Handover in Femto

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Venue:

Re: TGm SDD: Femtocells. in response to the TGm Call for Contributions and Comments 802.16m-08/040 for Session 58

Base Contribution:

This is the base contribution.

Purpose:

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

Motivation

- There could be different types of BSs in the network e.g. Macro BS, Micro BS, Pico BS and Femto BS
- Femto BS can be deployed by the end user at home or small office to provide closed access to one or few users.
- There could be tens/hundreds of femto BSs deployed under the macro BS coverage area.
- How would a femto BS and MS effectively detect its neighbours and generate neighbour list is an important aspect.
- The following slides propose efficient and seamless handover solution between macro BS and femto BS.

Proposed Solution

- As stated in SDD, the network provides the mapping between femto BS and corresponding overlay macro/micro BS. MS cache this information for future handover to the specific femto cell.
- When MS detects that it is in overlay macro BS coverage area, it adds femto BS identity in its neighbor list and start scanning for home femto BS(s).
- When MS detects that it is outside of overlay macro BS coverage area, then MS removes the femto BS identity from its neighbor list and stop scanning for home femto BS.
- When MS detects good signal strength from its home femto BS, it initiates HO procedure.
- After that normal 802.16m HO signaling exchange takes place.

Proposed Text

Replace the 2nd paragraph in section 10.3.3 with following text:

- Upon entering the coverage area of the overlay macro BS of the femto BS for an MS, the MS adds femto BS identity into its neighbor list and starts to scan for the femto BS(s). After the femto BS is detected, the MS may initiate to send handover request to the macro BS. The handover process between femto and macro BS is the same as defined in section 10.3.2.
- When MS detects that it is outside of overlay macro BS coverage area, then MS removes the femto BS identity from its neighbor list and stop scanning for home femto BS(s).