Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Amendment to section 14.2.5.2.1.1**
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Re:	
Abstract	Additional Hand over primitives
Purpose	Adoption
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Add an HO Initiation and Continue Primitive

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Abstract

The 802.16g draft is missing the trigger for Mobile Initiated Handover. When the NCMS at the MS decides to initiate a handover (as opposed to HO-Start) with the Serving BS it informs the 802.16 MS entity to send a MOB_MSHO-REQ listing the candidate BS for an upcoming HO-Start or HO-Cancel.

14.2.5.2.1 C-HO-REQ

This primitive is used by an 802.16 entity or NCMS to trigger a handover procedure. The Action Type included in this primitive defines the type of handover procedure to be performed. The possible Action Types for this primitive are listed in Table below:

Action Type	Description
HO-Serving	Handover procedure between current serving BS and NCMS.
HO-Target	Handover procedure between target BS and NCMS
HO-Scan	Neighbor BS scanning procedure
HO-Initiate	Handover procedure initiated by the MS
HO-Continue	Handover procedure when an MS receives MOB_BSHO_RSP

14.2.5.2.1.4 C-HO-REQ (Action_Type==HO-Initiate)

Function:

This primitive is used by the Mobility Management Services entity in the NCMS at the MS side to indicate the initiation of the HO process. In case of SHO/FBSS, it can be used to update Anchor BS or to add a new Active BS to the current Active set. The NCMS in the MS can use this primitive to inform the 802.16 MS entity to initiate the HO process and inform the serving BS of all the candidate BSs for HO as seen by the MS.

Semantics of the service primitive:

The following parameters are included in this primitive.

C-HO-REQ
(
Operation_Type(Action),
Action_Type(HO-Initiate),
Destination(MS),
Attribute _list:
Serving BSID
MS MAC Address,
HO Type,
Mode,
Number of candidate target BSs,
List of candidate target BSs,
Service flow information,
CS parameter information
)

Serving BSID
Base station unique identifier (same number as that broadcasted on the DL-MAP message).

MS MAC Address
48-bit unique identifier used by MS

HO Type
Indication of HO types; HHO or SHO/FBSS

Mode
Various modes in Anchor BS update or Active Set Update

Number of candidate target BSs
Number of BSs which are recommended by the MS as candidate target BSs. The information of each recommended BS is included in the list of candidate target BSs.

List of candidate target BSs
This is the list of recommended target BSs by the Mobility Management Services entity. The BSs in the list may be the candidate target BSs for HHO or an Anchor BS or Active BSs for SHO/FBSS according to the value of HO type and Mode MS Access Information, Newly Allocation Information, and HO Quality Information can be included in this list.

Service flow information
Information of all the service flows that have been established between the MS and the serving BS.

CS parameter information
Approved IP filter rules of a service flow such as packet classification rule and IPv6 flow label.

When generated:

NCMS to 802.16 MS entity:
This primitive is used by the Mobility Management Services entity in NCMS to inform the 802.16 MS entity to initiate a handover.

Effect of receipt:

802.16 MS entity:
The MS generates MOB_MSHO-REQ MAC message to the serving BS providing it with all the candidate BSs.

14.2.5.2.1.5 C-HO-REQ (Action_Type==HO-Continue)

Function:

This primitive is used by the MS to inform the Mobility Management Services entity in the NCMS MS about the arrival of a MOB-BSHO_RSP MAC message in response to the previously generated MOB_MSHO-REQ message and the pruned down list of the candidate BSs selected by the Mobility Management in the NCMS for the upcoming actual HO phase.

Semantics of the service primitive:

The following parameters are included in this primitive.

C-HO-REQ
(
Operation_Type(Action)
Action_Type(HO-Continue),
Destination(NCMS),
Attribute _list:
Serving BSID,
MS MAC Address,
HO Type,
Mode,
Number of candidate target BSs,
List of candidate target BSs,
Service flow information,
HO quality information,
CS parameter information
)

Serving BSID
Base station unique identifier (same number as that broadcasted on the DL-MAP message).

MS MAC Address
48-bit unique identifier used by MS

HO Type
Indication of HO types; HHO or SHO/FBSS

Mode
Various modes in Anchor BS update or Active Set Update

Number of candidate target BSs
Number of BSs which are recommended by the MS as candidate target BSs. The information of each recommended BS is included in the list of candidate target BSs.

List of candidate target BSs
This is the list of recommended target BSs by the Mobility Management Services entity. The BSs in the list may be the candidate target BSs for HHO or an Anchor BS or Active BSs for SHO/FBSS according to the value of HO type and Mode MS Access Information, Newly Allocation Information, and HO Quality Information can be included in this list.

Service flow information
Information of all the service flows that have been established between the MS and the serving BS.

HO quality information
Information related with quality of HO procedure; Service Level Prediction, HO Optimization Flag, Arrival Time Difference, etc.

CS parameter information
Approved IP filter rules of a service flow such as packet classification rule and IPv6 flow label.

When generated:

802.16 MS entity to NCMS:

This primitive is used by the 802.16 MS entity to inform the Mobility Management Services entity about the arrival of a response to the previously generated C-HO_Req (Initiate) primitive.

Effect of receipt:

NCMS at the MS:

The NCMS learns about the pruned down list of the potential candidates BS to select as the final candidate.

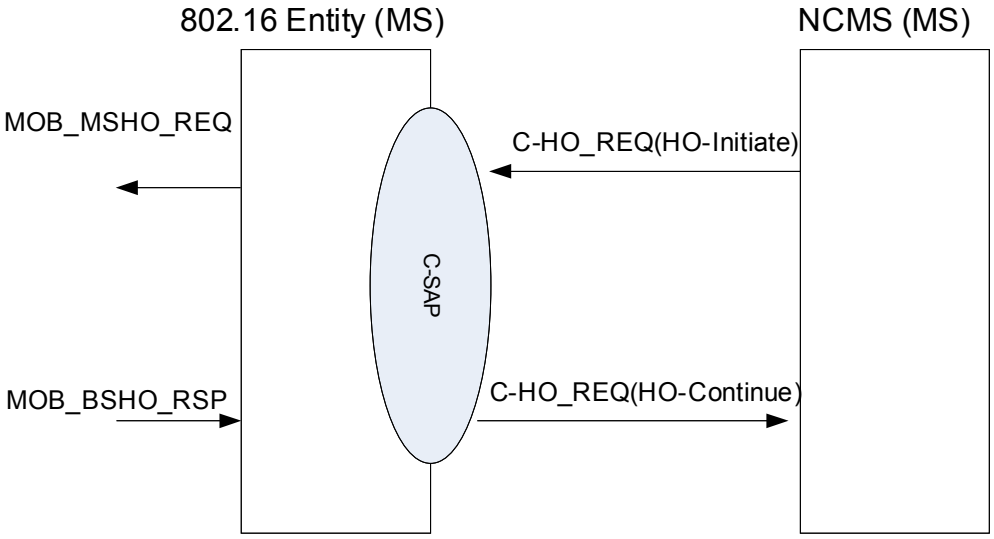

Figure xxx – Primitive flow between NCMS at the MS and the MS when HO is initiated