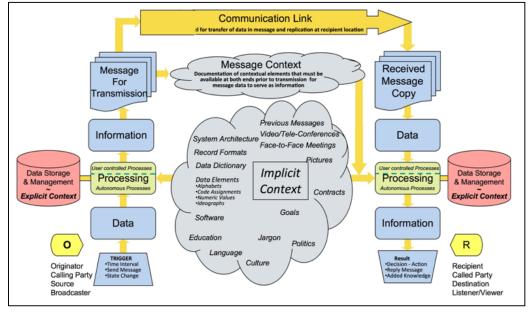


Current Project: Context Aware Cognitive Radio

For developers of complex information systems with intelligent automated behaviour who need to incorporate diverse and varying information sources into their automated decision processes...

The project will provide tools ... that will aid in defining, designing and selecting Cognitive Radio Systems...









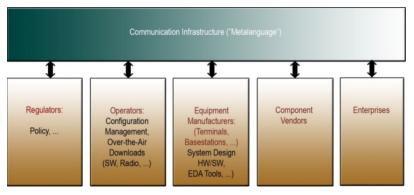
Current Project: MLM and IEEE P1900.5

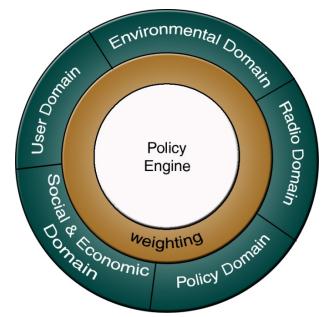
Modeling Language for Mobility (MLM) Specification

- Based on OWL
- Defines a formal ontology for use in DSA Policy Languages

P1900.5.1 – Policy Language Standards for DSA

- Forum's MLM has been submitted as a baseline
- Forum and IEEE have MoU to collaborate on this project

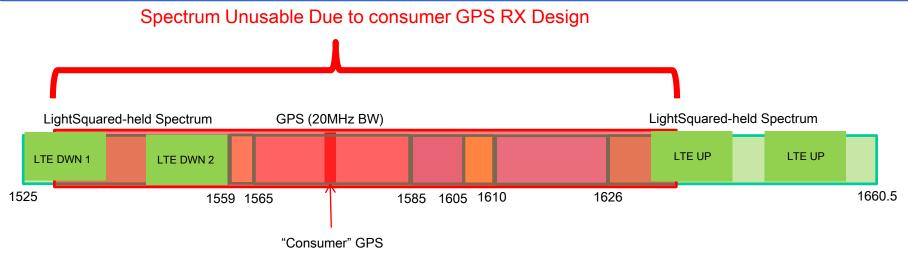








Current Project: Receiver Performance Guidelines



- LightSquared followed all of the rules...
- Without GPS receiver spec, market did not design to allow spectrum reuse
- Because of <u>GPS receiver interference issues</u>, the FCC rescinded authorization
- \$2.7 B Investment lost
- Receiver Minimum Performance Guidelines will be a necessary part of spectrum sharing solutions





Receiver Performance Guidelines Project

- This report is being developed for regulators, designers, manufacturers and users of wireless communications systems
- who are developing wireless policy and equipment to access shared spectrum or to coexist with adjacent spectrum uses while understanding impact to current spectrum users.
- The report will produce a set of actionable guidelines to design and evaluate the performance of receivers that will coexist in shared & adjacent spectrum bands that can be used as a foundation for future radio systems.





New Project Forming: Spectrum Sharing Annual Report

Project Positioning:

For Regulators, Policy Makers, Spectrum Managers, Network Planners, and Wireless Researchers

Who need to understand the state of technologies such as dynamic spectrum access and their ability to facilitate spectrum sharing,

The Spectrum Sharing Annual Report is a reference guide

That clearly identifies and synthesizes a harmonized view of the results of Spectrum Sharing research and trials, identifies what is in development, and articulates what issues are being addressed and still need to be resolved.

Unlike reports from individual, independent projects and trials that provide only a limited view of the state of spectrum sharing,

This product will consolidate the results from around the world in summary form, providing an easy reference for the target audience on the state of spectrum sharing and its viability in specific markets.





Annual Meeting Software Defined Radio Forum, Inc

CC SCA Report

November 6, 2014





What we did

Provided the majority of the content that will become SCA 4.1 to the JTNC

- Joint JTNC/WINNF SCA 4.1 Kickoff Workshop Nov 2013
 - Defined content to be included in SCA 4.1
- 6 work products delivered to the JTNC for inclusion in the SCA 4.1
 - MUO with JTNC defined and agreed upon
 - Wireless Innovation Forums Contribution to SCA 4.1 in October 2014 Military Embedded System magazine

Strategic Plan developed

 Summarize key points from it Establishment of Advocacy WG charter and accomplishments





CC SCA Mission

Supports the international harmonization of SCA based standards through open standards, while influencing the specification, development and verification of portable SCA based waveforms

- Defining an industry driven SCA evolution roadmap for the international community
- Profiling the SCA specification and related APIs to define internationally accepted variants that are hosted by the Forum
- Developing extensions to the SCA standards that address any gaps between the defined SCA evolution roadmap and Forum accepted SCA specification variants
- Providing implementation and certification guides, tools etc. easing implementation and supporting proliferation
- Establishing and managing industry led certification programs where appropriate

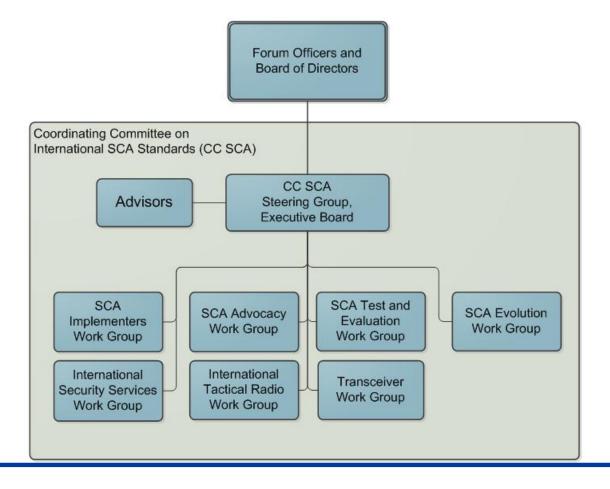




CC SCA Structure

Structure for Coordinating Committee on International SCA Standards

27 October 2014







CC SCA Structure – Steering Group

Board

- Co-chair: Ken Dingman (Harris)
- Co-chair: Eric Nicollet (Thales Communications)
- Treasurer: Ruediger Leschhorn (Rohde & Schwarz)
- Secretary: Alberto Quintana (Indra)

Voting Members

- Claudio Armani (Selex)
- Ken Dingman (Harris)
- Yusuke Kanahashi (Hitachi)
- Lina Lagana (a4ESSOR)
- Ruediger Leschhorn (Rohde and Schwarz)
- Jimmie Marks (Raytheon)
- Sarah Miller (Rockwell Collins)
- Eric Nicollet (Thales)
- Alberto Quintana (Indra)





CC SCA Structure - Advisors

Advisors

- Marc Adrat
- Fabio Amadio
- Richard Barfoot
- Paolo Cecchini
- Charles Chedhomme
- Eric Christensen
- Jean-Philippe Delahaye
- Jean-Phillipe Dufour

Advisors

- Leon Hernandez
- Guillaume Journaux
- Philippe Margot
- Greg Rassatt
- Mattias Skold
- Don Stephens
- Frank Van Syckle





SCA 4.1 Contributions

A successful WINNF / JTNC event

Hosted by Raytheon on 21 and 22 November 2013 in San Diego

What to definitely include in SCA 4.1

- Backwards compatibility
- IDL Changes
- Optional Inheritance
- AEPs
- IDL Profiles
- Document clean up

What to included in SCA 4.1 if sufficient contributions

- DSP and FPGA OE
- Errors and Exceptions
- Capacity/performance model
- Document organization

To be resolved

- Zero copy
- Two way performance (FKA One Ways)
- Static versus dynamic
- Flow connections

Parking Lot (SCA 4.2+)

- Optimized protocols
- Waveform PIM (IDL, UML)
 - PSM Neutrality for Application components





SCA 4.1 Contributions

3 WINNF projects created

- SCA-2013-001 SCAv4 Backwards Compatibility with SCAv2.2.2
- SCA-2013-003 AEPs Improvements for SCA 4.1
- SCA-2013-002 IDL Profiles Improvements for SCA 4.1

Summary view of WINNF projects key facts

- Main development effort from January 2014 to June 2014
- 4-6 active participants, incl. contributors working with JTNC
- More than 1200 hours of accumulated international SDR expertise dedicated to projects accomplishment
- 8 WINNF products released in July and August





SCA 4.1 Application Backwards Compatibility

- Type of product: Recommendation
- Abstract: This recommendation provides comments on the modifications to SCA 4.0 necessary to support application-backwards compatibility with SCA 2.2.2.
- Document: WINNF-14-R-0004-V1.0.0
- URL: http://groups.winnforum.org/p/do/sd/sid=4764

SCA 4.1 Application Mixture

- Type of product: Recommendation
- Abstract: This recommendation proposes changes to the next SCA specification, which will allow an application to be comprised of both SCA 2.2.2 and SCA 4.1 components. This change will allow developers to perform a more incremental transition from SCA 2.2.2 to SCA 4.
- Document: WINNF-14-R-0014-V1.0.0
- URL: http://groups.winnforum.org/p/do/sd/sid=4769





SCA 4.1 Naming Convention

- Type of product: Recommendation
- Abstract: This recommendation proposes changes to the SCA 4.0.1 specification to use a naming convention for the names of the interfaces and components. The goal is to improve readability of the SCA 4.1 specification.
- Document: WINNF-14-R-0013-V1.0.0
- URL: http://groups.winnforum.org/p/do/sd/sid=4759

SCA 4.1 Push Registration and Allocation Properties

- Type of product: Recommendation
- Abstract: This recommendation proposes changes to the SCA 4.0.1 specification to support late device registration with the domain manager. This change will allow the core framework to better accommodate device components with multiple implementations and to manage plug and play devices.
- Document WINNF-14-R-0012-V1.0.0
- URL: http://groups.winnforum.org/p/do/sd/sid=4836





SCA 4.1 Scalable Components

- Type of product: Recommendation
- Abstract: This recommendation proposes changes to the SCA 4.0.1 specification to improve component scalability by allowing component developers to choose whether or not to implement some of the standard subcomponent interfaces. The scalability will also be used to support the different profiles of the specification
- Document: WINNF-14-R-0010-V1.0.0
- URL: http://groups.winnforum.org/p/do/sd/sid=4760

SCA 4.1 Scalable Manager Components

- Type of product: Recommendation
- Abstract: This recommendation proposes changes to the SCA 4.0.1 specification to add support for scalability of the manager components. This will allow developers to choose whether or not to implement all of the manager interfaces.
- Document: WINNF-14-R-0011-V1.0.0
- URL: http://groups.winnforum.org/p/do/sd/sid=4761





Lightweight and Ultra-Lightweight AEP input to SCA 4.1

Type of product: Specification

• Pages: 43

Abstract:

This specification defines POSIX AEPs for interaction between SDR applications and the operating environment (OE) in resource-constrained architectures. Two Base AEPs functions groups, the Lightweight (Lw) and the Ultra-Lightweight (ULw), are defined as well as two function groups that can extend the Base AEPs function groups if required for porting. The specification harmonizes and improves prior work from JTNC and ESSOR into a single converged solution

Document: WINNF-14-S-0009-V1.0.0

URL: http://groups.winnforum.org/p/do/sd/sid=4767





PIM IDL Profiles input to SCA 4.1

Type of product: Specification

Pages: 31

Abstract:

This specification defines "Full" and 'Ultra-Lightweight" platform-independent model (PIM) IDL profiles that may be used to define platform-independent SDR component APIs. The document contains a support section with content-overview tables and extension perspectives, and a rationale section to explain the design choices. This specification also harmonizes and improves prior work from JTNC and ESSOR into a single converged solution.

Document: WINNF-14-S-0016-V1.0.1

URL: http://groups.winnforum.org/p/do/sd/sid=4841





Strategic Plan

- Defines CC SCA Strategic Plan for 2014 to 2017
- Become the recognized vendor worldwide for the harmonization and standardization of SDR standards for mission critical and essential wireless communications
- Foundational Elements
 - SDR Standards Harmonization
 - Establish the CC SCA as the Preferred Venue for Government/Industry Collaboration on SCA Based Standards
 - Expansion of SCA beyond defense markets
 - Support for other SDR Standards
 - Outreach
 - Maximizing involvement of government and industry stakeholders
 - Promoting adoption of preferred standards
 - Restructure and rebrand CC SCA as required to reflect changes in vision and required to execute on defined strategies

Document: CCSCA-P-004-V1.0.0

URL: https://winnf.memberclicks.net/assets/documents/ccsca-p-004-v1.0.0-





Project Plans

- Finalize SCA Test Lab Recommendations: The SCA Test and Evaluation Work Group will create a report that provides an overview understanding of an SCA test Lab. The document will identify artifacts that are the inner workings for the SCA Test Lab's existing. The document also identifies the business case as it pertains to the financial concerns of a business entity.
- Finalize State of the Art on Waveform Portability Report: The SCA Implementer's
 Work Group will create a report with the current state of the art on waveform
 portability. This will serve as a baseline to create in the future a set of
 recommendations for waveform portability.
- SCA Advocacy: The SCA Advocacy Work Group will establish an Advocacy Plan and develop collateral to help in the promotion and adoption of the SCA. This will serve as the basis of material to attract membership to the WINNF/CC SCA.
- SCA Evolution: In conjunction with the JTNC and other Advisors, the SCA Evolution Work Group will identify enhancement and modifications to the SCA 4.1 and associated JTNC and/or WINNF API specifications and generate updates to them. This will result in specification updates or recommendations delivered from the WINNF CCSCA. These will serve as the basis for the SCA 4.2 and new baselines to the API specifications.





Other Activities

- Regular meetings with the Advisors
- SCA 4.2 Workshop in Q12014





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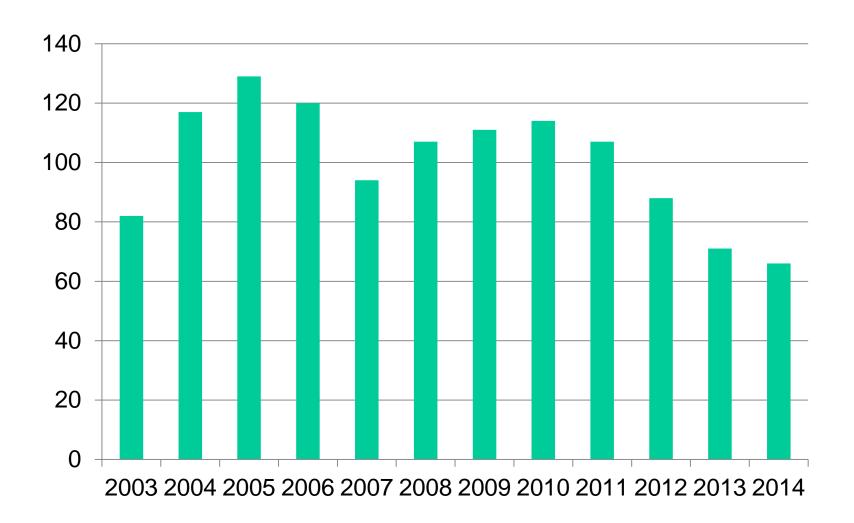
Operations Report

4 November 2014





Total Membership (As of 30 October Each Year)







Membership Changes since last Annual Meeting

New Members – 6

- DGA
- Federated Wireless
- L&T
- Rockwell Collins (returning)
- Shared Spectrum (Returning)
- Telecast Technologies

Lost Members – 11

- Aselsan
- Aviacomm
- Artisan Wireless
- CERDEC
- GIRD
- Engility
- Etherstack
- NICT
- RFEL
- Southwest Research
- University of Oulu





FY2014 Meetings and Events

SCA 4.1 Workshop: 21 to 22 November 2013 in San Diego, CA

Hosted by Raytheon

Waveform Portability Workshop: 21 to 24 January 2014

Hosted by Thales

SDR-WInnComm 2014: 11 to 13 March 2014

Hosted by Motorola Solutions

CC SCA and Dynamic Spectrum Sharing Annual Report Work Group TEM: 11 to 14 June 2014

Hosted by Harris

India Regional User Group Meeting: 19 to 20 June 2014

Hosted by TATA Consultancy





Thank You to Our Sponsors









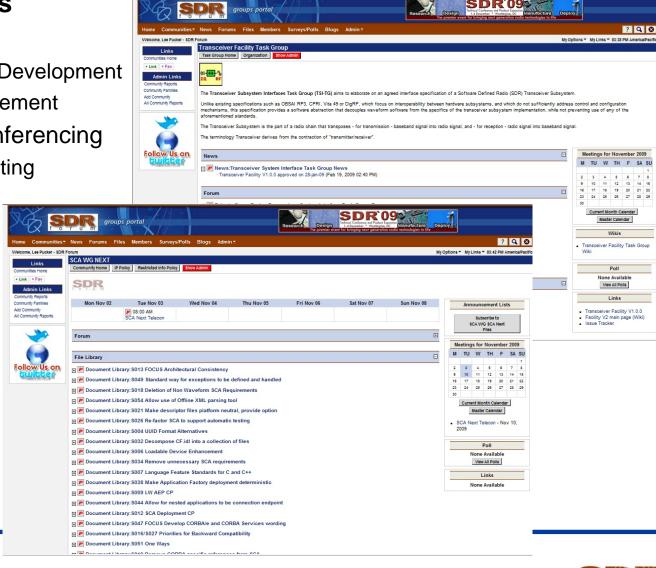
Supporting Collaborative Development of Reports, Recommendations and Specifications

Professional Tools

- Group Portal
 - Document Development
 - File Management
- Tele/Web Conferencing
 - Go To Meeting

Staff Support

- Technical Editing
- Graphic Design
- Configuration Management
- Balloting







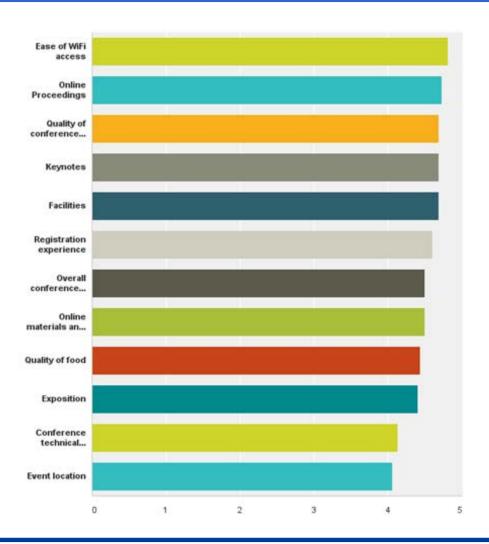
US Conference Performance by Attendance

	Conference Attendees	Exhibit Only
2007	298	?
2008	406	?
2009	414	89
2010	396	107
2011	342	96
2012/2013	231	39
2014	178	22





US Conference Survey Results







Memberships and Partnerships

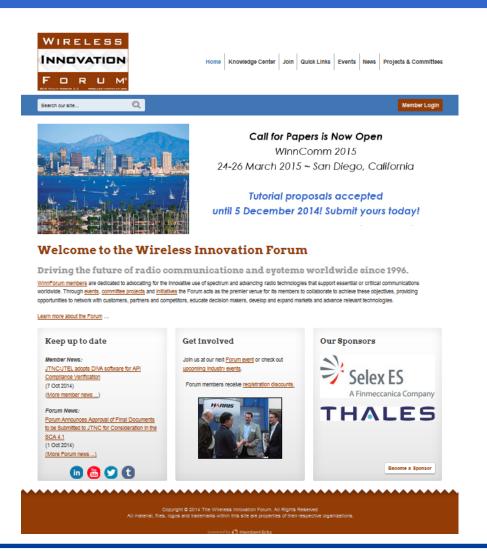


Wireless Innovation Forum Memberships and Partnerships





Website Update







Website Page Views

Site	2011	2012	2013	2014
External Main Site	183,016	117,633	68,150	83813
Socious Main Site		121940	116045	128974
External US Conference	54613	23418	16168	17321
Socious US Conference	2059	14485	27267	41518
External Europe	30901	16342	8492	5971
Socious Europe	16	12514	40003	38359
Total		306332	276125	315956





Document Downloads

	FY2012	FY2013	FY2014
Conference Proceedings	114,015	122,221	152,866
Workshop Proceedings	15,740	15248	22,671
Work Products			
• Reports	5,140	9,116	12,107
 Recommendations 	4,891	6,270	8,604
 Specifications 	2,337	2,558	2,929
Market Studies	1,272	1,339	1,663
SCA Standards Portfolio	2,784	3,541	4,858
Webinars	1,453	2,033	186
Other	15,926	16,970	31,597
Total	163,558	179,297	237,481





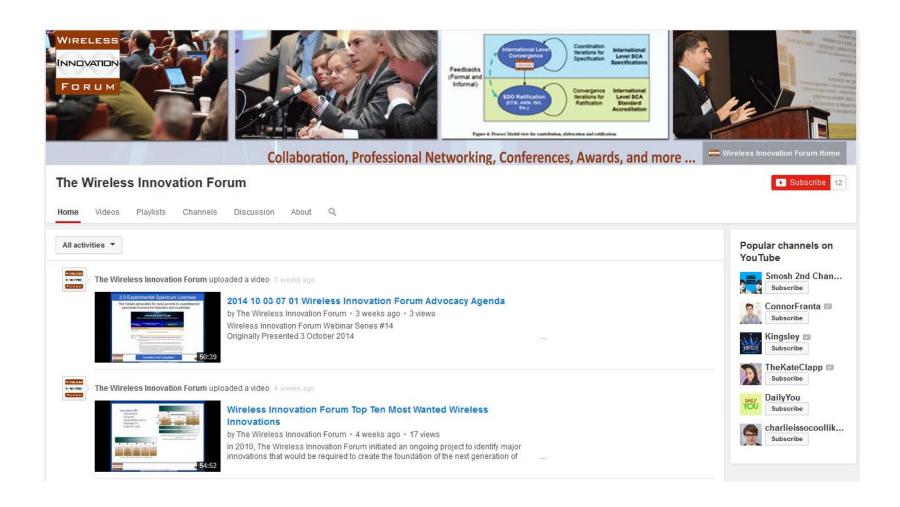
New Model for Downloads

	Current	Planned
Work products (Reports, Recommendations, Specifications)	Open (in compliance with CA law and Board direction)	Open
Historical Docs	Open	Member Only
Input documents	Mixed	Member Only
Conference Proceedings	 Open to attendees Open to members after 6 months One to everyone after 1 year 	 Open to attendees Open to members \$10 for non-members per download (papers only) Open to non-members via Annual Subscription (fee tbd) Fee can be waived for advocacy purposes
Workshop Proceedings	Open	 Open to attendees Open to members Open to non-members via Annual Subscription (fee tbd) Fee can be waived for advocacy purposes
Market studies	Open to membersSpecific studies open to non- members for fee	 Open to members Specific studies open to non-members for fee





NEW - You Tube Channel







Member Discounts

Dozens of discounts negotiated for Forum Members

- Market Studies
- Events
- Products and Services

See Website for Details





Social Media, etc.

RSS news feed:

http://feeds.feedburner.com/SDRForumNews



Twitter

http://twitter.com/winnforum



Linked In:

http://www.linkedin.com/groups?mostPopular=&gid=95572

Facebook:

http://www.facebook.com/WInnForum?ref=sgm



Tumblr

http://winnforum.tumblr.com/



Wikipedia





Annual Meeting Software Defined Radio Forum, Inc

Finance Committee Report

December 10, 2013





Report Summary

FY2013 was a challenging year for the Forum financially, with a net loss of \$59,063

- Largely tied to unprecedented actions taken by the US Government regarding employee travel bans and the engagement of sequestration actions
- Further loss was mitigated by significant expense controls implemented throughout the year

The FY2014 financial plan represents a net income for the year of -\$10,825 USD.

 This financial model results in reserves of the corporation in excess of \$201,500 USD at the end of 2014.





Further Financial Actions

During the 11 June 2013 Board Meeting, the Board formed the following Board committees to define new programs to help overcome the projected budgetary shortfall.

- CC SCA Membership Growth Committee: This committee will work with the CC SCA Steering Group to grow participation
- Spectrum Sharing Project Development Committee: This committee will work with the membership to establish relevant projects in support of the spectrum sharing projects worldwide, including the PCAST report and the President's memorandum on spectrum sharing
- Conference Papers Committee: This committee will work to ensure a successful technical program at SDR-WInnComm 2014
- Conference Workshops Committee: This committee will work to organize workshops at SDR-WInnComm 2014 supporting members specific needs
- Training Programs Committee: This committee will explore establishing a new product line within the Forum focused on training
- Membership Models Committee: This committee will explore alternative membership models for use by the Forum





FY2013 Balance Sheet

	30 June 2013
Assets	
Current Assets	
Cash and Cash Equivalents	\$211,870
Short Term Investments	0
Total Current Assets	\$211,870
Other Assets	
Deposits	\$10,829
Total Other Assets	\$10,829
Total Assets	\$222,699
Liabilities and Net Assets	s
Current Liabilities	
Credit card payable	\$4,155
VAT Payable	0
Total Current Liabilities	4,155
Net Assets	
Unrestricted Net Assets	\$218,544
Total Net Assets	218,544
Total Liabilities and Net Assets	\$222,699



