

# USB Power Delivery ENGINEERING CHANGE NOTICE

**Title: AMS Update**

**Applied to: USB Power Delivery Specification Revision 3.1  
Version 1.4**

<b>Brief description of the functional changes proposed:</b>
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Replace the AMS table with a more useful table including the following:
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| <ol style="list-style-type: none"><li>1. Lists of all relevant AMSs</li><li>2. Sequences of messages detailed</li><li>3. Cross-references to both the AMS and State Machine figures.</li></ol> |
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Add missing AMS examples based on list above.
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Modify/add the following state machines:
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| <ul style="list-style-type: none"><li>• Alert<ul style="list-style-type: none"><li>○ Add waiting for Get_Status/sender response timeout state to ensure state machine starts/ends in ready.</li><li>○ Also allows for Not_Supported Message to be received.</li></ul></li><li>• Source_Info<ul style="list-style-type: none"><li>○ Added missing state diagrams.</li></ul></li></ul> |
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<b>Benefits as a result of the proposed changes:</b>
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Clarifies exactly where each AMS starts and ends and what is interruptible/non-interruptible.
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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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Should remove confusion over when to change the Rp value for example.
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<b>An analysis of the hardware implications:</b>
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Should be none.
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<b>An analysis of the software implications:</b>
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Should be none.
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<b>An analysis of the compliance testing implications:</b>
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Helps to clarify the compliance tests.

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## Actual Change Requested

### (a). Table 1.1, “Terms and Abbreviations”, Page 70

#### New Text:

Term	Description
Vendor Defined Extended Message (VDEM)	PD Extended Message defined for vendor/standards usage. A VDEM does not define any structure and Messages can be created in any manner that the vendor chooses.

### (b). Section 8.3.2.1.3 “Interruptible and Non-interruptible Atomic Message Sequences”, Page 384

#### From Text:

Table 8-4 details which AMS (as defined in Section 8.3.2) *shall* be treated as Interruptible or Non-interruptible during the sequence. Every AMS which starts with the same Message *shall* obey the Interruptible/Non-interruptible requirement. Note that every AMS is Interruptible until the first Message in the sequence has been successfully sent (*GoodCRC* Message received). Any Sequence of VDMs *shall* be Interruptible. After the AMS that caused the interruption has completed, if the original AMS is still needed the interrupted AMS *shall* be Re-run.

Table 8-4 Interruptible and Non-interruptible AMS

AMS	Interruptible	Reference
Power Negotiation	No	Section 8.3.3.2, 8.3.3.3
GotoMin	No	Section 8.3.3.2, Section 8.3.3.3
Soft Reset	No	Section 8.3.3.4
Data Reset	No	Section 8.3.2.4
Hard Reset	No	Section 8.3.3.2, Section 8.3.3.3
Cable Reset	No	Section 8.3.3.24.2.3
Get Source Capabilities	No	Section 8.3.3.2, Section 8.3.3.3
Get Sink Capabilities	No	Section 8.3.3.2, Section 8.3.3.3
Power Role Swap	No	Section 8.3.3.18.3, Section 8.3.3.18.4
Fast Role Swap	No	Section 8.3.3.18.5, Section 8.3.3.18.6
Data Role Swap	No	Section 8.3.3.18.1, Section 8.3.3.18.2
VCONN Swap	No	Section 8.3.3.19
Source Alert	N/A	Section 8.3.3.8
Getting Source Extended Capabilities	No	Section 8.3.3.9
Getting Source/Sink Status	No	Section 8.3.3.10
Getting Battery Capabilities	No	Section 8.3.3.11
Getting Battery Status	No	Section 8.3.3.12
Getting Manufacturer Information	No	Section 8.3.3.13
Security	Yes	Section 8.3.3.14
Firmware Update	Yes	Section 8.3.3.17
Discover Identity	Yes <sup>1</sup>	Section 8.3.3.20.1, Section 8.3.3.21.1
Source startup Cable Plug Discover Identity	Yes	Section 8.3.3.20.1, Section 8.3.3.24.3
Discover SVIDs	Yes	Section 8.3.3.20.2, Section 8.3.3.21.2

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AMS	Interruptible	Reference
Discover Modes	Yes	Section 8.3.3.20.3, Section 8.3.3.21.3
DFP to UFP Enter Mode	Yes	Section 8.3.3.22.1, Section 8.3.3.23.1
DFP to UFP Exit Mode	Yes	Section 8.3.3.22.2, Section 8.3.3.23.2
DFP to Cable Plug Enter Mode	Yes	Section 8.3.3.22.1, Section 8.3.3.24.4.1
DFP to Cable Plug Exit Mode	Yes	Section 8.3.3.22.1, Section 8.3.3.24.4.2
Attention	N/A	Section 8.3.3.20.4
Built in Self-Test (BIST)	No	Section 8.3.2.14
Sequence of Unstructured VDMs	Yes	Section 6.4.4.1
Sequence of Structured VDMs using Vendor Commands	Yes	Section 6.4.4.2
Country Info	Yes	Section 8.3.2.10.8
Enter USB	No	Section 8.3.2.15
Country Codes	Yes	Section 8.3.2.10.7
EPR Mode Entry or Exit	No	Section 8.3.3.25
<sup>1</sup> Discover Identity of a Cable Plug is non-interruptible when the process is initiated as part of the EPR Mode Entry Process.		

## To Text:

Table 8-4 details which AMS (as defined in Section 8.3.2) **Shall** be treated as Interruptible or Non-interruptible during the sequence. Every AMS which starts with the same Message **Shall** obey the Interruptible/Non-interruptible requirement. Note that every AMS is Interruptible until the first Message in the sequence has been successfully sent (**GoodCRC** Message received). Any Sequence of VDMs **Shall** be Interruptible. After the AMS that caused the interruption has completed, if the original AMS is still needed the interrupted AMS **Shall** be Re-run.

The Message Sequences in Table 8-4 list sequences of either Messages or combinations of Messages and one or more embedded AMSes. Where there is an embedded AMS the entire Message Sequence is treated as an AMS and the Rp value used for collision avoidance (see Section 5.7) **Shall** only be changed on leaving or entering the ready state at the beginning or end of the entire Message Sequence, and not at the start or end of the embedded AMS.

Table 8-5 details a Hard Reset (which is Signaling not an AMS) followed by an SPR Contract Negotiation AMS which **Shall** be treated as Non-Interruptible.

**Table 8-4 Interruptible and Non-interruptible AMS**

AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
<b>Power Negotiation (SPR)</b>				<b>Section 8.3.2.2.1</b>	
SPR Explicit Contract Negotiation (Accept)	No	<ol style="list-style-type: none"> <li>1. <b>Source_Capabilities Message</b></li> <li>2. <b>Request Message</b></li> <li>3. <b>Accept Message</b></li> <li>4. <b>PS_RDY Message</b></li> </ol>	Started by Source, SPR Mode	Section 8.3.2.2.1.1.1	Section 8.3.3.2, Section 8.3.3.3
SPR Explicit Contract Negotiation (Reject)	No	<ol style="list-style-type: none"> <li>1. <b>Source_Capabilities Message</b></li> <li>2. <b>Request Message</b></li> <li>3. <b>Reject Message</b></li> </ol>		Section 8.3.2.2.1.1.2	
SPR Explicit Contract Negotiation (Wait)	No	<ol style="list-style-type: none"> <li>1. <b>Source_Capabilities Message</b></li> <li>2. <b>Request Message</b></li> <li>3. <b>Wait Message</b></li> </ol>		Section 8.3.2.2.1.1.3	

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
Reclaiming Power with GotoMin Message	No	1. <i>GotoMin Message</i> 2. <i>PS_RDY Message</i>	Started by Sink, SPR Mode	Section 8.3.2.2.1.2	
SPR PPS Keep Alive	No	1. <i>Request Message</i> 2. <i>Accept Message</i> 3. <i>PS_RDY Message</i>		Section 8.3.2.2.1.3	Section 8.3.3.3
SPR Sink Makes Request (Accept)	No	1. <i>Request Message</i> 2. <i>Accept Message</i> 3. <i>PS_RDY Message</i>		Section 8.3.2.2.1.4	Section 8.3.3.2, Section 8.3.3.3
SPR Sink Makes Request (Reject)	No	1. <i>Request Message</i> 2. <i>Reject Message</i>		Section 8.3.2.2.1.4.2	
SPR Sink Makes Request (Wait)	No	1. <i>Request Message</i> 2. <i>Wait Message</i>		Section 8.3.2.2.1.4.3	
<b>Power Negotiation (EPR)</b>				<b>Section 8.3.2.2.2</b>	
Entering EPR Mode (Success)	No	1. <i>EPR_Mode (Enter) Message</i> 2. <i>EPR_Mode (Enter Acknowledge) Message</i> 3. Vconn Source Swap, initiated by non- Vconn Source (Accept) AMS 4. Initiator to Responder Discover Identity (ACK) AMS (Optional for Sources with captive cables) 5. <i>EPR_Mode (Enter Succeeded) Message</i> 6. EPR Explicit Contract Negotiation AMS	Started by Sink, SPR Mode	Section 8.3.2.2.2.1 Section 8.3.2.9.1 Section 8.3.2.9.2 Section 8.3.2.13.3 Section 8.3.2.2.2.4	Section 8.3.3.26.1, Section 8.3.3.26.2 Section 8.3.3.20 Section 8.3.3.21.1, Section 8.3.3.22.1 Section 8.3.3.2, Section 8.3.3.3
Entering EPR Mode (Failure due to non-EPR cable)	No	1. <i>EPR_Mode (Enter) Message</i> 2. <i>EPR_Mode (Enter Acknowledge) Message</i> 3. Vconn Source Swap, initiated by non- Vconn Source (Accept) AMS 4. Initiator to Responder Discover Identity (ACK) AMS (Optional for Sources with captive cables) 5. <i>EPR_Mode (Enter Failed) Message</i>	Started by Sink, SPR Mode	Section 8.3.2.2.2.2 Section 8.3.2.9.1 Section 8.3.2.9.2 Section 8.3.2.13.3	Section 8.3.3.26.1, Section 8.3.3.26.2 Section 8.3.3.20 Section 8.3.3.21.1, Section 8.3.3.22.1
Entering EPR Mode (Failure of VCONN Swap)	No	1. <i>EPR_Mode (Enter) Message</i> 2. <i>EPR_Mode (Enter Acknowledge) Message</i> 3. Vconn Source Swap, initiated by non- Vconn Source (Reject) AMS 4. <i>EPR_Mode (Enter Failed) Message</i>	Started by Sink, SPR Mode	Section 8.3.2.2.2.3 Section 8.3.2.9.1 Section 8.3.2.9.2	Section 8.3.3.26.1, Section 8.3.3.26.2 Section 8.3.3.20

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
EPR Explicit Contract Negotiation (Accept)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Source_Capabilities Message</i></li> <li>2. <i>EPR_Request Message</i></li> <li>3. <i>Accept Message</i></li> <li>4. <i>PS_RDY Message</i></li> </ol>	Started by Source, EPR Mode	Section 8.3.2.2.2.2.1	Section 8.3.3.2, Section 8.3.3.3
EPR Explicit Contract Negotiation (Reject)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Source_Capabilities Message</i></li> <li>2. <i>EPR_Request Message</i></li> <li>3. <i>Reject Message</i></li> </ol>		Section 8.3.2.2.2.2.2	
EPR Explicit Contract Negotiation (Wait)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Source_Capabilities Message</i></li> <li>2. <i>EPR_Request Message</i></li> <li>3. <i>Wait Message</i></li> </ol>		Section 8.3.2.2.2.2.3	
EPR Keep Alive	No	<ol style="list-style-type: none"> <li>1. <i>EPR_KeepAlive Message</i></li> <li>2. <i>EPR_KeepAlive_Ack Message</i></li> </ol>	Started by Sink, EPR Mode	Section 8.3.2.2.2.5	
Exiting EPR Mode (Sink Initiated)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Mode (Exit) Message</i></li> <li>2. SPR Explicit Contract Negotiation AMS</li> </ol>	Started by Sink, EPR Mode	Section 8.3.2.2.2.6	Section 8.3.3.26.3, Section 8.3.3.26.4
Exiting EPR Mode (Source Initiated)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Mode (Exit) Message</i></li> <li>2. SPR Explicit Contract Negotiation AMS</li> </ol>	Started by Source, EPR Mode	Section 8.3.2.2.2.7	
EPR Sink Makes Request (Accept)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Request Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>PS_RDY Message</i></li> </ol>	Started by Sink, EPR Mode	Section 8.3.2.2.2.6	Section 8.3.3.2, Section 8.3.3.3
EPR Sink Makes Request (Reject)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Request Message</i></li> <li>2. <i>Reject Message</i></li> </ol>	Started by Sink, EPR Mode	Section 8.3.2.2.2.6.2	
EPR Sink Makes Request (Wait)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Request Message</i></li> <li>2. <i>Wait Message</i></li> </ol>	Started by Sink, EPR Mode	Section 8.3.2.2.2.6.3	
Not Supported				Section 8.3.2.3	
Unsupported Message	Yes/No <sup>1,2</sup>	<ol style="list-style-type: none"> <li>1. Any Message which is not supported by the Source or Sink</li> <li>2. <i>Not Supported Message</i></li> </ol>	Started by Source or Sink	Section 8.3.2.3	Section 8.3.3.6.2
Ping				Section 8.3.2.4	
Ping	No	<ol style="list-style-type: none"> <li>1. <i>Ping Message</i></li> </ol>		Section 8.3.2.4	Section 8.3.3.7

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
<b>Soft Reset</b>				<b>Section 8.3.2.3</b>	
Soft Reset	No	<ol style="list-style-type: none"> <li>1. <i>Soft_Reset Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. In SPR Mode: SPR Explicit Contract Negotiation AMS or in EPR Mode: EPR Explicit Contract Negotiation AMS</li> </ol>	N/A	Section 8.3.2.3 Section 8.3.2.2.1.1 Section 8.3.2.2.2.4	Section 8.3.3.4.1, Section 8.3.3.4.2, Section 8.3.3.25.2.1, Section 8.3.3.25.2.3, Section 8.3.3.25.2.4, Section 8.3.3.2, Section 8.3.3.3
<b>Data Reset</b>				<b>Section 8.3.2.4</b>	
DFP Initiated Data Reset where the DFP is the VCONN Source	No	<ol style="list-style-type: none"> <li>1. <i>Data_Reset Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>Data_Reset_Complete Message</i></li> </ol>	Started by DFP	Section 8.3.2.4.1	Section 8.3.3.5.1, Section 8.3.3.5.2
DFP Receives Data Reset where the DFP is the VCONN Source	No	<ol style="list-style-type: none"> <li>1. <i>Data_Reset Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>Data_Reset_Complete Message</i></li> </ol>	Started by UFP	Section 8.3.2.4.2	
DFP Initiated Data Reset where the UFP is the VCONN Source	No	<ol style="list-style-type: none"> <li>1. <i>Data_Reset Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>PS_RDY Message</i></li> <li>4. <i>Data_Reset_Complete Message</i></li> </ol>	Started by DFP	Section 8.3.2.4.3	
DFP Receives Data Reset where the UFP is the VCONN Source	No	<ol style="list-style-type: none"> <li>1. <i>Data_Reset Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>PS_RDY Message</i></li> <li>4. <i>Data_Reset_Complete Message</i></li> </ol>	Started by UFP	Section 8.3.2.4.4	
<b>Power Role Swap</b>				<b>Section 8.3.2.8</b>	
Source Initiated Power Role Swap (Accept)	No	<ol style="list-style-type: none"> <li>1. <i>PR_Swap Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>PS_RDY Message</i></li> <li>4. <i>PS_RDY Message</i></li> <li>5. SPR Explicit Contract Negotiation AMS</li> </ol>	Started by Source	Section 8.3.2.8.1.1	Section 8.3.3.19.3, Section 8.3.3.19.4, Section 8.3.3.2, Section 8.3.3.3
Source Initiated Power Role Swap (Reject)	No	<ol style="list-style-type: none"> <li>1. <i>PR_Swap Message</i></li> <li>2. <i>Reject Message</i></li> </ol>		Section 8.3.2.8.1.2	
Source Initiated Power Role Swap (Wait)	No	<ol style="list-style-type: none"> <li>1. <i>PR_Swap Message</i></li> <li>2. <i>Wait Message</i></li> </ol>		Section 8.3.2.8.1.3	

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
Sink Initiated Power Role Swap (Accept)	No	<ol style="list-style-type: none"> <li>1. <i>PR_Swap Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>PS_RDY Message</i></li> <li>4. <i>PS_RDY Message</i></li> <li>5. <i>SPR Explicit Contract Negotiation AMS</i></li> </ol>	Started by Sink	Section 8.3.2.8.2.1	
Sink Initiated Power Role Swap (Reject)	No	<ol style="list-style-type: none"> <li>1. <i>PR_Swap Message</i></li> <li>2. <i>Reject Message</i></li> </ol>		Section 8.3.2.8.2.2	
Sink Initiated Power Role Swap (Wait)	No	<ol style="list-style-type: none"> <li>1. <i>PR_Swap Message</i></li> <li>2. <i>Wait Message</i></li> </ol>		Section 8.3.2.8.2.3	
<b>Fast Role Swap</b>				<b>Section 8.3.2.7</b>	
Fast Role Swap	No	<ol style="list-style-type: none"> <li>1. <i>FR_Swap Message</i></li> <li>2. <i>Accept Message</i></li> <li>3. <i>PS_RDY Message</i></li> <li>4. <i>PS_RDY Message</i></li> <li>5. <i>SPR Explicit Contract Negotiation AMS</i></li> </ol>	Started by Sink	Section 8.3.2.7 Section 8.3.2.2.1.1	Section 8.3.3.19.5, Section 8.3.3.19.6 Section 8.3.3.2, Section 8.3.3.3
<b>Data Role Swap</b>				<b>Section 8.3.2.8</b>	
Data Role Swap, Initiated by UFP Operating as Sink (Accept)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Accept Message</i></li> </ol>	Started by Sink	Section 8.3.2.10.1.1	Section 8.3.3.19.1, Section 8.3.3.19.2
Data Role Swap, Initiated by UFP Operating as Sink (Reject)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Reject Message</i></li> </ol>		Section 8.3.2.10.1.2	
Data Role Swap, Initiated by UFP Operating as Sink (Wait)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Wait Message</i></li> </ol>		Section 8.3.2.10.1.3	
Data Role Swap, Initiated by UFP Operating as Source (Accept)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Accept Message</i></li> </ol>	Started by Source	Section 8.3.2.10.2.1	
Data Role Swap, Initiated by UFP Operating as Source (Reject)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Reject Message</i></li> </ol>		Section 8.3.2.10.2.2	
Data Role Swap, Initiated by UFP Operating as Source (Wait)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Wait Message</i></li> </ol>		Section 8.3.2.10.2.3	
Data Role Swap, Initiated by DFP Operating as Source (Accept)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Accept Message</i></li> </ol>	Started by Source	Section 8.3.2.10.3.1	
Data Role Swap, Initiated by DFP Operating as Source (Reject)	No	<ol style="list-style-type: none"> <li>1. <i>DR_Swap Message</i></li> <li>2. <i>Reject Message</i></li> </ol>		Section 8.3.2.10.3.2	



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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
Data Role Swap, Initiated by DFP Operating as Source (Wait)	No	1. <b>DR_Swap Message</b> 2. <b>Wait Message</b>		Section 8.3.2.10.3.3	
Data Role Swap, Initiated by DFP Operating as Sink (Accept)	No	1. <b>DR_Swap Message</b> 2. <b>Accept Message</b>	Started by Sink	Section 8.3.2.10.4.1	
Data Role Swap, Initiated by DFP Operating as Sink (Reject)	No	1. <b>DR_Swap Message</b> 2. <b>Reject Message</b>		Section 8.3.2.10.4.2	
Data Role Swap, Initiated by DFP Operating as Sink (Wait)	No	1. <b>DR_Swap Message</b> 2. <b>Wait Message</b>		Section 8.3.2.10.4.3	
<b>VCONN Swap</b>				<b>Section 8.3.2.9</b>	
VCONN Source Swap, initiated by VCONN Source (Accept)	No	1. <b>VCONN_Swap Message</b> 2. <b>Accept Message</b> 3. <b>PS_RDY Message</b>	Started by VCONN Source	Section 8.3.2.11.1.1	Section 8.3.3.21
VCONN Source Swap, initiated by VCONN Source (Reject)	No	1. <b>VCONN_Swap Message</b> 2. <b>Reject Message</b>		Section 8.3.2.11.1.2	
VCONN Source Swap, initiated by VCONN Source (Wait)	No	1. <b>VCONN_Swap Message</b> 2. <b>Wait Message</b>		Section 8.3.2.11.1.3	
VCONN Source Swap, initiated by non- VCONN Source (Accept)	No	1. <b>VCONN_Swap Message</b> 2. <b>Accept Message</b> 3. <b>PS_RDY Message</b>	Started by non-VCONN Source	Section 8.3.2.11.2.1	
Vconn Source Swap, initiated by non- Vconn Source (Reject)	No	1. <b>VCONN_Swap Message</b> 2. <b>Reject Message</b>		Section 8.3.2.11.2.2	
VCONN Source Swap, initiated by non- VCONN Source (Wait)	No	1. <b>VCONN_Swap Message</b> 2. <b>Wait Message</b>		Section 8.3.2.11.2.3	
<b>Alert</b>				<b>Section 8.3.2.10.1</b>	
Source sends Alert to a Sink ( <b>SenderResponseTimer</b> Timeout)	No	1. <b>Alert Message</b>	Started by Source	Section 8.3.2.10.1.1	Section 8.3.3.8.1, Section 8.3.3.8.2
Source sends Alert to a Sink ( <b>Get_Status</b> Message)	No	1. <b>Alert Message</b> 2. Sink Gets Source Status AMS			
Sink sends Alert to a Source ( <b>SenderResponseTimer</b> Timeout)	No	1. <b>Alert Message</b>	Started by Sink	Section 8.3.2.10.1.2	Section 8.3.3.8.3, Section 8.3.3.8.4
Sink sends Alert to a Source ( <b>Get_Status</b> Message)	No	1. <b>Alert Message</b> 2. Source Gets Sink Status AMS			

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
<b>Status</b>				<b>Section 8.3.2.10.2</b>	
Sink Gets Source Status	No	1. <i>Get_Status Message</i> 2. <i>Status Message</i>	Started by Sink	Section 8.3.2.10.2.1	Section 8.3.3.10.1, Section 8.3.3.10.2
Source Gets Sink Status	No	1. <i>Get_Status Message</i> 2. <i>Status Message</i>	Started by Source	Section 8.3.2.10.2.2	
VCONN Source Gets Cable Plug Status	No	1. <i>Get_Status Message</i> 2. <i>Status Message</i>	Started by VCONN Source	Section 8.3.2.10.2.3	
Sink Gets Source PPS Status	No	1. <i>Get_PPS_Status Message</i> 2. <i>PPS_Status Message</i>	Started by Sink	Section 8.3.2.10.2.4	Section 8.3.3.10.3, Section 8.3.3.10.4
<b>Source/Sink Capabilities (SPR)</b>				<b>Section 8.3.2.10.3.1</b>	
Sink Gets Source Capabilities (EPR Mode)	No	1. <i>Get_Source_Cap Message</i> 2. <i>Source_Capabilities Message</i>	Started by Sink	Section 8.3.2.10.3.1.1	Section 8.3.3.2, Section 8.3.3.3
Sink Gets Source Capabilities (Accept in SPR Mode)	No	1. <i>Get_Source_Cap Message</i> 2. <i>Source_Capabilities Message</i> 3. In SPR Mode only: SPR Sink Makes Request 4. SPR Sink Makes Request (Accept) AMS		Section 8.3.2.2.1.4 Section 8.3.2.2.1.4.2 Section 8.3.2.2.1.4.3	
Sink Gets Source Capabilities (Reject in SPR Mode)	No	1. <i>Get_Source_Cap Message</i> 2. <i>Source_Capabilities Message</i> 3. In SPR Mode only: SPR Sink Makes Request (Reject) AMS			
Sink Gets Source Capabilities (Wait in SPR Mode)	No	1. <i>Get_Source_Cap Message</i> 2. <i>Source_Capabilities Message</i> 3. In SPR Mode only: SPR Sink Makes Request (Wait) AMS			
Dual-Role Source Gets Source Capabilities from a Dual-Role Sink	No	1. <i>Get_Source_Cap Message</i> 2. <i>Source_Capabilities Message</i>	Started by Source	Section 8.3.2.10.3.1.2	Section 8.3.3.19.7, Section 8.3.3.19.10
Source Gets Sink Capabilities	No	1. <i>Get_Sink_Cap Message</i> 2. <i>Sink_Capabilities Message</i>	Started by Source	Section 8.3.2.10.3.1.3	Section 8.3.3.2, Section 8.3.3.3
Dual-Role Sink Get Sink Capabilities from a Dual-Role Source	No	1. <i>Get_Sink_Cap Message</i> 2. <i>Sink_Capabilities Message</i>	Started by Sink	Section 8.3.2.10.3.1.4	Section 8.3.3.19.9, Section 8.3.3.19.8
<b>Source/Sink Capabilities (EPR)</b>				<b>Section 8.3.2.10.3.2</b>	
Sink Gets EPR Source Capabilities (SPR Mode)	No	1. <i>EPR_Get_Source_Cap Message</i> 2. <i>EPR_Source_Capabilities Message</i>	Started by Sink	Section 8.3.2.10.3.2.1	Section 8.3.3.2,

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
Sink Gets EPR Source Capabilities (Accept in EPR Mode)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Get_Source_Cap Message</i></li> <li>2. <i>EPR_Source_Capabilities Message</i></li> <li>3. In EPR Mode only: EPR Sink Makes Request</li> <li>4. EPR Sink Makes Request (Accept) AMS</li> </ol>		Section 8.3.2.2.2.6 Section 8.3.2.2.2.6.2 Section 8.3.2.2.2.6.3	Section 8.3.3.3
Sink Gets EPR Source Capabilities (Reject in EPR Mode)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Get_Source_Cap Message</i></li> <li>2. <i>EPR_Source_Capabilities Message</i></li> <li>3. In EPR Mode only: EPR Sink Makes Request (Reject) AMS</li> </ol>			
Sink Gets EPR Source Capabilities (Wait in EPR Mode)	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Get_Source_Cap Message</i></li> <li>2. <i>EPR_Source_Capabilities Message</i></li> <li>3. In EPR Mode only: EPR Sink Makes Request (Wait) AMS</li> </ol>			
Dual-Role Source Gets Source Capabilities from a Dual-Role EPR Sink	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Get_Source_Cap Message</i></li> <li>2. <i>EPR_Source_Capabilities Message</i></li> </ol>	Started by Source	Section 8.3.2.10.3.2.2	Section 8.3.3.19.7, Section 8.3.3.19.10
Source Gets Sink EPR Capabilities	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Get_Sink_Cap Message</i></li> <li>2. <i>EPR_Sink_Capabilities Message</i></li> </ol>	Started by Source	Section 8.3.2.10.3.2.3	Section 8.3.3.2, Section 8.3.3.3
Dual-Role Sink Get Sink EPR Capabilities from a Dual-Role Source	No	<ol style="list-style-type: none"> <li>1. <i>EPR_Get_Sink_Cap Message</i></li> <li>2. <i>EPR_Sink_Capabilities Message</i></li> </ol>	Started by Sink	Section 8.3.2.10.3.2.4	Section 8.3.3.19.9, Section 8.3.3.19.8
<b>Extended Capabilities</b>				<b>Section 8.3.2.10.4</b>	
Sink Gets Source Extended Capabilities	No	<ol style="list-style-type: none"> <li>1. <i>Get_Source_Cap_Extended Message</i></li> <li>2. <i>Source_Capabilities_Extended Message</i></li> </ol>	Started by Sink	Section 8.3.2.10.4.1	Section 8.3.3.9.1, Section 8.3.3.9.2
Dual-Role Source Gets Source Capabilities Extended from a Dual-Role Sink	No	<ol style="list-style-type: none"> <li>1. <i>Get_Source_Cap_Extended Message</i></li> <li>2. <i>Source_Capabilities_Extended Message</i></li> </ol>	Started by Source	Section 8.3.2.10.4.2	Section 8.3.3.19.11, Section 8.3.3.19.12
Source Gets Sink Extended Capabilities	No	<ol style="list-style-type: none"> <li>1. <i>Get_Sink_Cap_Extended Message</i></li> <li>2. <i>Sink_Capabilities_Extended Message</i></li> </ol>	Started by Source	Section 8.3.2.10.4.3	Section 8.3.3.9.3, Section 8.3.3.9.4
Dual-Role Sink Gets Sink Capabilities Extended from a Dual-Role Source	No	<ol style="list-style-type: none"> <li>1. <i>Get_Sink_Cap_Extended Message</i></li> <li>2. <i>Sink_Capabilities_Extended Message</i></li> </ol>	Started by Sink	Section 8.3.2.10.4.4	Section 8.3.3.19.13, Section 8.3.3.19.14
<b>Battery Capabilities and Status</b>				<b>Section 8.3.2.10.5</b>	
Sink Gets Battery Capabilities	No	<ol style="list-style-type: none"> <li>1. <i>Get_Battery_Cap Message</i></li> <li>2. <i>Battery_Capabilities Message</i></li> </ol>	Started by Sink	Section 8.3.2.10.5.1	Section 8.3.3.11.1,

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
Source Gets Battery Capabilities	No	1. <i>Get_Battery_Cap Message</i> 2. <i>Battery_Capabilities Message</i>	Started by Source	Section 8.3.2.10.5.2	Section 8.3.3.11.2
Sink Gets Battery Status	No	1. <i>Get_Battery_Status Message</i> 2. <i>Battery_Status Message</i>	Started by Sink	Section 8.3.2.10.5.3	Section 8.3.3.12.1, Section 8.3.3.12.2
Source Gets Battery Status	No	1. <i>Get_Battery_Status Message</i> 2. <i>Battery_Status Message</i>	Started by Source	Section 8.3.2.10.5.4	
<b>Manufacturer Information</b>				<b>Section 8.3.2.10.6</b>	
Source Gets Port Manufacturer Information from a Sink	No	1. <i>Get_Manufacturer_Info Message</i> 2. <i>Manufacturer_Info Message</i>	Started by Source	Section 8.3.2.10.6.1	Section 8.3.3.13.1, Section 8.3.3.13.2
Sink Gets Port Manufacturer Information from a Source	No	1. <i>Get_Manufacturer_Info Message</i> 2. <i>Manufacturer_Info Message</i>	Started by Sink	Section 8.3.2.10.6.2	
Source Gets Battery Manufacturer Information from a Sink	No	1. <i>Get_Manufacturer_Info Message</i> 2. <i>Manufacturer_Info Message</i>	Started by Source	Section 8.3.2.10.6.3	
Sink Gets Battery Manufacturer Information from a Source	No	1. <i>Get_Manufacturer_Info Message</i> 2. <i>Manufacturer_Info Message</i>	Started by Sink	Section 8.3.2.10.6.4	
VCONN Source Gets Manufacturer Information from a Cable Plug	No	1. <i>Get_Manufacturer_Info Message</i> 2. <i>Manufacturer_Info Message</i>	Started by VCONN Source	Section 8.3.2.10.6.5	
<b>Country Codes</b>				<b>Section 8.3.2.10.7</b>	
Source Gets Country Codes from a Sink	Yes	1. <i>Get_Country_Codes Message</i> 2. <i>Country_Codes Message</i>	Started by Source	Section 8.3.2.10.7.1	Section 8.3.3.14.1, Section 8.3.3.14.2
Sink Gets Country Codes from a Source	Yes	1. <i>Get_Country_Codes Message</i> 2. <i>Country_Codes Message</i>	Started by Sink	Section 8.3.2.10.7.2	
VCONN Source Gets Country Codes from a Cable Plug	Yes	1. <i>Get_Country_Codes Message</i> 2. <i>Country_Codes Message</i>	Started by VCONN Source	Section 8.3.2.10.7.3	
<b>Country Information</b>				<b>Section 8.3.2.10.8</b>	
Source Gets Country Information from a Sink	Yes	1. <i>Get_Country_Info Message</i> 2. <i>Country_Info Message</i>	Started by Source	Section 8.3.2.10.8.1	Section 8.3.3.14.3, Section 8.3.3.14.4
Sink Gets Country Information from a Source	Yes	1. <i>Get_Country_Info Message</i> 2. <i>Country_Info Message</i>	Started by Sink	Section 8.3.2.10.8.2	
VCONN Source Gets Country Information from a Cable Plug	Yes	1. <i>Get_Country_Info Message</i> 2. <i>Country_Info Message</i>	Started by VCONN Source	Section 8.3.2.10.8.3	

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
<b>Revision Information</b>				<b>Section 8.3.2.10.9</b>	
Source Gets Revision Information from a Sink	Yes	1. <i>Get_Revision_Message</i> 2. <i>Revision_Message</i>	Started by Source	Section 8.3.2.10.9.1	Section 8.3.3.15.1, Section 8.3.3.15.2
Sink Gets Revision Information from a Source	Yes	1. <i>Get_Revision_Message</i> 2. <i>Revision_Message</i>	Started by Sink	Section 8.3.2.10.9.2	
VCONN Source Gets Revision Information from a Cable Plug	Yes	1. <i>Get_Revision_Message</i> 2. <i>Revision_Message</i>	Started by VCONN Source	Section 8.3.2.10.9.3	
<b>Source Information</b>				<b>Section 8.3.2.12.10</b>	
Sink Gets Source Information	No	1. <i>Get_Source_Cap_Extended_Message</i> 3. <i>Source_Capabilities_Extended_Message</i>	Started by Sink	Section 8.3.2.12.10.1	Section 8.3.3.10.1, Section 8.3.3.10.2
Dual-Role Source Gets Source Information from a Dual-Role Sink	No	1. <i>Get_Source_Cap_Extended_Message</i> 2. <i>Source_Capabilities_Extended_Message</i>	Started by Source	Section 8.3.2.12.10.2	Section 8.3.3.20.15, Section 8.3.3.20.16
<b>Security</b>				<b>Section 8.3.2.11</b>	
Source requests security exchange with Sink	No	1. <i>Security_Request_Message</i>	Started by Source	Section 8.3.2.11.1	Section 8.3.3.17.1, Section 8.3.3.17.2, Section 8.3.3.17.3
Sink requests security exchange with Source	No	1. <i>Security_Request_Message</i>	Started by Sink	Section 8.3.2.11.2	
VCONN Source requests security exchange with Cable Plug	No	1. <i>Security_Request_Message</i>	Started by VCONN Source	Section 8.3.2.11.3	
Source responds to security exchange with Sink	No	1. <i>Security_Response_Message</i>	Started by Source	Section 8.3.2.11.1	
Sink responds to security exchange with Source	No	1. <i>Security_Response_Message</i>	Started by Sink	Section 8.3.2.11.2	
VCONN Source requests security exchange with Cable Plug	No	1. <i>Security_Response_Message</i>	Started by VCONN Source	Section 8.3.2.11.3	
<b>Firmware Update</b>				<b>Section 8.3.2.12</b>	
Source requests firmware update exchange with Sink	No	1. <i>Firmware_Update_Request_Message</i>	Started by Source	Section 8.3.2.12.1	Section 8.3.3.18.1, Section 8.3.3.18.2, Section 8.3.3.18.3
Sink requests firmware update exchange with Source	No	1. <i>Firmware_Update_Request_Message</i>	Started by Sink	Section 8.3.2.12.2	
VCONN Source requests firmware update exchange with Cable Plug	No	1. <i>Firmware_Update_Request_Message</i>	Started by VCONN Source	Section 8.3.2.12.3	

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
Source responds to firmware update exchange with Sink	No	1. <i>Firmware_Update_Response Message</i>	Started by Source	Section 8.3.2.12.1	
Sink responds to firmware update exchange with Source	No	1. <i>Firmware_Update_Response Message</i>	Started by Sink	Section 8.3.2.12.2	
VCONN Source responds to firmware update exchange with Cable Plug	No	1. <i>Firmware_Update_Response Message</i>	Started by VCONN Source	Section 8.3.2.12.3	
<b>Structured VDM</b>				<b>Section 8.3.2.13</b>	
Initiator to Responder Discover Identity (ACK)	Yes <sup>1</sup>	1. <i>Discover Identity REQ Command</i> 2. <i>Discover Identity ACK Command</i>	Started by Initiator	Section 8.3.2.15.1.1	Section 8.3.3.21.1, Section 8.3.3.22.1
Initiator to Responder Discover Identity (NAK)	Yes <sup>1</sup>	1. <i>Discover Identity REQ Command</i> 2. <i>Discover Identity NAK Command</i>		Section 8.3.2.15.1.1	
Initiator to Responder Discover Identity (BUSY)	Yes <sup>1</sup>	1. <i>Discover Identity REQ Command</i> 2. <i>Discover Identity BUSY Command</i>		Section 8.3.2.15.1.1	
Initiator to Responder Discover SVIDs (ACK)	Yes	1. <i>Discover SVIDs REQ Command</i> 2. <i>Discover SVIDs ACK Command</i>		Section 8.3.2.15.2.1	Section 8.3.3.21.2, Section 8.3.3.22.2
Initiator to Responder Discover SVIDs (NAK)	Yes	1. <i>Discover SVIDs REQ Command</i> 2. <i>Discover SVIDs NAK Command</i>		Section 8.3.2.15.2.1	
Initiator to Responder Discover SVIDs (BUSY)	Yes	1. <i>Discover SVIDs REQ Command</i> 2. <i>Discover SVIDs BUSY Command</i>		Section 8.3.2.15.2.1	
Initiator to Responder Discover Modes (ACK)	Yes	1. <i>Discover Modes REQ Command</i> 2. <i>Discover Modes ACK Command</i>		Section 8.3.2.15.3.1	Section 8.3.3.21.3, Section 8.3.3.22.3
Initiator to Responder Discover Modes (NAK)	Yes	1. <i>Discover Modes REQ Command</i> 2. <i>Discover Modes NAK Command</i>		Section 8.3.2.15.3.1	
Initiator to Responder Discover Modes (BUSY)	Yes	1. <i>Discover Modes REQ Command</i> 2. <i>Discover Modes BUSY Command</i>		Section 8.3.2.15.3.1	
DFP to UFP Enter Mode	Yes	1. <i>Enter Mode REQ Command</i> 2. <i>Enter Mode ACK Command</i>	Started by DFP	Section 8.3.2.13.8	Section 8.3.3.23.1, Section 8.3.3.24.1
DFP to UFP Exit Mode	Yes	1. <i>Exit Mode REQ Command</i> 2. <i>Exit Mode ACK Command</i>		Section 8.3.2.13.9	Section 8.3.3.23.2, Section 8.3.3.24.2
DFP to Cable Plug Enter Mode	Yes	1. <i>Enter Mode REQ Command</i> 2. <i>Enter Mode ACK Command</i>		Section 8.3.2.13.10	Section 8.3.3.23.2, Section 8.3.3.25.4.1
DFP to Cable Plug Exit Mode	Yes	1. <i>Exit Mode REQ Command</i> 2. <i>Exit Mode ACK Command</i>		Section 8.3.2.13.11	Section 8.3.3.23.2, Section 8.3.3.25.4.2

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AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
Initiator to Responder Attention	No	1. <b>Attention REQ Command</b>	Started by Initiator	Section 8.3.2.13.12	Section 8.3.3.21.4, Section 8.3.3.22.4
<b>Built in Self-Test (BIST)</b>				<b>Section 8.3.2.14</b>	
BIST Carrier Mode	No	1. <b>BIST (BIST Carrier Mode) Message</b>	Started by Tester	Section 8.3.2.16.1	Section 8.3.3.27.1
BIST Test Data	No	1. <b>BIST (BIST Test Data) Message</b>		Section 8.3.2.16.2	Section 8.3.3.27.2
BIST Shared Capacity Test Mode	No	1. <b>BIST (BIST Shared Test Mode Entry) Message</b> 2. Series of Messages 3. <b>BIST (BIST Shared Test Mode Exit) Message</b>		Section 8.3.2.16.3	Section 8.3.3.27.3
<b>Enter USB</b>				<b>Section 8.3.2.15</b>	
UFP Entering USB4TM Mode (Accept)	No	1. <b>Enter_USB Message</b> 2. <b>Accept Message</b>	Started by DFP	Section 8.3.2.17.1.1	Section 8.3.3.16.1, Section 8.3.3.16.2
UFP Entering USB4 Mode (Reject)	No	1. <b>Enter_USB Message</b> 2. <b>Reject Message</b>		Section 8.3.2.17.1.2	
UFP Entering USB4 Mode (Wait)	No	1. <b>Enter_USB Message</b> 2. <b>Wait Message</b>		Section 8.3.2.17.1.3	
Cable Plug Entering USB4 Mode (Accept)	No	1. <b>Enter_USB Message</b> 2. <b>Accept Message</b>		Section 8.3.2.17.2.1	
Cable Plug Entering USB4 Mode (Reject)	No	1. <b>Enter_USB Message</b> 2. <b>Reject Message</b>		Section 8.3.2.17.2.2	
Cable Plug Entering USB4 Mode (Wait)	No	1. <b>Enter_USB Message</b> 2. <b>Wait Message</b>		Section 8.3.2.17.2.3	
<b>Unstructured Vendor Defined Messages</b>				<b>Section 8.3.2.16</b>	
Unstructured VDM	No	1. <b>Unstructured Vendor_Defined Message</b>	Section 8.3.2.18.1	Section 8.3.2.16.1	
VDEM	No	1. <b>Vendor_Defined_Extended Message</b>	Section 8.3.2.18.2	Section 8.3.2.16.2	
<sup>1</sup> Discover Identity of a Cable Plug is non-interruptible when the process is initiated as part of the EPR Mode Entry Process. <sup>2</sup> For the initiator of the AMS interruptibility depends on the AMS which was initiated to trigger the Not_Supported Message response. The Sender of the Not_Supported Message Shall assume that the AMS is non-interruptible.					

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**Table 8-5 Hard Reset Sequence**

AMS	Interruptible	Message Sequence	Conditions	AMS Ref	State Machine Ref
<b>Hard Reset</b>				<b>Section 8.3.2.5</b>	
Source Initiated Hard Reset	No	<ol style="list-style-type: none"> <li><b>Hard Reset Signaling</b></li> <li>SPR Explicit Contract Negotiation AMS</li> </ol>	Started by Source	Section 8.3.2.5.1 Section 8.3.2.2.1.1	Section 8.3.3.2, Section 8.3.3.3
Sink Initiated Hard Reset	No	<ol style="list-style-type: none"> <li><b>Hard Reset Signaling</b></li> <li>SPR Explicit Contract Negotiation AMS</li> </ol>	Started by Sink	Section 8.3.2.5.2 Section 8.3.2.2.1.1	
Source Initiated Hard Reset – Sink Long Reset	No	<ol style="list-style-type: none"> <li><b>Hard Reset Signaling</b></li> <li>SPR Explicit Contract Negotiation AMS</li> </ol>	Started by Source	Section 8.3.2.5.3 Section 8.3.2.2.1.1	

## Actual Change Requested

### (c). Section 8.3.2

#### New Text:

Add missing AMS sequences and modify according to table changes.

## Actual Change Requested

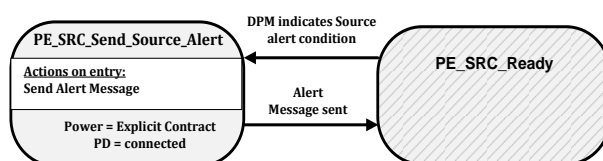
### (d). Section 8.3.3.8, “Alert State Diagrams

#### From Text:

#### 8.3.3.8.1 Source Port Source Alert State Diagram

Figure 8-93 shows the state diagram for an Alert Message sent by a Source Port.

**Figure 8-115 Source Port Source Alert State Diagram**



#### 8.3.3.8.1.1 PE\_SRC\_Send\_Source\_Alert State

The **PE\_SRC\_Send\_Source\_Alert** state *shall* be entered from the **PE\_SRC\_Ready** state when the Device Policy Manager indicates that there is a Source alert condition to be reported.

On entry to the **PE\_SRC\_Send\_Source\_Alert** state the Policy Engine *shall* request the Protocol Layer to send an Alert Message.

The Policy Engine *shall* transition back to **PE\_SRC\_Ready** (see Figure 8-84) when:

- The **Alert** Message has been successfully sent.

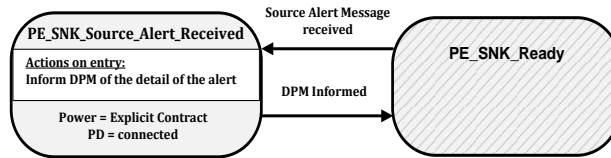


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## 8.3.3.8.2 Sink Port Source Alert State Diagram

Figure 8-94 shows the state diagram for an Alert Message received by a Sink Port.

Figure 8-116 Sink Port Source Alert State Diagram



### 8.3.3.8.2.1 PE\_SNK\_Source\_Alert\_Received State

The **PE\_SNK\_Source\_Alert\_Received** state *Shall* be entered from the **PE\_SNK\_Ready** state when an Alert Message is received.

On entry to the **PE\_SNK\_Source\_Alert\_Received** state the Policy Engine *Shall* inform the Device Policy Manager of the details of the Source alert.

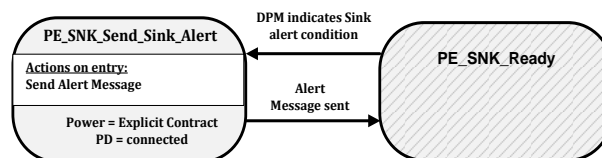
The Policy Engine *Shall* transition back to **PE\_SNK\_Ready** (see Figure 8-85) when:

- The DPM has been informed.

## 8.3.3.8.3 Sink Port Sink Alert State Diagram

Figure 8-95 shows the state diagram for an Alert Message sent by a Sink Port.

Figure 8-117 Sink Port Sink Alert State Diagram



### 8.3.3.8.3.1 PE\_SNK\_Send\_Sink\_Alert State

The **PE\_SNK\_Send\_Sink\_Alert** state *Shall* be entered from the **PE\_SNK\_Ready** state when the Device Policy Manager indicates that there is a Source alert condition to be reported.

On entry to the **PE\_SNK\_Send\_Sink\_Alert** state the Policy Engine *Shall* request the Protocol Layer to send an Alert Message.

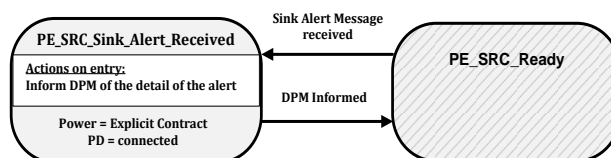
The Policy Engine *Shall* transition back to **PE\_SNK\_Ready** (see Figure 8-85) when:

- The **Alert** Message has been successfully sent.

## 8.3.3.8.4 Source Port Sink Alert State Diagram

Figure 8-96 shows the state diagram for an Alert Message received by a Source Port.

Figure 8-118 Source Port Sink Alert State Diagram



# USB Power Delivery ENGINEERING CHANGE NOTICE

## 8.3.3.8.4.1 PE\_SRC\_Sink\_Alert\_Received State

The **PE\_SRC\_Sink\_Alert\_Received** state *Shall* be entered from the **PE\_SRC\_Ready** state when an Alert Message is received.

On entry to the **PE\_SRC\_Sink\_Alert\_Received** state the Policy Engine *Shall* inform the Device Policy Manager of the details of the Source alert.

The Policy Engine *Shall* transition back to **PE\_SRC\_Ready** (see Figure 8-84) when:

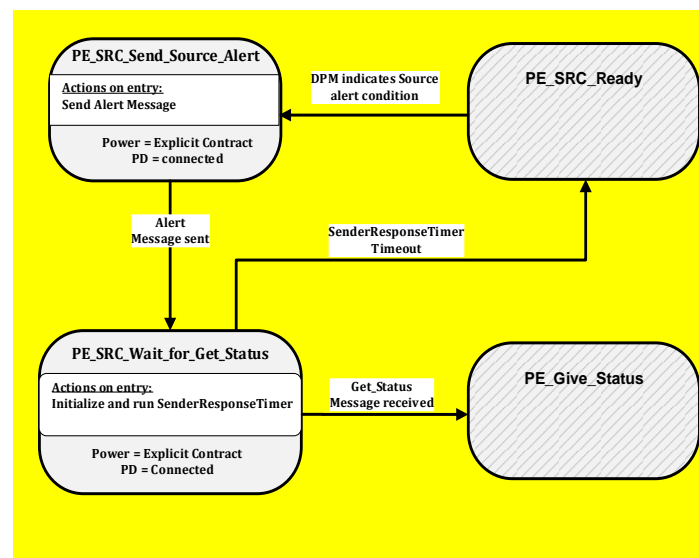
- The DPM has been informed.

## To Text:

### 8.3.3.8.1 Source Port Source Alert State Diagram

Figure 8-93 shows the state diagram for an Alert Message sent by a Source Port.

Figure 8-115 Source Port Source Alert State Diagram



#### 8.3.3.8.1.1 PE\_SRC\_Send\_Source\_Alert State

The **PE\_SRC\_Send\_Source\_Alert** state *Shall* be entered from the **PE\_SRC\_Ready** state when the Device Policy Manager indicates that there is a Source alert condition to be reported.

On entry to the **PE\_SRC\_Send\_Source\_Alert** state the Policy Engine *Shall* request the Protocol Layer to send an Alert Message.

The Policy Engine *Shall* transition to the **PE\_SRC\_Wait\_for\_Get\_Status** state when:

- The **Alert** Message has been successfully sent.

#### 8.3.3.8.1.2 PE\_SRC\_Wait\_for\_Get\_Status State

On entry to the **PE\_SRC\_Wait\_for\_Get\_Status** state the Policy Engine *Shall* initialize and run the **SenderResponseTimer**.

The Policy Engine *Shall* transition back to the **PE\_Give\_Status** state (see Figure 8-118) when:

- A **Get\_Status** Message is received.

The Policy Engine *Shall* transition back to the **PE\_SRC\_Ready** state (see Figure 8-84) when:

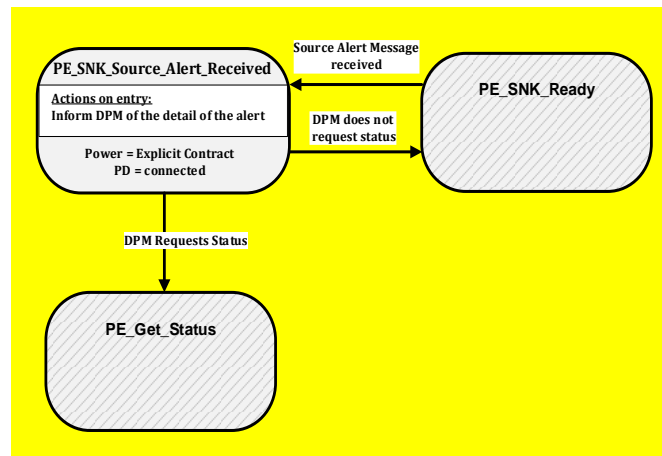
- The **SenderResponseTimer** times out.

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## 8.3.3.8.2 Sink Port Source Alert State Diagram

Figure 8-94 shows the state diagram for an Alert Message received by a Sink Port.

Figure 8-116 Sink Port Source Alert State Diagram



### 8.3.3.8.2.1 PE\_SNK\_Source\_Alert\_Received State

The **PE\_SNK\_Source\_Alert\_Received** state *shall* be entered from the **PE\_SNK\_Ready** state when an Alert Message is received.

On entry to the **PE\_SNK\_Source\_Alert\_Received** state the Policy Engine *shall* inform the Device Policy Manager of the details of the Source alert.

The Policy Engine *shall* transition to the **PE\_Get\_Status** state (see Figure 8-117) when:

- The DPM requests status.

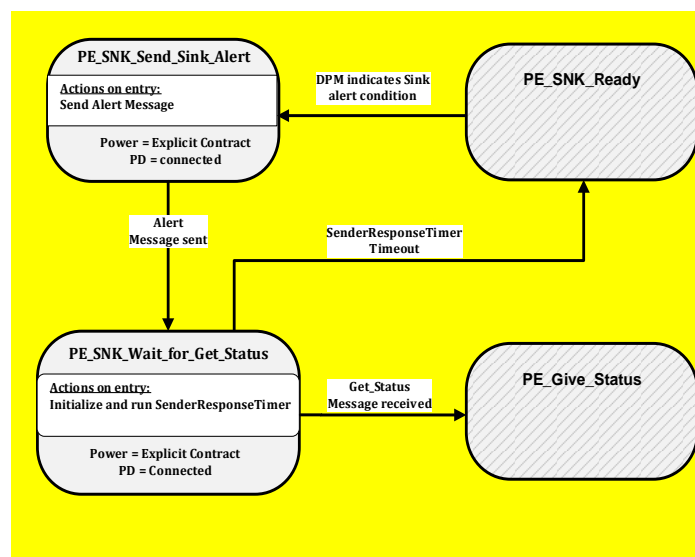
The Policy Engine *shall* transition back to the **PE\_SNK\_Ready State** (see Figure 8-85) when:

- The DPM **does not request status**.

## 8.3.3.8. Sink Port Sink Alert State Diagram

Figure 8-93 shows the state diagram for an Alert Message sent by a Sink Port.

Figure 8-115 Sink Port Sink Alert State Diagram



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## 8.3.3.8.1.1 PE\_SNK\_Send\_Sink\_Alert State

The **PE\_SNK\_Send\_Sink\_Alert** state *shall* be entered from the **PE\_SNK\_Ready** state when the Device Policy Manager indicates that there is a Sink alert condition to be reported.

On entry to the **PE\_SNK\_Send\_Sink\_Alert** state the Policy Engine *shall* request the Protocol Layer to send an Alert Message.

The Policy Engine *shall* transition to the **PE\_SNK\_Wait\_for\_Get\_Status** state when:

- The **Alert** Message has been successfully sent.

## 8.3.3.8.1.2 PE\_SNK\_Wait\_for\_Get\_Status State

On entry to the **PE\_SNK\_Wait\_for\_Get\_Status** state the Policy Engine *shall* initialize and run the **SenderResponseTimer**.

The Policy Engine *shall* transition back to the **PE\_Give\_Status** state (see Figure 8-118) when:

- A **Get\_Status** Message is received.

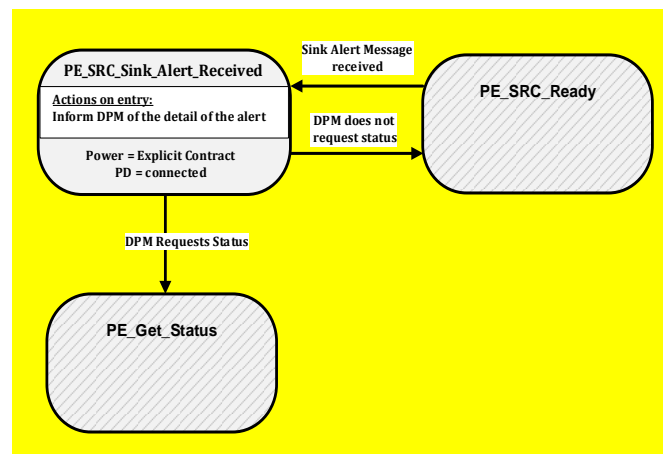
The Policy Engine *shall* transition back to the **PE\_SNK\_Ready** state (see Figure 8-84) when:

- The **SenderResponseTimer** times out.

## 8.3.3.8.4 Source Port Sink Alert State Diagram

Figure 8-94 shows the state diagram for an Alert Message received by a Source Port.

Figure 8-116 Source Port Sink Alert State Diagram



## 8.3.3.8.2.1 PE\_SNK\_Source\_Alert\_Received State

The **PE\_SRC\_Sink\_Alert\_Received** state *shall* be entered from the **PE\_SRC\_Ready** state when an Alert Message is received.

On entry to the **PE\_SRC\_Sink\_Alert\_Received** state the Policy Engine *shall* inform the Device Policy Manager of the details of the Sink alert.

The Policy Engine *shall* transition to the **PE\_Get\_Status** state (see Figure 8-117) when:

- The DPM requests status.

The Policy Engine *shall* transition back to the **PE\_SRC\_Ready** State (see Figure 8-85) when:

- The DPM **does not request status**.

## (e). Section 8.3.3.x, “Source\_Info State Diagrams

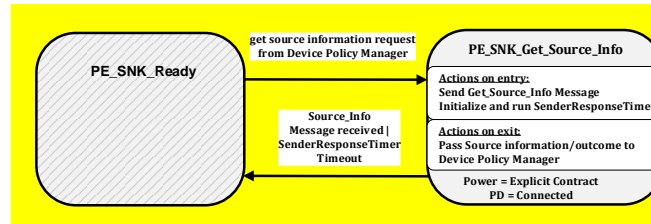
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## New Text:

### 8.3.3.x.x Get Source\_Info State Diagram

Figure 8-x Get Source\_Info State Diagram shows the state diagram for a Sink Port on receiving a request from the Device Policy Manager to get the Source's Source\_Info. See also Section 6.3.23 and Section 6.4.11.

Figure 8-x Get Source\_Info State Diagram



#### 8.3.3.x.x.x PE\_SNK\_Get\_Source\_Info State

The Policy Engine *Shall* transition to the **PE\_SNK\_Get\_Source\_Info** state, from the **PE\_SNK\_Ready** State, due to a request to get the Source's information from the Device Policy Manager.

On entry to the **PE\_SNK\_Get\_Source\_Info** state the Policy Engine *Shall* send a **Get\_Source\_Info** Message and initialize and run the **SenderResponseTimer**.

On exit from the **PE\_SNK\_Get\_Source\_Info** state the Policy Engine *Shall* inform the Device Policy Manager of the outcome (status or response timeout).

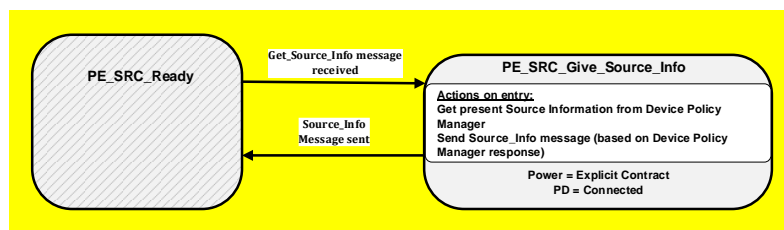
The Policy Engine *Shall* transition back to the **PE\_SNK\_Ready** State (see Figure 8-85) when:

- A **Source\_Info** Message is received
- Or **SenderResponseTimer** times out.

### 8.3.3.x.x Give Source Information State Diagram

Figure 8-x shows the state diagram for a Source on receiving a **Get\_Source\_Info** Message. See also Section 6.3.23 and Section 6.4.11.

Figure 8-x Source Give Source Information State Diagram



#### 8.3.3.x.x.x PE\_Give\_Status State

The Policy Engine *Shall* transition to the **PE\_SRC\_Give\_Source\_Info** state, from the **PE\_SRC\_Ready** State, when a **Get\_Source\_Info** Message is received.

On entry to the **PE\_SRC\_Give\_Source\_Info** state the Policy Engine *Shall* request the present Source information from the Device Policy Manager and then send a **Source\_Info** Message containing this information.

The Policy Engine *Shall* transition back to the **PE\_SRC\_Ready** State (see Figure 8-84) when:

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- The **Source\_Info** Message has been successfully sent.

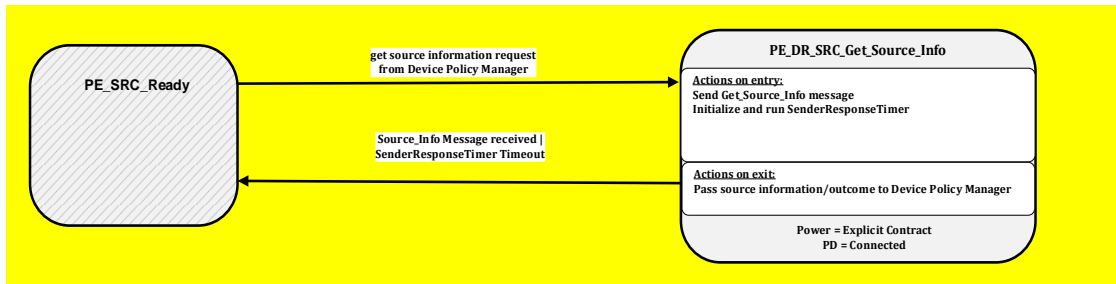
## (f) Section 8.3.3.x, Dual-Role “Source\_Info State Diagrams

New Text:

### 8.3.3.x.x Dual-Role (Source Port) Get Source Capabilities State Diagram

Figure 8-x shows the state diagram for a Dual-Role device, presently operating as a Source, on receiving a request from the Device Policy Manager to get the Port Partner’s Source capabilities. See also Section 6.3.23 and Section 6.4.11.

Figure 8-x Dual-Role (Source) Get Source Capabilities diagram



#### 8.3.3.x.x.x PE\_DR\_SRC\_Get\_Source\_Cap State

The Policy Engine *Shall* transition to the **PE\_DR\_SRC\_Get\_Source\_Info** state, from the **PE\_SRC\_Ready** state, due to a request to get the remote source information from the Device Policy Manager.

On entry to the **PE\_DR\_SRC\_Get\_Source\_Info** state the Policy Engine *Shall* request the Protocol Layer to send a **Get\_Source\_Info** message in order to retrieve the Source’s capabilities

The Policy Engine *Shall* then start the **SenderResponseTimer**.

On exit from the **PE\_DR\_SRC\_Get\_Source\_Info** state the Policy Engine *Shall* inform the Device Policy Manager of the outcome (Source information or response timeout).

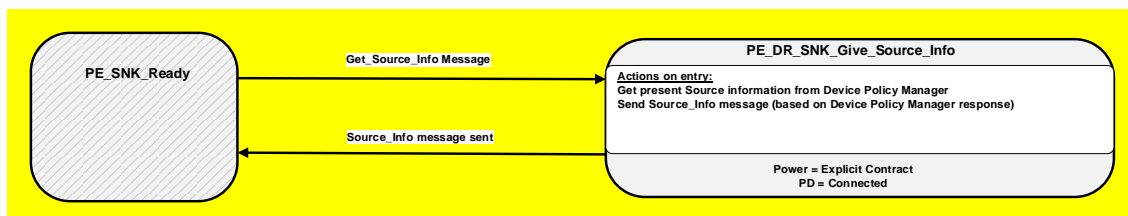
The Policy Engine *Shall* transition back to the **PE\_SRC\_Ready** State (see Figure 8-84) when:

- A **Source\_Info** Message is received or
- The **SenderResponseTimer** times out.

### 8.3.3.x.x Dual-Role (Sink Port) Give Source Information State Diagram

Figure 8-x shows the state diagram for a Dual-Role device, presently operating as a Sink, on receiving a **Get\_Source\_Info** Message. See also Section 6.3.23 and Section 6.4.11.

Figure 8-x Dual-Role (Sink) Give Source Capabilities State Diagram



#### 8.3.3.x.x.x PE\_DR\_SNK\_Give\_Source\_Info State

The Policy Engine *Shall* transition to the **PE\_DR\_SNK\_Give\_Source\_Info** state, from the **PE\_SNK\_Ready** state, when a **Get\_Source\_Info** Message is received.

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On entry to the *PE\_DR\_SNK\_Give\_Source\_Info* State the Policy Engine *Shall* request the Device Policy Manager for the current Source information. The Policy Engine *Shall* then request the Protocol Layer to send a *Source\_Info* Message containing this information.

The Policy Engine *Shall* transition to the *PE\_SNK\_Ready* state (see Figure 8-85) when:

- The *Source\_Info* Message has been successfully sent.