Source:	IEEE 802.3
Title:	***Response to Progress on Ethernet related recommendations***

COMMUNICATION STATEMENT

To:	ITU Q12/15
Approval:	July 2003 meeting, San Francisco
For:	
Deadline:	

Contact:	Bob Grow, 802.3 Chair	Email: bob.grow@intel.com
Contact:	Howard Frazier, EFM TF Chair	Email: millardo@dominetsystems.com
Contact:	Matt Squire, EFM OAM STF Chair	Email: msquire@hatterasnetworks.com

Response

At our July 2003 meeting, the ITU Q12/15 liaison to IEEE 802.1 was brought to the attention of IEEE 802.3. We would like to take the opportunity to provide feedback on your current recommendations.

In the IEEE 802 architecture, there are two kinds of devices that can be connected with Ethernet links: DTEs and repeaters. DTEs can be hosts, 802.1D compliant bridges, routers, or other devices. Repeaters are IEEE 802.3 defined devices that operate at in half-duplex only, and support multi-port access for CSMA/CD devices.

Within this model, any networking function at the DTE is above and outside the scope of IEEE 802.3. Any such function must not alter the behavior of the Ethernet MAC and/or PHY as defined within the IEEE 802.3 specifications. As a consequence, DTE functions cannot assert forwarding behavior on IEEE 802.3 defined protocols.

The current list of IEEE 802.3 protocols includes 802.3x PAUSE, 802.3ad LACP, and soon to be 802.3ah OAM and 802.3ah MPCP. Additional protocols within IEEE 802.3 may be developed in the future. When using IEEE 802.3 compliant links that support these functions, frames for these protocols will not be passed to higher layers, even when those protocols are disabled. So, as an example, if an Ethernet interface supports IEEE 802.3x MAC Control (PAUSE), then disabling PAUSE results in the PAUSE frames being discarded by the IEEE 802.3 MAC. There can be no option to 'tunnel' such frames in IEEE 802.3 compliant devices that support the protocol.

We strongly recommend that you follow the existing IEEE 802 architecture when modeling the Ethernet networks in your specifications. In particular:

1) When modeling an Ethernet MAC and/or PHY on a device, recognize that the MAC and/or PHY will not provide the option to tunnel IEEE 802.3 protocols in many cases.
2) Model any layer two networking device as an IEEE 802.1D compliant bridge.

Note that the second suggestion is very important for proper behavior under all conditions. For example, there are some optional layers in IEEE 802.3 compliant devices, such as MAC Control. When an Ethernet interface does not implement that layer, IEEE 802.3 protocols may be passed to the higher layer. When this happens, IEEE 802.1D bridges have proper forwarding behavior to filter these protocols. Without proper filters, the resulting behavior is unpredictable.

In several of your diagrams, it appears as if an IEEE 802.3 compliant device is connected to a second device that lacks a complete IEEE 802.3 MAC. This second device is not IEEE 802.3 compliant. Because the IEEE does not recognize this device, we can make no statements about how Ethernet or Ethernet protocols will operate in networks containing such devices. For these reasons, conformance with the IEEE 802 specifications is strongly recommended. Please refer to the attached document for an overview of the IEEE 802 architecture.

A two-port IEEE 802.1D compliant bridge is not a complex device and provides the necessary filtering and controls to ensure proper behavior with IEEE 802.3 and Ethernet networking. By following this model you will ensure current and future compatibility with IEEE 802.1/802.3 standards.

Attached is IEEE P802.3ah/Draft 2.0 for your review. We look forward to your comments.

Attachments

[1] IEEE P802.3ah/Draft 2.0
[2] IEEE P802-2001/Overview and Architecture