



# **MEF 3.0 LSO Sonata APIs**

## **Frequently Asked Questions**

## Summary

This FAQ addresses key questions about MEF 3.0 LSO Sonata APIs that enable automation of business-to-business functions between service providers. Separate FAQs are available for two new programs launched in September 2021: MEF's LSO API Onboarding & Interop Testing Service and MEF 3.0 LSO Sonata Certification.

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## MEF 3.0 LSO Sonata APIs & Inter-Provider Service Automation

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

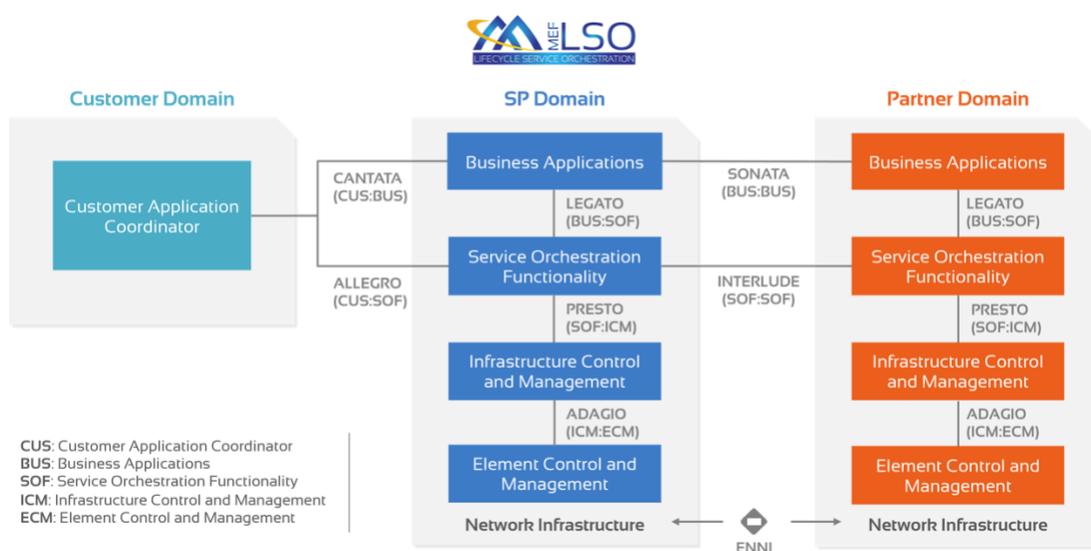
The communications industry is undergoing a multi-year transformation to dynamic, secure, and certified services across a global federation of automated networks, as envisioned in the MEF 3.0 framework. Service providers worldwide are not only becoming more automated internally to deliver solutions with user- and application-directed control over service capabilities. Many also are collaborating to build an emerging business ecosystem of automated networks that will support rapid delivery of digital services across multiple providers and reduce friction in connecting enterprise users to cloud applications.

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

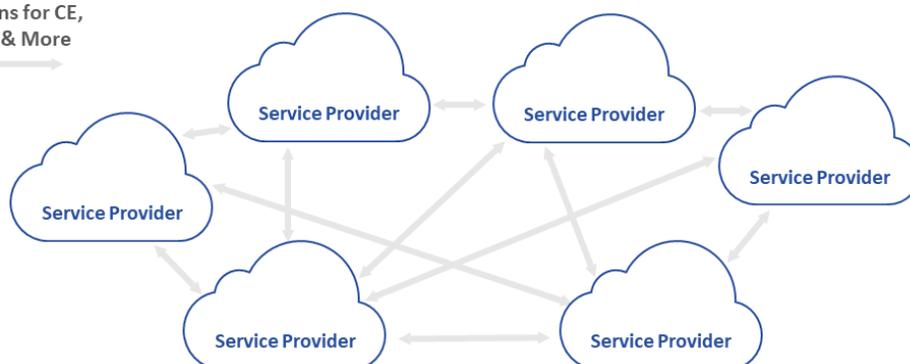
### 2. What are MEF 3.0 LSO Sonata APIs?

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 network technology domains. LSO Sonata APIs relate to the interface reference point within the [LSO Reference Architecture](#) that supports automated business-to-business interactions between service providers. Similar APIs at the LSO Cantata interface reference point support automation of business functions between service providers and enterprises.

LSO Reference Architecture & LSO Sonata APIs



LSO Sonata APIs Automate Business Functions for CE, Internet Access & More



### 3. What LSO Sonata APIs are available and planned?

With the latest “Billie” LSO SDK Release in June 2021, MEF now provides a robust set of LSO Sonata APIs for address validation, site query, product offering qualification, quote, product order, product inventory, and trouble ticket. These APIs initially support automation of Carrier Ethernet Access E-Line and CE subscriber services, as shown in the table below.

The “Celine” LSO SDK Release scheduled for January 2022 will introduce new support for Internet Access and will mature all LSO Sonata APIs and Developer Guides to pass another MEF member Call for Comments (CfC), with some advancing to Letter Ballot – the final stage of MEF member and Board approval before standards are published.

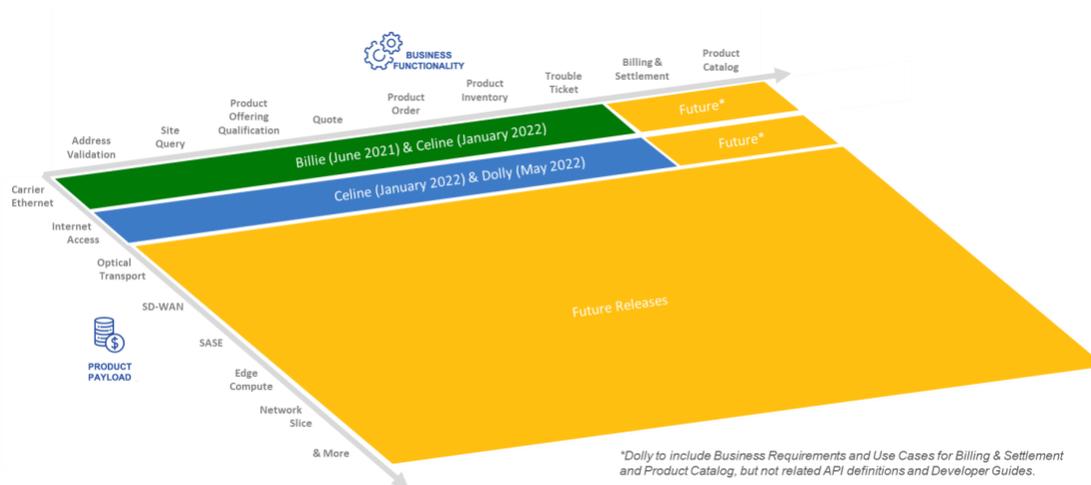
The “Dolly” LSO SDK Release scheduled for May 2022 is expected to include Business Requirements and Use Cases for billing & settlement and product catalog, but the related LSO API definitions and Developer Guides will not be part of this release.

MEF plans for future SDK releases following Dolly to support additional MEF-defined and MEF endorsed services as shown in the diagram below.

LSO Sonata SDK Release Roadmap – Near Term

Deliverables	Billie June 2021	Celine Plan January 2022	Dolly Plan May 2022
Functional Areas with APIs	Address Validation, Site Query, Product Offering Qualification, Quote, Product Order, Product Inventory, Trouble Ticket	Address Validation, Site Query, Product Offering Qualification, Quote, Product Order, Product Inventory, Trouble Ticket	Address Validation, Site Query, Product Offering Qualification, Quote, Product Order, Product Inventory, Trouble Ticket
Product Schemas	CE Access E-Line, EPL, EP-LAN, EP-Tree, EVPL, EVP-LAN, EVP-Tree	CE Access E-Line, EPL, EP-LAN, EP-Tree, EVPL, EVP-LAN, EVP-Tree Internet Access	CE Access E-Line, EPL, EP-LAN, EP-Tree, EVPL, EVP-LAN, EVP-Tree, Internet Access

## LSO Sonata/Cantata SDK Release Roadmap – Longer Term



### 4. Where can I find details on LSO SDK Releases covering LSO Sonata and other APIs?

MEF’s LSO API Framework provides a set of SDKs released every six months that contain APIs, tools, documentation, and underlying standards for service automation across providers, between providers and enterprises, and within providers.

- LSO SDK repositories are publicly available on GitHub and use GitHub teams as a communication channel.
- Extended SDK versions are available exclusively for MEF members. They contain work-in-progress elements and pre-release standards.
- Members can contact the *LSO Developer Community Manager*, [community\\_manager@mef.net](mailto:community_manager@mef.net), and visit [LSO Sonata SDK](#) on the MEF Wiki for more information.

Billie LSO Release	Links
LSO Sonata SDK	<a href="#">GitHub</a>
LSO Cantata SDK	<a href="#">GitHub</a>
LSO Legato SDK	<a href="#">GitHub</a>
LSO Presto SDK	<a href="#">GitHub</a>

### 5. What service provider challenges do LSO Sonata APIs address?

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 may involve proprietary APIs and portals but is predominantly manual across the industry – involving emails, spreadsheets, 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 potential error inherent in manual processes.

With hundreds of service providers and partners in the world, it would be prohibitively expensive and time consuming 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 their LSO Sonata-enabled partners. Similarly, a partner (seller) may implement these APIs, enabling automation with their LSO Sonata-enabled partner service providers.

## 6. What are the business benefits of LSO Sonata APIs?

The top three LSO Sonata benefits identified by service providers are: (1) accelerate service delivery, (2) accelerate time to revenue, and (3) improve customer experience and loyalty. More than two-thirds of 28 service providers surveyed by MEF described these benefits as having “high value.”

Other significant benefits include efficiencies that lead to additional revenue from new orders with API-enabled partners, scaling with predictability, reduced operational expenses, and the potential for new revenue from multi-provider on-demand services.

At a strategic level, implementation of LSO Sonata APIs enables service providers to participate in an emerging global networking federation with frictionless commerce. Federation participation will ultimately create an opportunity to provide higher margin, highly differentiated dynamic services across multiple providers that leave behind low-margin fixed-bandwidth services.

## LSO Sonata Market Adoption

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

A large and growing number of service providers worldwide are embracing LSO Sonata APIs to automate business functions between providers. The pace of the transition to the APIs has picked up significantly with the latest “Billie” LSO SDK Release in June 2021.

Recent research from MEF indicates that at least 30 companies are either in production with LSO Sonata or intend to be by the end of 2023, including 24 companies by the end of June 2022. Twenty-nine companies have implemented LSO Sonata or intend to as a seller, and 14 have implemented LSO Sonata or intend to as a buyer. These numbers are likely to increase as market awareness grows and buyers increasingly call upon their seller partners to align to LSO Sonata APIs.

## 8. Which companies are in production with or plan to implement LSO Sonata APIs?

MEF is closely tracking LSO Sonata adoption through one-to-one engagement with MEF member and non-member companies.

Fourteen companies in production with LSO Sonata APIs as of October 2021 include:

- AT&T
- Axtel Networks
- Bloomberg
- China Unicom Global Limited
- Colt Technology Services
- HGC Global Communications
- Lumen
- Orange
- PCCW Global
- Sparkle
- Telefónica Global Solutions
- Telia
- Zayo
- 1 unannounced

The 16+ companies committed to implementing LSO Sonata APIs include:

- CMC Networks
- Proximus
- TELUS
- TIME dotCom
- Verizon Business Group
- 11 other service providers

## 9. Where can I find data on which companies are implementing LSO Sonata as a buyer or seller and which SDK releases and business functions they support?

Our goal is to gain approval from as many companies as possible to list them as buyers and/or sellers within the LSO Partners Group and the new LSO Marketplace. We have many companies asking for this and more detailed information.

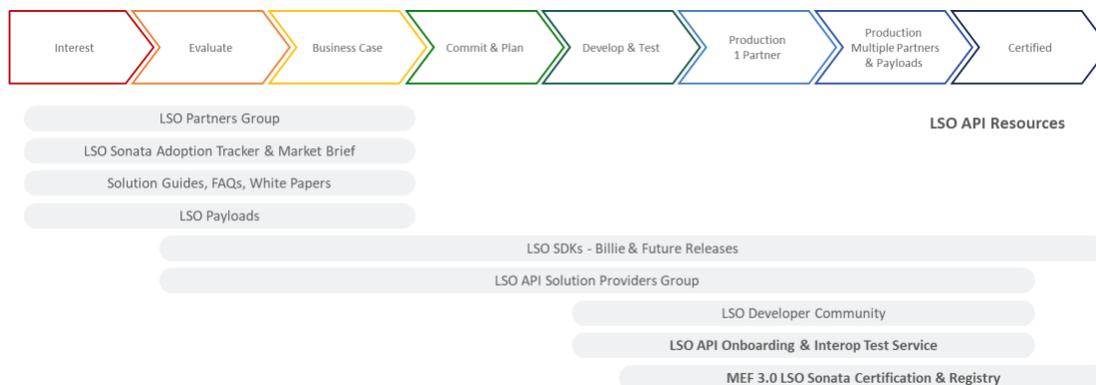
The LSO Partners Group currently is evaluating a proposal to develop a list of buyers and sellers that will include details regarding supported releases, functions, and product payloads, as well as contact information. We encourage all buyers and sellers to provide input on the proposal. We will need corporate approvals before such information can be published.

## Implementation Resources

### 10. What resources are available to help implement LSO Sonata APIs?

MEF has introduced a broad range of commercial and technical resources to make it much easier for service providers of all sizes to adopt LSO Sonata APIs. These are designed to support service providers throughout all stages of their adoption journey. Chief among the new programs are MEF's LSO API Onboarding & Interop Test (OIT) Service and MEF 3.0 LSO Sonata Certification.

## LSO Sonata Adoption Lifecycle



See this [LSO Sonata resource page on MEF.net](#) for links to a number of these resources.

MEF members can find more information on these resources and the standards-related work of MEF committees in the *LSO Sonata Adoption Tracker* (available exclusively for members).

### 11. Where can I learn about MEF's LSO API Onboarding & Interop Test Service?

MEF's LSO API Onboarding & Interop Test (OIT) Service offers an efficient, predictable, and scalable solution that service providers can use to test their LSO Sonata implementation and to perform interop testing with partners. It consists of software-based LSO Sonata Buyer & Seller Emulators hosted on a dedicated public cloud server for a subscriber.

Offered through Amartus, a MEF-Authorized Test and Certification Partner, the OIT Service entered general availability in October 2021.

See the [MEF Solution Brief – LSO API Onboarding & Interop Test Service](#) for a quick overview.

See the [FAQ – MEF LSO API Onboarding & Interop Test Service](#) for details.

### 12. Where can I learn about MEF 3.0 LSO Sonata certification?

MEF 3.0 LSO Sonata certification is a subset of the new MEF 3.0 LSO API certification program formally launched in September 2021. It builds upon MEF's years of experience providing service, technology, and professional certifications for Carrier Ethernet and SD-WAN services.

MEF 3.0 LSO Sonata certification enables buyers and sellers of wholesale connectivity services to validate that their suite of APIs used for inter-provider business transactions conform to MEF standards. Tested and certified LSO Sonata APIs are a combination of four elements listed below.

1. Buyer or seller
2. Business function
3. LSO Sonata release
4. Product payload

Offered through Iometrix, a MEF-Authorized Test and Certification Partner, MEF 3.0 LSO Sonata certification entered general availability in October 2021.

See the [MEF Solution Brief – MEF 3.0 LSO Sonata Certification](#) for a quick overview.

See the [FAQ – MEF 3.0 LSO Sonata Certification](#) for details.

## Implementation Deep Dive

### 13. How long should it take to develop LSO Sonata APIs and enter production?

MEF intends to address this question (with estimates) in Phase 2 of our LSO Sonata research. There are 3<sup>rd</sup> party LSO Sonata API solutions available to help significantly speed up the development process and provide timely support for new releases. And the new OIT Service shortens development and test time because companies can use emulators to test against multiple partners at the same time.

### 14. How much work is there to upgrade LSO Sonata APIs from one release to the next?

This depends on which two releases you compare. Starting from the Billie release – where every business function was covered – the number of changes is dropping significantly while stability is rising. Apart from Celine’s new support for Internet Access, the only significant API changes from Billie to Celine are some fixes and the introduction of new functionalities. Currently, the best estimate is 5% to 10% of the full implementation time to move from Billie to Celine. Each LSO Sonata API comes with release notes to help identify the changes and estimate the potential work.

### 15. Do you expect cases where there will be no changes to a particular business function when moving from one release to the next?

Yes. Once the Business Requirements and Use Cases and Developer Guide + API documents are published standards, the work on specific APIs essentially will stop. Only bug fixing may occur afterward, or possibly an amendment if needed. There is a chance that address validation, site query, POQ, and quote in Celine will reach the Letter Ballot status and likely will not change for Dolly.

### 16. Why is MEF not using numbers for releases instead of Billie, Celine, etc.?

Billie, Celine, etc. are marketing names for SDK releases. Each of the APIs has its own semantic numbering.

## Contacts

### 17. Who should I contact for more information and engagement with MEF?

The following are key contacts:

- LSO SDK Releases: [community\\_manager@mef.net](mailto:community_manager@mef.net)
- LSO Onboarding & Interop Test Service: [LSOIT@mef.net](mailto:LSOIT@mef.net)
- MEF 3.0 LSO Sonata Certification: [LSOCert@mef.net](mailto:LSOCert@mef.net) and [Info@lometrix.com](mailto:Info@lometrix.com)
- LSO Sonata and other API standards in the LSO Committee: [lso@mef.net](mailto:lso@mef.net)



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