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|---|---|
| Title | **The Template for the "PHY Service" sub-clause** |
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| Re: | The Template for the "PHY Service " sub-clause |
| Abstract | The Template proposed for an additional sub-clause for the PHY clauses describing different PHYs communicating to 802.16 MAC. |
| Purpose | Illustrate the document "Proposal on changes in the 802.16 MAC Reference Model and PHY Service definition" |
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# The Template for the  PHY Service   sub-clause

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## The Goal of this Document

This document provides a template for the sub-clause, which should be added to any PHY clause. The name of the specific PHY layer (e.g.  802.16.1 Mode A ) appears in the text as ***PHY_NAME.***

<<< Beginning of the template >>>>

## 1.  The [PHY_NAME] PHY Service Provided to MAC

### 1.1.   Scope of this Subclause

This subclause describes the physical layer services provided to the 802.16 MAC by the ***PHY_NAME***  system. The PHY layer consists of two protocol functions:

a)  A physical layer convergence function, which adapts the capabilities of the physical medium dependent system to the Physical Layer service. This function is supported by the PHY Layer Convergence Procedure (PLCP) which defines a method of mapping the 802.16 PHY sublayer Service Data Units (PSDU) into a framing format suitable for sending and receiving user data and management information between two or more stations using the associated physical medium dependent system.

<<< This includes also TC sublayer functions>>>

b)  A Physical Medium Dependent (PMD) system whose function defines the characteristics and method of transmitting and receiving data through a wireless medium between two stations.

### 1.2.   [PHY_NAME] Physical Layer Functions

The <<<PMD Name>>> architecture is depicted in the reference model shown in XXX.The ***PHY_NAME*** physical layer contains three functional entities: the physical medium dependent function, the physical layer convergence function  and the layer management function. Each of these functions is described in detail in the following subclauses.

The <<<PMD Name>>> Physical Layer service is provided to the Medium Access Control through the physical layer service primitives described in paragraph X.XX
.

#### 1.2.1.  Physical Layer Convergence Procedure (??? TC ???) Sublayer

In order to allow the 802.16 MAC to operate with minimum dependence on the PMD sublayer, a physical layer convergence sublayer  <<<???>>> defined. This function simplifies the physical layer service interface to the 802.16 MAC services.

### 1.2.2. Physical medium dependent sublayer

The physical medium dependent sublayer provides a means to send and receive data between two or more stations. This subclause is concerned with the <<< frequency bands >>> using <<<PMD Name>>>

### 1.2.3. Physical Layer Management Entity (PLME)

The Physical LME performs management of the local Physical Layer Functions in conjunction with the MAC <<< MAC Management entity if present >>>

## 2. PPDU Structure

   <<< PHY Specific PPDU structure: preamble, PHY bursts etc.>>>

## 3. [PHY_NAME] MIB

### 3.1. [PHY_NAME] Service Parameter Lists

   <<< Contains the list of ALL PHY parameters, both constants and variables. Description of each variable includes the set of possible values. The following examples are or the 802.16.1 PHY >>>

Example #1 of MIB parameter: table of the PHY channel attributes in effect

| Channel ID ==> | 1 | 2 | 3 | |
|---|---|---|---|---|
| Symbol Rate | | | | |
| Frequency | | | | |
| Preamble Pattern | | | | |
| Tx/Rx Gap | | | | |
| | | | | |

Example #2 of MIB parameter: table of the Burst profiles in effect

| UIUC → | 0000 | 0001 | 0010 | |
|---|---|---|---|---|
| Modulation Type | | | | |
| Differential Encoding | | | | |
| Preamble Length | | | | |
| Preamble Value Offset | | | | |
| | | | | |

The following paragraphs contain the lists of the parameters which are subsets of the whole PHY parameters set.

### 3.2. PHY Dependent MAC Parameters

<<< List PHY_PARAMVECTOR— the vector that contains all the PHY-dependent MAC parameters, like the duration of mini-slot >>>

### 3.3.  PHY parameters related to all the channels in use

<<< CH_PARAMVECTOR >>>

### 3.4.  PHY Parameters Transferred in UCD Message

UCD_VECTOR — set of the PHY parameters transferred in UCD message (e.g. central frequency)

### 3.5.  PHY Parameters Transferred in DCD Message

<<<DCD_VECTOR>>>


### 3.6.  Parameters Related to the Transmit of the whole PPDU

PPDU_TXVECTOR — set of PHY parameters related to the transmit of the whole PPDU (like Tx Power and preamble s specification).


### 3.7.  PHY Parameters Related to the Transmit of the Burst

<<< BURST_TXVECTOR >>> — this is the vector of pairs
**{Burst Profile ID, Length}**
Where
**Burst Profile ID** — same as or similar to DIUC/UIUC
**Length** — length (bytes) of the data block to be transmitted with the modulation type etc. given by the Burst Profile ID


### 3.8.  Parameters Related to the Receive of the whole PPDU

PPDU_RXVECTOR — set of PHY parameters related to the receive of the whole PPDU


### 3.9.  PHY Parameters Related to the Transmit of the Burst

<<< >>>

### 3.10. PPDU Receive Status Parameters

 <<< PPDU_RXSTATUS — set of PHY parameters (like RSSI) measured during the reception of a PPDU >>>

### 3.11. Ranging Related Parameters

<<< RNGREQ_VEC — set of PHY parameters used in the ranging request message >>>
<<< RNGRSP_VEC — set of PHY parameters used in the ranging response message >>>

# 4. Implementation of the PHY Service Primitives in the [PHY_NAME]

## 4.1.   PHY -TXSTART.request

<<< Implementation description >>>

## 4.2.   PHY-TXSTART.confirm

<<< Implementation description >>>

## 4.3.   PHY-TXEND.indication

<<< Implementation description >>>
.
<<< So on for all the primitives >>>