USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: USB3 Path Teardown
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

Cleanup of the section about USB3 Path teardown.

Benefits as a result of the changes:

A more precise description of behavior.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:

None

An analysis of the hardware implications:

None

An analysis of the software implications:

None (expected to match existing SW behavior)

An analysis of the compliance testing implications:

None

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Actual Change

(a). Section 9.3.2   Path Teardown

Make the following changes:

When a Device Router either detects a disconnect on an Upstream Facing Port, or the *Path Enable* bit in the Upstream USB3 Adapter is set to 0b and the *Valid* bit is set to 1b in the USB3 Adapter Configuration Capability:

- The Upstream USB3 Adapter Layer shall:

    o Not issue any Tunneled Packets to the Transport Layer.

    o Remove far-end receiver termination to the internal USB3 device as defined in Section 9.1.1.1.2.

- The internal USB3 device port shall detect a disconnect within 500 ms.

- The integrated Enhanced SuperSpeed Hub within the Device Router shall ensure that any SuperSpeed or Enhanced SuperSpeed devices on its downstream-facing ports transition to the default state. This can be achieved by either issuing a Warm Reset to the devices or initiating a disconnect/reconnect (either by cycling power or removing terminations).

  ✉ IMPLEMENTATION NOTE

  When a USB4 device is reconnected after an Upstream Facing Port disconnect, host system software expects the integrated Enhanced SuperSpeed Hub within the USB4 device to come up in its default state. A USB4 device therefore needs to ensure that the integrated hub goes through a reset after the Device Router detects a disconnect on the Upstream Facing Port.

  A USB3 device connected to a downstream port of the integrated hub may fall back to USB 2.0 operation when the hub is reset. Host system software needs to restore the original operating mode of the USB3 device after a USB 2.0 port reset.

When the *Path Enable* bit in a Downstream USB3 Adapter is set to 0b and the *Valid* bit is set to 1b in the USB3 Adapter Configuration Capability:

- The Downstream USB3 Adapter Layer shall:

    o Not issue any Tunneled Packets to the Transport Layer.

    o Remove far-end receiver termination to the internal USB3 device as defined in Section 9.1.1.1.2.

- The internal USB3 device port shall detect a disconnect within 500 ms.

- ~~An integrated Enhanced SuperSpeed Hub within the Device Router shall ensure that SuperSpeed or Enhanced SuperSpeed devices on its downstream-facing ports transition to default state. This can be achieved by either issuing a Warm Reset to the devices or initiating a disconnect/reconnect (either by cycling power or removing terminations).~~