System Description

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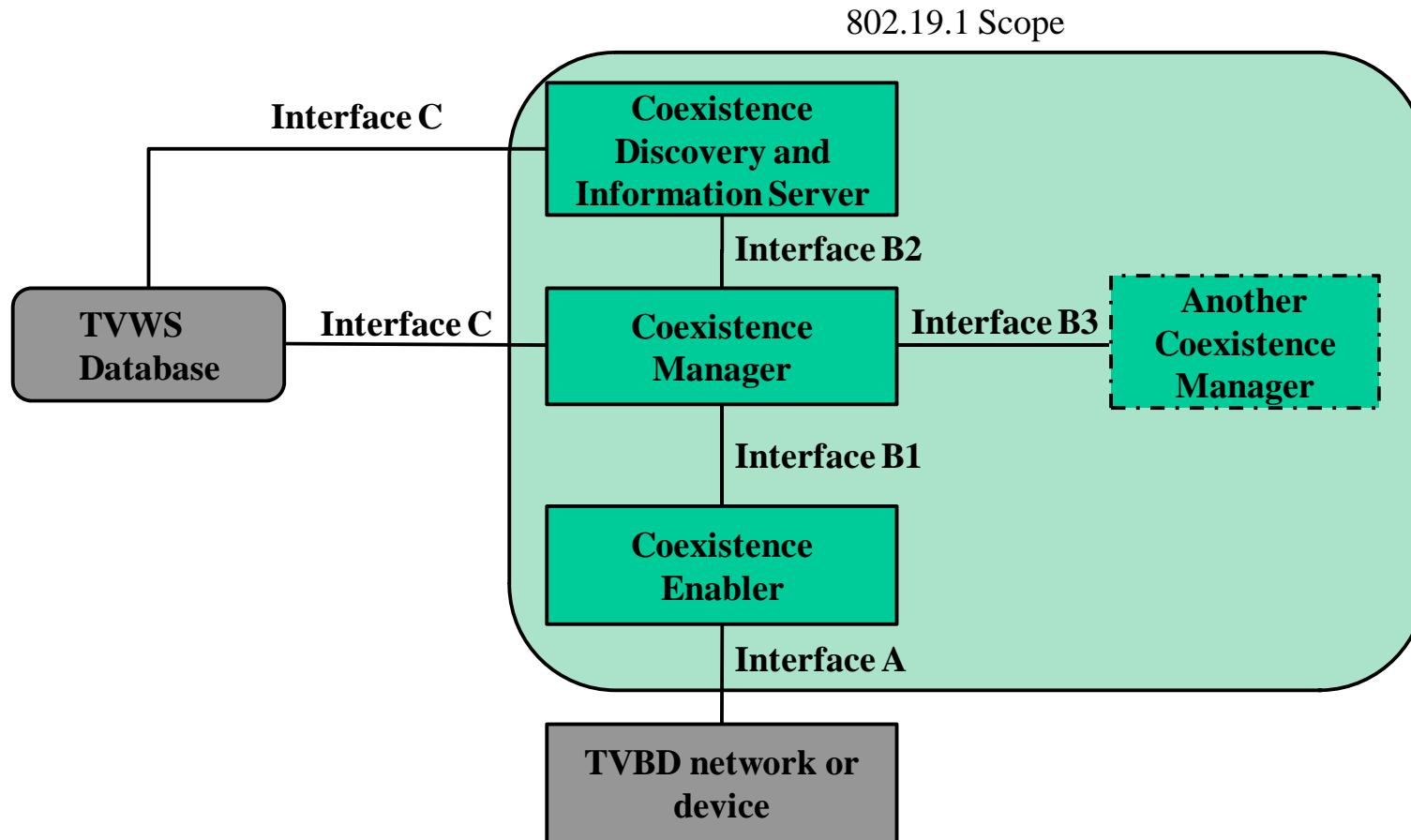## Authors:

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Abstract

- **This contribution introduces System Description proposal**

- **Compared to SDD, some modifications are done**
  - The intention of modification is to make System Description proposal and Reference Model proposal consistent
  - There is no intention to limit protocol design
  - Further modifications to System Description may be required based on protocol design

System Architecture

802.19.1 Scope

Interface C

Coexistence Discovery and Information Server

Interface B2

TVWS Database

Interface C

Coexistence Manager

Interface B3

Another Coexistence Manager

Interface B1

Coexistence Enabler

Interface A

TVBD network or device

System Architecture

- **Logical entities**
  - Coexistence Manager (CM)
  - Coexistence Enabler (CE)
  - Coexistence Discovery and Information Server (CDIS)

- **Logical interfaces**
  - Interface A
  - Interface B1
  - Interface B2
  - Interface B3
  - Interface C

- **External entities**
  - TVWS database
  - TVBD network or device

Logical Entities

- **Coexistence Enabler**

  – 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

Logical Entities

- **Coexistence Enabler (continued)**
  - 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

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Logical Entities

- **Coexistence Manager**

  - 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

Logical Entities

- **Coexistence Discovery and Information Server**
  - 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

Logical Interfaces

- **Interface A between CE and TVBD network or device**
  - 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)

Logical Interfaces

- **Interface B1 between CE and CM**
  - From CE to CM
    - Information required for coexistence
  - From CM to CE
    - Reconfiguration commands required for coexistence

Logical Interfaces

- **Interface B2 between CM and CDIS**
  - From CM to CDIS
    - Information required for discovery
    - Information required for coexistence
  - From CDIS to CM
    - Information required for discovery
    - Information required for coexistence

Logical Interfaces

- **Interface B3 between different CMs**
  - Information required for coexistence

Logical Interfaces

- **Interface C between CM and TVWS database or between CDIS and TVWS database**
  - From TVWS database
    - Information required for coexistence