SD-WAN Service Components

MEF 3.0 SD-WAN Services are specified by Service Attributes for three logical constructs:

- SD-WAN Virtual Connection (SWVC)
- SD-WAN Virtual Connection End Point
- SD-WAN UNI

Several additional components are (or may be) visible to the Subscriber but are not described by SD-WAN Service Attributes. These include:

- SD-WAN Edge
- Subscriber Network
- Service Provider Network
- Underlay Connectivity Service (UCS)
- Tunnel Virtual Connection (TVC)
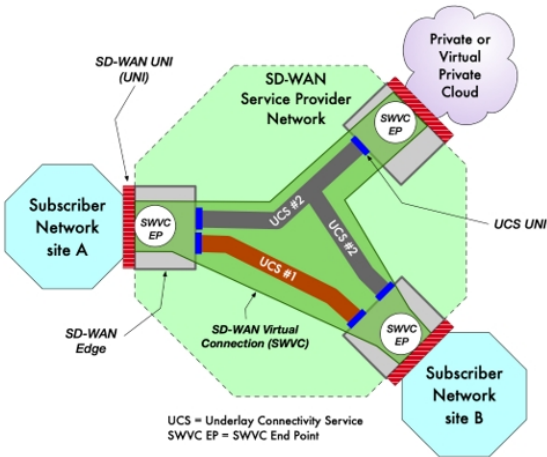
Figure 1 shows the SD-WAN Service components.

Figure 1

Note that in Figure 1 one of the Subscriber sites is connected to a Private or Virtual Private Cloud which may not be located at the Subscriber's physical location. This type of connection operates no differently in the SD-WAN Service than any of the other Subscriber Network locations although for the cloud connection the SD-WAN Edge is usually a virtual network function (VNF), whereas for the other sites the SD-WAN Edge could be either a physical network function (PNF) or a VNF.

Two additional components, the Tunnel Virtual Connection (TVC) and the SD-WAN Edge, are also described since these components are used to describe the operation of the SD-WAN Service. These components are shown in Figure 2 (the SD-WAN Edge is also shown in Figure 1).
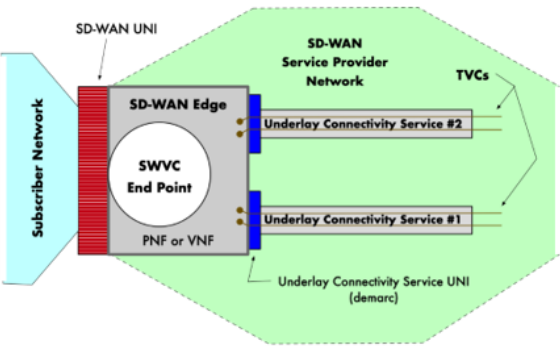

Figure 2 – SD-WAN Edge and TVCs

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Figure 2 shows the SD-WAN Edge, a physical or virtual network function, which includes the SWVC End Point. The SD-WAN Edge has the UNI on one side (left) and the Underlay Connectivity Services on the other side (right).

Each Underlay Connectivity Service terminates at a service demarcation point, i.e., UNI (since they are also services), which is shown in the diagram. Depending on the type of Underlay Connectivity Service, this could be an Ethernet UNI (as defined in MEF 10.4 - Subscriber Ethernet Service Attributes), an IP UNI (as defined in MEF 61.1 - IP Service Attributes), an L1 UNI (as defined in MEF 63 - Subscriber Layer 1 Service Attributes), or analogous service demarcation for other non-MEF services.

Figure 2 also shows TVCs across the Underlay Connectivity Services. TVCs or Tunnel Virtual Connections are point-to-point paths across the Underlay Connectivity Services that define the logical forwarding topology of the SD-WAN Service.

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