



**IEEE 802.3 Ethernet Working Group  
Liaison Communication**

July 17, 2008

From: IEEE 802.3 Ethernet Working Group

To: Yoichi Maeda, Chair of ITU-T SG15 (yoichi.maeda@ntt-at.co.jp)

Members ITU-T Question 2/15

Cc: Paul Nikolich; Chair, IEEE 802 (p.nikolich@ieee.org)

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Subject: Liaison letter ITU-T SG15 to IEEE 802.3 LS 1

Action: Response / Information

Dear Mr. Maeda and members of ITU-T SG15:

The 802.3 Working Group thanks SG15 for their liaison regarding the proposed interworking of ITU next generation PON and 802.3av standards systems. The group supports the basic goal of having standards from the two groups work together in a harmonious way, with the 802.3 standard providing the necessary interfaces such that the ITU standards may provide extended functions that are beyond the scope of 802.3 while not modifying the base 802.3 standard.

Concerning the specific interfaces, we would like to note that 802.3 already provides an extensible interface to the OAM channel, as described in 802.3 Clause 57.4.3.6. An organization specific OAMPDU is defined with a code of 0xFE. The message data field begins with the organizational unique identifier (OUI) of the relevant organization, and the remainder of the data field is defined by that organization. We note that ITU-T has already been allocated an IEEE OUI: 00-19-A7 (hex). Therefore, the mechanism is in place to address any extensions to the OAM channel.

In addition, the next revision of the standard is proposed to provide an additional extension to the slow protocol channel, as described in Annex 57B. Here, an organization specific slow protocol sub-type is defined with a code 0x0A. The message contents begin with an OUI, and the remainder of the message contents are defined by the indicated organization.

To the specific request to extend the MPCP channel, the preferred approach is to follow the precedent of the OAM channel. However, to make this even more generic and widely usable, the extension will be applied to the MAC control channel, as described in 802.3 Clause 31. (MPCP is a subtype of MAC Control.) A new opcode shall be defined that will indicate an organization specific MAC Control message. The payload will then consist of the OUI of the defining organization and the organizationally defined contents. With this in place, it will be possible for ITU to define specific extensions to the MPCP channel. For your reference, we attach the two documents that contain the proposed text for this function. Please note that this material is only a proposal, and is subject to change during balloting.

We believe that with these three extensible message types in place, the necessary interfaces for the successful interworking of the ITU and IEEE standards will be in place. We look forward to continuing our dialog with SG15 on this and other matters. Our next plenary session will be held in Dallas, Texas, USA on the week of Nov. 10<sup>th</sup>. Please note that this liaison represents the views of 802.3, and not necessarily those of the IEEE or the IEEE SA.

## Annex 31A

(normative)

### MAC Control opcode assignments

*Update Table 31A-1 by replacing the last row in the table with the following three rows:*

00-07 through xx-xw	Reserved			
xx-xx	EXTENSION		This frame is used for Organization-Specific Extension. Upon reception of this message, the MAC Control generates MA_CONTROL.Indication informing the MAC Control Client to perform the relevant action.	No
xx-xy through xx-xz	Reserved			

*Add a new Table 31A-8 after Table 31A-7 with the description of EXTENSION frame with the following contents:*

**Table 31A-8—EXTENSION MAC Control indications**

EXTENSION (opcode 0xXXXX)		
indication_operand_list element	Value	Interpretation
OUI	24 bits	Organizationally-Unique Identifier that determines the format and semantics of the Value field and its subfields, if any are defined.
Value	variable	Organization-specific value, distinguished by the OUI.

Annex 31C

(normative)

MAC Control organization specific extension operation

31C.1 Organization specific extension description

The extension operation is used to provide a standardized means for organizations to define their own MAC Control protocols outside the scope of this standard. The requirements defined in @@Clause 31@@ apply to these protocols.

31C.2 Transmission of Extension MAC Control frame

Upon receipt of a MA\_CONTROL.request primitive containing the EXTENSION opcode from a MAC client, the MAC control sublayer calls the MAC sublayer MAC:MA\_DATA.request service primitive with the following parameters:

- a) The destination\_address is set equal to the destination\_address parameter of the MA\_CONTROL.request primitive. This parameter is currently restricted to either the value 01-80-C2-00-00-01 or to the 48-bit individual address of the destination station.
- b) The source\_address is set equal to the 48-bit individual address of the station.
- c) The length/type field (i.e., the first two octets) within the mac\_service\_data\_unit parameter is set to the IEEE 802.3 MAC Control type value assigned in @@Subclause 31.4.1.3@@.
- d) The remainder of the mac\_service\_data\_unit is set equal to the concatenation of the Extension Opcode, the Organizationally Unique Identifier, and the Organization specific data.
- e) The frame\_check\_sequence is omitted.

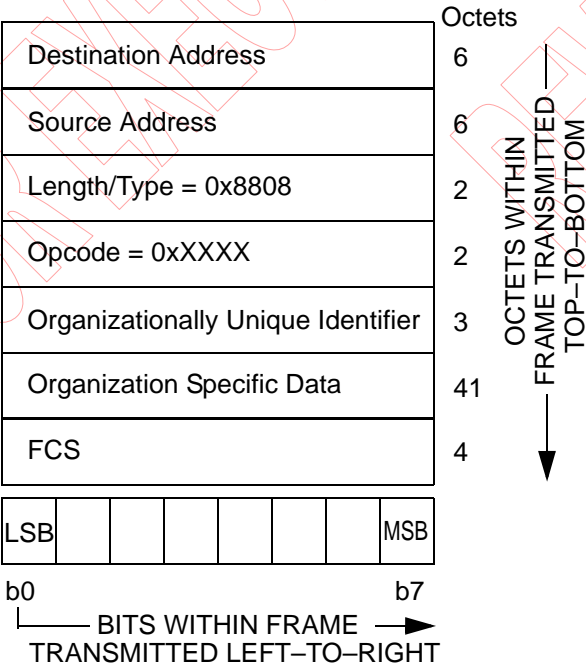


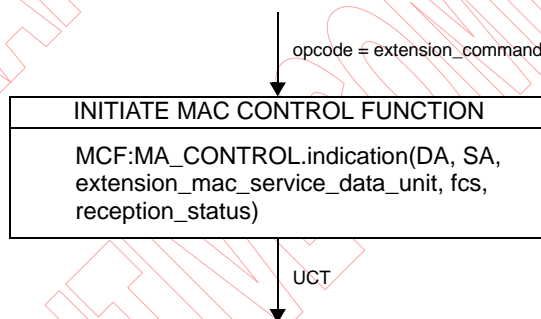
Figure 31C–1—MAC Control EXTENSION Frame

### 31C.3 Receive operation

The opcode-independent MAC Control sublayer Receive state diagram accepts and parses valid frames received from the MAC sublayer. MAC Control sublayer entities that implement the EXTENSION operation shall implement the Receive state diagram specified in this subclause. The functions specified in this subclause are performed upon receipt of a valid Control frame containing the EXTENSION opcode and define the function called by the INITIATE MAC CONTROL FUNCTION state of @@Figure 31-4@@ (See @@Subclause 31.5.3@@).

#### 31C.3.1 Receive state diagram (INITIATE MAC CONTROL FUNCTION) for EXTENSION operation

@@Figure 31C-2@@ depicts the INITIATE MAC CONTROL FUNCTION for the EXTENSION operation (See @@Subclause 31.5.3@@). Upon reception of EXTENSION frames, the frame is sent to the MAC CONTROL client.



**Figure 31C-2—EXTENSION receive function**