IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)	
Title	Enhanced Beacon Related MAC Primitives	
Date Submitted	Dec., 2010	
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Re:		
Abstract	IEEE 802.15 Task Group TG4g Comment Resolution	
Purpose	To modify the primitives according to the modifications in the enhanced beacon and enhanced beacon request frame formats	
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Release	The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15.	

Text – General Idea of this document
Text – Editorial modifications from 10/872r4

****Not Part of the Draft Modification****

General Idea:
The purpose of this document is to modify the primitives in accordance to the changes made in EB/EBR frame formats.
Modifications are mainly addition of parameters to the existing primitives.
All specifications of new primitives (as in draft D2) has been removed.

The basic changes in this document:

1 MCPS-BEACON-NOTIFY.indication
- 1.1 To send MPM-related information contained in the EB to the upper layer

2 MLME-SCAN.request
- 2.1 To control the MPM-related scanning process including channels selected to be scanned

3 MLME-START.request
- 3.1 To control the transmission of outgoing EB

This document resolves the comments with CID as below:
78,80,81,82,83,84,85,86,87,88,89,90,92,145,285,286,287,288,289,290,291,292,293,
294,295,351,496,498,595,862,864,865,866,867,868,869,870,871,872,873,874,875,922,
1057,1071,1140

Instructions to the editors are given in ***Editorial Notes*** in red font.

Editorial note: Remove sub-clauses 7.1.5a, 7.1.11, 7.1.14.1 and all corresponding sub-sub-clauses. Replace with the following text.

Editorial note: Add 7.1.5.1 as the following

7.1.5.1 MCPS-BEACON-NOTIFY.indication

7.1.5.1.1 Semantics of the service primitive

Add additional parameters to primitive:

MCPS-BEACON-NOTIFY.indication
(
…
CoexSpecification
)

Add element in Table 54 as follows:

Table 54 – MLME-BEACON-NOTIFY.indication parameters

Name	**Type**	**Valid Range**	**Description**
…			
CoexSpecification	Sets of octets	See 7.2.2.4a.2	The Coex Specification contains the information on multi-PHY management (MPM)

Editorial note: Add 7.1.11.1 as the following

7.1.11.1 MLME-SCAN.request

7.1.11.1.1 Semantics of the service primitive

Add additional parameters to primitive:

MLME-SCAN.request

(

…

ScanDurationBPAN

ScanDurationNBPAN

MPMScanChannels

)

Add element in Table 67 as follows:

Table 67 – MLME-SCAN.request parameters

Name	**Type**	**Valid Range**	**Description**
…			
ScanDurationBPAN	Integer	0-14	The maximum time spent to scan for enhanced beacon of a beacon-enabled PAN in the channel is [*aBaseSuperframeDuration* * 2^n] symbols, where symbol refers to the symbol time in the current PHY, and *n* is a parameter to specify the scan duration.
ScanDurationNBPAN	Integer	0-16383	The maximum time spent to scan for enhanced beacon of a non-beacon-enabled PAN in the channel is [*aBaseSlotDuration* * *n*] symbols, where symbol refers to the symbol time in the current PHY, and *n* is a parameter to specify the scan duration
MPMScanChannels	Bitmap	*phyMaxSUNChannelSupported* + 1 bits	The specific channels where an enhanced beacon is transmitted or scanned for in a location where multiple PANs may be

			operating and it is possible that more than one PHY (MR-FSK, MR-OQPSK or MR-OFDM) is in use. This parameter allows the channels on which the enhanced beacon to be sent or scanned for to be defined. A bit is set (=1) for channel(s) where the enhanced beacon is to be sent or scanned for.

Editorial note: Add 7.1.14.1 as the following

7.1.14.1 MLME-START.request

7.1.14.1.1 Semantics of the service primitive

Add additional parameters to primitive:

MLME-START.request
(
…
AttributeID
EnhancedBeaconOrder
OffsetTimeSlot
NBPANEnhancedBeaconOrder
)

Add element in Table 108 as follows:

Table 108 – MLME-START.request parameters

Name	Type	Valid Range	Description
…			
AttributeID	Integer	-	Determines which IEs are sent in the EB. Otherwise set to zero.

EnhancedBeaconOrder	Integer	0-15	Indicates how often the EB is to be transmitted in a beacon-enabled PAN (*i.e. macBeaconOrder* < 15). A value of 15 indicates that no EB will be transmitted.
OffsetTimeSlot	Integer	1-15	Indicates the time difference between the EB and the preceding periodic beacon.
NBPANEnhancedBeaconOrder	Integer	0-16384	Indicates how often the EB is to be transmitted in a non-beacon-enabled PAN (*i.e. macBeaconOrder* = 15). A value of 16384 indicates that no EB will be transmitted.

7.1.14.1.3 Effect of Receipt

Insert the following new paragraph before the last paragraph of 7.1.14.1.3:

In a beacon-enabled PAN (BeaconOrder<15), the MLME examines the OffsetTimeOrder parameter to determine the time to begin transmitting the EB following the periodic beacon. EB intervals are determined by the value of EnhancedBeaconOrder.

In a non-beacon-enabled PAN (BeaconOrder=15), the MLME examines the NBPANEnhancedBeaconOrder parameter to determine the interval between EBs.

See 7.5.1.2a for the description of enhanced beacon timing.