

# USB4 1.0 ENGINEERING CHANGE NOTICE FORM

**NOTICE:** Any Company or Companies submitting an ECR proposal must be one of the following: a Promoter, Contributor, or Adopter of the USB4 Specification for which the ECR is being submitted. If a group of Companies is submitting an ECR proposal, each company must be either a Promoter, Contributor, or Adopters of the USB4 Specification.

**SPECIFICATION REVISIONS AND ADDENDA:** At any point in time, there shall only be one current version of the USB4 Specification, version 1.0. At the same time, there may also be proposed revisions to the specification's design which are not yet approved and shall be held confidential as deemed necessary by the USB4 Promoters and within the Group of Working Committee(s).

**PROCEDURES FOR SUBMITTING PROPOSALS:** Both members of the USB Implementers Forum as a whole and members of the USB Promoters may submit requests to revise the USB4 Specification version 1.0 and design guides. Such a request may be rejected or may result in a USB4 1.0 Engineering Change Notice (ECN), which is the official way USB specifications may be changed.

**FORMAT OF PROPOSAL:** The originator of a request to alter the USB4 1.0 Specification may do so in writing, either through electronic mail or printed copy. For an electronic copy of this form call 1-503-619-0426 or Fax 1-503-644-6708. Although faxed proposals are acceptable, the original document must be sent to the Secretary of the USB Implementers Forum (see below) after the Fax is sent.

**RESUBMISSION AND APPEAL:** The originator of a request that was not approved can redraft the original request. Rewritten proposal will be treated as a new proposal and will be evaluated using the procedures described above. The originator of a request that was not approved can also submit an appeal to the USB Promoters. The appeal must be made in writing and addressed to the Secretary of the USB Implementers Forum.

## **ABOUT THE ENGINEERING CHANGE REQUEST FORM:**

The Purpose of this Engineering Change Request Form is to expedite the review process of the proposal by providing explanations, background information, and examples of the proposed changes at a high level. This form serves as an executive summary to the actual proposal.

## **STEPS ON HOW TO SUBMIT A USB4 1.0 ENGINEERING CHANGE REQUEST:**

1. Please fill out the Engineering Change Request Form on the next page completely.
2. Give a minimum of 2-3 sentences for each description on the form.
3. Attach the form on top of your detailed proposal to serve as a cover sheet.
4. Send the entire document with the written proposal to the Secretary of the USB-IF at:

USB Implementers Forum  
Attn: Traci Donnell  
3855 SW 153<sup>rd</sup> Drive  
Beaverton, OR 97006  
E-mail: [admin@usb.org](mailto:admin@usb.org)  
FAX#: (503) 644-6708

# USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Name: Uri Hermoni Email: uri.hermoni@intel.com

Company: Intel Mailstop: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Province: \_\_\_\_\_

Country: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

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# USB4 1.0 ENGINEERING CHANGE NOTICE FORM

**Title: Bonding Error Scenario Addition**  
**Applied to: USB4 Specification Version 1.0**

**Brief description of the functional changes:**

Changes the requirement to go through Bonding state before transition to Dual-Lane Link.

**Benefits as a result of the changes:**

Supports error scenarios of Lane Bonding that were not covered in the past.

**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:**

Need to change one of the conditions to transition to Dual-Lane Link

**An analysis of the software implications:**

None

**An analysis of the compliance testing implications:**

None

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## Actual Change

### (a). Section 4.2.2.2 Transition from Two Single-Lane Links to Dual-Lane Link, Page 164

#### From Text:

The Logical Layer shall transition to a Dual-Lane Link when the following conditions are met:

- Both Adapters have transitioned successfully to CL0 state tBonding time after entry to Lane Bonding state.

#### To Text:

The Logical Layer shall transition to a Dual-Lane Link when the following conditions are met:

- Both Adapters have transitioned successfully to CL0 state tBonding time after sending the first TS1 Ordered Set with Lane Bonding Target set to 001b.~~entry to Lane Bonding state.~~

### (b). Section 4.2.3 Logical Layer Link State, Page 166

#### From Text:

The Transport Layer sees a Link in one of three states: Active, Low Power, or Inactive . Adapter states are mapped into Transport Layer Link States as follows:

- For a Single-Lane Link, the Link is in Active state when its Adapter is in CL0 state.
- For a Dual-Lane Link, the Link is in Active state after its Lanes are successfully bonded, both Adapters transition from Lane Bonding State to CL0 state, and the Adapters stop transmitting TS2 Ordered Sets.

#### To Text:

The Transport Layer sees a Link in one of three states: Active, Low Power, or Inactive . Adapter states are mapped into Transport Layer Link States as follows:

- For a Single-Lane Link, the Link is in Active state when its Adapter is in CL0 state.
- For a Dual-Lane Link, the Link is in Active state after its Lanes are successfully bonded, both Adapters transition from Lane Bonding State or Training State to CL0 state, and the Adapters stop transmitting TS2 Ordered Sets.