P802.19.1 Requirements

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Abstract

This contribution proposes requirements for P802.19.1

Requirements will serve as a framework for developing system architecture and draft standard

Requirements (1/7)

- **P802.19.1 shall enable discovery of P802.19.1-compliant TVBD networks and devices.**

  (Discovery)

  Explanatory note: P802.19.1 is required to identify potential P802.19.1-compliant TVBD networks or devices that need to coexist as one crucial step in order to achieve coexistence.

  The term discovery should be understood as determining the presence of TVBD network or device and identifying its attribute such as ID.

Requirements (2/7)

- **P802.19.1 shall be able to analyze operational environment of TVBD networks and devices, and determine whether coexistence problem exist.**

  (Algorithm)

  Explanatory note: After collecting operational environment information, such as available white space and operating TVBD networks and their spectrum usage, from individual TVBD networks and devices, and other sources such as TVWS database, P802.19.1 must analyze the data to determine if coexistence problem exists. Execution of coexistence algorithms and protocols should follow to provide coexistence solution.

Requirements (3/7)

- **P802.19.1 shall enable TVWS coexistence decision making.**

  (Algorithm)

  Explanatory note:

  This requirement underlines the P802.19.1 system capability in terms of executing algorithms for decision making in order to realize coexistence.

Requirements (4/7)

- **P802.19.1 shall support centralized, distributed and autonomous decision making for TVWS coexistence.**

  (Algorithm)

  Explanatory note: This requirement underlines the possibility of having various approaches to implement decision making in coexistence scenarios. It also underlines P802.19.1 must be capable to support these different approaches of decision making for coexistence.

Requirements (5/7)

- **P802.19.1 shall have a means to obtain and exchange information required to make TVWS coexistence decisions.**

  (Communication)

  Explanatory note: Without constraining the mechanism of communication, this requirement puts a high level requirement to support a means of obtaining and exchanging information necessary for coexistence among the P802.19.1 compliant TVBD networks and devices and the P802.19.1 entities (e.g. coexistence database, coexistence server . . .).

Requirements (6/7)

- **P802.19.1 shall be able to provide reconfiguration commands and corresponding control information to P802.19.1 TVBD networks and devices to implement TVWS coexistence decisions.**

  (General)

  Explanatory note: P802.19.1 shall have the capability of providing reconfiguration commands specific to a particular coexistence scenario in order to achieve coexistence. For example the reconfiguration command may consist of adjusting a center frequency, transmit power, so and so on.

Requirements (7/7)

- **P802.19.1 shall be able to update information related to coexistence and provide it to P802.19.1 compliant networks and devices.**

  (General)

  Explanatory notes: This requirement highlights the capability to update/refresh coexistence related information, such as location information of TVBD networks and devices, spectrum utilization by TVBD networks and devices.