

# USB4 2.0 ENGINEERING CHANGE NOTICE FORM

## Title: ReturnBounce Bit Clarifications - Update Applied to: USB4 Specification Version 2.0

### Brief description of the functional changes:

Edits for added clarity and simplification in the Bounce Mechanism. Edits were made on top of the previously approved ECN of: <https://groups.usb.org/wg/cairo/document/18181?downloadRevision=24946>

### Benefits as a result of the changes:

Added Clarity and simplification on Bounce Mechanism

### 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:

Need to verify that Routers don't check and modify the *ReturnBounce* bit.

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## Actual Change

### (a). Section 13.2.1.2.2.1 – Bounce Mechanism

#### To Text:

The Bounce mechanism is used when a Router needs to access the Register Space of a Cable Re-timer that can only be accessed by its Link Partner. A Router shall support the Bounce Mechanism. The Bounce Mechanism consists of the following rules:

- A Router shall set the *Bounce* bit to 1b and the *ReturnBounce* bit to 1b to target a Cable Re-timer that is adjacent to the Router's Link Partner.
- A Router that receives an AT Transaction Command with the *Bounce* bit set to 1b ~~and the *ReturnBounce* bit to 1b~~ shall set the *Bounce* bit to 0b, then forward the AT Transaction towards its adjacent Cable Re-timer.

*Note:* A Cable Re-timer responds to an AT Transaction Command with the *Bounce* bit set to 0b ~~and the *ReturnBounce* bit to 1b~~. The AT Response from the Cable Re-timer has the *Bounce Bit* set to 1b.

- A Router that receives an AT Response with the *Bounce* bit set to 1b shall set the *Bounce* bit to 0b, then forward the AT Response to its Link Partner.

An example of the Bounce Mechanism is shown in Figure 13-2 where Router A is accessing the Configuration Space of Cable Re-timer B.

*Note:* The Bounce Mechanism is only used when operating with a bi-directional Re-timer.

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