Multi-mode Operation for 802.16n

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Sungkyung Kim, Eunkyung Kim, Sungcheol Chang, Hyun Lee, Chulsik Yoon
ETRI
Voice: +82-42-860-5415
E-mail: ekkim@etri.re.kr, scchang@etri.re.kr

Re:

"IEEE 802.16gman-10/0042," in response to the agreement by the Gridman TG at session #70 for IEEE 802.16n at session #71

Base Contribution:

N/A

Purpose:

To be discussed and adopted by 802.16n

Multi-mode Operation for 802.16n

Background

- Degraded network
  - HR-BS breakdown
  - Failure of network connectivity
- Self-healing for degraded network
  - ***Multi-mode operation***
  - MS-MS Direct communication
  - Standalone network
  - Etc.

Multi-mode operation

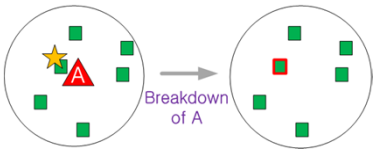
- Multi-function HR-BS
  - BS mode
  - RS mode
    - Only RS function
    - RS function for backhaul link + BS function
- Multi-function HR-MS
  - MS mode
  - BS mode: BS function + MS function
  - RS mode: RS function + MS function

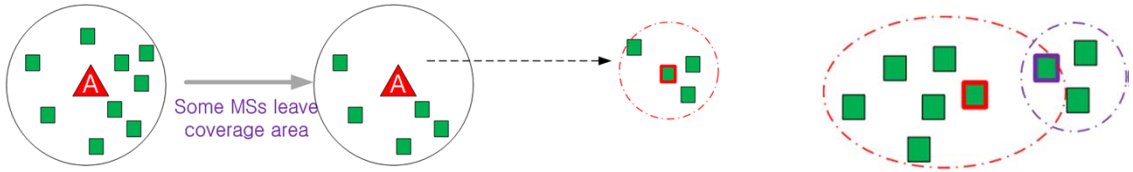
Relay function for HR-BS

- Operation scenarios
  - Breakdown in wired backbone connectivity
- Technical issues
  - Channel monitoring & report
  - Frame structure for RS mode of HR-BS
    - Similar to HR-RS frame structure
  - Signaling for RS mode change of HR-BS
    - Modified RS NE procedures
  - Connection management of subordinate HR-MSs
    - Group handover, callback handover, etc.

BS function for HR-MS

- Operation scenarios
  - Breakdown of BS; in the absence of neighbor BS
  - Out of coverage
  - Temporary network construction for PPDR mission

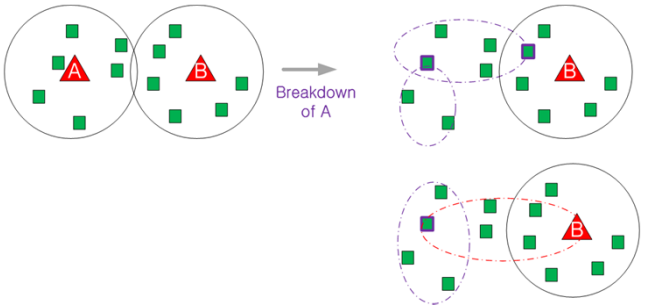




- Self Cell Configuration without infrastructure node
  - Selecting a HR-MS acting as BS
  - Dynamic role change
  - Interference mitigation
  - Network merge & separate
  - Etc.

RS function for HR-MS

- Operation scenarios
  - Breakdown of BS; neighbor BSs
  - BS coverage/capacity extension for disaster relief



- Technical issues
  - Method of selecting HR-MS acting as RS
  - Signaling for RS mode change of HR-MS
  - Method of data relaying in multi-mode HR-MS
  - HR-MS discovery procedure
  - Etc.

Text proposal for SRD as an Annex

Annex C: Protocol Structure

Annex C.1 IEEE 802.16n Protocol Structure

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- Multi-Mode Management: Indicates a block which supports multi-mode operation meeting the requirements described in Section 6.1.1.

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