Project	**IEEE 802.16 Broadband Wireless Access Working Group** <http://ieee802.org/16>
Title	**Handover with Relays (Section 15.6.2.5.2, Section 15.6.2.5.3)**
Date Submitted	**2009-11-06**
Source(s)	Gauri Joshi, Srinadh B, Abhay Karandikar, Prateek Kapadia TICET, IIT Bombay Voice: +91-9820347269 E-mail: karandi@ieee.org
Re:	IEEE 802.16m-09/0057: Letter Ballot Recirc #30a Target Topic: IEEE P802.16m/D2: Section 15.6.2.5
Abstract	An ABS-anchored inter-ARS handover process is proposed
Purpose	For discussion and adoption by TGm in the 802.16m amendment
Notice	*This document does not represent the agreed views of the IEEE 802.16 Working Group or any of its subgroups*. It represents only the views of the participants listed in the "Source(s)" field above. It is offered as a basis for discussion. It is not binding on the contributor(s), who reserve(s) the right to add, amend or withdraw material contained herein.
Release	
Patent Policy	

Handover with Relays

Gauri Joshi, Srinadh B, Abhay Karandikar, Prateek Kapadia
TICET, IIT Bombay, India

INTRODUCTION

We propose the text for Section 15.6.2.5 of P802.16m/D2 on AMS scanning and handover process with ARS. The detailed inter-ABS handover process has been defined in Section 15.2.6. We present modifications to this text for the purpose of supporting handover with ARSs.

HANDOVER SCHEME

Since the ARSs are not directly connected to a backbone network, they have to negotiate and synchronize with the handover target through the super ordinate ABS. Thus, it is efficient if ABS controls the handover process. ABS initiates all the HO decision and control messages. The ARS may modify and forward the control messages between AMS and ABS. When requested, the ARS will provide the ABS with information about the AMS, necessary for handover.

ABS should control the allocation of the scanning intervals for all ARSs and AMSs. ARS cannot allocate the scanning intervals because it does not have information of when the neighboring ARSs are scanning the neighborhood. Since in TDD deployments ARSs operate in TTR mode, ARSs will not transmit pilot signals when they are performing scanning. If AMS scanning interval and ARS scanning interval overlaps then AMS will not detect the ARS pilot signal in order to estimate the channel between them, for handover. So to prevent this problem, ABS should centrally schedule the scanning intervals for all ARSs and AMSs.

PROPOSED TEXT

----------Start of text (Page 566, Line 14)----------

15.6.2.5.2 AMS scanning of neighbor ABS/ARSs

The scanning procedure is as described in Section 15.2.6.1.2 with the following modifications when the AMS is under the control of an ARS.

The ABS will control the allocation of scanning intervals to the AMS. It will also decide the target ARS/ABSs to be scanned and the trigger parameter values in the AAI_SCD and AAI_SCN-RSP messages. These messages are sent to ARS which forwards them to the AMS.

The ARS may modify the target ABS/ARS list AAI_SCN-RSP message to suit its service area and send this to the AMS, or forward the message received from the ABS without modifying it. An AMS measures the selected scanning candidate ABS/ARSs and reports the measurement result back to the serving ARS. The serving ARS will forward these measurements to the ABS.

15.6.2.5.3 AMS Handover process

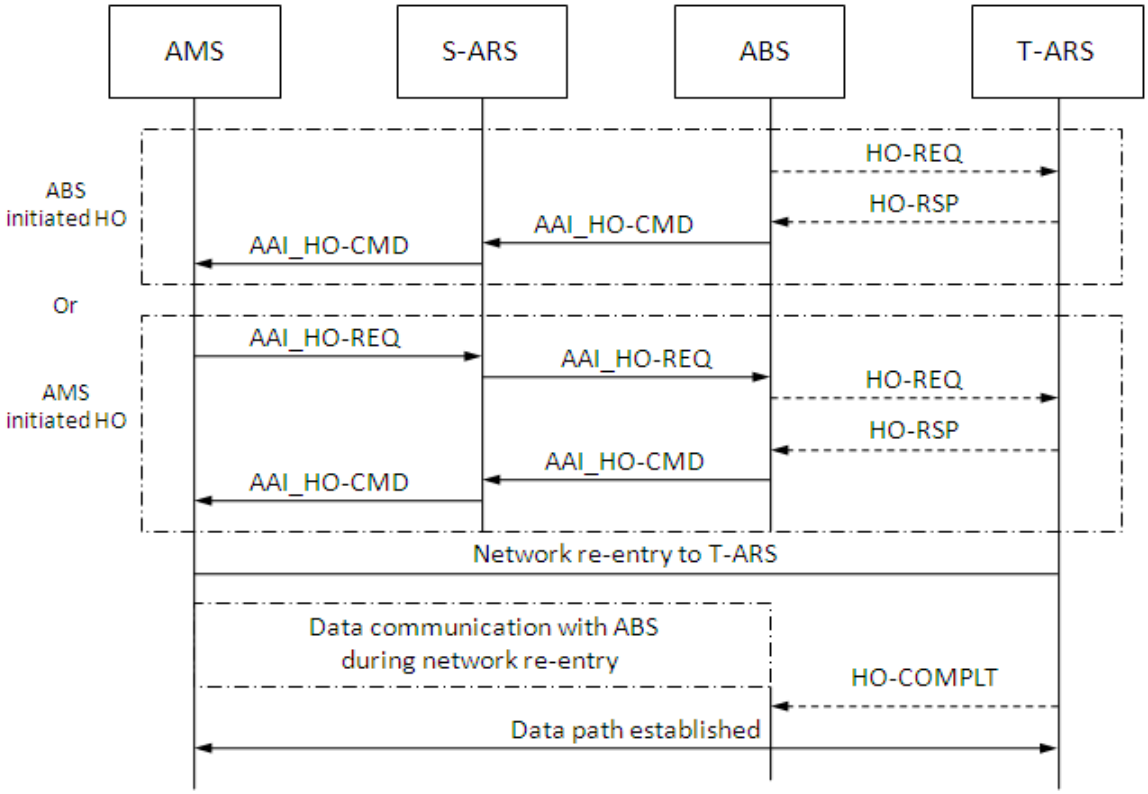

Figure xxx— ARS to ARS intra-cell HO Procedure

The handover process for inter-ARS, intra-cell handover is similar to the process defined in Section 15.2.6.3. The only modifications are:

1. The S-ARS relays AAI_HO-REQ and AAI_HO-CMD between AMS and ABS.

2. The HO-COMPLT, HO-REQ and HO-RSP messages are exchanged by the ABS and T-ARS.

----------End of text----------