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| IEEE 802.1 REVISION REQUEST 0158 |
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DATE: Jan 21, 2015
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REQUESTED REVISION:
STANDARD: IEEE Std 802.1Q-2014
CLAUSE NUMBER: 35
CLAUSE TITLE: Stream Reservation Protocol (SRP)

RATIONALE FOR REVISION:

At the last minute, when 802.1BA was written, we noticed that VLAN 1, by default, is transmitted without a C-tag. This is a problem, because AVB streams (pretty much) require a priority field. The fix we came up with, at the time, was to create the SR_PVID (2), and default AVB traffic to VLAN 2. This is a problem, because it means that AVB traffic can't use VLAN 1 plug-and-play, which interferes with the normal use of VLANs in a network, e.g. to separate IP subnets.

In retrospect, there was a better solution available. That solution WOULD HAV BEEN as follows (It's too late, now, but we need to understand it, first.):

We have a per-Bridge Port variable that contains two values for "transmit the PVID on this port tagged/untagged", one to use if the port is an SRP core port, and one if it is not. Then, as the port transitions in or out of core port status, the state of the port can change with respect to transmitting the default VLAN with or without a tag. The 802.1BA default would be "untagged, tagged" for "not core, core" respectively. We would then have no need for the SR_PVID.

But, since the SR_PVID is there, I would recommend we define that same variable (in Clauses 12 and 17), but define it for the SR_PVID, not the PVID, and mention that, if the SR_PVID is configured to equal the PVID, that variable applies, just the same. Thus, if the Bridge is configured with SR_PVID = PVID = 1, "core tagged, non-core untagged", then it works like I think we should have defined it in the first place. If the Bridge is configured with SR_PVID = 2, PVID = 1, "tagged, tagged", it works like it does, today. Either way, the out-of-the-box default behavior is "PVID 1 is untagged", as has always been the case.

Of course, this has to be explained in Clause 35.

PROPOSED REVISION TEXT:

I think the following is the minimum change to be made to 802.1Q. There are a few other clauses (e.g. the definition of core port in clause 3, or the definition of the "this is a core port" variable) that we could change, but I'm not sure that's necessary.

Add the core/not variables to Clauses 12 and 17, presumably in the same sections where the PVID and SR_PVID are now defined.

Mention this in a NOTE 4 in 8.8.2.

Add explanatory why/how text somewhere in Clause 35; I think 35.1 is the best place.

Add a "shall" clause to 35.1.4 saying that the Static VLAN Registration Entry for transmitting the SR_PVID tagged/untagged changes when the core port status changes.

IMPACT ON EXISTING NETWORKS:

The default values of the new variables would leave today's behavior unchanged for both AVB and non-AVB use. However, it would make it possible to build networks where TSN was an add-on feature available to all flows, instead of requiring a special-built application to use it. (I.e. AVB traffic can safely use VLAN 1 in a plug-and-play world for its IP multicast traffic.)

Note that changes to 802.1BA might also be desirable.

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| Please attach supporting material, if any |
| Submit to:- Glenn Parsons, Chair IEEE 802.1 |
| and copy:- John Messenger, Vice-Chair IEEE 802.1 |
| E-Mail: stds-802-1-maint-req@ieee.org |
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| +----- For official 802.1 use -----+ |
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