Roger Marks
Chair, IEEE 802.16 Working Group
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September 12th, 2008

Subject: Liaison Statement to IEEE 802.16 to share WiMAX Forum's high level Air interface requirements to support Femtocells

Dear Dr. Marks,

Given the increased interest in femtocell features and deployments among WiMAX operators, the Service Provider's Group of the WiMAX Forum has created an adhoc team to focus on the requirement for enabling femtocells in the near and long term based on IEEE 802.16 standards and our end-to-end network specifications.

Through this process, operators and vendors involved have agreed to some high-level functional requirements for air interface. While in the near term we would need to arrive at femtocell solutions to meet the requirement as much as feasible given the baseline IEEE 802.16Rev2 draft standard, in the long term we need such requirements to be considered in the design of the next generation of WiMAX radio access technology based on IEEE 802.16m.

WiMAX Forum would like to share the following high level requirements with the IEEE 802.16 Working Group for consideration as guidelines in the ongoing development of the 802.16m draft standard.

In these requirements Femtocell refers to a low power BS, typically installed by a subscriber in his/her home or SOHO to provide access to a closed or open group of users as configured by the subscriber and/or the access provider. Femtocell BS's typically operate in licensed spectrum and may use the same or different frequency as macro-cells and use broadband connection such as cable or DSL for backhaul. The MS's using access in a femtocell are typically stationary or moving at low (i.e. pedestrian) speed.

- The link level performance of the air interface in terms of packet error rate shall not be significantly degraded when the MS is within 10cm-30m from the femtocell BS, which is typical for femtocell usage.
- The air interface shall support features needed to limit the MS's scanning, cell re-/selection, access for network entry/re-entry and handover to femtocell BS's with restricted access if they are designated as part of closed user group.
- The air interface shall support preferred access during the handover and power saving operations (e.g. Location Update and Idle Mode Exit) of MS's to their designated femto-BS's.
- The Air interface shall support seamless handover between Macro and femtocells as well as between femtocells, assuming user's access is allowed to the target cell.

- The air interface should support low-complexity synchronization between macro-BS and femto-BS and among neighboring femto-BSs operating in the same frequency.
- The air interface should support over the air measurements by BS or MS for interference detection and mitigation between femto-cell and macrocells or among femtocells.
- The air interface shall support seamless coexistence of Femtocell BS's with Wi-Fi or Bluetooth systems.
- The air interface should support optimized and seamless session continuity and handover between Femtocell BS's and Wi-Fi access systems.
- The air interface should support features needed to help a femtocell BS to determine its location.
- The air interface shall allow dense deployment of a large number of femto cells by an operator.

Thank you for your consideration and please let us know if you have any questions about our proposed requirements.

Sincerely,

Ron Resnick
President and Chairman of the Board,
WiMAX Forum

CC: Asan Khan, Vice Chair, WiMAX Forum Service Provider Working Group.