



Title	MEF Forum Work on 5G
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From	MEF Forum

Thank you for your recent liaison on the work of the IEEE 1914 WG including the draft of your new P1914.3 Radio over Ethernet Encapsulations and Mappings.

We would like to inform you of MEF's ongoing 5G related work to help better coordinate our efforts. Recently, MEF approved a final ballot on MEF 22.3 Mobile Backhaul Implementation Agreement, and we expect publication in Q1 2018. This revision aligns with MEF 23.2 COS IA and contains additional details to support time synchronization. Two use cases are specified for time synch: the mobile operator owns the time reference, and the CEN provider owns the time reference. The first is specified in detail using ITU-T G.8275.1, and the second using G.8275.2 for PTS and APTS. This is available as approved draft D00139 for your review.

MEF's liaison partners may access all MEF approved drafts as follows:

<https://mef.net/liaison-login>

Username: mef

Password: M3F3030

The elements of the ongoing 5G work in MEF are in the following areas:

1. Transport for 5G
2. End-to-End Network Slicing
3. Orchestrating 5G Services
4. MEF Connectivity Services over 5G
5. 5G Applications

1. Transport for 5G

The MEF Forum has a long history in providing Ethernet Service definitions, LSO and Certification for mobile backhaul supporting 2G through LTE. The MEF 5G project extends this work by expanding into fronthaul and leveraging developments in IEEE 802.1 Time Sensitive Networking, increased data rates and network technologies to meet the latency, isolation and capacity requirements of 5G and network slicing.

Specifically, the work on 5G transport is pursued via a 5G-oriented MEF Implementation Agreement. The MEF 22.3.1 amendment on “Transport for 5G Mobile Networks” is a Phase 4 deliverable of the MBH project. The project will enhance Mobile Backhaul using Carrier Ethernet for new 5G use cases and network slicing, but will also add support for Mobile Fronthaul over Carrier Ethernet (e.g., in support of eCPRI). In support of the latter, we have been working closely with IEEE 802.1CM and the CPRI Cooperation. Specifically, this project will describe:

- Enhanced mobile backhaul transport that supports:
 - 5G use cases
 - Network slicing
 - Cloud-based infrastructure and networking
 - Reduced latency and improved synchronization
- Mobile fronthaul transport that supports:
 - Mobile fronthaul interfaces (e.g. CPRI/eCPRI)

As a secondary scope, we will look to support all 5G transport requirements (i.e., multiple instances of mobile backhaul and/or fronthaul) over the same Carrier Ethernet network or service (e.g., with traffic separation, QoS, etc.). We are targeting letter ballot (final approval) in 2019 for this amendment. As a result, we would welcome your requirements for the transport network in support of 5G / IMT-2020.

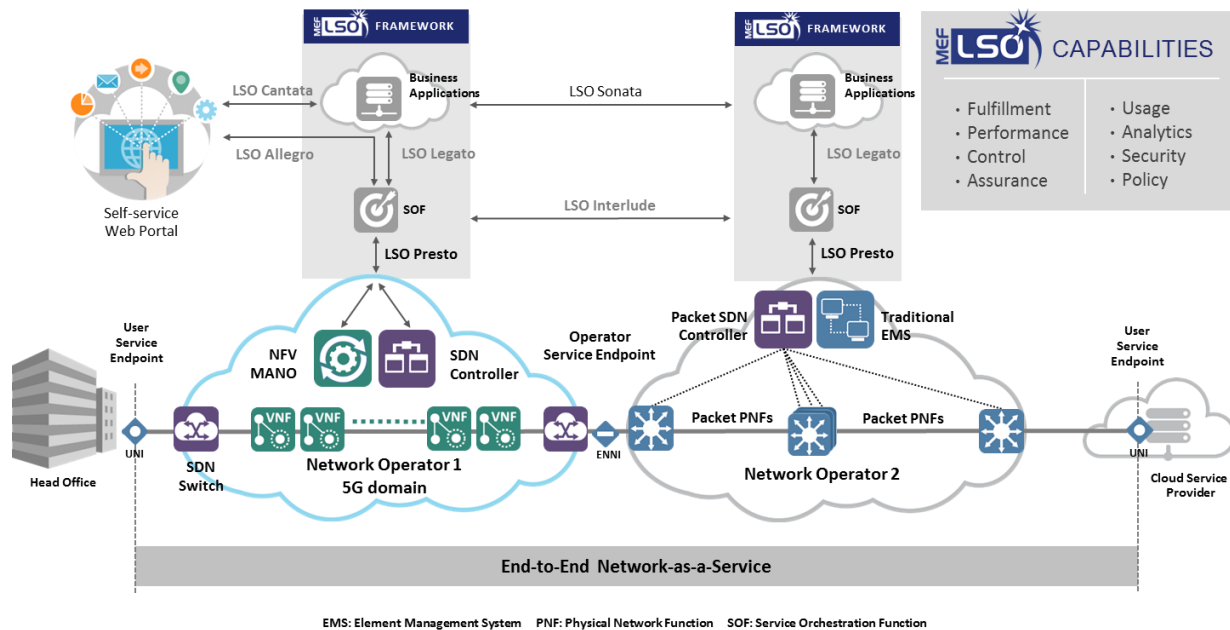
2. End-to-End Network Slicing

In addition to the support of transport constructs for identification of network slices for mobile networks (that will be included in the ongoing MEF 22.3.1 project), there is additional work in MEF on network slicing. The MEF has an active project that is investigating how to apply network slicing concepts and techniques in the context of Lifecycle Service Orchestration.

3. Orchestrating 5G Services

The work on LSO includes ensuring 5G-based services fully orchestrated through SDN controllers as part of :

- Heterogeneous connectivity service
 - Multi-Operator
 - Multi-Technology
- Full service lifecycle
 - Network resource provisioning
 - Service OAM and SAT
 - Service assurance (e.g. Zero touch telemetry, closed loopback control)



In addition, the MEF Forum’s 5G project is defining use cases, epics and user stories to initiate information and data modeling needed to standardize open northbound APIs for 5G environments.

4. MEF Connectivity Services over 5G

MEF Services are agnostic to the underlying transport, as such provisioning 5G as the underlying layer for Ethernet and IP Services will be facilitated by native support in 3GPP-based 5G networks. In addition to the development of the MEF Service technical specifications, the MEF runs projects to develop demonstration platforms to validate that the MEF specifications (both completed and underdevelopment) solve real-world problems. One use-case of interest is to show how to extend MEF Connectivity Services using a 5G network for transport. A recent proof-of-concept demonstration at MEF-17 provided an example of deploying a MEF Connectivity Service out of region using a cellular mobile hotspot as the demarcation device.

5. 5G Applications

The Applications committee has many activities that will be useful in the 5G ecosystem. The Intent-Based Orchestration project provides common, multi-vendor, interoperable way to describe what a policy needs to do, not provide a prescriptive set of actions (how to do the policy). The Applications committee has an activity group related to Internet of Things. The Applications committee is evaluating how to apply IoT and machine-to-machine interfaces to support the development of 5G-oriented over-the-top services.

We hope that you have found this information informative and you may use it as input to your work. You may access our current draft MEF 22.3 and we will send you a draft of the MEF 22.3.1 amendment once it has reached an approved draft status later this year. We would be most interested in reviewing your P1914.1 document when it is ready and assessing the requirements for inclusion in MEF 22.3.1.

We look forward to our continued dialog to best align our work and learning more about the 5G standards activities happening in your organization.

Please note that the next MEF Forum meetings are:

- April 23-26, 2018, Athens
- July 23-26, 2018, Nashville
- November 1-2, 2018, Los Angeles