[Addressing scheme for 16m]

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Source:

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Venue:

IEEE 802.16m-08/024 - Call for Comments and Contributions on Project 802.16m SDD
Topic: Upper MAC concepts and methods (Addressing)

Base Contribution:

None

Purpose:

Discuss and approve the proposed text changes into SDD document

Notice:

Release:

Patent Policy:

Addressing in 16e

- Connections & system operation identifiers are identified by a 16 bit CIDs allocated from a common pool
  - Management & Unicast Transport Connections
    - Management Connection: Basic, primary & secondary CIDs
    - Unicast Transport Connections: Transport CIDs
    - Unique across mobile stations (MSs) in a sector
      - CID identifies both MS as well as the connection

  - Broadcast/Multicast Transport Connections
    - Broadcasting: Broadcast CID
    - Multicasting: Multicast CIDs

  - System Operation Identifiers
    - Ranging CID, AAS Initial Ranging, Multicast polling, idle/sleep/normal mode multicast, padding

Addressing in 16e - Issues

- CID identifies both MS as well as the connection leading to:
  - Multiplexing Overhead
    - MAC Header always contains a16 bit CID. If there are multiple MPDUs destined to a single MS, multiple 16-bit Transport CIDs are carried.

  - Signaling Overhead during HO
    - Reassignment of CIDs (Basic/Primary/Transport) by the target BS during HO
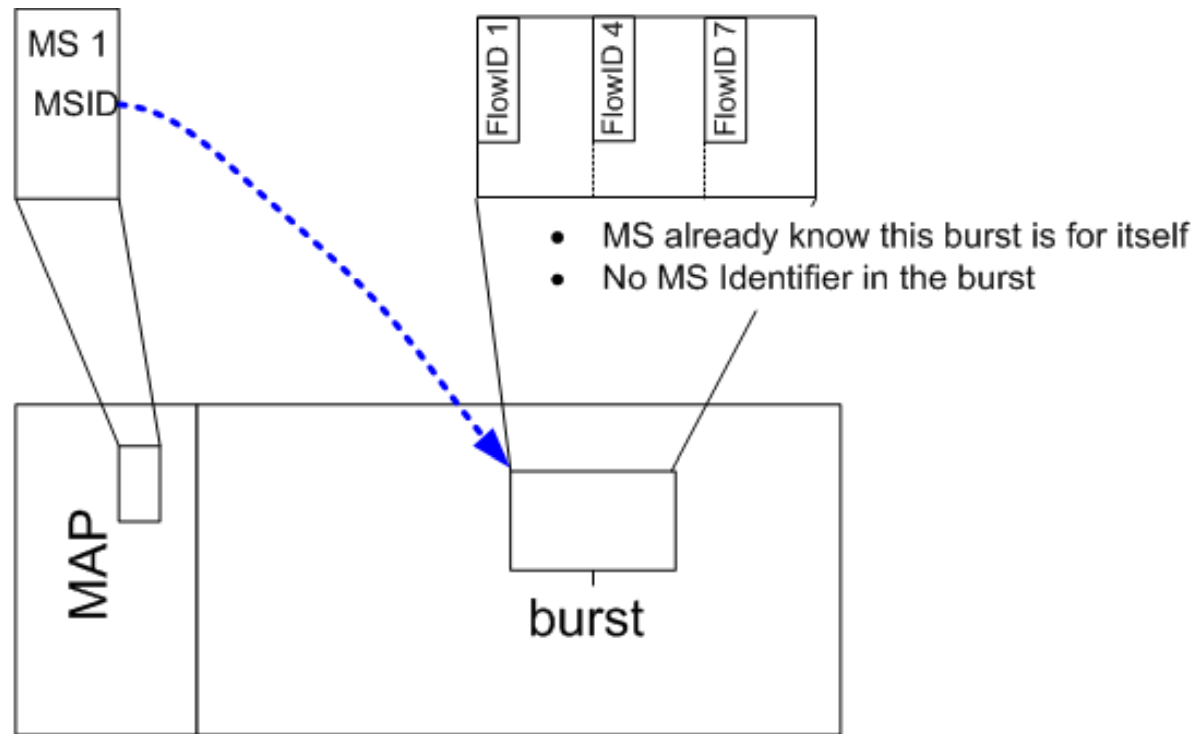
Proposed Addressing scheme for 16m

- Independent addresses for identifying connection and MS

- Connection Identification
  - 5 bit FlowID
  - Identifies a connection within a MS
  - FlowIDs are re-used per MS
  - Two FlowIDs are reserved for the basic/primary management connections.

- MS Identification
  - 16 bit MSID
  - Identifies an MS within a BS
  - It does not identify any specific connection
  - MSID is unique across all MSs of a BS
  - Some identifiers in the MSID pool may be reserved for Multicasting group of MSs

Basic operation scenario

- MAP IE includes the burst location of a MS

- MSID is used only for decoding MAP IE, and there is no need for it to be included in the data burst.

- Only FlowIDs are carried in the burst to identify which connection the MPDUs belongs to

- A MAP IE identifies only which MS this MAP is for
- No information about specific connection

MS 1

MSID

FlowID 1 FlowID 4 FlowID 7

- MS already know this burst is for itself
- No MS Identifier in the burst

MAP

burst

Proposed text change in SDD

[Insert the following text in section 10 in IEEE 802.16m-08/003r3]

------------------------------ Text Starts ------------------------------

10. MAC Sublayer

10.x Addressing and connections

Connections and mobile stations are identified by independent addresses. Connections are identified by 5-bit FlowID and Mobile stations are identified using 16 bit MSID. The MPDU in a burst shall be identified using the flow ID, while the MSID in the MAP IE identifies which MS the burst is meant for.

10.x.1 MSID

16 bit MSID identifies an MS within a BS. It is unique across all the MSs of a BS. Some identifiers in the MSID pool may be reserved for identifying Multicasting groups.

10.x.2 FlowID

5 bit FlowID identifies a connection within an MS. FlowIDs are re-used per MS. FlowIDs 0x0 is reserved for the Basic management connection while 0x1 is reserved for the primary management connection. These management IDs are retained during handover.

------------------------------ Text Ends ------------------------------