

# UCSI ENGINEERING CHANGE REQUEST FORM

**NOTICE:** Any Company or Companies submitting a UCSI ECR proposal must be one of the following: a Promoter or Contributor of the UCSI 3.0 Specifications who have completed the UCSI addendum. If a group of Companies is submitting an ECR proposal, each company must be either a Promoter or Contributor of the UCSI 3.0 Specifications who have completed the USB Power Delivery addendum.

**SPECIFICATION REVISIONS AND ADDENDA:** At any point in time, there shall only be one current version of the UCSI specification, termed the production version. 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 UCSI 3.0 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 UCSI 3.0 Promoters may submit requests to revise the UCSI Specification. Such a request may be rejected or may result in a UCSI 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 UCSI Specification may do so by posting this to the USB Newark Software UCSI working group for review. Once the proposal has been reviewed by the working group it will be passed to the UCSI 3.0 Promoters for approval to publish.

**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 UCSI 3.0 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 USB PD ENGINEERING CHANGE REQUEST:**

- 1) Please fill out the Engineering Change Request Form on the following pages completely:
  - a) Detail the names and contact details for each of the ECR contributors
  - b) Update the ECR Title
  - c) Give a minimum of 2-3 sentences for each description on the form outlining the background to the ECR
- 2) For each section/table/figure to be updated:
  - a) Detail the section number, starting page and figure/table number to be updated as appropriate.
  - b) Detail existing text under "From Text"
  - c) Detail changed text under "To Text"
- 3) Save the file as "UCSI 3.x R 1" followed by the ECR Title as per step 1)b)
- 4) Post the ECR in the UCSI Documents section under "ECR | New ECRs".
  - a) This ECR will then be reviewed by the USB Newark Software Working Group.
  - b) Revisions to the ECR originating from the review should be submitted as document revision of the original ECR using "Add new document".

# UCSI ENGINEERING CHANGE REQUEST FORM

Name: UTHRA RAVICHANDRAN Email: uthra.ravichandran@intel.com  
Company: INTEL CORPORATION Mailstop: \_\_\_\_\_  
Address: 1900 PRAIRIE CITY RD  
City: FOLSOM State/Province: CA  
Country: UNITED STATES OF AMERICA Zip/Postal Code: 95630  
Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

Name: DMITRIY BERCHANSKIY Email: dmitriy.berchanskiy@intel.com  
Company: INTEL CORPORATION Mailstop: \_\_\_\_\_  
Address: 1900 PRAIRIE CITY RD  
City: FOLSOM State/Province: CA  
Country: UNITED STATES OF AMERICA Zip/Postal Code: 95630  
Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

Name: PRANAV TIPNIS Email: pranav.tipnis@intel.com  
Company: INTEL CORPORATION Mailstop: \_\_\_\_\_  
Address: 1900 PRAIRIE CITY RD  
City: FOLSOM State/Province: CA  
Country: UNITED STATES OF AMERICA Zip/Postal Code: 95630  
Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

Name: \_\_\_\_\_ Email: \_\_\_\_\_  
Company: \_\_\_\_\_ Mailstop: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State/Province: \_\_\_\_\_  
Country: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_  
Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

# UCSI ENGINEERING CHANGE REQUEST FORM

**Title: Get Connector Status Connector Partner Flag clarification**

**Applied to: UCSI Specification Version 3.0 Revision 1**

|                                                              |
|--------------------------------------------------------------|
| <b>Brief description of the functional changes proposed:</b> |
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|                                                                                                                                                                                                                                                                                  |
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| To align with the intended purpose of this field — to indicate the current operating mode of the connector, we propose renaming the field accordingly and updating the associated bit fields to accurately represent USB4 mode, as this is the information available to the LPM. |
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|                                                      |
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| <b>Benefits as a result of the proposed changes:</b> |
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|                                                                                |
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| Provides greater clarity and accurately reflects the true intent of the field. |
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|                                                                                                                          |
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| <b>An assessment of the impact to the existing revision and systems that currently conform to the USB specification:</b> |
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|                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------|
| One of the previously defined bits has been deprecated, as the PD Controller does not currently have the capability to populate this field. |
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|                                                  |
|--------------------------------------------------|
| <b>An analysis of the hardware implications:</b> |
|--------------------------------------------------|

|                                     |
|-------------------------------------|
| There are no hardware implications. |
|-------------------------------------|

|                                                  |
|--------------------------------------------------|
| <b>An analysis of the software implications:</b> |
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|                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If an OPM chooses to implement this change, it is required that the LPM/PPM communicate the current operating mode of the connector to the OPM. As the LPM has knowledge of the connector's operating mode — whether USB, Alternate Mode, or USB4, it shall notify the PPM/OPM with the corresponding bits set appropriately to reflect this status. |
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|                                                            |
|------------------------------------------------------------|
| <b>An analysis of the compliance testing implications:</b> |
|------------------------------------------------------------|

|                                                             |
|-------------------------------------------------------------|
| There are no compliance testing implications at this point. |
|-------------------------------------------------------------|

# UCSI ENGINEERING CHANGE REQUEST FORM

## Actual Change Requested

### (a). Section 6.5.17, Page 60, Table 6-43

#### From Text:

If the command completed successfully then the PPM shall set the MESSAGE IN Data Structure as described in Table 6-43.

Table 6-43: GET\_CONNECTOR\_STATUS Data

| Offset (Bits) | Field                                | Size (Bits) | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
|---------------|--------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|---|--------------------------------------|---|--------------------------------------|---|------------|---|------------|-----|---------------------------|---|-------------------------|---|-------------------------|---|----------|
| 0             | Connector Status Change              | 16          | A bitmap indicating the types of status changes that have occurred on the connector. See Table 6-44 for a description of each bit.                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 16            | Power Operation Mode                 | 3           | <div>This field is only valid when the <i>Connect Status</i> field is set to one. This field shall indicate the current power operation mode of the connector.</div> <table><tr><th>Value</th><th>Meaning</th></tr><tr><td>0</td><td>Reserved</td></tr><tr><td>1</td><td>USB Default Operation</td></tr><tr><td>2</td><td>BC</td></tr><tr><td>3</td><td>PD</td></tr><tr><td>4</td><td>USB Type-C Current – 1.5A</td></tr><tr><td>5</td><td>USB Type-C Current – 3A</td></tr><tr><td>6</td><td>USB Type-C Current – 5A</td></tr><tr><td>7</td><td>Reserved</td></tr></table> | Value | Meaning | 0 | Reserved                             | 1 | USB Default Operation                | 2 | BC         | 3 | PD         | 4   | USB Type-C Current – 1.5A | 5 | USB Type-C Current – 3A | 6 | USB Type-C Current – 5A | 7 | Reserved |
| Value         | Meaning                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 0             | Reserved                             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 1             | USB Default Operation                |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 2             | BC                                   |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 3             | PD                                   |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 4             | USB Type-C Current – 1.5A            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 5             | USB Type-C Current – 3A              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 6             | USB Type-C Current – 5A              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 7             | Reserved                             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 19            | Connect Status                       | 1           | This field indicates the current connect status of the connector. This field shall be set to one when a device is connected to this connector.                                                                                                                                                                                                                                                                                                                                                                                                                              |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 20            | Power Direction                      | 1           | <div>This field is only valid when the <i>Connect Status</i> field is set to one. The field shall indicate whether the connector is operating as a consumer or provider.</div> <table><tr><th>Value</th><th>Meaning</th></tr><tr><td>0</td><td>Connector is operating as a consumer</td></tr><tr><td>1</td><td>Connector is operating as a provider</td></tr></table>                                                                                                                                                                                                       | Value | Meaning | 0 | Connector is operating as a consumer | 1 | Connector is operating as a provider |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| Value         | Meaning                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 0             | Connector is operating as a consumer |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 1             | Connector is operating as a provider |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 21            | Connector Partner Flags              | 8           | <div>This field is only valid when the <i>Connect Status</i> field is set to one. This field indicates the current mode the connector is operating in.</div> <table><tr><th>Bit</th><th>Meaning</th></tr><tr><td>0</td><td>USB (USB 2.0 or USB 3.x)</td></tr><tr><td>1</td><td>Alternate Mode</td></tr><tr><td>2</td><td>USB4 gen 3</td></tr><tr><td>3</td><td>USB4 gen 4</td></tr><tr><td>4-7</td><td>Reserved</td></tr></table>                                                                                                                                           | Bit   | Meaning | 0 | USB (USB 2.0 or USB 3.x)             | 1 | Alternate Mode                       | 2 | USB4 gen 3 | 3 | USB4 gen 4 | 4-7 | Reserved                  |   |                         |   |                         |   |          |
| Bit           | Meaning                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 0             | USB (USB 2.0 or USB 3.x)             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 1             | Alternate Mode                       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 2             | USB4 gen 3                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 3             | USB4 gen 4                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |
| 4-7           | Reserved                             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |            |   |            |     |                           |   |                         |   |                         |   |          |

#### To Text:

If the command completed successfully then the PPM shall set the MESSAGE IN Data Structure as described in Table 6-43.

Table 6-43: GET\_CONNECTOR\_STATUS Data

| Offset (Bits) | Field | Size (Bits) | Description |
|---------------|-------|-------------|-------------|
|---------------|-------|-------------|-------------|

# UCSI ENGINEERING CHANGE REQUEST FORM

| 0     | Connector Status Change                                              | 16 | A bitmap indicating the types of status changes that have occurred on the connector.<br>See Table 6-44 for a description of each bit.                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
|-------|----------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|---|--------------------------------------|---|--------------------------------------|---|---------------------|---|----------------------|-----|---------------------------|---|-------------------------|---|-------------------------|---|----------|
| 16    | Power Operation Mode                                                 | 3  | <div>This field is only valid when the <i>Connect Status</i> field is set to one. This field shall indicate the current power operation mode of the connector.</div> <table><tr><th>Value</th><th>Meaning</th></tr><tr><td>0</td><td>Reserved</td></tr><tr><td>1</td><td>USB Default Operation</td></tr><tr><td>2</td><td>BC</td></tr><tr><td>3</td><td>PD</td></tr><tr><td>4</td><td>USB Type-C Current – 1.5A</td></tr><tr><td>5</td><td>USB Type-C Current – 3A</td></tr><tr><td>6</td><td>USB Type-C Current – 5A</td></tr><tr><td>7</td><td>Reserved</td></tr></table> | Value | Meaning | 0 | Reserved                             | 1 | USB Default Operation                | 2 | BC                  | 3 | PD                   | 4   | USB Type-C Current – 1.5A | 5 | USB Type-C Current – 3A | 6 | USB Type-C Current – 5A | 7 | Reserved |
| Value | Meaning                                                              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 0     | Reserved                                                             |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 1     | USB Default Operation                                                |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 2     | BC                                                                   |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 3     | PD                                                                   |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 4     | USB Type-C Current – 1.5A                                            |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 5     | USB Type-C Current – 3A                                              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 6     | USB Type-C Current – 5A                                              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 7     | Reserved                                                             |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 19    | Connect Status                                                       | 1  | This field indicates the current connect status of the connector. This field shall be set to one when a device is connected to this connector.                                                                                                                                                                                                                                                                                                                                                                                                                              |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 20    | Power Direction                                                      | 1  | <div>This field is only valid when the <i>Connect Status</i> field is set to one. The field shall indicate whether the connector is operating as a consumer or provider.</div> <table><tr><th>Value</th><th>Meaning</th></tr><tr><td>0</td><td>Connector is operating as a consumer</td></tr><tr><td>1</td><td>Connector is operating as a provider</td></tr></table>                                                                                                                                                                                                       | Value | Meaning | 0 | Connector is operating as a consumer | 1 | Connector is operating as a provider |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| Value | Meaning                                                              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 0     | Connector is operating as a consumer                                 |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 1     | Connector is operating as a provider                                 |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 21    | <del>Connector</del><br>Partner Flags<br>Connector<br>Operating Mode | 8  | <div>This field is only valid when the <i>Connect Status</i> field is set to one. This field indicates the current mode the Connector is operating in.</div> <table><tr><th>Bit</th><th>Meaning</th></tr><tr><td>0</td><td>USB (USB 2.0 or USB 3.x)</td></tr><tr><td>1</td><td>Alternate Mode</td></tr><tr><td>2</td><td>USB4 gen3 USB4 Mode</td></tr><tr><td>3</td><td>USB4 gen4 Deprecated</td></tr><tr><td>4-7</td><td>Reserved</td></tr></table>                                                                                                                        | Bit   | Meaning | 0 | USB (USB 2.0 or USB 3.x)             | 1 | Alternate Mode                       | 2 | USB4 gen3 USB4 Mode | 3 | USB4 gen4 Deprecated | 4-7 | Reserved                  |   |                         |   |                         |   |          |
| Bit   | Meaning                                                              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 0     | USB (USB 2.0 or USB 3.x)                                             |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 1     | Alternate Mode                                                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 2     | USB4 gen3 USB4 Mode                                                  |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 3     | USB4 gen4 Deprecated                                                 |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |
| 4-7   | Reserved                                                             |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |         |   |                                      |   |                                      |   |                     |   |                      |     |                           |   |                         |   |                         |   |          |