



VLAN + UMT

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An action item from March mtg

5.3 VLAN-Tagged UMT PDU

Editorial Note (to be removed prior to publication): Glen took an AI to generate content for this particular section, including addressing comment #6 from D0.4, and submit via comment on D0.5.

#6 Type: T TF: TF2 Clause: 5.3 Page: 29 Line: 12 Commenter: Pradeep Kondamuri / Ciena
Comment Status: Resolved Response Status: Reject Commenter Satisfaction: None Category: -

Going by 802.1Q frame format, the VLAN tag goes before the UMT Ethertype

-

No proposed change to the draft. See comment #14.

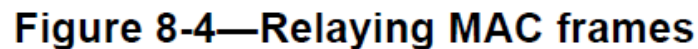
#14 Type: TR TF: TF2 Clause: 5.3 Page: 29 Line: 9 Commenter: Marek Hajduczenia / Charter
Comment Status: Resolved Response Status: Reject Commenter Satisfaction: Satisfied Category: -

I do seem to recall material on VLAN tagged UMT PDUs haveinb been presented by Glen before. Is there any chance we can roll it into the next version of the draft as a strawman proposal and see whether it generates any positive feedback?

Per comment

No specific changes to the draft at this time. Glen took an action item to propose specific material for next cycle.

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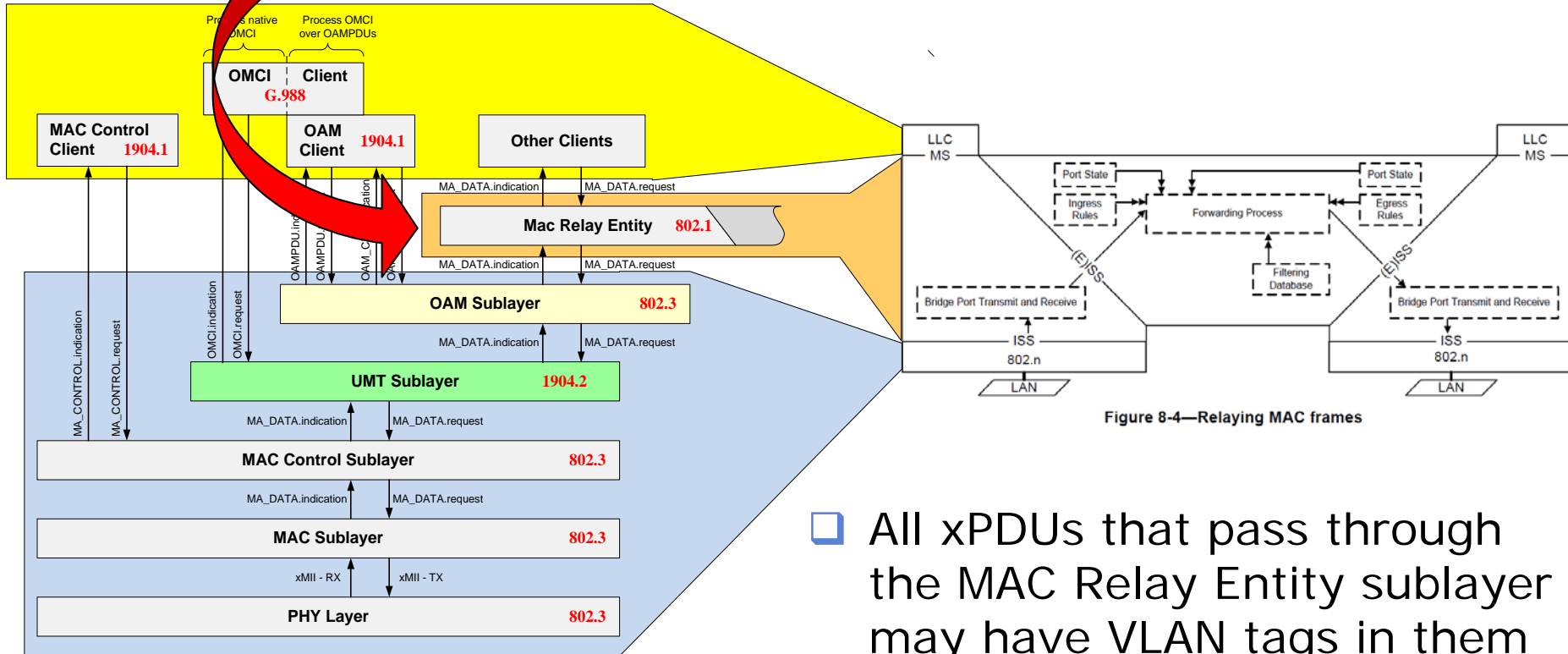


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Layering Diagram



VLAN tags are inserted, processed, and removed at this sublayer



- ❑ All xPDUs that pass through the MAC Relay Entity sublayer may have VLAN tags in them
- ❑ OAMPDUs don't traverse the MAC Relay Entity and can never include VLAN tags.

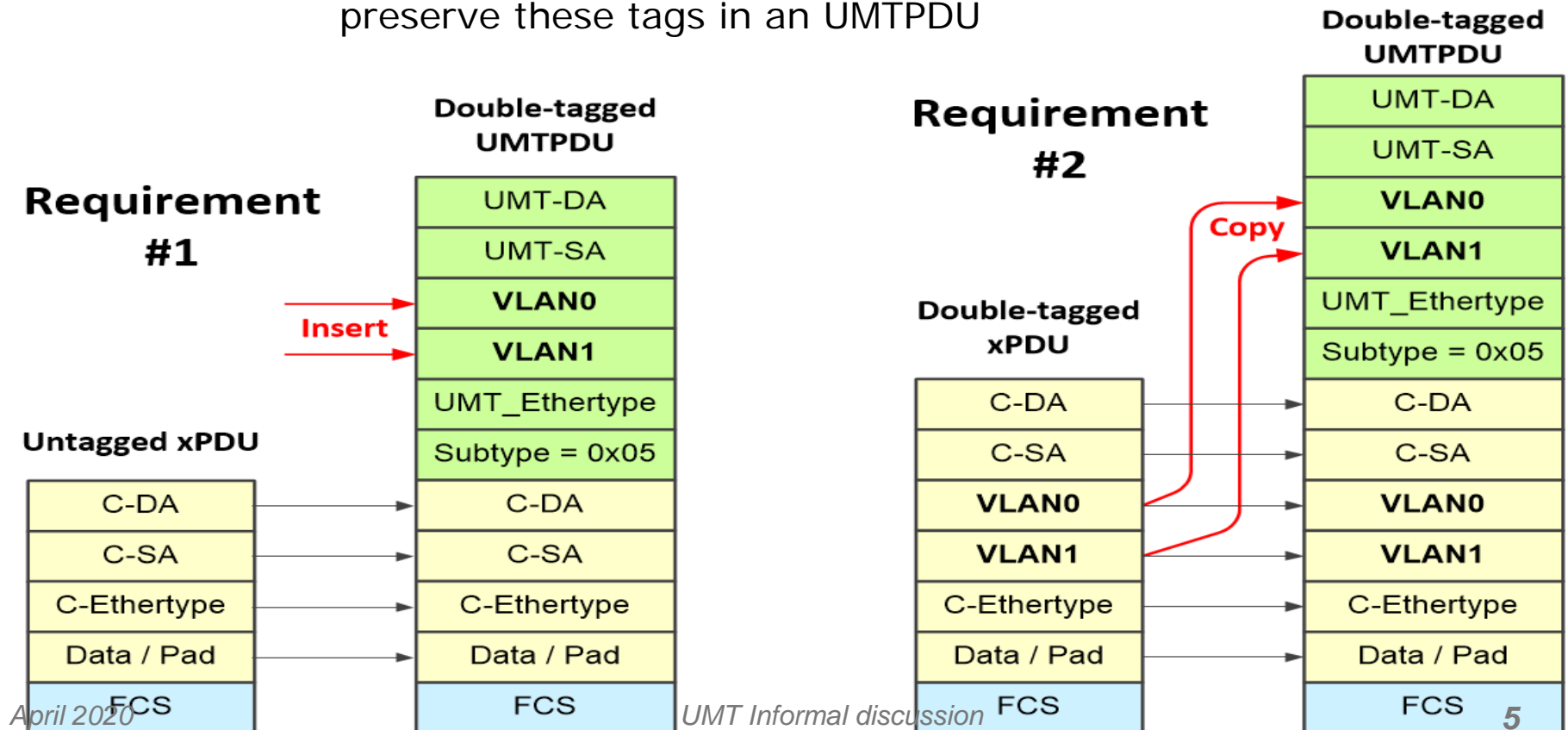
1904.2 Requirements



- L2 network may rely on virtual topology such that UMTPDUs may be required to include one or two VLAN tags.

Requirement 1: UMT sublayer needs to be able to insert one or two VLAN tags in an UMT PDU

Requirement 2: If an xPDU already includes VLAN tag(s), the UMT sublayer needs to be able to preserve these tags in an UMT PDU



Proposal for Requirement #1

- Requirement #1 is already supported in the draft D0.5.
 - CTE actions to add and delete fields are already defined

Table 6-3—Actions used in CTE rules

Action	Numeric Code	Mnemonic / Description
Add a field	0xAD	<code>ADD(FIELD_CODE, field_value)</code> This operation adds a field of the type indicated by the <code>FIELD_CODE</code> and having the value of <code>field_value</code> .
Delete (remove) a field	0xDE	<code>DELETE(FIELD_CODE)</code> This operation removes a field of the type indicated by the <code>FIELD_CODE</code> . The result of the <code>DELETE</code> operation is undefined if the field indicated by the <code>FIELD_CODE</code> is not present in the frame.

- List of field codes already includes `VLAN0`, `VLAN1`, and subfields of these fields

Table 6-2—L2 classification fields

<code>FIELD_CODE</code>	Numeric Code	Field size (bits)	Description
<code>VLAN0</code>	0x04	32	<i>Outermost VLAN tag.</i> This parameter corresponds to the first VLAN tag following the <code>SRC_ADDR</code> field. If no VLAN tags follow the <code>SRC_ADDR</code> field, then the <code>VLAN0</code> field does not exist.
<code>VLAN1</code>	0x07	32	<i>Innermost VLAN tag.</i> This parameter corresponds to the VLAN tag that follows the outermost tag <code>VLAN0</code> . If no VLAN tags follow the <code>VLAN0</code> field, then the <code>VLAN1</code> field does not exist.

Proposal for Requirement #2

- ❑ To duplicate the existing VLAN tags from xPDU into an UMTPDU, we need to define a new operation **COPY**:

Action	Numeric Code	Mnemonic / Description
Add a field	0xAD	<code>ADD(TARGET_FIELD_CODE, field_value)</code> This operation adds a field of the type indicated by the <code>TARGET_FIELD_CODE</code> and having the value of <code>field_value</code> .
Delete (remove) a field	0xDE	<code>DELETE(TARGET_FIELD_CODE)</code> This operation removes a field of the type indicated by the <code>TARGET_FIELD_CODE</code> . The result of the <code>DELETE</code> operation is undefined if the field indicated by the <code>TARGET_FIELD_CODE</code> is not present in the frame.
Change (replace) a field	0xCE	<code>CHANGE(TARGET_FIELD_CODE, field_value)</code> This operation replaces the value of the field indicated by the <code>TARGET_FIELD_CODE</code> with the value of <code>field_value</code> . The result of the <code>CHANGE</code> operation is undefined if the field indicated by the <code>TARGET_FIELD_CODE</code> is not present in the frame.
Copy (duplicate) a field	0xD8	<code>COPY(TARGET_FIELD_CODE, SOURCE_FIELD_CODE)</code> This operation adds a field of the type indicated by the <code>TARGET_FIELD_CODE</code> with the value of the field indicated by the <code>SOURCE_FIELD_CODE</code> . The result of the <code>COPY</code> operation is undefined if the field indicated by the <code>TARGET_FIELD_CODE</code> is already present in the frame or if the field indicated by the <code>SOURCE_FIELD_CODE</code> is not present in the frame. The result is also undefined if the fields identified by the <code>TARGET_FIELD_CODE</code> and <code>SOURCE_FIELD_CODE</code> are not of the same size.

- ❑ We need to clarify that UMT's operation on VLAN tags is not a substitution for 802.1Q specification. UMT inserts VLAN tag values as provisioned by UMT controller (Manager), and that controller needs to participate in MVRP
- ❑ Proposed new subclause:

6.4 CTE rules involving operations on the VLAN tags

The classification clauses in the CTE rules may classify the incoming xPDUs and UMTPDUs based on VLAN0 or VLAN1 fields, or based on some sub-fields of these fields (see Table 6-2).

The action clauses in the CTE rules may add VLAN0 and VLAN1 tags to UMTPDUs or delete these tags from UMTPDUs. When performing a translation of an xPDU into an UMTPDU, and if the original xPDU includes any VLAN tags, the action clauses may also copy these tags from xPDU into UMTPDU. The COPY operation leaves the VLAN tags in the original xPDU intact.

Even though the UMT sublayer may be configured to manipulate VLAN tags in UMTPDUs, it does not imply that a given UMT-aware device is also VLAN-aware and that it is a participant in Multiple VLAN Registration Protocol (MVRP). The VLAN manipulation applied by the UMT sublayer is entirely based on the provisioned CTE rules and not on any higher-layer protocol behavior or device configuration. In a VLAN-enabled L2 network, the management entity responsible for UMT port configuration and provisioning is expected to be aware of VLAN topology and to participate in MVRP if necessary.



Thank You