
Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >
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Title	Location Management for supporting IDLE mode in IEEE P802.16e
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Re:	Call for inputs for the Handoff Ad-hoc group
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Abstract	This contribution describes Location Management for supporting IDLE mode in IEEE P802.16e/D2-2004.
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Purpose	Handoff Ad Hoc draft proposal for the IEEE802.16e group.
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Location Management for supporting IDLE mode in IEEE P802.16e

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1. Statement of the problem

According to the current IEEE P802.16e/D2-2004, the BSs are divided into logical groups called paging groups, of which the purpose is to offer a contiguous coverage region in which the MSS in IDLE mode does not need to transmit in the UL. The size of paging group has the trade-off between the paging overhead of system and power saving of MSS: if the size is large, the paging overhead is heavy and the power consumption is low; if the size is small, the paging overhead is light and the power consumption is high. This contribution focuses on reducing the paging overhead of system while maximizing the power saving of MSS in IDLE mode. In order to reduce the paging overhead, the size of paging group should be set to small as much as possible, which causes the MSS to frequently cross a paging group boundary and resultantly makes the meager power saving due to the frequent network re-entry.

In this contribution, we propose the light and secure location update procedures in IDLE mode. While a MSS in IDLE mode crosses the boundary of a paging group, the MSS shall perform location update operation instead of doing network re-entry. This location update procedure should be designed in order to protect the fake location update from the malicious user.

2. Summary of solution

2.1 IDLE authentication information

A IDLE authentication information is an authentication key used by a MSS in IDLE mode in order to support secure location update. Upon transition into IDLE mode, each MSS in IDLE mode is allocated a IDLE authentication key by a paging and location management (PLM) server, which may be co-located in the current serving BS or ASA server.

Proposed Text Change

TBA