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| Project | IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 > | |
| Title | Correct Figure for TEK management in BS and MS | |
| Date Submitted | 2005-07-19 | |
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| Re: | Response to Sponsor Ballot on IEEE802.16e/D8 document | |
| Abstract | This contribution corrects the figure for TEK management in BS and MS. | |
| Purpose | To incorporate the figure changes proposed in this contribution into the 802.16e/D9 draft. | |
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Correct Figure for TEK management in BS and MS

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1. Problem Statements

IEEE 802.16-2004 describes TEK management as follows:

“Through operation of its TEK state machines, an SS shall request a new set of traffic keying material a configurable amount of time, the *TEK Grace Time* [see points (x) and (y) in Figure 134], **before the MS's latest TEK is scheduled to expire.**”

“TEK Refresh Timeout: The TEK refresh timer timed out. This timer event signals the TEK state machine to issue a new Key Request in order to refresh its keying material. The refresh timer is set to fire a configurable duration of time (*TEK Grace Time*) **before the expiration of the newer TEK the SS currently holds.** This is configured via the BS to occur after the scheduled expiration of the older of the two TEKs.”

However, Figure 134 of 802.16-2004 is incorrect, **as the current figure shows that an SS sends Key Request message to the BS when TEK0 Refresh Timer is fired [see points (x)]. Also, it shows that the BS receives Key Request message after TEK0 Lifetime expires. Therefore, SS and BS cannot synchronize TEKs. Figure 134 of 802.16-2004 needs correction so it can comply with the texts in IEEE 802.16-2004.**

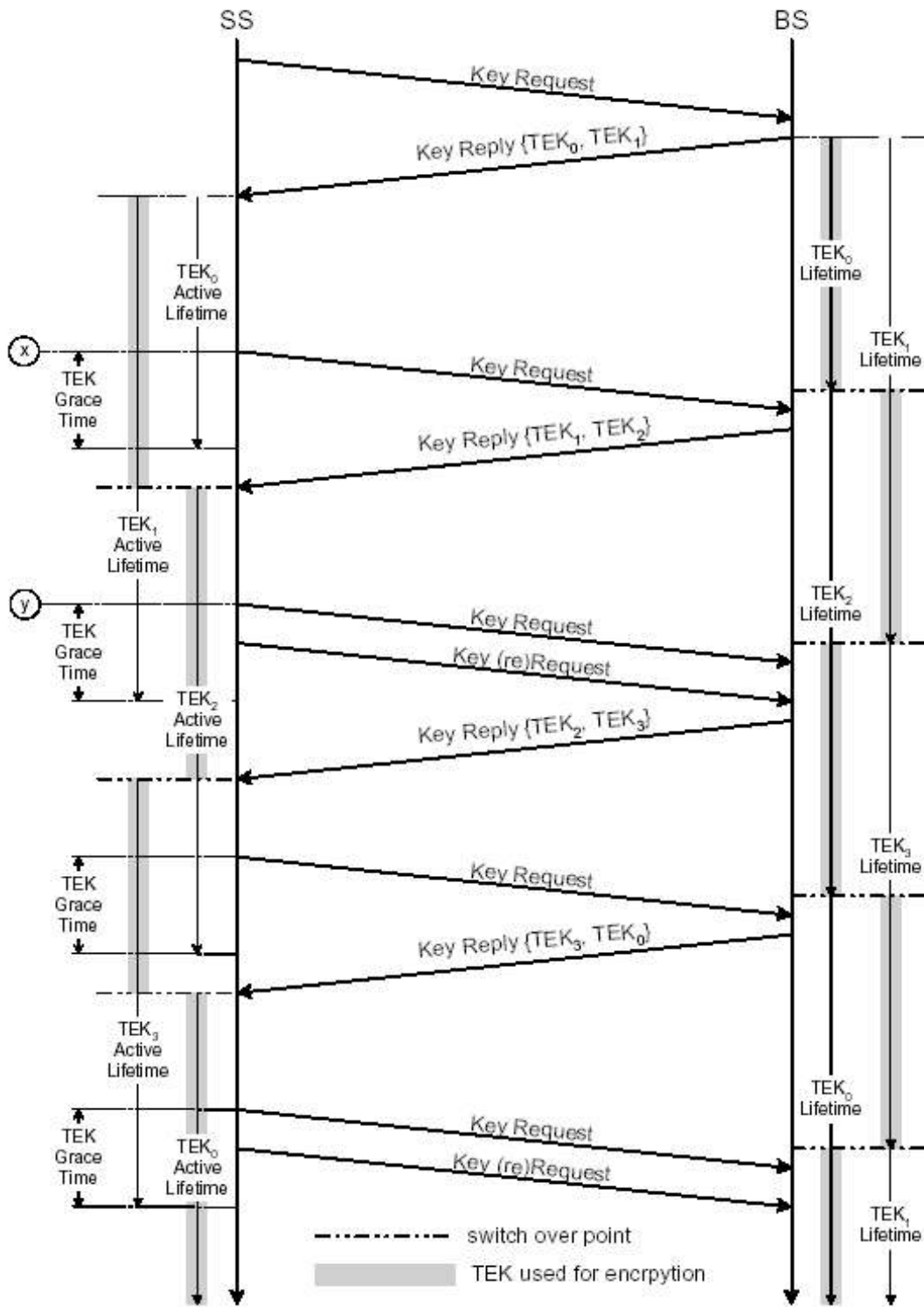


Figure 134—TEK management in BS and SS

2. Proposed Solution

We propose a correct figure in the below. In the proposed figure, an SS sends Key Request message to the BS when TEK1 Refresh Timer is fired [see points (x)] and the BS receive Key Request message before TEK1 Lifetime expires.

3. Specific Changes

[Insert the following changes in line 26, page 67 of 802.16d Cor1/D3 as indicated and include a new figure in the next page :]

7.4.1.5 BS usage of TEK

[Replace Figure 134 of 802.16-2004 with a new figure:]

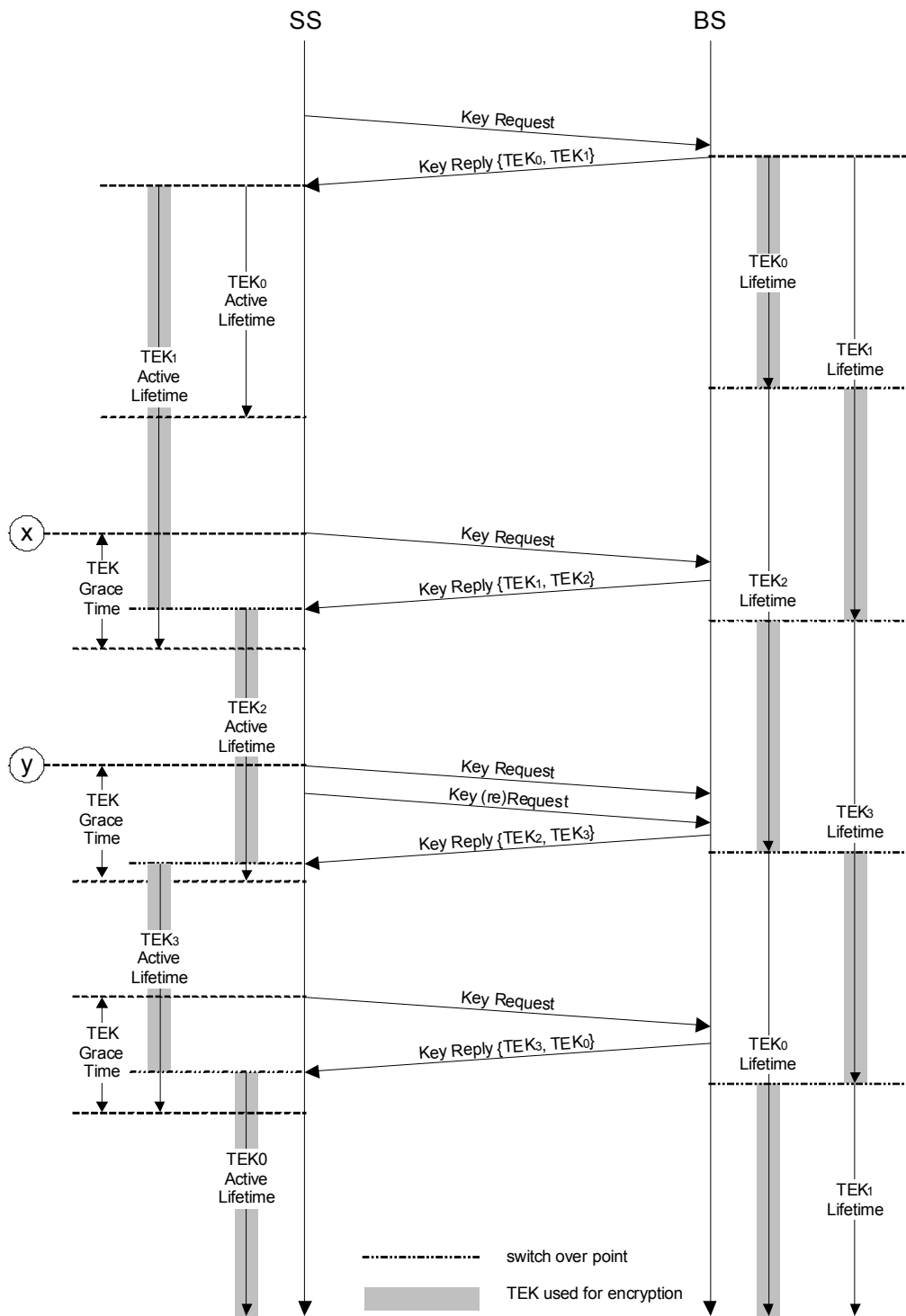


Figure 134 -TEK management in BS and SS

4. References

- [1] IEEE 802.16-2004 IEEE Standards for local and metropolitan area networks part 16: Air interface for fixed broadband wireless access systems
- [2] DOCSIS1.1 SP-BPI+I10-030730 Cable Television Laboratories Specification to describe MAC layer security services for DOCSIS® CMTS