

P802.19.1

Submitter Email: shellhammer@ieee.org

Type of Project: New IEEE Standard

PAR Request Date: 10-Oct-2009

PAR Approval Date:

PAR Expiration Date:

Status: Unapproved PAR, PAR for a New IEEE Standard

1.1 Project Number: P802.19.1

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 19: TV White Space Coexistence Mechanisms

3.1 Working Group: Coexistence TAG (C/LM/WG802.19)

Contact Information for Working Group Chair

Name: Stephen Shellhammer

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Contact Information for Working Group Vice-Chair

None

3.2 Sponsoring Society and Committee: IEEE Computer Society/Local and Metropolitan Area Networks (C/LM)

Contact Information for Sponsor Chair

Name: Paul Nikolich

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Contact Information for Standards Representative

None

4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 12/2012

4.3 Projected Completion Date for Submittal to RevCom: 12/2013

5.1 Approximate number of people expected to be actively involved in the development of this project: 30

5.2 Scope: The standard specifies mechanisms for coexistence among dissimilar or independently operated TV Band Device (TVBD) networks and dissimilar TV Band Devices.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: The purpose of the standard is to enable the family of IEEE 802 Wireless Standards to most effectively use TV White Space by providing standard coexistence mechanisms among dissimilar or independently operated TVBD networks and dissimilar TVBDs. This standard addresses coexistence for IEEE 802 networks and devices and will also be useful for non IEEE 802 networks and TVBDs.

5.5 Need for the Project: Existing IEEE 802 standards groups are developing standards and amendments, to comply with the regulatory rules for use of TV white space. Other non-IEEE 802 wireless standards for use of the TV White Space are also in development. In order for these various dissimilar TVBD networks and devices to effectively coexist in the TVWS spectrum, fair and efficient spectrum sharing is needed. Fair and efficient spectrum sharing among dissimilar TVBD networks and devices may require the coexistence mechanisms provided in this standard. In order to enhance utilization of the TV White Space bands standardized coexistence mechanisms are needed. Mechanisms such as those discussed in the explanatory notes may be considered.

5.6 Stakeholders for the Standard: Designers of TVWS MAC/PHY standards and implementations.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: Yes

If Yes please explain: IEEE P1900.4a is a standards project which addresses dynamic spectrum access.

IEEE P802.22 is a MAC/PHY standards project for operation in the TVWS which includes coexistence mechanisms.

Ecma International TC48-TG1 is a MAC/PHY standards project for operation in the TVWS which includes coexistence mechanisms **and answer the following**

Sponsor Organization: IEEE / IEEA / ECMA International

Project/Standard Number: P1900.4a / P802.22 / TC48-TG1

Project/Standard Date: 30-Dec-2012

Project/Standard Title: Standard for Architectural Building Blocks Enabling Network-Device Distributed Decision Making for Optimized Radio Resource Usage in Heterogeneous Wireless Access Networks - Amendment: Architecture and Interfaces for Dynamic Spectrum Access Networks in White Space Frequency Bands / Draft Standard for Wireless Regional Area Networks Part 22: Cognitive Wireless RAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Policies and procedures for operation in the TV Bands / Wireless Communications using Television White Spaces (TVWS)

7.2 International Activities

a. Adoption

Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international organization?: No

b. Joint Development

Is it the intent to develop this document jointly with another organization?: No

c. Harmonization

Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?: Do Not Know

Organization:

Technical Committee Name:

Technical Committee Number:

Contact Name:

Phone:

Email:

8.1 Additional Explanatory Notes (Item Number and Explanation): Section 5.2 (Scope)

The term *dissimilar* used in this document refers to the networks and devices, which use different radio technologies adapted for TV White Space Frequency Bands.

Section 5.2 (Scope)

The term *independently operated* used in this document refers to networks which may or may not use the same radio technology but are operated by independent entities which do not necessarily have a business relationship for coordinating their use of TV White Space Frequency Bands; furthermore, such similar radio access technologies may not have an otherwise available means of coexistence. For example, this differentiates *independently operated* from a situation in which a single administrative authority manages the coexistence between *dissimilar* technologies deployed in a composite network.

Section 5.2 (Scope):

The term "TVBD" is the FCC term for TV Band Device which refers to any device which complies with FCC rules to allow unlicensed radio transmitters to operate in the broadcast television spectrum at locations where that spectrum is not being used by licensed services. A TV band device (TVBD) is a low power transmitter that operates on an unoccupied TV channel in the range of channels 2-51, excluding channels 3-4 and 37.

Sec. 5.5 (Need):

The radio technology independent coexistence mechanisms that are standardized may address the following and related areas:

Discovery is the process of determining that there are two or more *dissimilar* and *independently operated* wireless networks or devices attempting to use the same White Space frequency range in the same location. This can occur in two ways. The two networks or devices may attempt to enter at the same time or one may be present and a second seek to enter. In the second case, a network operating in White Space, must periodically check for new entrants and a new entrant must check before entering.

A Connection for coexistence may be useful for two *dissimilar* and *independently operated* wireless networks or devices to exchange information in order to share spectrum.

A Logical Mechanism for Promoting Coexistence is a mechanism that involves the exchange of information between different *dissimilar* or *independently operated* networks or devices and may also involve algorithms seeking to maximize the quality of service

for all participants.

This standard project addresses USA FCC TV White Space Rules and may address the TV White Space rules of other regulatory domains. During the project lifetime, the draft standard may be modified to address any new or changing regulatory White Space Rules.