



## MEF LSO Sonata APIs – Frequently Asked Questions

### 1. What is the Big Picture relevance of LSO Sonata APIs for the industry?

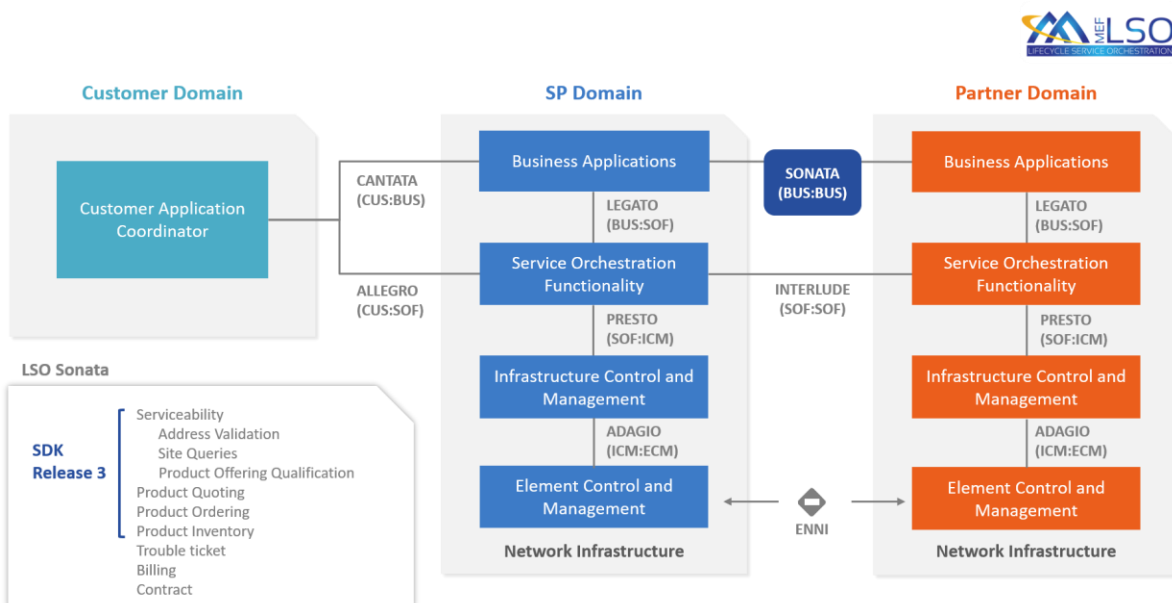
The communications industry is in the midst of a multi-year transformation to dynamic and assured services across a global ecosystem of automated networks, as envisioned in the [MEF 3.0 framework](#). With each day, consensus builds that service providers must become more cloud-like and automated to deliver more powerful networking solutions with unprecedented user- and application-directed control over network resources and service capabilities.

It will not be enough for providers to offer dynamic connectivity and virtualized services over just their own networks. Providers must transition from operating as independent islands of excellence to being integral players in a worldwide business federation of cloud-like networks that support standardized dynamic services across multiple operators. This opinion of MEF is based on direct engagement with top decision-makers and influencers employed by the biggest service providers in the world, along with many of their wholesale buy and sell partners.

To realize this vision, MEF has advanced initiatives related to a full family of standardized MEF 3.0 services – including Carrier Ethernet, SD-WAN, Optical Transport, and IP – as well as standardized [MEF 3.0 LSO \(Lifecycle Service Orchestration\) Sonata APIs](#) that are foundational to orchestrating these services across federated networks.

### 2. What are LSO Sonata APIs?

MEF is standardizing LSO Sonata APIs as part of a comprehensive effort to standardize multiple sets of LSO APIs enabling service automation across providers and over multiple network technology domains. LSO Sonata APIs relate to the interface reference point within the [LSO Reference Architecture](#) that supports business-to-business interactions between service providers. LSO Sonata APIs combine service-agnostic TM Forum Open APIs with MEF 3.0 service definitions. The collaboration secures a service provider’s investment in both MEF and TM Forum while delivering an accelerated time-to-market and time-to-revenue. The full suite of planned LSO Sonata APIs deals with serviceability (address validation, site queries, product offering qualification), product inventory, quoting, ordering, trouble ticketing, contracts, and billing.



### **3. What service provider challenges do the LSO Sonata APIs address?**

Looking at the figure above, consider the case of a large enterprise customer with data centers and branch offices located around the world. This customer is looking for a service provider to provide connectivity to all their locations. No single service provider has facilities to reach all customer locations. Typically, a service provider can reach some of the locations (on-net locations) but must work with a set of partners to reach the other locations (off-net locations).

The interaction between service providers and partners to deliver services to a single customer is predominantly manual involving people, emails, negotiations, etc., resulting in long time periods and costs to set up required connectivity. Accelerating these processes through automation provides cost savings and greater business value to the end customer. It also removes much of the error potential inherent in manual processes.

With hundreds of service providers and hundreds of partners in the world, it would be prohibitively expensive to implement custom automation for each service provider – partner pair. MEF's LSO Sonata APIs provide an industry standard so that a service provider (buyer) may implement these APIs and automatically work with all partners. Similarly, a partner (seller) may implement these APIs, enabling automation with all their partner service providers.

### **4. What LSO Sonata APIs are available today, and what others are planned?**

In June 2019, MEF announced the availability of LSO Sonata SDK Release 3 that includes a set of deliverables that enable market adoption of LSO Sonata APIs for serviceability (address validation, site queries, and product offering qualification), product inventory, quoting, and ordering. The SDK includes published and draft standards listed below covering business requirements, use cases, and attributes that serve as the basis for the associated APIs and data models. Available on the [MEF public GitHub](#), the SDK also includes Swagger data models, product payload specifications composed of MEF 3.0 services, and other artifacts that enable a developer to rapidly build out these Sonata LSO APIs within their business systems.

- [Ethernet Ordering Technical Standard: Business Requirements and Use Cases \(MEF 57.1\)](#).
- [Address, Service Site, and Product Offering Qualification Management: Requirements and Use Cases \(MEF 79 Draft Standard\)](#)
- [Quote Management: Requirements and Use Cases \(MEF 80 Draft Standard\)](#)
- [Product Inventory Management: Requirements and Use Cases \(MEF 81 Draft Standard\)](#)

MEF intends to continually enhance standards related to LSO Sonata APIs for serviceability, product inventory, quoting, and ordering while also advancing standards work related to LSO Sonata APIs for trouble ticketing, contracts, and billing.

### **5. Can LSO Sonata APIs be used to orchestrate all MEF 3.0 services?**

While initial LSO Sonata API work relates to orchestration of MEF 3.0 Carrier Ethernet services, further advancements will support the full range of MEF 3.0 services – also including Optical Transport, IP, SD-WAN, Security-as-a-Service, etc. – without changing the basic API structure itself thanks to the polymorphic approach used in collaboration with TM Forum.

### **6. How would you characterize industry support for LSO Sonata APIs?**

More than 50 service providers around the world – including AT&T, Colt, Orange, PCCW Global, Sparkle, Tata, Verizon, CenturyLink, and others – have voiced support for development and adoption of LSO Sonata APIs to realize time-to-revenue and profit goals. A core group is

lining up to participate in the LSO Sonata pilot certification program, leading the industry shift from manual inter-provider processes to dynamic service automation.

A number of companies that are involved in both MEF and in the ITW Global Leaders' Forum have supported LSO Sonata API development in order to advance frictionless commerce across communications providers worldwide. MEF looks forward to closer collaboration with GLF members in the months ahead to advance our common goals.

MEF's LSO Sonata press release from October 2018 lists more than 40 service and technology provider companies who have publicly supported LSO Sonata, and representatives from dozens of more companies have informed MEF of their support.

### **7. Has anybody implemented LSO Sonata APIs?**

Yes. MEF congratulates AT&T and Colt for their pioneering efforts to implement LSO Sonata APIs in production environments as announced in June 2019. This is a major milestone for these companies, MEF, and the broader industry.

We anticipate more companies will begin production implementations of LSO Sonata APIs in 2H 2019 and 2020.

### **8. What is MEF 3.0 LSO Sonata certification, and why is it important?**

MEF 3.0 LSO Sonata certification enables buyers and sellers of wholesale MEF 3.0 services to validate that the full suite of their APIs used for inter-provider business transactions comply with MEF standards. The certification program will help companies develop, test, and certify all LSO Sonata APIs as they are released. This new certification builds upon the widely recognized MEF certification program that has delivered hundreds of certifications to Carrier Ethernet service and technology providers and fueled creation of today's \$80+ billion global CE market.

### **9. What is the process for MEF 3.0 LSO Sonata certification?**

The MEF 3.0 LSO Sonata certification program starts with a pilot, which is designed to be the fastest path for buyers and sellers of Ethernet Access services to be part of the leading group of partners advancing frictionless inter-provider service automation. The pilot involves three major steps associated with published MEF 3.0 CE and LSO Sonata standards:

1. **Certify MEF 3.0 CE Access E-Line Service.** Service providers validate compliance with MEF 3.0 CE Access E-Line service standards as described in the upcoming MEF 3.0 Carrier Ethernet Test Requirements (MEF 91) document.
2. **Develop MEF 3.0 LSO Sonata Ordering API.** The API test platform helps companies optimize development of the LSO Sonata Ordering API based on [Ethernet Ordering Technical Standard: Business Requirements and Use Cases \(MEF 57.1\)](#) and LSO Sonata SDK Release 3. The platform provides a structure within which API developers can develop code covering various use cases in an optimal manner and pre-validate their code at every step of development on a 24/7 basis.
3. **Certify MEF 3.0 LSO Sonata Ordering API.** The final stage of certification validates conformity of the LSO Sonata Ordering API to the upcoming [MEF LSO Sonata Certification Test Requirements \(MEF 92\)](#) document, which together with the MEF 3.0 CE Access E-Line service certification provides a validated orchestrated service ready to interact with partners across the globe.

For more information about the MEF 3.0 LSO Sonata certification pilot, contact Iometrix at [info@iometrix.com](mailto:info@iometrix.com).

MEF member companies interested in pilot certification should register no later than 15 September 2019.

**10. Has anyone signed up for MEF 3.0 LSO Sonata certification pilot yet?**

Multiple companies already have committed to being involved in the MEF 3.0 LSO Sonata certification pilot, and we encourage others to join as well.

**11. How can I learn more about LSO Sonata APIs in action – like Proof of Concept demonstrations?**

Many MEF member service provider and technology companies showcased LSO Sonata APIs in Proof of Concept demonstrations at MEF18 in October 2018. We expect to see even more sophisticated demonstrations involving LSO Sonata and other LSO APIs in the upcoming MEF 3.0 PoC Showcase at [MEF19](#), held 18-22 November 2019 at the JW Marriott LA LIVE in Los Angeles, California.

**12. What is the relationship between the MEF LSO Sonata APIs and the TM Forum Open API Framework?**

As noted above, LSO Sonata APIs combine service-agnostic TM Forum Open APIs with MEF 3.0 service definitions. The collaboration effectively secures a service provider's investment in both MEF and TM Forum while delivering an accelerated time-to-market and time-to-revenue.

**13. How can I contribute to LSO Sonata API work?**

Contribution to the LSO Sonata work is welcomed. Participation is restricted to active MEF member companies and their staff. Send an inquiry to [LSO-Sonata@mef.net](mailto:LSO-Sonata@mef.net) for more details.

**14. What are leading industry professionals saying about MEF LSO Sonata APIs?**

The following are examples of public comments from leading service, technology, and market research professionals on MEF LSO Sonata APIs and their relevance to the industry.

**Roman Pacewicz, Chief Product Officer, AT&T Business**

"MEF continues to be the driving force in the service provider community bringing standardization of specifications promoting carrier interoperability of next generation services like Ethernet and SD-WAN. AT&T is pleased to be part of this effort and we are continually implementing these specifications to enable on-demand services, drive complexity out of our processes, and lower our operating costs. Today's announcement demonstrates that LSO Sonata APIs have arrived, and it's incumbent upon all of us in the service provider community to implement them in the same standardized fashion to ensure cross-carrier interoperability." (MEF PR, June 2019)

**George Sloan, Vice President, AT&T Global Connections and Alliance Management**

"Advancing interoperability is a key initiative of the ITW Global Leaders' Forum, a network of the leaders from the world's largest wholesale carriers, who convene to discuss strategic issues and collaborative activities with the aim of driving the next phase of growth for the industry. GLF has been supporting MEF LSO Sonata API work, which will enable network providers to more easily buy from and sell to each other and better meet the needs of our respective business customers." (AT&T and Colt PR, June 2019)

**Carl Grivner, CEO, Colt Technology Services**

“I think the biggest thing though coming up for us, for the industry, was the announcement that we made with AT&T in of terms of the first API that that follows the MEF standards. Now that we've got Colt and AT&T, our goal for this year, and certainly into next year, is to get as many carriers—on a global basis—to join that API capability because that'll speed up everything for not only the carriers but the for customers as well. I also think that that's another major step along the way for SDN. We'll continue to build out SDN, but the API plays a critical role in that scenario as well. For this year and next year, we will be building out that API capability with other carriers.” (Fierce Telecom, July 2019)

**Mirko Voltolini, Head of Network On Demand, Colt Technology Services**

“Colt has taken a leadership role within MEF and has been working with other carriers to design and develop the LSO Sonata APIs. As one of the first implementers of the APIs, we couldn't be more thrilled to see this architecture now changing how we do business. For the success of the MEF LSO APIs moving forward, having a certification is critical because it adds credibility to those organizations who are already working with the APIs, and also makes it easier to identify those who are investing and working towards a cost-effective, on-demand, frictionless way of working.” (MEF PR, June 2019)

**Emmanuel Rochas, CEO, Orange International Carriers**

“Orange is pleased to be part of the early adopters of MEF 3.0 LSO Sonata. The integration of these APIs into our on-demand services will provide efficiency and thus simplify cooperation between operators on existing and new on-demand services. Because digital transformation is growing at such an incredible pace, here at Orange we are convinced that automation is a key element in customer experience!” (MEF PR, June 2019)

**Laurent Leboucher, Vice President Architecture, Enablers and Security, Orange**

“Within Orange, we are proud to contribute to this new standard. The MEF LSO Sonata APIs based on TM Forum Open APIs are a cornerstone to develop on-demand cross carrier network services and create a global software connectivity platform for our enterprise & carrier customers.” (MEF PR, October 2018)

**Juan Carlos Bernal, CEO International Wholesale Business, Telefónica International Wholesale Services**

“We're expecting 2 benefits [from LSO Sonata APIs]...agility to our customers and efficiency. On agility, we are envisioning that we can complete the evolution of our network and systems to provide...automated services for our customers. On the efficiency, this is something all carriers are looking for every day and every year...This is a way to get efficiency and to skip human intervention in some low-value activities, avoid errors, and dedicate our resources, our teams to more valued activities.” (ITW Global Leaders' Forum Panel, June 2019)

**Ravindran Mahalingam, SVP – International Business, HGC Global Communications**

“Obviously if we want to be at the front end of providing services in the coming years we do need to be involved in the digital space. We ourselves did our transformation about a year and half ago, and now we have launched several services. But we cannot be on our own island. We have to collaborate...It is a coming together of all like-minded transformation carrier organizations to see how we can make this available across each others' networks. The GLF is one of the catalysts and also the other catalyst is MEF – bringing together the oil in the gears to make that even quicker.” (ITW Global Leaders' Forum Panel, June 2019)

**Pascal Menezes, CTO, MEF**

“Certified MEF 3.0 LSO Sonata APIs will be the critical enabler for orchestrating MEF 3.0 services – starting with Carrier Ethernet and extending to SD-WAN, Optical Transport, and IP – across a global federation of automated networks.” (MEF PR, June 2019)

**Nik Willetts, CEO, TM Forum**

“MEF has leveraged the natural extension capability of the TM Forum Open APIs to enable the LSO Sonata SDKs. This is a great example of industry partnership and application of the common core capabilities of the Forum Open APIs, which enable interoperability and connectivity across all technologies and services in open digital ecosystems.” (MEF PR, October 2017)

**Rosemary Cochran, Principal Analyst & Co-Founder, Vertical Systems Group**

“The top business driver for service providers migrating to new dynamic network offerings is the ability to provision services faster and more efficiently for their customers, according to results of the 2018 MEF-Vertical Systems Group survey. Standardized LSO Sonata APIs help service providers achieve this goal by automating the business-to-business interactions that take place in multi-provider environments. From our survey, the two most important benefits of implementing LSO Sonata APIs are to reduce the time from serviceability to activation and to improve quality of experience for customers.” (MEF PR, October 2018)