IEEE P802.11 Wireless LANs

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| Proposed text for TGbb MAC supporting the mandatory PHY | | | | |
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Abstract

This document provides text to be incorporated in the TGbb draft for the MAC supporting the common PHY mode.

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# 1 MAC sublayer functional description

## 1.1 Introduction

This clause defines the light communications (LC) MAC. The subclause (1.2 MAC for the Common Mode PHY) describes the minimum requirements of the MAC that supports the common mode PHY. For other PHY modes, optional MAC functions may be introduced in future.

## 1.2 MAC for the Common Mode PHY

### 1.2.1 Introduction

The MAC is meant to support the common mode PHY defined in doc.11-20/0571r3. On top of the MAC functions for IEEE 802.11a, this MAC enhances the security by adopting more secure encryption protocol CCMP while with TKIP and GCMP as optional encryption protocols.

### 1.2.2 DCF

The DCF subclause shall be the same as in section 10.3.

### 1.2.3 Fragmentation

The Fragmentation subclause shall be the same as in section 10.5.

### 1.2.4 Defragmentation

The Defragmentation subclause shall be the same as in section 10.6.

### 1.2.5 Multirate support

The Multirate support shall be the same as in section 10.7.

### 1.2.6 Logical service interfaces

The subclause shall be based on subsection 4.4. PCPS (see section 4.4.3) is not related to this standard.

#### 1.2.6.1 General

The subclause shall be the same as in section 4.4.1 except: 1) removing PCPS related text; 2) the services of DFS, TPC, Radio measurement and DSE are removed.

#### 1.2.6.2 SS

The subclause shall be the same as in section 4.4.2 except the services of DFS, TPC, Radio measurement and DSE are removed.

#### 1.2.6.3 DSS

The subclause shall be the same as in section 4.4.4 except the services of DSE and Interworking with the DS (mesh facility only) are removed.

### 1.2.7 Security

#### 1.2.7.1 Authentication service

The subclause shall be the same as in section 8.1 in Std. 802.11-1997.

#### 1.2.7.2 Security methods

Three security methods are adpoted in this standard. The Counter mode (CTR) with Cipher-Block Chaining Message Authentication Code (CBC-MAC) protocol, namely CCMP is made mandatory. The less secure method Temporal key integrity protocol (TKIP) is optional algorithm. The newer security method Galois/Counter Mode Protocol (GCMP) is deemed optional in case that not all the devices in the network could support the algorithm. The users also have the option to adopt open connection instead of using any encryption protocol mentioned in this subclause.

#### 1.2.7.2.1 CCMP

The subclause shall be the same as in section 12.5.3.

#### 1.2.7.2.2 TKIP

The subclause shall be the same as in section 12.5.2.

#### 1.2.7.2.3 GCMP

The subclause shall be the same as in section 12.5.5.

### 1.2.8 Power management

#### 1.2.8.1 Power management in a non-DMG infrastructure network

#### 1.2.8.1.1 STA power management modes

The subclause shall be the same as in section 11.2.3.2.

#### 1.2.8.1.2 AP TIM transmissions

The subclause shall be the same as in section 11.2.3.3.

#### 1.2.8.1.3 TIM types

The subclause shall be the same as in section 11.2.3.4.

#### 1.2.8.1.4 AP operation during the CP

The subclause shall be the same as in section 11.2.3.6, excluding bullets d), h), i), and j).

#### 1.2.8.1.5 AP operation during the CFP

The subclause shall be the same as in section 11.2.3.7.

#### 1.2.8.1.6 Receive operation for STAs in PS mode during the CP

The subclause shall be the same as in section 11.2.3.8.

#### 1.2.8.1.7 Receive operation for STAs in PS mode during the CFP

The subclause shall be the same as in section 11.2.3.9.

#### 1.2.8.1.8 STAs operating in the Avtive mode

The subclause shall be the same as in section 11.2.3.11.

#### 1.2.8.1.9 AP aging function

The subclause shall be the same as in section 11.2.3.12.

#### 1.2.8.2 Power management in an IBSS

#### 1.2.8.2.1 Basic approach

The subclause shall be the same as in section 11.2.4.2.

#### 1.2.8.2.2 Initialization of power management within an IBSS

The subclause shall be the same as in section 11.2.4.3.

#### 1.2.8.2.3 STA power state transitions

The subclause shall be the same as in section 11.2.4.4.

#### 1.2.8.2.4 ATIM and frame transmission

The subclause shall be the same as in section 11.2.8 excluding bullet l).