USB Type-C ENGINEERING CHANGE NOTICE

Title: Checking Partner Before Cable in TBT3 Discovery
Applied to: USB Type-C Specification Release 2.1, May 2021

Brief description of the functional changes proposed:
Update the TBT3 discovery flow defined in Figure F-1 to check the partner before the cable.

Benefits as a result of the proposed changes:
If both a partner and cable don't support TBT3 mode entry, it should be the partner that causes mode entry failure. Currently, the TBT3 discovery flow will go back and forth between checking the cable and partner which complicates attributing mode entry failure to the partner or cable. Checking the partner first will allow systems to add features which depend on the reason for mode entry failure. This edit brings Figure F-1 in line with Figure 5-1 USB4 Discover and Entry Flow Model.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
The existing TBT3 discovery flow will still work. Systems which are implementing the existing TBT3 discovery flow and expect a pass/fail result will not see any difference.

An analysis of the hardware implications:
None.

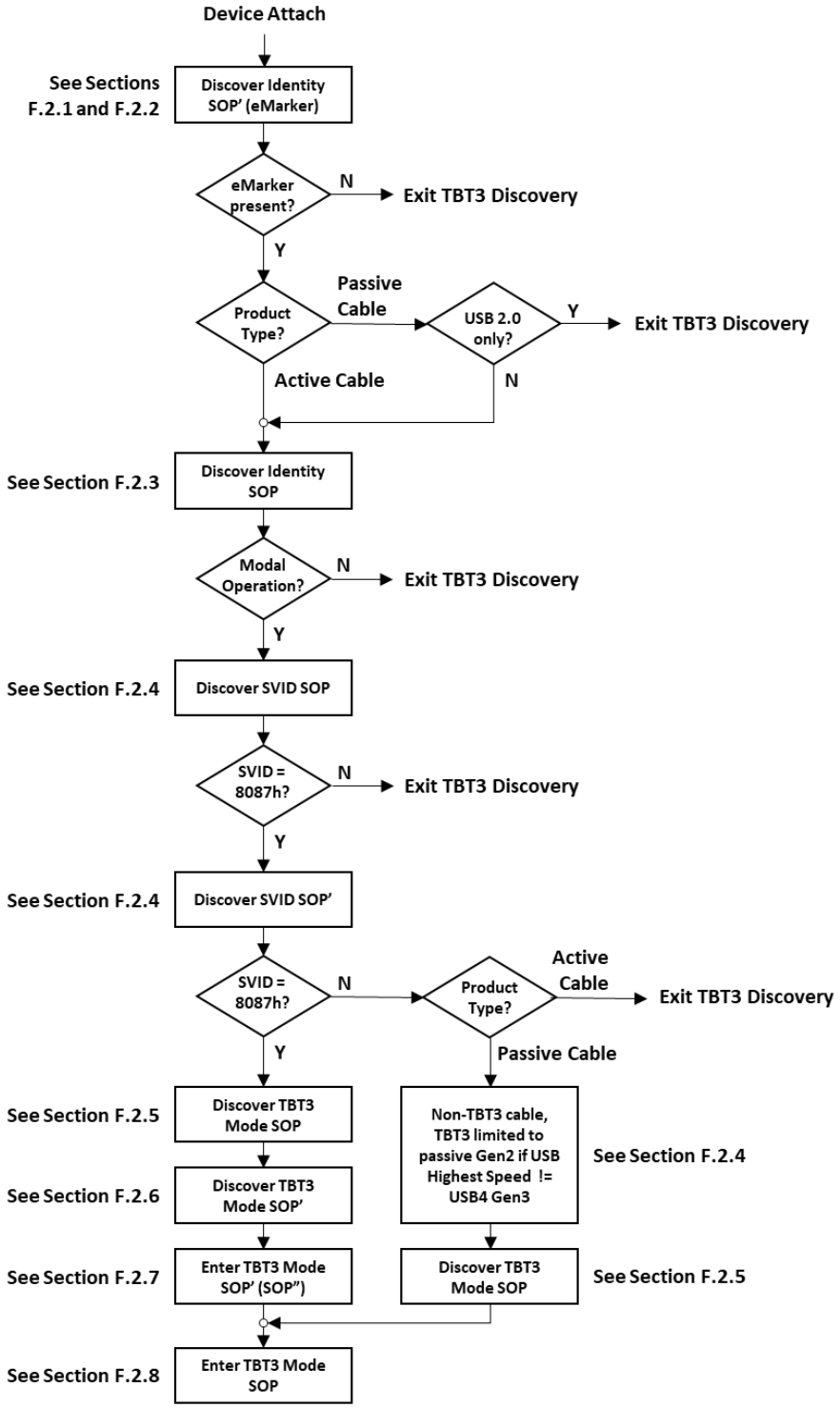
An analysis of the software implications:
None.

An analysis of the compliance testing implications:
None.

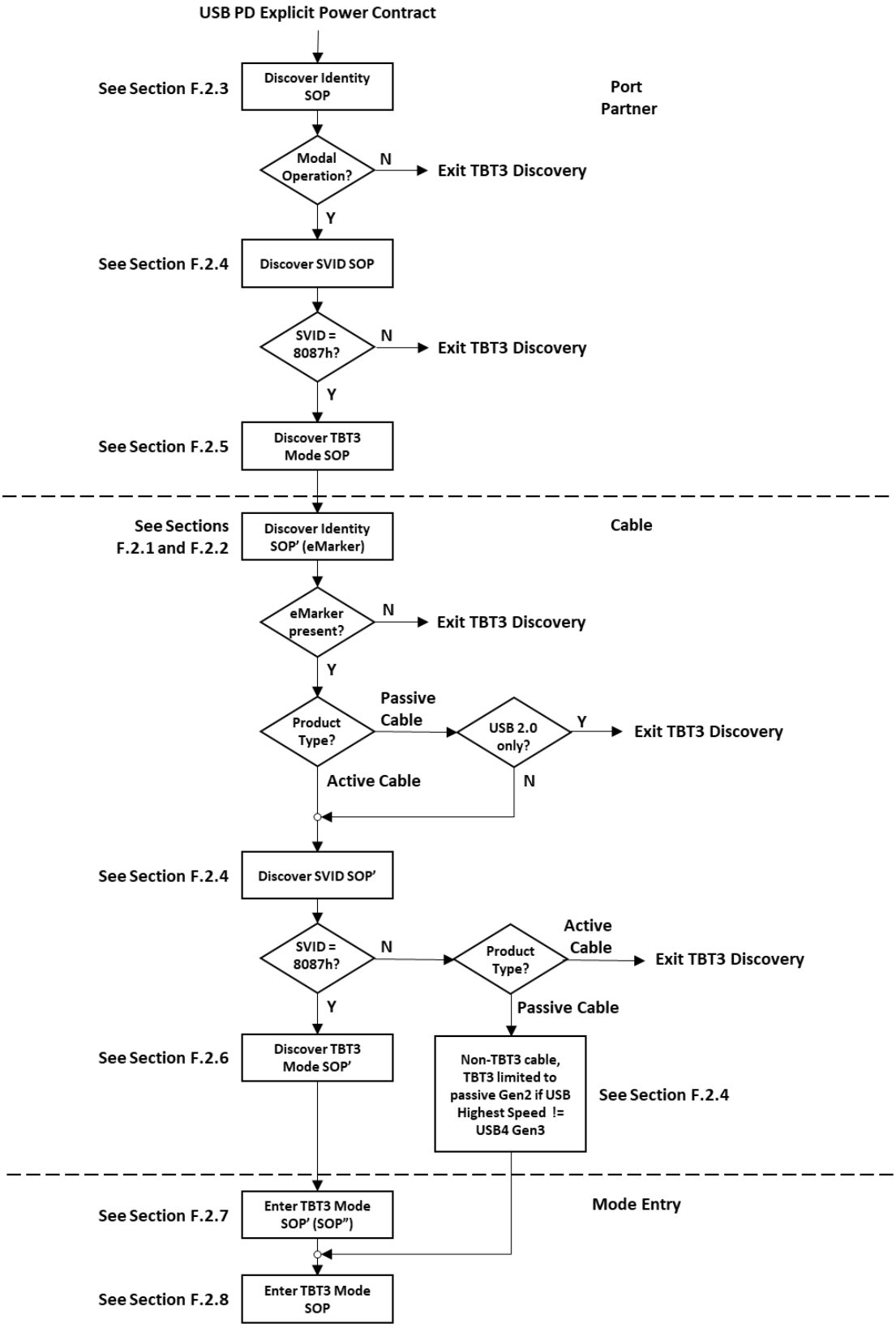
Actual Change Requested

(a). Figure F-1 TBT3 Discovery Flow

From:



To:


USB PD Explicit Power Contract
See Section F.2.3
Discover Identity SOP
Port Partner
Modal Operation?
N
Exit TBT3 Discovery
Y
See Section F.2.4
Discover SVID SOP
SVID = 8087h?
N
Exit TBT3 Discovery
Y
See Section F.2.5
Discover TBT3 Mode SOP
See Sections F.2.1 and F.2.2
Discover Identity SOP' (eMarker)
Cable
eMarker present?
N
Exit TBT3 Discovery
Y
Product Type?
Passive Cable
USB 2.0 only?
Y
Exit TBT3 Discovery
Active Cable
N
See Section F.2.4
Discover SVID SOP'
SVID = 8087h?
N
Product Type?
Active Cable
Exit TBT3 Discovery
Y
Passive Cable
See Section F.2.6
Discover TBT3 Mode SOP'
Non-TBT3 cable, TBT3 limited to passive Gen2 if USB Highest Speed != USB4 Gen3
See Section F.2.4
See Section F.2.7
Enter TBT3 Mode SOP' (SOP")
Mode Entry
See Section F.2.8
Enter TBT3 Mode SOP