IEEE 802.21 Working Group on Media Independent Handovers
http://ieee802.org/21

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To: Gregory Schumacher, 3GPP TSG SA Liaison Contact

Dear Mr. Schumacher:

Thank you for your recent liaison statement, SP-070249, on "Mobility inter-working between 3GPP and WiMAX systems" addressed to the IEEE 802.16 WG. The IEEE 802.16 Working Group has referred this liaison to the IEEE 802.21 Working Group which deals with Media Independent Handover aspects within IEEE 802 and we are pleased to respond.

There is significant interest in IEEE in inter-working between IEEE 802 access technologies and 3GPP. The IEEE 802 LAN/MAN Standards Committee has adopted a media independent approach in this regard and the IEEE 802.21 Working Group is standardizing an inter-technology handover solution between different IEEE 802 technologies (such as 802.16) and external systems such as 3GPP.

With regard to your specific questions please refer to the following:

1) Q:If known, with which of the 3GPP radio access systems (e.g. LTE, WCDMA, TDS-CDMA, GSM/GPRS/EDGE) is mobility inter-working required?

A: As mentioned in the response from the 802.16 Working Group, 802.16 desires to inter-work with all 3GPP radio access system. Inter-working, however, is envisioned to occur above the access layer using 802.21 mechanisms. As the 802.21 Working Group's name (Media Independent Handover) implies, from inception 802.21 has been designed to be access media agnostic and is capable of supporting interworking between all 3GPP and IEEE 802 air interfaces.

2) Q: If known, with which of the WiMAX radio access systems is mobility interworking with 3GPP radio access systems required?

A: Please refer to the response from the 802.16WG.

3) Q: Is there a preference for handover direction or is the requirement for equal performance in both directions (i.e. bidirectional handover)?

A: Please refer to the response from the 802.16WG.

4) Q: If available, are you able to provide an expected timeline for completion of this activity from IEEE 802.16 perspective?

A: The IEEE 802.21 standard is expected to be entering IEEE Sponsor Ballot shortly and completed by end of 2007..

5) Q: Is tight coupling with 3GPP systems required (e.g. mobility based on approaches transparent to the UE such as GTP or PMIP, because the multimode 3GPP/ WiMAX technology terminal to be used in the intersystem operation is expected to be single radio), or is a loosely coupled approach to intersystem mobility sufficient?

A: The handover solution developed by IEEE 802.21 is capable of supporting both tight and loose coupling.   As such, we have no particular preference for a particular type of coupling and would be pleased to work with 3GPP on optimizing either approach.

6) Q: What is the expected interruption time for handover between the technologies?

A: For intra-technology handovers, IEEE 802.21 believes that the expected interruption time should not exceed [100 ms] for real time services. It is desirable to keep the handover interruption time for inter-technology handovers at a par with the time required for intra-technology handovers in order to satisfy service continuity requirements.

IEEE 802.21 would like to see support for 3GPP inter-working scenario 4 (service continuity with brief interruptions) and scenario 5 (seamless services, with minimum data loss and break time during switch) between WiMAX and 3GPP systems. The 802.21 Working Group will continue to work with the 802.16 Working Group and other relevant forums on this issue. We kindly request that 3GPP keep both the 802.21 Working Group and the 802.16 Working Group informed of any progress on this issue within 3GPP.

Sincerely,

Vivek Gupta
Chair, IEEE 802.21 Working Group

cc: Roger.B.Marks, Chair, IEEE 802.16 Working Group
       Ron Resnick, President, WiMAX Forum
       Paul Nikolich, Chair, IEEE 802 Executive Committee