Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**HO Overview Section Cleanup 1 – HO Process Overview Section**
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Re:	Response to IEEE 802.16e-04/06 (Call for Contributions on IEEE 802.16e/D1)
Abstract	HO Overview Section Cleanup 1 – HO Process Overview Section
Purpose	Correct overview section flow and language in HO Overview Section
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HO Overview Section Cleanup 1

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Problem:
As currently defined, mechanics for hand-over are incomplete or poorly defined. Elements are out of order.

Remedy:
Revise hand-over process overview to more logical format and increase language clarity.

Remedy 1:

*[Modify **1.4.1.2.2 HO process**, page 9,lines 3-24, replace with; relocate normative text for section to section **6.4 Data/Control Plane**; editor will make appropriate allocation of numbering for subsection:]*

1.4.1.2.2 HO Process

The HO process in which an MSS migrates from the air-interface provided by one BS to the air-interface provided by another BS is defined in section **6.4.??.**

*[Move **1.4.1.2.2 HO process**, page 9,lines 3-24, relocate normative text for section to section **6.4 Data/Control Plane**; editor will make appropriate allocation of numbering (??) for subsection:]*

6.4.?? HO Process

The section defines the HO process in which an MSS migrates from the air-interface provided by one BS to the air-interface provided by another BS. The HO process consists of the stages ~~listed below (not necessarily in the order listed)~~:

Cell Reselection — MSS may use Neighbor BS information acquired from a decoded MOB_NBR-ADV message, or may make independent decision, to schedule scanning intervals or sleep-intervals to scan, and possibly range, Neighbor BS for the purpose of evaluating MSS interest in hand-over to potential Target BS. The Cell Reselection process need not occur in conjunction with any specific, contemplated HO Decision.

~~— HO initiation, the decision to start the process is taken~~

HO Decision & Initiation — a hand-over begins with a decision for an MSS to hand-over its air interface, service flow, and network attachment from a Serving BS to a Target BS. The decision may originate either at the MSS, the Serving BS, or the network manager. The HO Decision consummates with a notification of MSS intent to hand-over through MOB_xxxHO-REQ.

Target BS Scanning — MSS shall scan Target BS for downlink channel & synchronization and uplink channel & synchronization. If MSS had previously decoded a MOB_NBR-ADV message including Target BS ID, Physical Frequency, DCD and UCD, then the scanning and synchronization process may be shortened. If the Target BS had previously received HO notification from Serving BS over the backbone (see section Backbone network HO procedures), then Target BS may place a non-contention based Fast_UL_ranging_IE MSS Initial Ranging opportunity in the UL-MAP. MSS shall scan Target

BS for UL-MAP that includes either a contention or non-contention based MSS Initial Ranging opportunity.

~~— Network re-entry in Target BS, where the MSS re-enters the network using a fast network entry procedure. After network re-entry, service flows belonging to the MSS are re-associated with newly established connections. QoS parameters of service flows (AdmittedQoSParamSet) may be different from AuthorizedQoSParamSet, based on the availability of resources in the Target BS.~~

Network Re-entry — MSS and Target BS shall conduct Ranging per 6.2.9.5 to begin network re-entry. If MSS RNG-REQ includes an unexpired Serving BS ID and Target BS had not previously received MSS information over the backbone (see section Backbone network HO procedures), then Target BS may make an MSS information request of Serving BS over the backbone network and Serving BS may respond. Regardless of having received MSS information from Serving BS, Target BS may request MSS information from an Authorizing Station via the backbone network. Network re-entry proceeds per 6.2.9.5 except as may be shortened by Target BS possession of MSS information obtained from Serving BS over the backbone network. Network re-entry process completes with establishment of MSS normal operations.

~~— Termination of service with the Serving BS, where all connections belonging to the MSS are terminated, and the context associated with them (i.e. information in queues, ARQ state-machine, counters, timers, etc.) is discarded or forwarded to the Target BS.~~

~~The Serving BS may terminate the service with the MSS upon receiving hand-over indication from the MSS, or it may maintain the service with the MSS until receiving network entry indication from the Target BS.~~

Termination of Service — The final step in hand-over is any termination of MSS services with previous Serving BS. Termination of Service is defined as Serving BS termination of all connections belonging to the MSS and the context associated with them (i.e. information in queues, ARQ state-machine, counters, timers, etc…, is discarded).

HO Cancellation — an MSS may cancel a pending HO at any time

The HO process, and its similarity to the initial network entry process, is depicted in Figure 0f.