USB Power Delivery ENGINEERING CHANGE NOTICE

Title: EUDO Cable speed field clarification
Applied to: USB Power Delivery Specification Revision 3.1 Version 1.7

Brief description of the functional changes proposed:
This ECN clarifies the value of the cable fields in the EUDO message

Benefits as a result of the proposed changes:
Prevents various interpretation and implementation of the spec. Aligns USB community to use one way of reporting cable parameters in EUDO.

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

An analysis of the hardware implications:
NA

An analysis of the software implications:

An analysis of the compliance testing implications:
Helps compliance specification to test for products to use one way of reporting cable parameters in EUDO

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Actual Change Requested

(a). Section 6.4.8.4, Page 187

From Text:

The ***Cable Speed*** field ***Shall*** be used to indicate the cable's maximum speed.

When a UFP is capable of operating in ***[USB4]*** Gen4, it ***Shall*** recognize that when the Cable Speed field is 011b (***[USB4]*** Gen3) and Cable Type field is 00b (Passive), that the cable is capable of ***[USB4]*** Gen4 operation.

To Text:

The ***Cable Speed*** field ***Shall*** be used to indicate the cable's maximum speed. The value is read from the Cable Plug and interpreted by the DFP as defined by ***[USB Type-C 2.2]*** in the USB4 Discovery and Entry Section.

~~When a UFP is capable of operating in ***[USB4]*** Gen4, it ***Shall*** recognize that when the Cable Speed field is 011b (***[USB4]*** Gen3) and Cable Type field is 00b (Passive), that the cable is capable of ***[USB4]*** Gen4 operation.~~

(b). Section 6.4.8.5, Page 187

From Text:

The ***Cable Type*** field ***Shall*** be used to indicate whether the cable is passive or active. Further if the cable is active, it indicates the type of active circuits in the cable and if the cable is optically isolated.

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The ***Cable Type*** field ***Shall*** be used to indicate whether the cable is passive or active. Further if the cable is active, it indicates the type of active circuits in the cable and if the cable is optically isolated. The value is read from the Cable Plug and interpreted by the DFP as defined by ***[USB Type-C 2.2]*** in the USB4 Discovery and Entry Section.

(c). Section 6.4.8.6, Page 188

From Text:

The ***Cable Current*** field ***Shall*** be used to indicate the cable's current carrying capability.

To Text:

The ***Cable Current*** field ***Shall*** be used to indicate the cable's current carrying capability. The value is reported by the Cable Plug in the Vbus Current Handling Capability field.

(d). Section 6.4.8, Page 186

From Text:

B25	*USB3 DRD*[2]	0b: Not capable of operating as a *[USB 3.2]* Device 1b: Capable of operating as a *[USB 3.2]* Device
B24	***Reserved***	***Shall*** be set to zero.
B23…21	***Cable Speed***[2]	000b: ***[USB 2.0]*** only, no SuperSpeed support 001b: ***[USB 3.2]*** Gen1 010b: ***[USB 3.2]*** Gen2 and ***[USB4]*** Gen2 011b: ***[USB4]*** Gen3 100b: ***[USB4]*** Gen4 101b…111b: ***Reserved***, ***Shall*** not be used
B20…19	***Cable Type***[2]	00b: Passive 01b: Active Re-timer 10b: Active Re-driver 11b: Optically Isolated
B18…17	***Cable Current***[2]	00b = V_{BUS} is not supported 01b = ***Reserved*** 10b = 3A 11b = 5A
B16	***PCIe Support***[2]	***[USB4]*** PCIe tunneling supported by the host
B15	***DP Support***[2]	***[USB4]*** DP tunneling supported by the host
B14	***TBT Support***[2]	***[TBT3]*** is supported by the host's USB4® Connection Manager
B13	***Host Present***[2]	Connected to a Host. When this bit is set ***PCIe Support***, ***DP Support***, and ***TBT Support*** represent the Host's capabilities that Shall be propagated down the Hub tree.
B12…0	***Reserved***	***Shall*** be set to zero.
Note 1: Entry into ***[USB 3.2]*** and ***[USB4]*** include entry into ***[USB 2.0]***. Note 2: ***Shall*** be ***Ignored*** when received by a Cable Plug (e.g., SOP' or SOP'').		

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B23…21	***Cable Speed***[2,3]	000b: ***[USB 2.0]*** only, no SuperSpeed support 001b: ***[USB 3.2]*** Gen1 010b: ***[USB 3.2]*** Gen2 and ***[USB4]*** Gen2 011b: ***[USB4]*** Gen3 100b: ***[USB4]*** Gen4 101b…111b: ***Reserved***, ***Shall*** not be used

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Note 1: Entry into ***[USB 3.2]*** and ***[USB4]*** include entry into ***[USB 2.0]***.

Note 2: ***Shall*** be ***Ignored*** when received by a Cable Plug (e.g., SOP' or SOP'').

Note 3: The DFP ***Shall*** interpret the Cable Plug's reported capability as defined in ***[USB Type-C 2.2]*** in the USB4 Discovery and Entry Section.