Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	PKM optimization flags refinements for HO
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Re:	IEEE P802.16e/D6
Abstract	Separate the PKM skip bit in HO optimization to authentication SKIP and TEK exchange SKIP
Purpose	Allow flexibility of HO optimization
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Add skip-TEK-exchange bit to HO optimization

Avishay Shraga, Yigal Eliaspur

1. Motivation

This PKM stage is composed of 2 major phases:

- The authentication phase (EAP /Mutual Authentication)
- The TEK creation phase

The standard today gives the BS a way to inform the SS that the security phase can be skipped. However it does not specify which sub-phase. There are situations in which authentication is not needed but TEKs recreation should to be done.

2. Proposed solution

The proposal adds a bit to the HO process optimization Field to separate the skip bit of the authentication and the key-exchange.

3. Changes summary

]
[Update all messages containing the HO optimization field (exclude RNG-RSP) with the bit changes]

Syntax	Size	notes

HO Process Optimization	8 bits	HO Process Optimization is provided as part of this message is indicative only. HO process requirements may change at time of actual HO. For each Bit location, a value of '0' indicates the associated reentry management messages shall be required, a value of '1' indicates the reentry management message may be omitted. Regardless of the HO Process Optimization TLV settings, the target BS may send unsolicited SBC-RSP and/ or REG-RSP management messages Bit #0: Omit SBC-REQ/RSP management messages during re-entry processing Bit #1: Omit ~~PKM-REQ/RSP management message~~ PKM Authentication phase except TEK phase during current re-entry processing Bit #2: Omit PKM TEK creation phase during re-entry processing Bit #~~2~~3: Omit REG-REQ/RSP management during current re-entry processing Bit #~~3~~4: Omit Network Address Acquisition management messages during current reentry processing Bit #~~4~~5: Omit Time of Day Acquisition management messages during current reentry processing Bit #~~5~~6: Omit TFTP management messages during current re-entry processing Bit #~~6~~7: Full service and operational state transfer or sharing between serving BS and target BS (ARQ, timers, counters, MAC state machines, etc…) ~~Bit #7: reserved~~

[Update Table 367a—RNG-RSP message encodings as follows]

Syntax	Size	notes

HO Process Optimization	8 bits	For each Bit location, a value of '0' indicates the associated re-entry management messages shall be required, a value of '1' indicates the re-entry management message may be omitted. Bit #0: Omit SBC-REQ management messages during current re-entry processing Bit #1: Omit ~~PKM-REQ management message~~ PKM Authentication phase except TEK phase during current re-entry processing Bit #2: Omit PKM TEK creation phase during re-entry processing Bit #~~2~~3: Omit REG-REQ management during current re-entry processing ….. Bit #~~9~~10 : BS shall send an unsolicited REG-RSP management messages with updated capabilities information during current re-entry processingBit #~~10~~11-15 : *Reserved*