USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Port Regions in VSEC6
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:
This ECR applies to Routers that support TBT3 compatibility. A TBT3-Compatible Router that implements a single USB4 Port responds to accesses to the 2nd Port of a Vendor Specific Extended 6 Capability as either ERR_ADDR or as reserved. A TBT3-Compatible Router that implements more than one USB4 Port shall implement 2 USB4 Port Regions.

Benefits as a result of the changes:
A TBT3 Connection Manager accesses the 2nd Port Region of a Vendor Specific Extended 6 Capability in a Router that implements a single USB4 Port. It requires that such a Router handles such accesses in a certain way.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
All known Routers already conform with the ECR.

An analysis of the hardware implications:
A Router that implements a single USB4 Port and supports TBT3 compatibility shall conform with this ECR.

An analysis of the software implications:
None

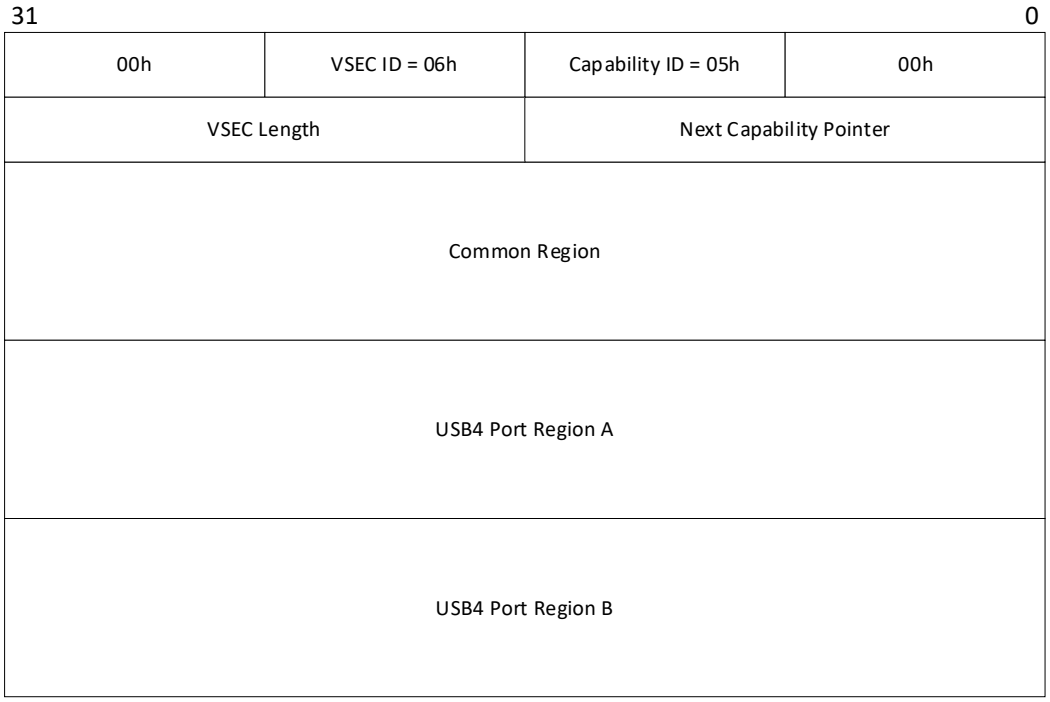
An analysis of the compliance testing implications:
Additional test for Routers that implement a single USB4 Port and support TBT3 compatibility.

Actual Change

(a). Section 13.6.1.4 "Vendor Specific Extended 6 Capability"

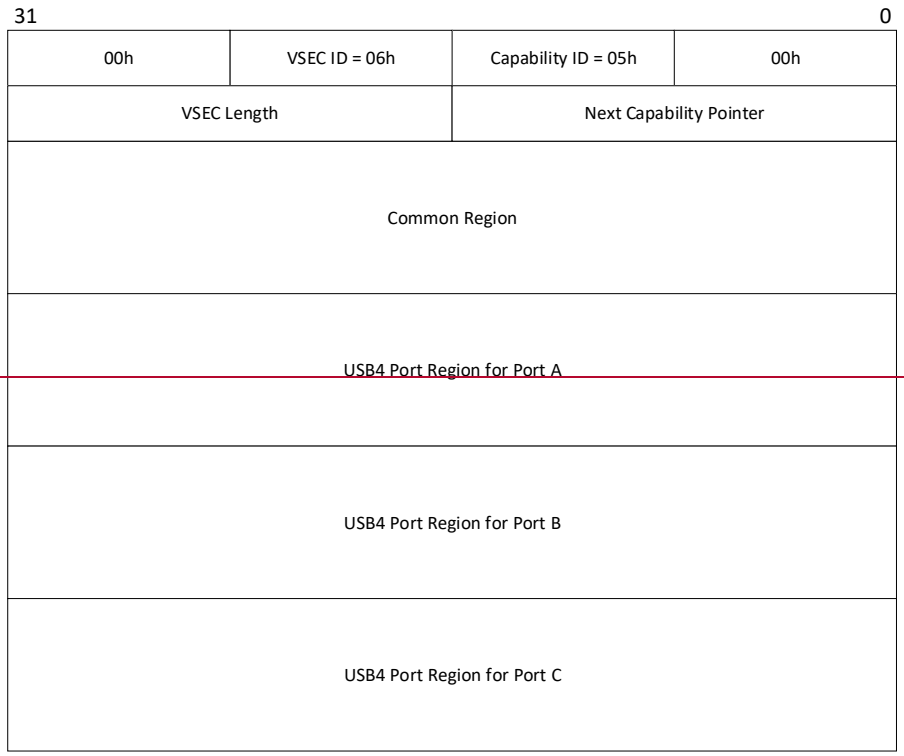
A Vendor Specific Extended 6 Capability shall have the structure depicted in Figure 13-6 and the fields defined in Section 13.6.1.4.1 and Section 13.6.1.4.2. ~~A USB4 Port Region shall exist for each USB4 Port.~~

Figure 13-6. Structure of the Vendor Specific Extended 6 Capability



A USB4 Port Region shall exist for ~~each~~ the two USB4 Ports with the lowest Adapter Numbers. The first USB4 Port Region (USB4 Port Region A) shall contain information about the USB4 Port with the lowest Adapter Numbers. The second USB4 Port Region (USB4 Port Region B) shall contain information about the USB4 Port with the next lowest Adapter Numbers. If a Router implements a single USB4 Port, it may respond to a Read Request or a Write Request to USB4 Port Region B with a Notification Packet with Event Code = ERR_ADDR. Such a Router may instead implement the registers in USB4 Port Region B as Rsvd. A Router shall not use the address space of USB4 Port Region B for other usage. ~~Each subsequent USB4 Port Region shall contain information about the USB4 Port with the next highest Adapter Number. For example, Figure 13-7 shows the Vendor Specific Extended 6 Capability for a Router with three USB4 Ports (referred to as Port A, Port B, and Port C) where Port A contains Lane Adapters 1 and 2, Port B contains Lane Adapters 3 and 4, and Port C contains Lane Adapters 5 and 6.~~

~~**Figure 13-7. Example Vendor Specific Extended 6 Capability**~~



(B). Table 13-17. “Common Region Fields”

DW	Register Name	Bit(s)	Field Name and Description	Type	Default Value
2	CAP_STRUCT	3:0	**USB4 Ports** This field shall contain the number of USB4 Ports supported by the Router. 1h – Single USB4 Port 2h – More than one USB4 Port All other values are reserved.	RO	Vendor Defined