

Liaison Response to 3GPP TSG-SA5 for Network Slice Ordering, Provisioning & Assurance

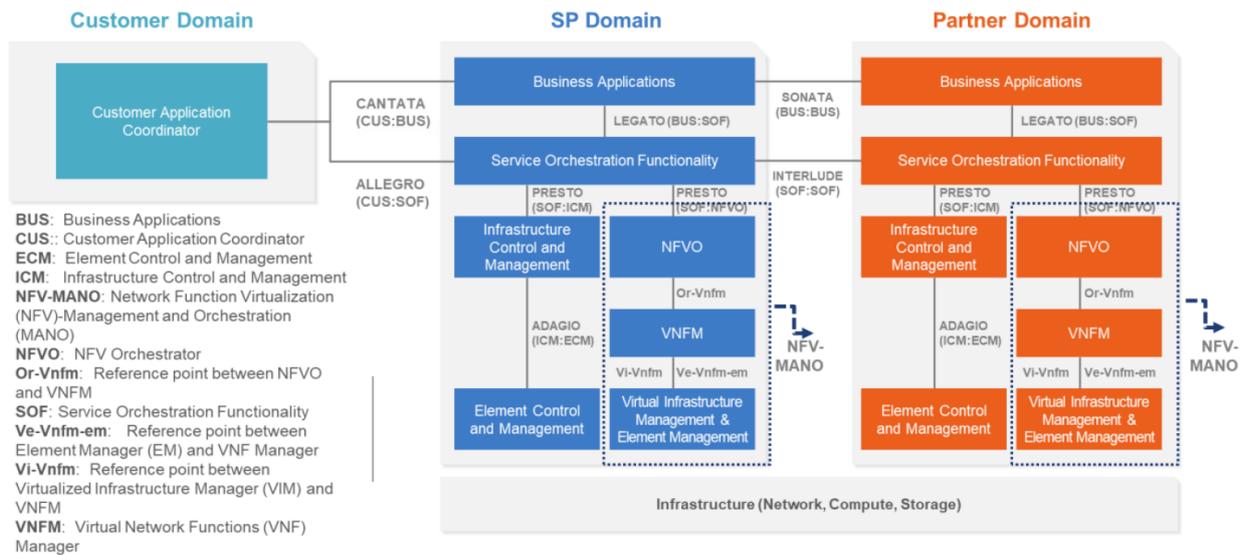
Title	Liaison Response to 3GPP TSG-SA5 for Network Slice Ordering, Provisioning & Assurance
Date	5 May, 2022
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MEF thanks 3GPP SA5 for the liaison about the two main use cases and interfaces for the ordering and provisioning of network slices.

MEF LSO APIs may also be considered as candidate APIs for all the interface types highlighted in the two use cases.

The MEF LSO Reference Architecture is defined in MEF 55.1.



(b) ETSI NFV-MANO Integrated LSO Architecture of a SP and a Partner

Figure 3 – LSO Reference Architecture Integrated with MANO

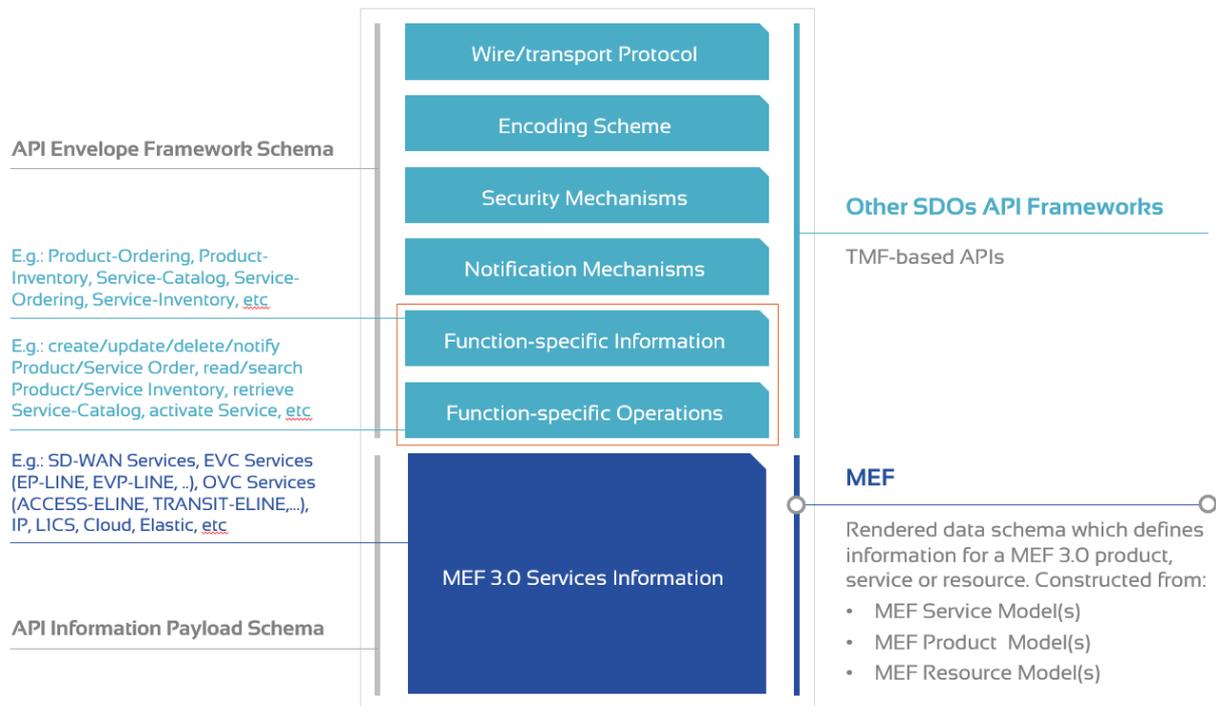
LSO Sonata is the Management Interface Reference Point supporting the management and operations interactions (e.g., ordering, billing, trouble management, any other interactions with potential commercial implications) between two Operators (e.g., Service Provider Domain and Partner Domain).

LSO Cantata is the Management Interface Reference Point that provides a Customer Application Coordinator (including enterprise Customers) with capabilities to support the operations interactions (e.g., ordering, billing, trouble management, etc.) with the Service Provider’s Business Applications for a portion of the Service Provider service capabilities related to the Customer’s Products and Services (e.g., Customer Service Management interface).

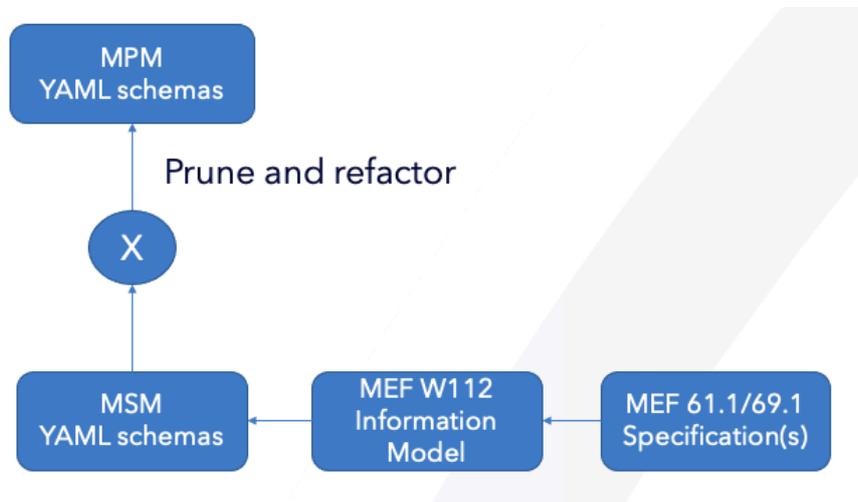
LSO Legato is the Management Interface Reference Point between the Business Applications and the Service Orchestration Functionality needed to allow management and operations interactions supporting Services.

LSO Presto is the resource Management Interface Reference Point needed to manage the infrastructure.

For LSO Sonata, Cantata and Legato APIs development an approach is used that separates API “Envelope” and “Payload”, and is conformant to TM Forum.



The API development process is initiated with a MEF specification (e.g., MEF 61.1/69.1) and an Information Model is created (e.g., MEF W112). The Information Model is used as a reference for the corresponding Service and Product payload YAML schemas.



The combination of MEF-defined envelope, based on and conformant with TM Forum APIs, and MEF-defined payloads provide an open and standard set of APIs for Product, Service functions.

For example, the LSO Sonata Envelope leverages a TM Forum product agnostic API. The Product Order resources (objects) are contained and instantiated as part of the Envelope. The product Order specific resources are ProductOrder and ProductOrderItem.

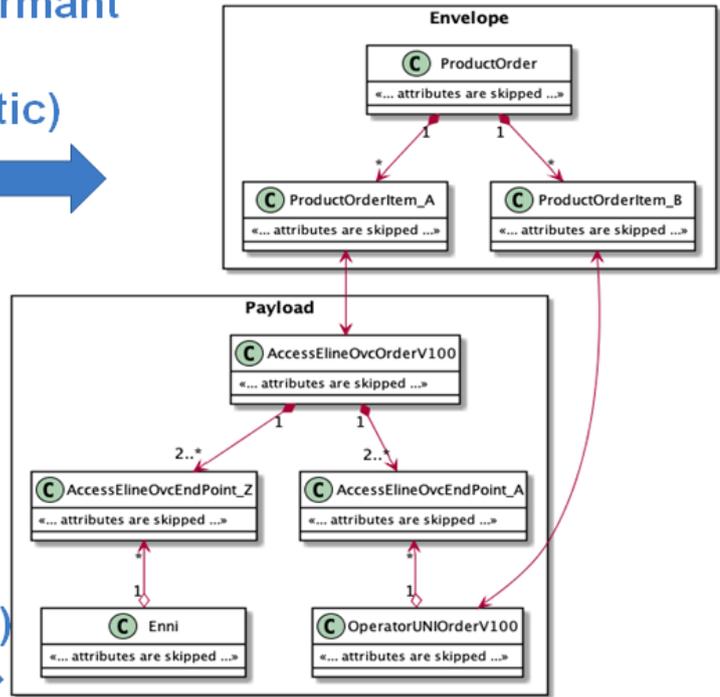
MEF Sonata conformant API (Product-agnostic)



MEF (or other) (Product Order specific)



Envelope and Payload UML Diagram



MEF Service Models are currently:

- Carrier Ethernet, SD-WAN, IP/IPVPN and L1CS
- Leveraged at SOF (Service Orchestration Functionality), Legato, Allegro and Interlude Interfaces.
- MEF Product Models are a subset of MEF Service Models

The API protocol/structure for LSO Presto is YANG and RESTCONF/YANG.

With regard to the two main use cases 3GPP SA5 shared in their liaison, MEF sees following mapping for the interfaces:

Interface Type A ↔ LSO Cantata

Interface Type 1 ↔ LSO Legato

Interface Type 2 ↔ LSO Legato/Presto

Interface Type X ↔ LSO Sonata

MEF considers the interfaces above as in-scope of MEF LSO.

With regard to interface Type A and Interface Type X:

- Is there a 3GPP service that may be offered as a product over the LSO interface reference points Cantata and/or Sonata?
- In that case it could be that 3GPP may only need to provide the LSO API payload for a “slice as service” product. MEF has the envelop information.
- By virtue of the product/service independent nature of the LSO APIs, it is possible to develop schemas not based on MEF standards and successfully use those schemas in LSO APIs as well as MEF-endorsed LSO payloads.

MEF realizes LSO Legato interface using REST API and JSON.

- For Interface Type 1, 3GPP may only need to provide the LSO API payload for a "slice as service" service ; MEF has the envelop information.
- Could there be a 3GPP service to be used/called on the LSO Legato interface reference point?

MEF uses YANG on the LSO Presto interface.

- For Interface Type 2, 3GPP may provide MEF the corresponding 3GPP YANG model or point MEF to the respective IETF model for the 3GPP network slice / subnetwork slice.
- Could there be a 3GPP service to be used/called on the LSO Presto interface reference point?

MEF is currently revising MEF 84 to refine and possibly augment the MEF 84 Network Service Attributes definitions (i.e. attributes for a Network Slice,

Which information concerning a 3GPP network slice is exposed via the Network Slice Provider (NSP) when the slice is offered/provided to a Network Slice Customer (NSC)?

MEF is looking forward to collaborate with 3GPP and would appreciate feedback and comments on the above.

References:

- MEF 55.1 Lifecycle Service Orchestration (LSO): Reference Architecture and Framework; January 2021; <https://www.mef.net/resources/mef-55-1-lifecycle-service-orchestration-lso-reference-architecture-and-framework/>
- MEF 84 Subscriber Network Slice Service and Attributes; June 2021; <https://www.mef.net/resources/mef-84-subscriber-network-slice-service-and-attributes/>

MEF Technical Standards, including published & draft standards, and SDKs are available at <https://www.mef.net/learn/mef-technical-standards-sdks/>.

The forthcoming MEF meetings are:

- 25 - 28 July 2022
- 24 - 27 October 2022