

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: D0 MAC proposal clarifications

Date Submitted: May 2016

Source: Dobroslav Tsonev, Nikola Serafimovski **Company:** pureLiFi Ltd.

Address: pureLiFi Ltd. ETTC, Max Born Crescent, Edinburgh, EH9 3BF, UK

Voice: +44-131-472-4704, **E-Mail:** dobroslav.tsonev@purelifi.com, nikola.serafimovski@purelifi.com

Re:

Abstract:

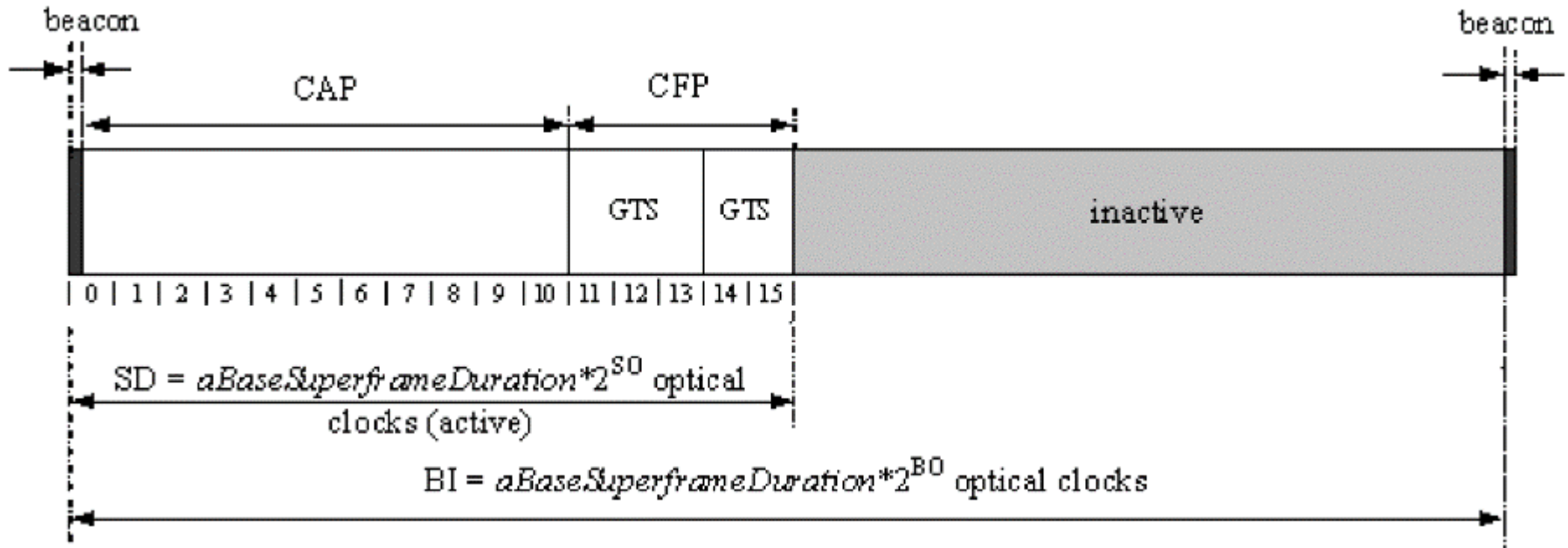
Purpose:

Notice: This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Release: The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15.

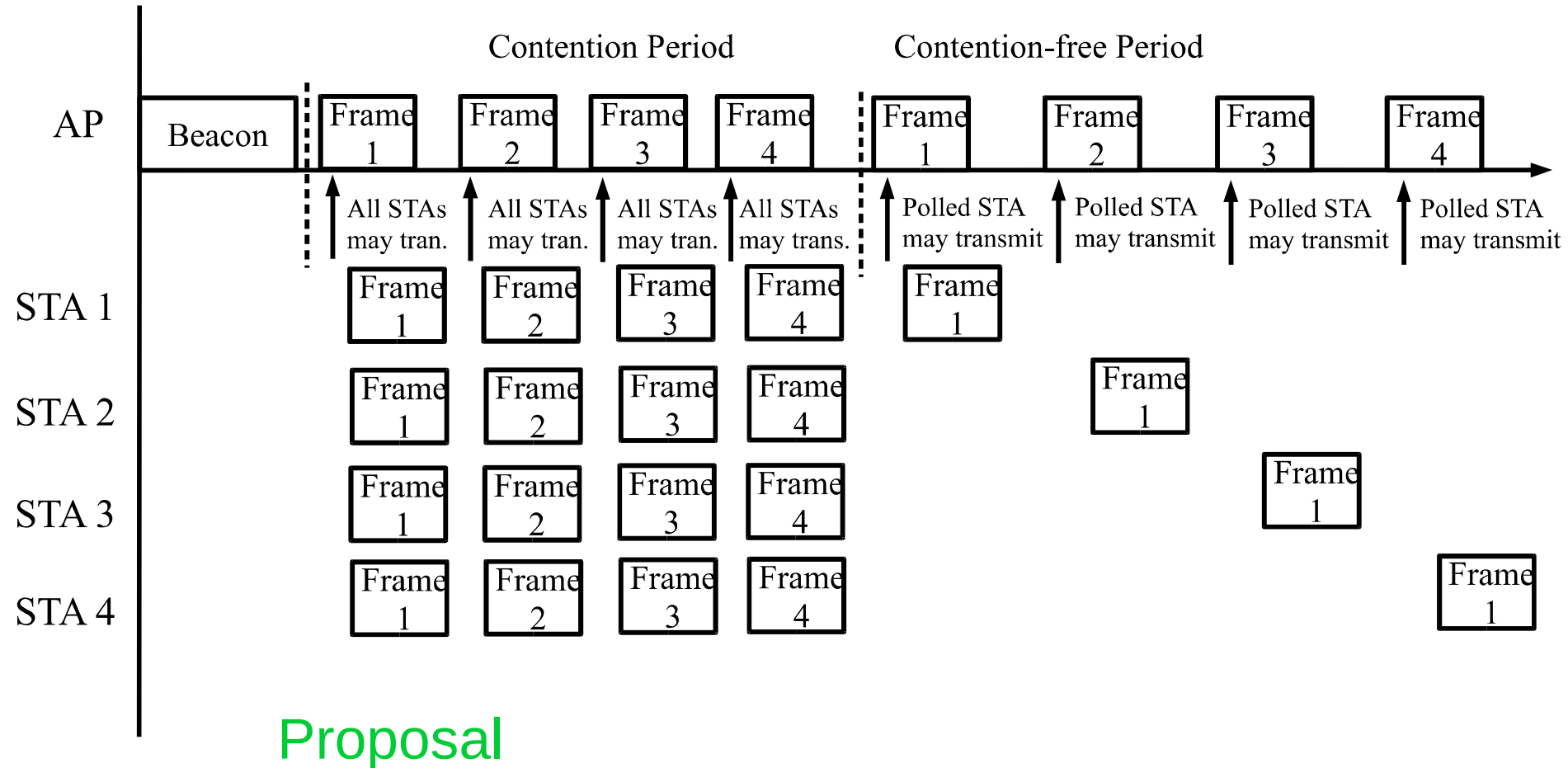
D0 MAC Proposal Clarifications

Super Frame Structure



802.15.7

Super Frame Structure



MAC Frame Structure

802.15.7

Octets: 2	1	0/2	0/2/8	0/2	0/2/8	0/5/6/10/ 14	variable	2
Frame Control	Sequence Number	Destina- tion VPAN Identifier	Destination Address	Source VPAN Identifier	Source Address	Auxiliary Security Header	Frame Payload	FCS
		Addressing fields						
MHR							MSDU	MFR

Figure 44—General MAC frame format

Proposal

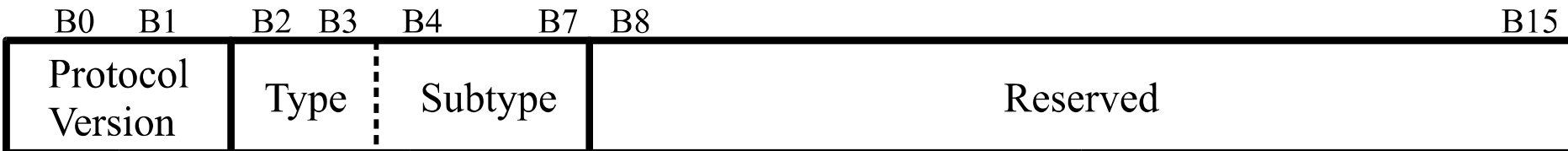
Octets: 2	2	4	6	6	6	2	2	0 - 2312	4
Frame Control	Reserved	Ack Info	Receiver address	Transmitter address	Reserved	Sequence Control	Reserved	Frame Body	FCS

Frame Control Field

Bits: 0–1	2–5	6–8	9	10	11	12–13	14–15
Frame Version	Reserved	Frame Type	Security Enabled	Frame Pending	Ack Request	Dest Addressing Mode	Source Addressing Mode

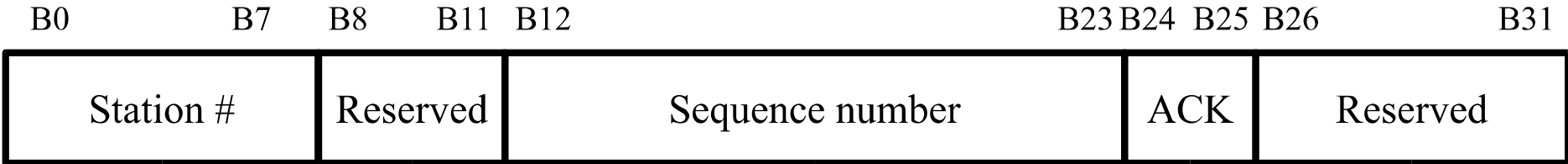
802.15.7

Figure 45—Format of the frame control field



Proposal

ACK Field



Proposed MAC Layer Services

- MAC-DATA.request → Similar to MA-UNITDATA.request
- MAC-DATA.indicate → Similar to MA-UNITDATA.indication
- MAC-DATA.confirm → follows a MAC-DATA.request command and reports the status of the MAC-DATA.request command execution.

MAC Layer Services to be Defined

- Services for CSI reports to upper layer
- Services for adaptive bit and energy loading
- Services for interference coordination
- Services for heterogeneous RF communication + VLC

Security Protocols

The MAC layer protocol should have the option to provide encryption and security features using the following set of protocols:

- 1) Wired Equivalent Privacy (WEP)
- 2) Temporal Key Integrity Protocol (TKIP)
- 3) Counter Mode Cipher Block Chaining Message Authentication Code Protocol (CCMP)