802.19 Coexistence PAR

Date: 2009-10-19

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Abstract

This is a work in process draft of the presentation supporting the 802.19 Coexistence PAR at the 802 EC Meeting in November 2009.
TV White Space Opportunity

- **Regulators Are Opening Up New Spectrum By Allowing Special Access To Unused TV Channels**
  - The US FCC Makes This Available Unlicensed
  - Other Regulators Have Proposed Combinations of Licensed and Unlicensed
  - Additional Spectrum Is Welcomed By 802

- **The Spectrum Is Available to Support All 802 Wireless Standards**
  - 802.22 and 802.11 Are Working To Develop Standards To Address:
    - Regulatory Requirements
    - Perceived Use & Business Cases
  - Other 802 Groups May Follow

- **Regulators Specify Means of Protecting “Incumbents” such as:**
  - Broadcasters
  - Wireless Microphones
  - CATV Headends
Coexistence Problem

- **Regulators Allow All Users/Standards to Enter White Space**
  - If Different Users, Employing Different 802 Standards Enter the Same Channel in the Same Location They Will Interfere With Each Other
    - For Example CSMA/CA & TDMA
- **Regulators Are Leaving Coexistence Problem to Industry**
  - Speed Deployment
  - Maximize Innovation Over Time
- **802 Solution**
  - Initiate Standard Development Effort For Coexistence Mechanisms That Will Provide a Good User Experience For all 802 Standards Users in TV White Space
  - Make the 802 Coexistence Mechanisms Available to non 802 Wireless Standards Groups
Coexistence Standard Intent

• **802 Standards Groups Such As 802.11, 802.22, etc.**
  – Control Own Destiny
  – Develop Standards For TV White Space that Address:
    • Regulatory Requirements
    • Anticipated Use Cases
    • Anticipated Business Cases

• **TV White Space Coexistence Task Group Develops Coexistence Mechanisms That Have the Absolute Minimum Possible Impact:**
  – On the Implementation of the Underlying Standards
  – Spectrum Utilization When There Are Not Different Users, Employing Different 802 Standards In the Same Channel In the Same Location
  – Spectrum Utilization When There Are Different Users, Employing Different 802 Standards In the Same Channel In the Same Location
  – System Overhead
Support

• This PAR Is the Result Of a Long Process That Has Been Supported By a Broad Cross Section of the 802 Community
  – TV White Space EC Study Group
    • 100 + Foil Presentation
  – 802.19 TV White Space Coexistence Study Group
    • Coexistence Use Cases & Scenarios
  – 802.19 TV White Space Coexistence Study Group Extension & Authorization to Write PAR

• There Has Been Strong Support For the Coexistence Study Group
  – Number of Substantive Contributions: ______
  – Attendance On the Telecons: ______
  – Attendance at Interim: ______
  – Attendance at SF Plenary: ______

• There Has Been Strong Support For the Development of the PAR
  – Over 30 Active Participants In PAR Finalization in Hawaii
    • All Major Roles in Value Chain
    • North America, Asia & Europe
  – Larger Numbers of Active Participants Are Expected Once PAR Is Approved
IEEE 802.19 WG Organization

802.19 WG
- WG Chair
- WG Vice Chair
- WG Secretary

Task Group 1
- TVWS Coexistence
  - TG Chair
  - TG Vice Chair
  - TG Secretary

Coexistence Assurance Standing Committee
- SC Chair
WG Organization

- The 802.19 WG will hold its first meeting at the January Wireless Interim (or March Plenary)
- The initial WG membership will be the union of the following two groups
  - The current 802.19 members
  - All those people who attend at least 75% of the first WG sessions as per the 802 Operations Manual Section 3.2.2.1
WG Organization

- **WG Officers**
  - Acting WG chair will be appointed by Paul Nikolich
  - Acting WG vice chair and acting secretary will be appointed by acting WG chair
  - WG Chair, vice chair and secretary elections will be held at the March Plenary session

- **Task Group 1 Officers**
  - Task Group chair, vice chair and secretary elections will be at the March Plenary

- **Standing Committee Chair**
  - Standing committee chair election will be at the March Plenary
Leadership

• There Are Qualified & Capable Individuals Prepared To Run For the Task Group Leadership Positions
Relationship To Other Standards Efforts

- The Following Standards Projects May Prove Somewhat Helpful
  - P1900.4a
  - TC48-TG1
  - None of These Standards Provide The Full Solution To the IEEE 802 Coexistence Problem

- Other Groups Inside 802 Are Working On or Preparing To Work On TV White Space Standards
  - 802.22
  - 802.11
  - For Fundamental Structural Reasons These Efforts Can Not Provide The Full Solution To the IEEE 802 Coexistence Problem
Back Up Material
# Hawaii Attendance

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Coexistence Among TV White Space Devices Within the Context of the US FCC

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*Protected devices, as defined by the FCC are not listed.
**This Table is meant to be Representative, not complete.
***It is likely that a similar analysis be done for GFCOM, Industry Canada, Netherlands Antilles, etc. rules.

Full Coexistence Requires Cooperation
Partial Coexistence Requires Cooperation
Coexistence Requires Cooperation

Submission | Slide | Mark Cummings, SWIM