USB Power Delivery ENGINEERING CHANGE NOTICE

Title: DRP and DRD bits in SrcCap and SnkCap messages
Applied to: USB Power Delivery Specification Revision 2.0 Version 1.2

Brief description of the functional changes:
To clarify usage of Dual-Role Power bit and Dual-Role Data bit in the Source_Capabilities message and the Sink_Capabilities message

Benefits as a result of the changes:
We observed that an interpretation of this bit is slightly different among some implementations and the Compliance test may fail due to this misinterpretation. This ECR can prevent from occurring such failures.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
Some existing implementations may be affected because of a difference between this ECR and their implementations.

An analysis of the hardware implications:
Probably no implications

An analysis of the software implications:
A firmware of those devices that have different implementation from this ECR need to be updated.

An analysis of the compliance testing implications:
Some compliance tests seem to implement different interpretation of this bit. Therefore these also need to be updated.

Actual Change

(a). Section 6.4.1.2.3.1 Dual-Role Power

From Text:

The Dual-Role Power bit shall be set when the Port is Dual-Role Power capable i.e. supports the PR_Swap Message.
This is a static capability which shall remain fixed for a given device.

To Text:

The Dual-Role Power bit shall be set when the Port is Dual-Role Power capable i.e. supports the PR_Swap Message.
This is a static capability which shall remain fixed for a given device regardless of the device's present power role. If the Dual-Role Power bit is set to one in the ***Source_Capabilities*** Message the Dual-Role Power bit in the ***Sink_Capabilities*** Message shall also be set to one. If the Dual-Role Power bit is set to zero in the ***Source_Capabilities*** Message the Dual-Role Power bit in the ***Sink_Capabilities*** Message shall also be set to zero.

(b). Section 6.4.1.3.1.1 Dual-Role Power

From Text:

The Dual-Role Power bit shall be set when the Port is Dual-Role Power capable i.e. supports the PR_Swap Message.
This is a static capability which shall remain fixed for a given device.

To Text:

The Dual-Role Power bit shall be set when the Port is Dual-Role Power capable i.e. supports the PR_Swap Message.
This is a static capability which shall remain fixed for a given device regardless of the device's present power role. If the Dual-Role Power bit is set to one in the ***Source_Capabilities*** Message the Dual-Role Power bit in the ***Sink_Capabilities*** Message shall also be set to one. If the Dual-Role Power bit is set to zero in the ***Source_Capabilities*** Message the Dual-Role Power bit in the ***Sink_Capabilities*** Message shall also be set to zero.

(c). Section 6.4.1.2.3.5 Dual-Role Data

From Text:

The Dual-Role Data bit shall be set when the Port is USB Type-C (see ***[USB Type-C 1.2]***) and supports the ***DR_Swap*** Message. This is a static capability which shall remain fixed for a given device.

To Text:

The Dual-Role Data bit shall be set when the Port is USB Type-C (see ***[USB Type-C 1.2]***) and supports the ***DR_Swap*** Message. This is a static capability which shall remain fixed for a given device regardless of the device's present power role or data role. If the Dual-Role Data bit is set to one in the ***Source_Capabilities*** Message the Dual-Role Data bit in the ***Sink_Capabilities*** Message shall also be set to one. If the Dual-Role Data bit is set to zero in the ***Source_Capabilities*** Message the Dual-Role Data bit in the ***Sink_Capabilities*** Message shall also be set to zero.

(d). Section 6.4.1.3.1.5 Dual-Role Data

From Text:

The Dual-Role Data bit shall be set when the Port is USB Type-C (see ***[USB Type-C 1.2]***) and supports the ***DR_Swap*** Message. This is a static capability which shall remain fixed for a given device.

To Text:

The Dual-Role Data bit shall be set when the Port is USB Type-C (see ***[USB Type-C 1.2]***) and supports the ***DR_Swap*** Message. This is a static capability which shall remain fixed for a given device regardless of the device's present power role or data role. If the Dual-Role Data bit is set to one in the ***Source_Capabilities*** Message the Dual-Role Data bit in the ***Sink_Capabilities*** Message shall also be set to one. If the Dual-Role Data bit is set to zero in the ***Source_Capabilities*** Message the Dual-Role Data bit in the ***Sink_Capabilities*** Message shall also be set to zero.