

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Inter-Domain Time Sync is Optional for Host Routers Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

A Host Router is no longer required to support inter-Domain Time Sync. A new bit in Router Configuration Space will indicate if the Host Router supports the feature.

Benefits as a result of the changes:

The change gives the freedom of choice to the Host Router implementor, whether to implement this feature or not.

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

An analysis of the compliance testing implications:

Inter-Domain time sync will only be tested in a Host Router if the Host Router supports it.

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Actual Change

(a). 7 Time Synchronization

A Router shall support the USB4™ Time Synchronization Protocol described in this chapter. Support for Inter-Domain Time Synchronization is optional for a Host Router. The Time Synchronization Protocol provides a mechanism for synchronizing the real-time clocks and absolute time of connected Routers to a high degree of accuracy and precision.

(b). Table 8 4. TMU Router Configuration Capability Fields

| DW | Register Name | Bit(s) | Field Name and Description | Type | Default Value |
|----|-------------------|-------------------------|---|-----------|---|
| 18 | TMU_RTR_CS_1 8 | 15:0 | Inter-Domain Time Stamp High For an Inter-Domain Slave: This field shall contain the most significant 32 bits of the computed value of the Inter-Domain time stamp. The time stamp shall be computed as described in Section 7.4.2.1. For all other Routers: This field shall contain the most significant 32 bits of the IDTimeStamp value contained in the last received Follow-Up Packet. | RO | 0 |
| | | 34 30:1 6 | Reserved | Rsvd | 0 |
| | | 31 | <u>Inter-Domain Not Supported (IDNS)</u> <u>This field shall indicate whether or not a Router supports Inter-Domain Time Synchronization:</u> <u>0 – Supported</u> <u>1 – Not Supported</u> <u>A Host Router may set this field to either 1 or 0. A Device Router shall set this field to 0.</u> | RO | <u>Host Router:</u> <u>Vendor Defined</u> <u>Device Router:</u> <u>0</u> |

(c). Figure 8 3. Structure of the TMU Router Configuration Capability

[Editor Note] – Add IDNS bit to Figure 8.3