SCA Standards for Defense Communications

Presented by the Steering Group of the Coordinating Committee on International SCA Standards

WInnF Webcast, 5 Nov 2013

Administrivia

Slides presented during this webinar will be posted here:

http://www.wirelessinnovation.org/webinars

Link to the Webinar Satisfaction Survey will be sent shortly

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Agenda

What are SCA Standards?

Global Adoption

Proven Performance

The WInnF Coordinating Committee on International SCA Standards

Q&As

Webcast Presenters

Main Presenters

- Eric Nicollet, THALES
- Ken Dingman, Harris

Other Panelists

- Ugo Manetti, a4ESSOR
- David Renaudeau, THALES
- Fabio Casalino, Selex ES
- Ken Dingman , Harris
- Rüdiger Leschhorn, Rohde & Schwarz

Moderator

- Lee Pucker, WInnF

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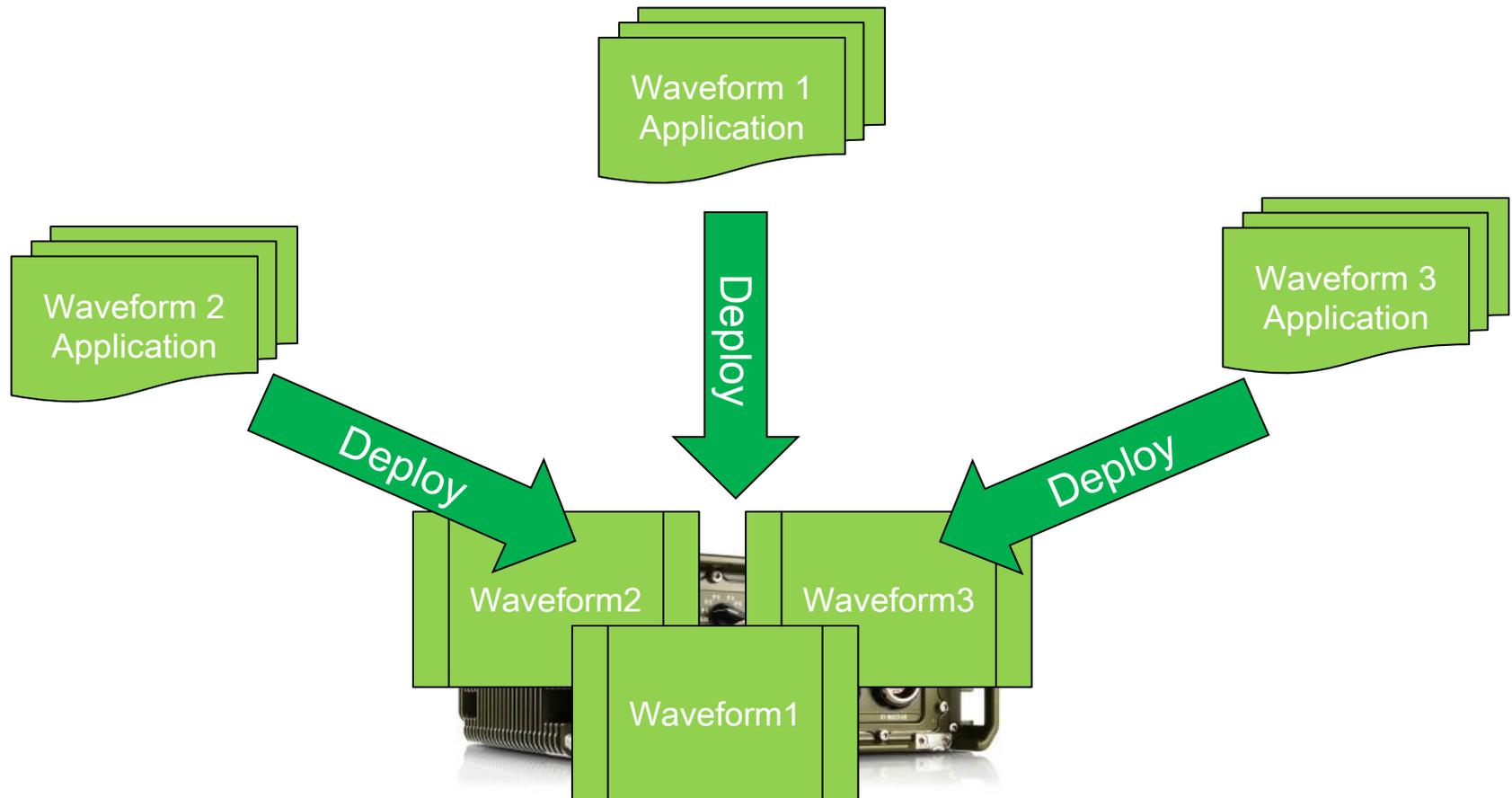version 2.0

What Are SCA Standards?

Standards based on or supporting the Software Communications Architecture (SCA), an architecture framework created to assist in the development of software defined radio communication systems, allowing waveform application software to be more easily ported across radio platforms

Publicly available specificaitions

- SCA 2.2.2 and 4.0
- SCA Appendices
- SCA APIs

www.wirelessinnovation.org/What_is_the_SCA

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Why Adopt the SCA? Reconfigurability

Waveform 1 Application

Waveform 2 Application

Waveform 3 Application

Deploy

Deploy

Deploy

Waveform2

Waveform3

Waveform1

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Why Adopt the SCA? Portability
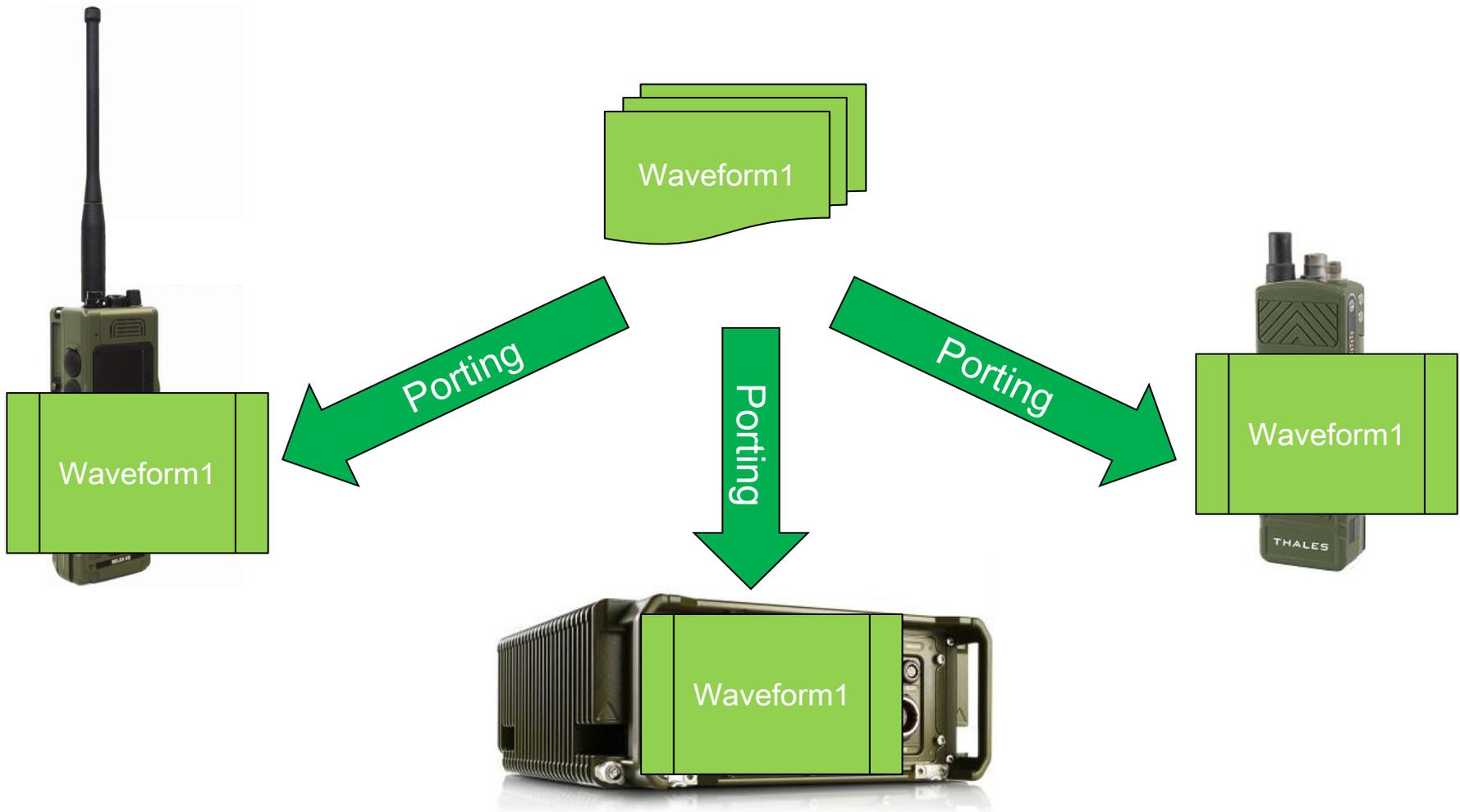
Typical SCA-based SDR architecture

Applications, GUI, …

SCA APIs, …

Waveform Software

SCA Core Framework

Device and Service APIs

Radio Devices and Services

Audio	Security	Transceiver	…	Ethernet

SCA Appendices APIs, …

Middleware	Networking	POSIX OS	Transfer mechanism	…	Kernel

Operating Environment

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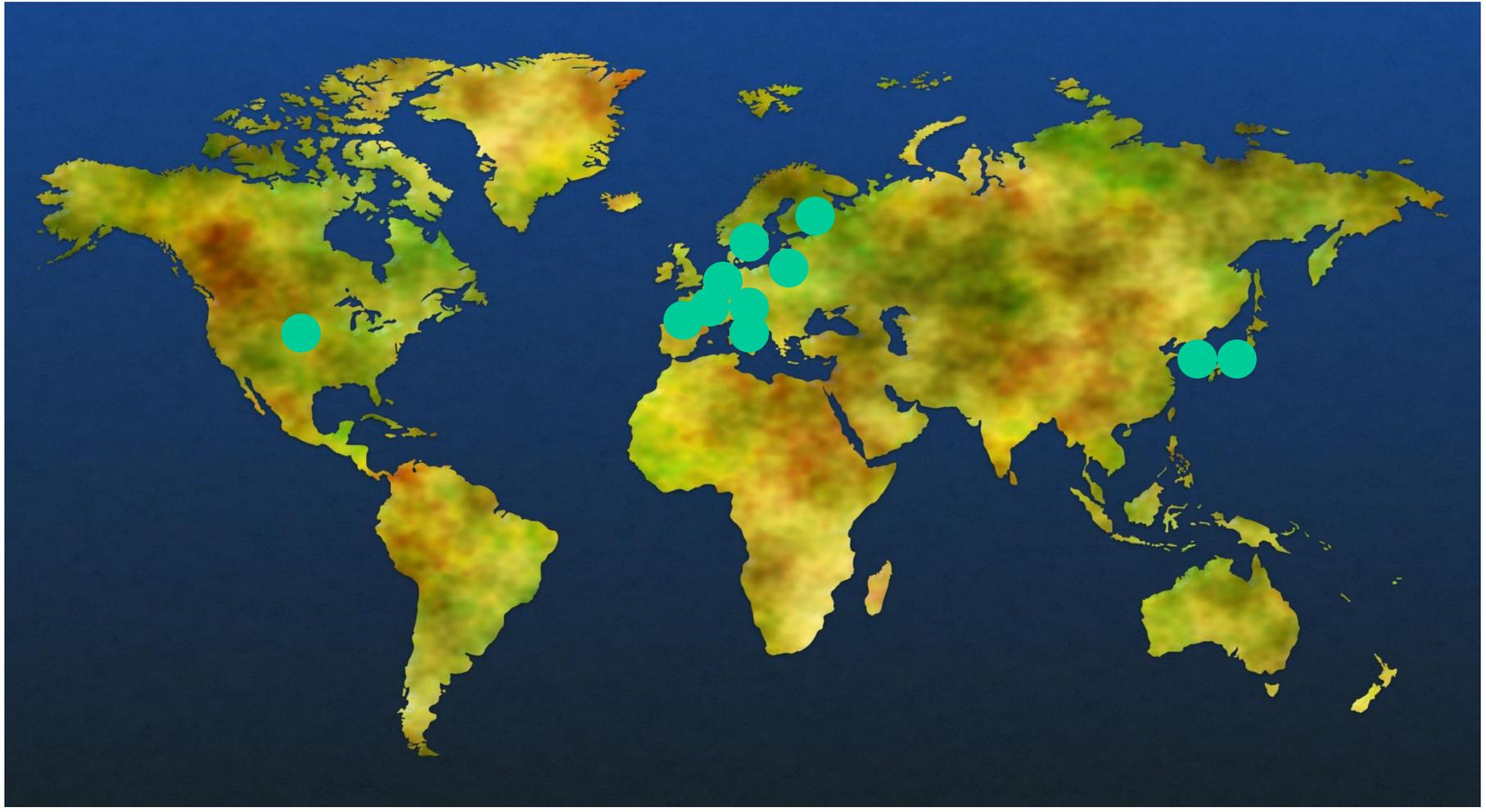*Driving the future of radio communications and systems worldwide*

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Global Adoption, Proven Performance

- **Proven cost and delivery time advantages**
  - Reuse of waveform application software
  - Within a radio family and across radio vendors
- **Enhanced communications interoperability**
  - Common waveform application base across multinational coalitions
- **Simplified insertion of new communications capabilities in deployed radios**
  - E.g. next generation MANET, dynamic spectrum allocation…
- **Reduced development risk and time-to-market**
  - Established ecosystem of SCA vendors
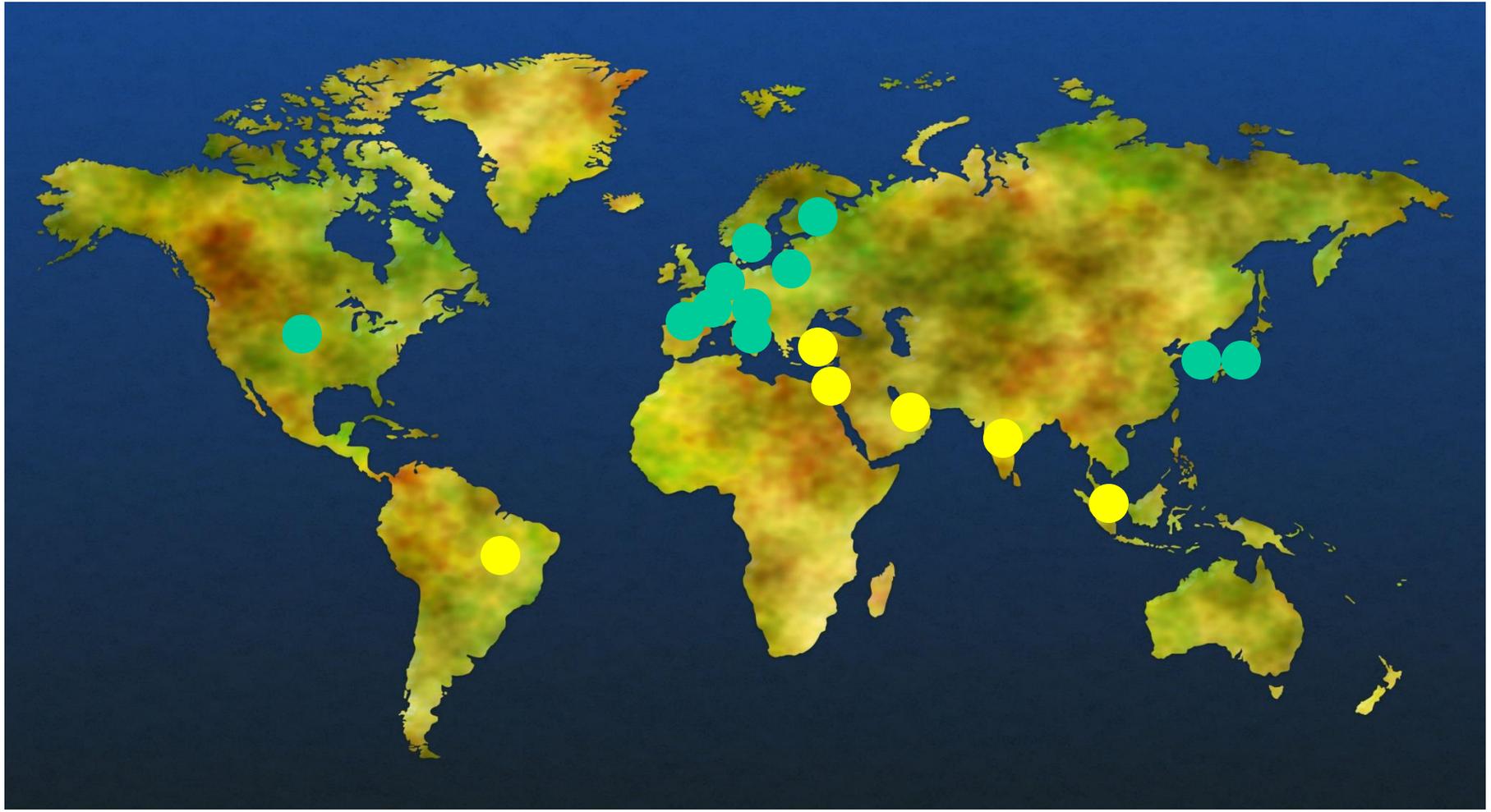
SCA Based Programs

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"ESSOR Nations and Industries have recognized the outstanding benefit of the SCA as the foundations for the SDR military business. The ESSOR Architecture extends the SCA in order to facilitate WF portability, addressing secure solutions for a large scope of military waveform applications."

Ugo Manetti, *a4ESSOR*

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The Second Wave of SCA Adoption

Proven Performance in Deployed Systems

"We have realized significant savings by leveraging SCA standards across Harris' military tactical Software Defined Radio (SDR) product lines. The underlying component technology facilitates genuine software reuse, providing development cost and time savings for porting simple legacy waveform applications to porting highly complex networking waveform applications."

Ken Dingman, *Harris Corporation*

Other Deployed Systems

"Selex ES gained great benefits from the large-scale migration of Software Communications Architecture (SCA)-based techniques into the Software Defined Radio (SDR) range of products. With a mature technology foundation and now ready to enter into the market with very good sales prospects, it provides unprecedented advantages to the customer. These include using the same platform for different radio applications (waveforms and user services), featuring upgradeable and flexible solutions, supporting the rapid deployment of mission-ready systems."

Fabio Casalino, *Selex ES*

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Available Waveforms

SCA Based Waveforms - Deployed*

- Easy II
- FlexNet Waveform
- HAVEQUICK II
- HDR-AJ
- Mobile User Objective System (MUOS)
- PR4G-Fastnet
- SATURN
- Soldier Radio Waveform (SRW)
- Soldier Broadband Waveform (SBW)
- VHF/UHF Line of Sight (VULOS)
- Wideband Networking Waveform (WNW)
- Legacy Waveforms (SATCOM 181/182/183/184, SINCGARS, EPLRS, JTRS Bowman, Link-16 & HF)
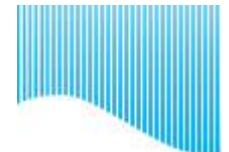
Additional Waveforms

SCA Based Waveforms – in Development*

- Coalition Wideband Networking Waveform (COALWNW)
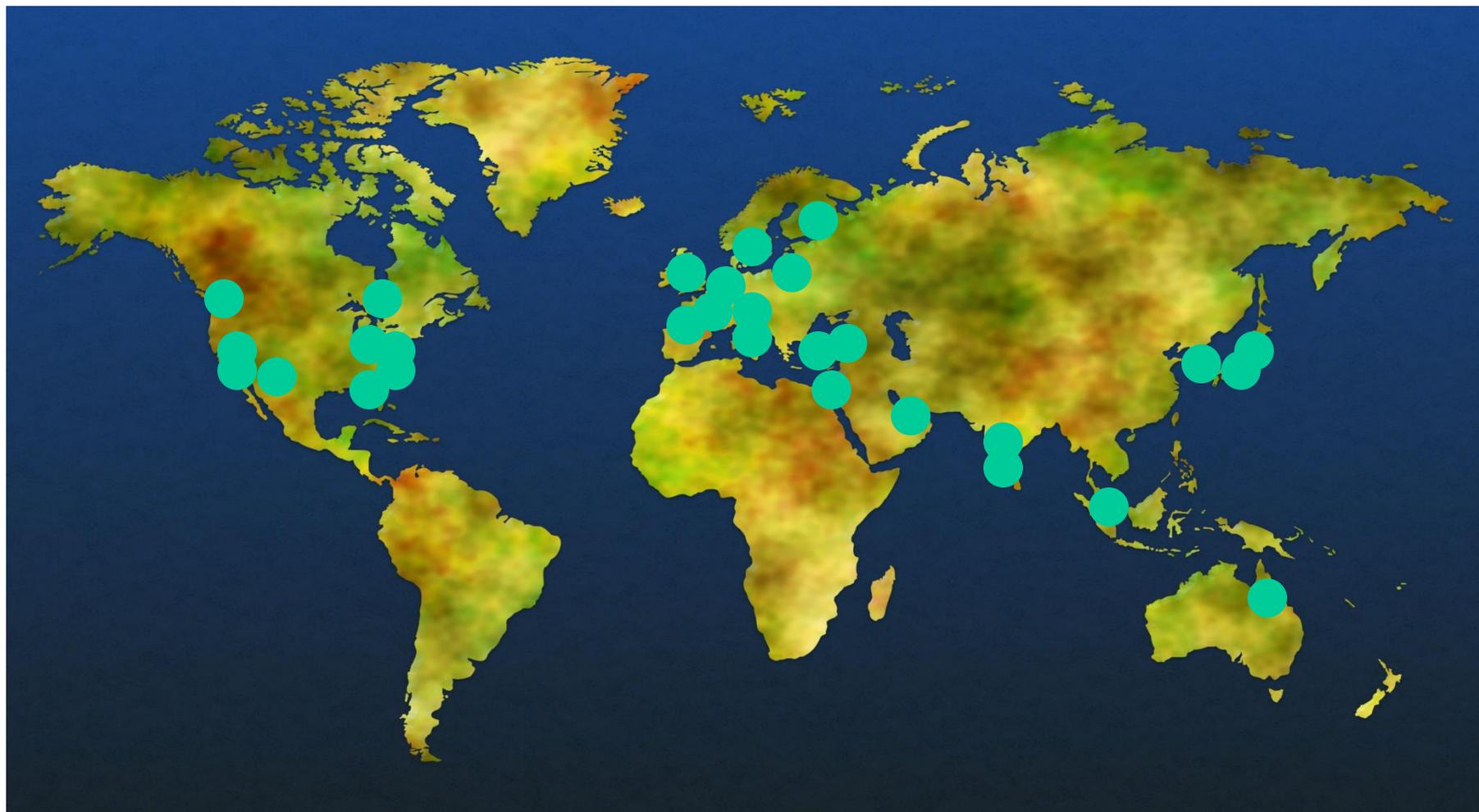- ESSOR High Data Rate Waveform (HDRWF)

"SCA Standards are key success factors for reducing cost in porting common waveforms onto platforms from different suppliers and bringing benefits to radio manufacturers in advancing their product portfolio such as reduced time to market, reduced development costs, and the availability of ported waveforms, therefore providing more options to customers."

David Renaudeau, *Thales*

Evolving Ecosystem

SCA Based Development and Manufacturing Centers

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"The SCA specifications are an important corner stone to SDR standardization and - in combination with an open architecture and near target development platforms - a prerequisite to enable timely and cost efficient porting and integration of waveforms, especially multinational and secure waveforms for combined operations."

Rüdiger Leschhorn, *Rohde & Schwarz*

COORDINATING COMMITTEE ON INTERNATIONAL SCA STANDARDS (CC SCA)

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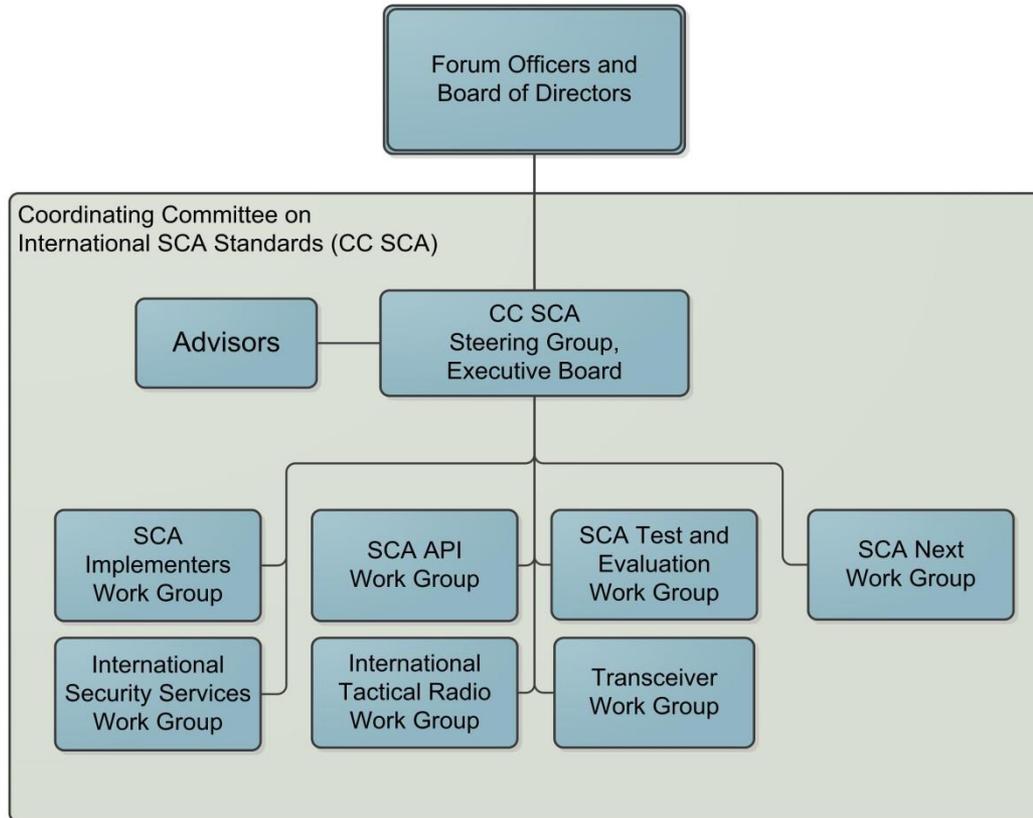version 2.0

CC SCA Mandate

To support the harmonization of the SCA standards at the international level for the mutual benefits of all stakeholders to include:

- 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

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CC SCA Structure

Structure for Coordinating Committee on International SCA Standards
17 April 2013

The CC SCA is led by THE leading tactical radio manufacturers worldwide

CC SCA Events

SCA4.1 Workshop: 21 to 22 Nov 2013, San Diego

- Co-organized with JTNC

Waveform Portability Workshop: 22 Jan 2014, Paris

- Project "Waveform Portability State-of-the-Art"
- Working meetings of the SCA Project Teams
- http://groups.winnforum.org/Waveform_Portability_Workshop

SDR WInnComm 2014: 11 to 13 Mar 2014

- Working meetings of the SCA Project Teams
- http://www.conference.wirelessinnovation.org/

http://www.wirelessinnovation.org/WInnForum-Events

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Find Out More

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Question & Answers

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END OF THE PRESENTATION

Thank you for your participation

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