IEEE P802.19

Wireless Coexistence Working Group

Project	IEEE 802.19 Wireless Coexistence Working Group (WG)
Title	Proposal to System Description and Reference Model clauses
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Re:	
Abstract	This file contains proposal to System Description and Reference Model clauses in response to Call for Proposals (P802.19-10/57r2). It uses IEEE draft standard template.
Purpose	To propose text for System Description and Reference Model clauses of P802.19.1 draft standard
Notice	
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IEEE P802.19.1™/ DRAFT 0.0
Draft Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 19: TV White Space Coexistence Methods

Prepared by the IEEE 802.19 Working Group of the

LAN/MAN Standards Committee

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Abstract:
Keywords:

NOTICE TO USER

Introduction

(This introduction is not part of IEEE P802.19.1/D0.0, June 2010, Draft Standard for Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 19: TV White Space Coexistence Methods.)

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Participants

At the time this draft standard was completed, the IEEE 802.19 Working Group had the following membership:

Stpehen Shellhammer, *Chair*

Ivan Reede, *Vice-chair*

Participant1	Participant4	Participant7
Participant2	Participant5	Participant8
Participant3	Participant6	Participant9

The following members of the balloting committee voted on this standard. Balloters may have voted for approval, disapproval, or abstention.

(to be supplied by IEEE)

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

1 Overview

1.1 Scope

The standard specifies radio technology independent methods for coexistence among dissimilar or independently operated TV Band Device (TVBD) networks and dissimilar TV Band Devices

1.2 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 methods 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.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

TBD

3 Definitions, Abbreviations and Acronyms

3.1 Definitions

For the purposes of this draft standard, the following terms and definitions apply. *The Authoritative Dictionary of IEEE Standards, Seventh Edition,* should be referenced for terms not defined in this clause.

TBD

3.2 Abbreviations and Acronyms

TBD

4 System Description

4.1 System Architecture

The 802.19.1 system architecture has three logical entities and five logical interfaces. An 802.19.1 logical entity is defined by its functional role(s) and its interfaces with other 802.19.1 logical entities and with external elements.

Three logical entities are:

— Coexistence Manager (CM)

— Coexistence Enabler (CE)

— Coexistence Discovery and Information Server (CDIS).

Five logical interfaces are:

— Interface A

— Interface B1

— Interface B2

— Interface B3

— Interface C.

The 802.19.1 system interacts with two external elements:

— TVWS database

— TVBD network or device.

Figure 1 shows 802.19.1 system architecture.

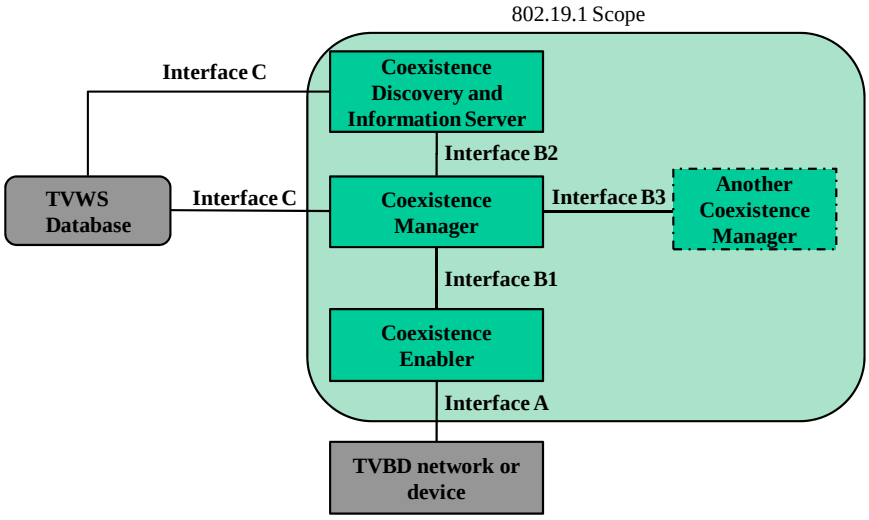

Figure 1 System Architechture

4.2 Logical entities

4.2.1 Coexistence Enabler

Coexistence Enabler has the following functional roles:

— Obtain information required for coexistence from TVBD network or device and provide it to CM

— Provide information required for coexistence (generated by IEEE 802.19.1 system or obtained by IEEE 802.19.1 system from external entities) to TVBD network or device

— Facilitate sharing of information required for coexistence among TVBD networks or devices via the IEEE 802.19.1 system

— Request TVBD network or device to perform measurements required for coexistence by itself or according to commands received from CM

— Obtain measurement results required for coexistence from TVBD network or device and provide them to CM

— Request TVBD network or device to perform reconfiguration required for coexistence according to commands received from CM

— Receive information about observed or predicted events related to coexistence from TVBD network or device and provide it to CM

— Provide information about observed or predicted events related to coexistence (generated by IEEE 802.19.1 system) to TVBD network or device.

4.2.2 Coexistence Manager

Coexistence Manager has the following functional roles:

— Coexistence decision making

— Discovery of other CMs

— Support exchange of information required for coexistence among CMs

— Support sharing of information required for coexistence among TVBD networks or devices.

4.2.3 Coexistence Discovery and Information Server

Coexistence Discovery and Information Server has the following functional roles:

— Support discovery of CMs
— Collect, store, aggregate, and provide information required for coexistence
— Support exchange of information required for coexistence among CMs
— Support sharing of information required for coexistence among TVBD networks or devices.

4.3 Logical Interfaces

Five logical interfaces defined in the 802.19.1 system architecture can be split into three groups:

— Interfaces between 802.19.1 entities:
  — Interface B1
  — Interface B2
  — Interface B3
— Interface between an 802.19.1 entity and TVBD network/device:
  — Interface A
— Interface between 802.19.1 entities and TVWD database:
  — Interface C.

Different interfaces in each group are distinguished by their usage, types of information exchanged, and underlying protocols.

4.3.1 Interface A

Interface A between CE and TVBD network or device is used to transmit the following:

— From TVBD network or device to CE:
  — Information required for coexistence
  — Measurement results required for coexistence
  — Information about observed or predicted events related to coexistence
— From CE to TVBD network or device:
  — Information required for coexistence (generated by IEEE 802.19.1 system or obtained by IEEE 802.19.1 system from external entities)
  — Measurement requests required for coexistence
  — Reconfiguration requests required for coexistence
  — Information about observed or predicted events related to coexistence (generated by IEEE 802.19.1 system).

4.3.2 Interface B1

Interface B1 between CE and CM is used to transmit the following:

— From CE to CM:
  — Information required for coexistence
— From CM to CE:
  — Reconfiguration commands required for coexistence.

4.3.3 Interface B2

Interface B2 between CM and CDIS is used to transmit the following:

— From CM to CDIS:
  — Information required for discovery
  — Information required for coexistence
— From CDIS to CM:
  — Information required for discovery
  — Information required for coexistence.

4.3.4 Interface B3

Interface B3 between different CMs is used to transmit the following:

— Information required for coexistence.

4.3.5 Interface C

Interface C between CM and TVWS database or between CDIS and TVWS database is used to transmit the following:

— From TVWS database:
  — Information required for coexistence.

5 IEEE 802.19.1 reference model

5.1 General description

TBD

5.2 Service access points

TBD

5.3 Data types

TBD