

Inter-carrier Service Orchestration

Amartus is working with the industry to help define open standard inter-carrier APIs to provide end-to-end service creation and flexibility in an SDN environment.

Communication Service Providers (CSPs) are under pressure to meet the needs of the new generation of digital consumers and more flexible networks using SDN and NFV. This requires CSPs to move away from highly manual to automated, on-demand services. Although they have made headway towards automating their internal network, very little progress has been made in automation of the external interconnectivity, in particular the transactions between CSPs provisioning end-to-end services, when a CSP requires an OFF-net resource of another CSP (e.g., tail circuits, backbone links).

CSPs want to interconnect with other providers with a minimum of effort and costs. The inter-carrier automation between providers is essential to make the process more efficient. CSPs may have multiple OFF-net partners, generating thousands of order requests per month, with the current manual process prone to errors and taking from weeks to months to set up. This can be reduced to minutes with an automated inter-carrier interface.

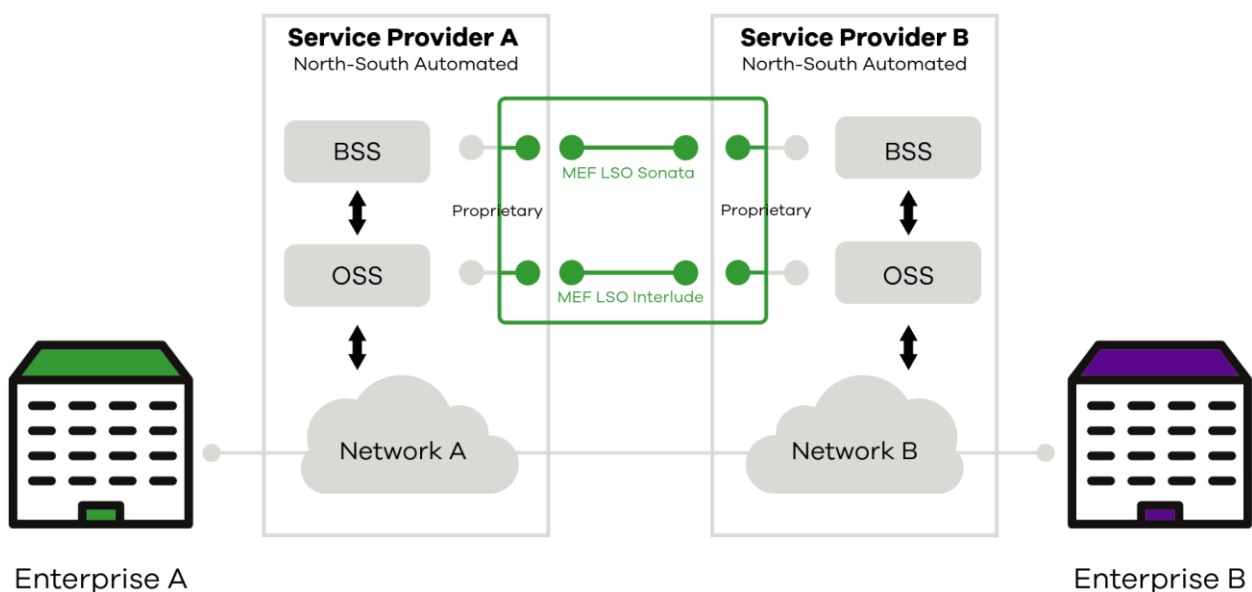
The Challenge: The Lack of Inter-carrier Standards Stalls Network Evolution

Through Amartus conversations with CSPs, we've acknowledged that the lack of inter-carrier automation is a major industry pain point.

The main challenges that service providers are facing today that impede growth of their services and hinder profit are:

What are the main issues?

- How to set up an agile end-to-end service over multi-carrier domains, spanning hybrid infrastructures, in the minimum time?
- How to let your customers control on demand service modifications, unlimited by geography?
- How to set up competitive Service Level Agreements (SLA) across multiple carriers?
- How to interconnect each carrier's orchestrator for a seamless service and experience?



The Solution: Inter-carrier Open APIs

The answer to the above challenges are open standards for inter-carrier network APIs. They provide CSPs with the means for streamlining and automating the service lifecycle in a maintainable fashion.

Some CSPs use the ATIS ASR (Access Service Request) standard to interconnect, but this is limited to North America and not widely adopted. However, there is also another, more wide-spread activity in the industry to define the inter-carrier communications through MEF Lifecycle Service Orchestration.

In the MEF terminology, the inter-carrier layer is referred to as *East-West*, as the communication is passed horizontally, between individual systems usually belonging to different operators. The automation of the East-West data flows through standard APIs is next step to the automated North-South flows of the management of a single provider's network. East-West automation will not only make OFF-net more efficient but also enable ON-net CSPs to source services from a wider choice of OFF-net providers, making the market more open and competitive.

These East-West APIs define the reference points supporting the interactions (e.g., availability, ordering, billing, trouble ticketing, etc.) between two network providers (e.g., Service Provider and Partner Domain). For example, the Service Provider Business Applications can place an order to a Partner provider for an access service, needed to form an end-to-end connectivity service. These APIs can address other capabilities such as performance, assurance, usage, analytics, etc.

East-West APIs are getting a major push with standard organizations combining forces, as part of the wider activity called MEF LSO (Lifecycle Service Orchestration). LSO defines sets of APIs for North-South and East-West communication, binding together legacy OSS and BSS services with newer SDN and NFV software and telecom hardware.

Two East-West APIs being defined are:

1. **LSO Sonata**, which defines the interface data model for the business-related aspects of service.
2. **LSO Interlude**, which covers operational aspects of service.

The results: Enabling Automated Global Business Services

The APIs for East-West interfaces are critical to enabling automated global business services since no single operator has the physical facilities everywhere their customers need to communicate. The current highly-manual set-up has existed for a number of years, but now there is industry momentum and the demand driving the need to increase efficiency through automation.

Exposing standardized Inter-Provider Open APIs will not only allow a solution to the new generation of digital consumers but also open new opportunities for business and revenue streams in an on-demand environment.

Initiatives such as MEF LSO are enabling progress in defining APIs to provide an agile approach to streamlining and automating the service lifecycle. This enables coordinated management and control across all network domains responsible for delivering end-to-end dynamic connectivity service.