P802.19.1 General Architecture

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Abstract

This contribution proposes general system architecture for P802.19.1
General system architecture 1/2

Coexistence database

TVWS database

Coexistence management server

Coexistence Enabler

TVBD network 1

Coexistence Enabler

TVBD network 2
General system architecture 2/2

- **Coexistence Database**
  - Contains information required for TVWS coexistence
  - Provides this information to Coexistence Management Server
  - Provides this information to Coexistence Enablers

- **Coexistence Management Server**
  - Makes TVWS coexistence decisions
  - Provides TVWS coexistence guidelines to Coexistence Enablers

- **Coexistence Enabler**
  - Obtains information required for TVWS coexistence
  - Provides this information to Coexistence Database
  - Exchanges this information with other Coexistence Enablers
  - Makes TVWS coexistence decisions within the guidelines (if any) received from Coexistence Management Server
  - Implements TVWS coexistence decisions
Deployment options

• **Deployment option 1**
  – Coexistence Enablers use “direct discovery” (e.g. direct dedicated connection, wired/wireless beacon)
  – Coexistence decisions are done by Coexistence Enablers

• **Deployment option 2**
  – Coexistence Enablers use Coexistence Database for registration and discovery
  – Coexistence decisions are done by Coexistence Enablers

• **Deployment option 3**
  – TVBD networks use Coexistence Database for registration and for conveying information from Coexistence Enablers to Coexistence Management Server
  – Coexistence decisions are done in Coexistence Management Server and reconfiguration guidelines are provided to Coexistence Enablers
  – Coexistence Enablers make coexistence decisions within the guidelines received from Coexistence Management Server and implement these decisions
Deployment option 1

TVWS
database

Coexistence Enabler

TVBD network 1

Coexistence Enabler

TVBD network 2
Deployment option 2

TVWS database

Coexistence database

Coexistence Enabler

TVBD network 1

Coexistence Enabler

TVBD network 2
Deployment option 3
Conclusions

• **General system architecture is proposed**
  – This system architecture supports both centralized and distributed decisions making
  – This system architecture does not give any limitations on transport means (e.g., can support both wired and wireless implementation options)

• **Three deployment options are proposed**
  – Different deployment options could be beneficial in different scenarios
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