IEEE DySPAN-SC and IEEE 1900 Standards Working Groups: Update for IEEE TCCN Meeting at IEEE Globecom 2014

December 10, 2014

Austin, TX, USA

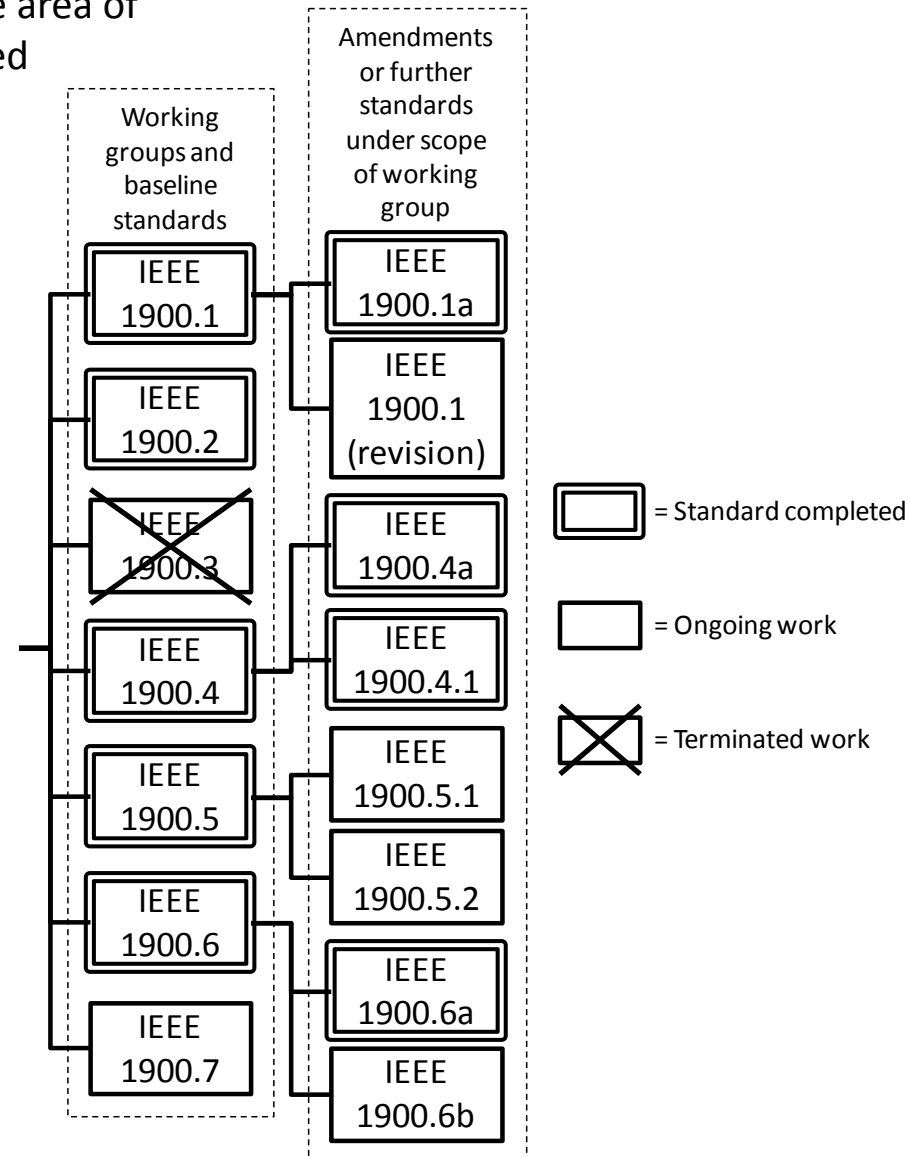Oliver Holland, King's College London

Outline

1. Introduction to DySPAN-SC

2. Progress Since Last Report

3. Upcoming Meetings and Links to Contribute

Introduction to DySPAN-SC

- Sponsors IEEE 1900 working groups, covering the area of "Dynamic Spectrum Access Networks" and related technologies

- Committee leadership comprises

  - Chair: Hiroshi Harada, University of Kyoto and NICT

  - Vice-Chair: Currently open

  - Treasurer and Acting Secretary: Oliver Holland, King's College London

  - IEEE 1900.1 Chair: Oliver Holland, King's College London

  - IEEE 1900.2 Chair: Stephen Berger, TEM Consulting

  - IEEE 1900.4 Chair: Masayuki Ariyoshi, NEC

  - IEEE 1900.5 Chair: Mat Sherman, BAE Systems

  - IEEE 1900.6 Chair: Oliver Holland, King's College London

  - IEEE 1900.7 Chair: Stanislav Filin, NICT

Working groups and baseline standards

| IEEE 1900.1 |
| IEEE 1900.2 |
| ~~IEEE 1900.3~~ |
| IEEE 1900.4 |
| IEEE 1900.5 |
| IEEE 1900.6 |
| IEEE 1900.7 |

Amendments or further standards under scope of working group

| IEEE 1900.1a |
| IEEE 1900.1 (revision) |
| IEEE 1900.4a |
| IEEE 1900.4.1 |
| IEEE 1900.5.1 |
| IEEE 1900.5.2 |
| IEEE 1900.6a |
| IEEE 1900.6b |

= Standard completed

= Ongoing work

= Terminated work

Introduction to DySPAN-SC

- ❑ Working Groups

  - ❑ IEEE 1900.1: "Terminology Relating to Emerging Wireless Networks, System Functionality, and Spectrum Management"

  - ❑ IEEE 1900.2: "Recommended Practice for the Analysis of In-Band and Adjacent Band Interference and Coexistence Between Radio Systems" (in hibernation)

  - ❑ IEEE 1900.3: "Recommended Practice for Conformance Evaluation of Software Defined Radio (SDR) Software Modules" (disbanded)

  - ❑ IEEE 1900.4: "Architectural Building Blocks Enabling Network-Device Distributed Decision Making for Optimized Radio Resource Usage in Heterogeneous Wireless Access Networks" (in hibernation)

  - ❑ IEEE 1900.5: "Policy Language and Policy Architectures for Managing Cognitive Radio for Dynamic Spectrum Access Applications"

  - ❑ IEEE 1900.6: "Spectrum Sensing Interfaces and Data Structures for Dynamic Spectrum Access and other Advanced Radio Communication Systems"

  - ❑ IEEE 1900.7: "Radio Interface for White Space Dynamic Spectrum Access Radio Systems Supporting Fixed and Mobile Operation"

Progress Since Last Report

- ❑ IEEE 1900.1

  - ❑ Has continued work started in March 2013 on a revision of the IEEE 1900.1-2008 standard, considering all aspects: Updates to terms/definitions, new terms/definitions or deletion of terms/definitions, updates to supporting materials (e.g., explanatory material on the relationship between concepts), updates to structuring, etc. PAR expiration end of 2017

  - ❑ Tentatively aiming for a first complete draft of the revised terms/definitions in mid-2015

- ❑ IEEE 1900.4

  - ❑ 1900.4.1, "Standard for Interfaces and Protocols Enabling Distributed Decision Making for Optimized Radio Resource Usage in Heterogeneous Wireless Networks", approved and published in June 2013. Specifies in detail aspects of the interface/protocols between the 1900.4 network management elements

  - ❑ Currently in hibernation pending new work items or periodic revisions of its standards

- ❑ IEEE 1900.5

  - ❑ Work continues on 1900.5.1 standard, "Policy Language for Dynamic Spectrum Access Systems", started in December 2011. PAR expiration December 2015

  - ❑ Work continues on 1900.5.2 standard, "Standard Method for Modeling Spectrum Consumption", started in March 2013. PAR expiration December 2015

Progress Since Last Report

- ❑ IEEE 1900.6

  - ❑ The new 1900.6b amendment standard on support for spectrum databases (e.g., geolocation databases, as in the TV white space case) has been approved by the IEEE-SA, and work on this amendment standard has started

  - ❑ Has undertaken initial consideration of use cases and scenarios, and the entities and interfaces between those entities that will be involved

  - ❑ Currently soliciting new participants – the overlap between spectrum sensing information and spectrum databases is an extremely hot topic

- ❑ IEEE 1900.7

  - ❑ Significant progress, with some important parts of the standard quite stable although open to further contributions/suggestions
    - ❑ FBMC PHY
    - ❑ Variant on CSMA/CA MAC with enhanced scalability; frame structure and other elements

  - ❑ Looking for inputs on some other areas, e.g., "Cognitive plane"

  - ❑ Currently looking towards the standard being completed for sponsor ballot in March 2015

Progress Since Last Report

- ❑ IEEE DySPAN-SC in general

  - ❑ Linked to requests originating from some of its working groups (e.g., IEEE 1900.6), has completed the consideration/development of harmonized (common) policies/procedures for all individual-based working groups

  - ❑ Covers all working groups except IEEE 1900.4, which is entity-based

  - ❑ Completed/approved common working group policies/procedures in last week's Singapore meeting, and these have also been approved by all working groups, pending one which held a straw poll achieving unanimous support, however, needs to hold a further ballot to formally approve

  - ❑ Reflects IEEE-SA baseline policies/procedures, with very minor variations

  - ❑ Harmonizes the consideration of face-to-face and phone meetings, and participation of new-comers—consecutive attendance of two meetings now leads to voting membership of the associated 1900 working group

  - ❑ A link to these approved policies/procedures is here: http://grouper.ieee.org/groups/dyspan/files/individual-WG-PnPs.pdf

Upcoming Meetings and Links to Contribute

❑ Participation is welcome to upcoming meetings!

Dates	Format	Location	Host
24th-26th (perhaps also 27th) March, 2015	Joint IEEE DySPAN-SC and IEEE 1900 WGs	San Diego, CA, USA	WInnForum
Late July or Early August 2015 (TBD)	Joint IEEE DySPAN-SC and IEEE 1900 WGs	Either London or Berlin (TBD)	King's College London or Fraun. FOKUS
Late November or Early December 2015 (TBD)	Joint IEEE DySPAN-SC and IEEE 1900 WGs	Either Kyoto or Toyko (TBD)	NICT
Numerous WG telephone conferences in between these meetings.			

❑ For further information, please visit: www.dyspan-sc.org, or contact:

   ❑ Hiroshi Harada, DySPAN-SC Chair/Secretary, hiroshi.harada@i.kyoto-u.ac.jp

   ❑ Oliver Holland, DySPAN-SC Treasurer, Acting Secretary and TCCN Liaison, oliver.holland@kcl.ac.uk

   ❑ …Or the associated working group Chair(s): 1900.1 – Oliver Holland, oliver.holland@kcl.ac.uk; 1900.4 – Masayuki Ariyoshi, ariyoshi@bx.jp.nec.com; 1900.5 – Mat Sherman, matthew.sherman@baesystems.com; 1900.6 – Oliver Holland, oliver.holland@kcl.ac.uk; 1900.7 – Stanislav Filin, sfilin@ieee.org

Thank you!