

Temporary Station Identifier Used During Network Entry

IEEE 802.16 Presentation Submission Template (Rev. 9)

Document Number:

IEEE C802.16m-08/1088

Date Submitted:

2008-09-05

Source:

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Venue:

Re: MAC: Network Entry; in response to the TGM Call for Contributions and Comments 802.16m-08/033 for Session 57

Base Contribution:

This is the base contribution.

Purpose:

To be discussed and adopted by TGM for the 802.16m SDD

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[<http://standards.ieee.org/guides/bylaws/sect6-7.html#6>](http://standards.ieee.org/guides/bylaws/sect6-7.html#6) and [<http://standards.ieee.org/guides/opman/sect6.html#6.3>](http://standards.ieee.org/guides/opman/sect6.html#6.3).

Further information is located at [<http://standards.ieee.org/board/pat/pat-material.html>](http://standards.ieee.org/board/pat/pat-material.html) and [<http://standards.ieee.org/board/pat>](http://standards.ieee.org/board/pat).

Motivation

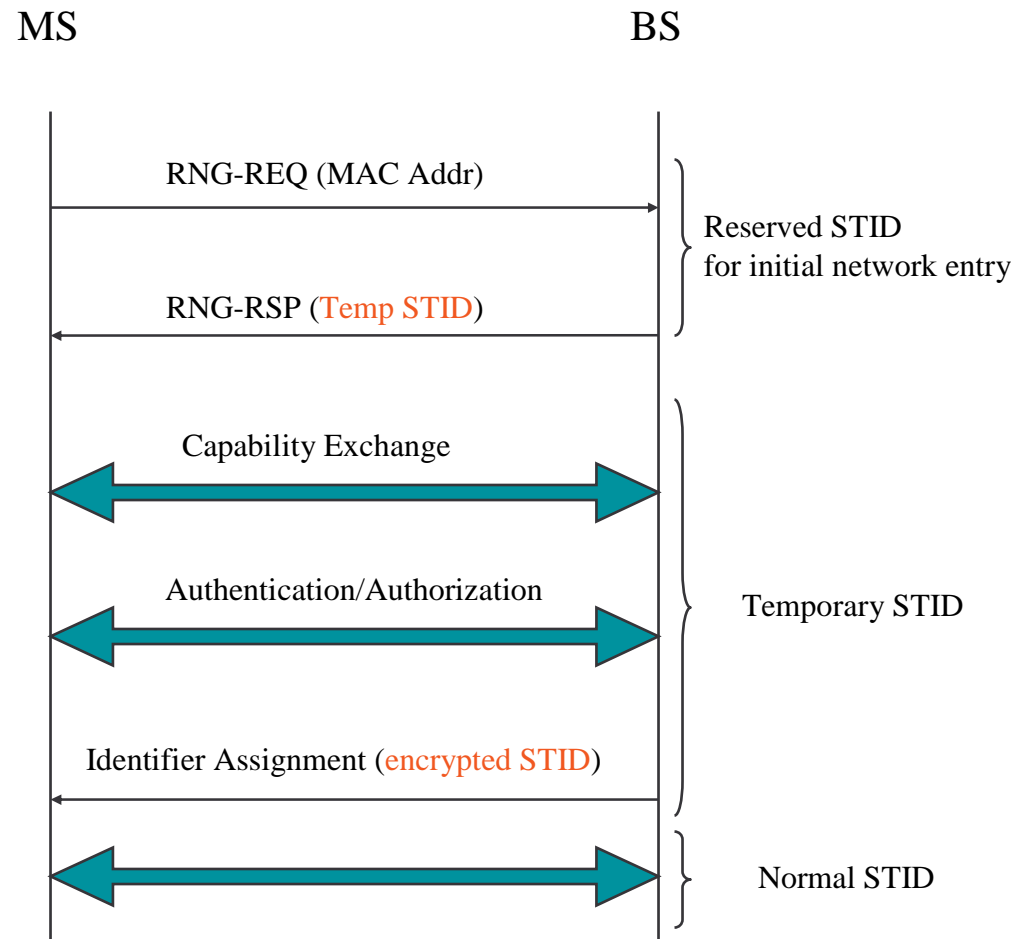
- Sending MAC address over the air is not an issue and cannot be completely avoided.
 - MAC address is needed for BS to obtain MS related information from other network entities.
 - MAC address is used by BS to generate various security keys.
 - Certificate which contains MAC address is sent over the air in clear text anyway.
- Revealing **the mapping between MAC address and Station ID** is the real problem to be solved.
 - By monitoring the ranging procedures, an intruder can obtain the mapping between MAC address and Station ID, based on which perform specific attack to that specific user.

Proposed Solution

- Temporary Station Identifier
 - Assigned by BS during initial network entry
 - Use to temporarily identify MS within the BS
 - Within the same scope of normal Station Identifier

Temporary Station Identifier (STID)

- **Temporary STID** is assigned during **initial ranging** process.
- After being assigned, it is used for the subsequent network entry procedures until the normal STID is allocated.
- **Normal STID** is assigned during/after **authentication** process, and shall be **encrypted** during the assignment.
- The temporary STID is then released and normal STID is used for all the remaining transactions.



Proposed SDD Text

Section 10.x: Network Entry

- Two types of station identifiers are assigned to MS during network entry process and one of them will be used for the certain time period.
- A temporary station identifier is assigned during initial ranging process, and is used during the subsequent network entry procedures until the normal station identifier is allocated.
- The normal station identifier is assigned during authentication process, and is encrypted during the assignment.
- The temporary station identifier is released after normal station identifier is assigned, and the normal station identifier is used for all the remaining transactions.