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

The subclause shall be the same as in section 11.2.3, excluding the following difference:

* bullets d), h), i), and j) in 11.2.3.6 do not apply to this standard
* 11.2.3.13 to 11.2.3.19 do not apply to this standard

#### 1.2.8.2 Power management in an IBSS

The subclause shall be the same as in section 11.2.4.

#### 1.2.8.3 ATIM and frame transmission

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

### 1.2.9 Relayed CCA support

#### 1.2.9.1 STA side: additional check before accessing to the medium

A STA checks if there is relayed CCA session on the DL channel all the time. An ongoing relayed CCA session initiated by the AP means the medium is “CCA busy”. The STA marks the medium “busy” in the PHY-CCA indication if relayed CCA session presents. The STA will stop backoff procedure when the relayed CCA session is valid and defer to the end of the relayed CCA session.

#### 1.2.9.2 AP side: retransmission of received packet

When relayed CCA session starts, AP retransmits the received signals from the RX immediately, with a few nano seconds delay.