MEF Brief

June 2020

MEF and 5G

HIGHLIGHTS

Initial MEF use case for 5G – extending MEF 70 SD-WAN services

MEF 22.3.1 defines Carrier Ethernet transport for 5G fronthaul

'Slicing for Shared 5G Fronthaul and Backhaul' White Paper describes MNO opportunity

Clarity on 5G slices and their types, network slicing and SD-WAN service mapping is essential

LSO orchestration of 5G local loops via LSO Presto and LSO Interlude: topic for new work

Definition of MEF 5G UNI can be derived from MEF 61.1

1

Extending SD-WAN Using 5G

5G offers a powerful solution for extending SD-WAN managed services to home offices, mobile users and IoT devices.

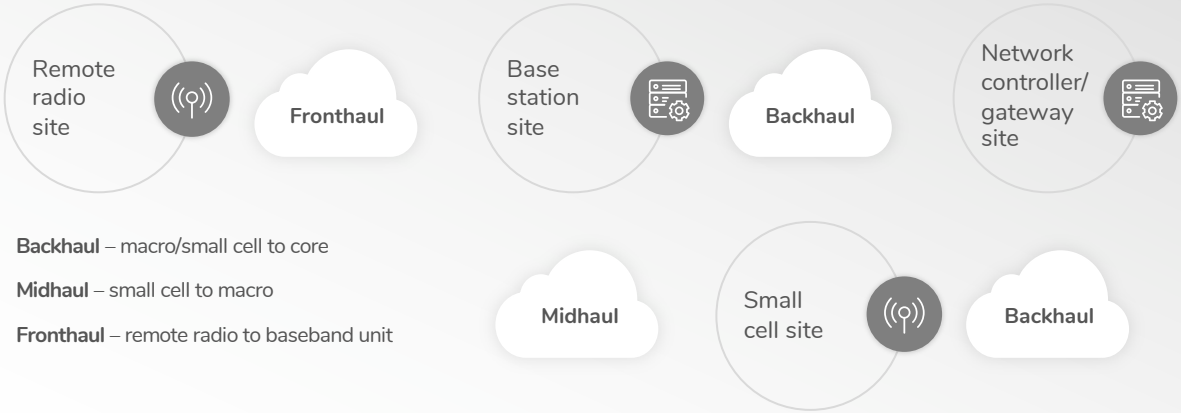
5G performance characteristics and potential for ubiquity can enable many digital service use cases that today are not feasible due to lack of connectivity for a fixed user (e.g. fiber requires new trench to be dug) or performance for a mobile user (e.g. 4G doesn't deliver the required performance for a given application). However, there are still areas of standardization that are required in order to accelerate the use and availability of 5G for this purpose.

2

Increasing 5G Ubiquity

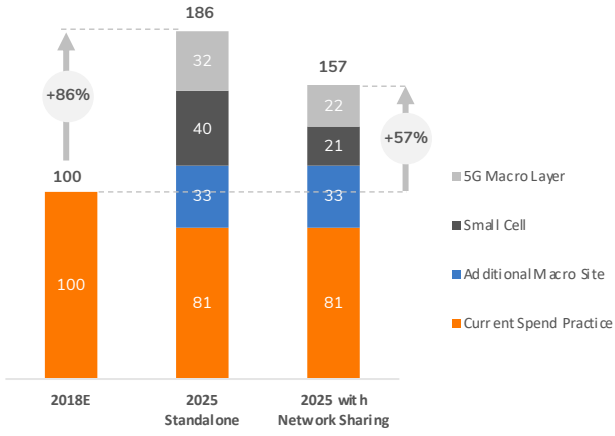
Carrier Ethernet Enabling 5G Fronthaul

The mobile architecture evolution to 5G maximizes Carrier Ethernet utilization in mobile fronthaul (MFH) in addition to the already defined mobile backhaul (MBH) used in previous generations of mobile telecommunications. The recently published **MEF 22.3.1** specifies how to use MEF-defined Carrier Ethernet services to enable 5G mobile fronthaul, thereby ensuring the transport performance required for demanding 5G use cases. MEF 22.3.1 also defines how to map network slices in the RAN context (defined in 3GPP TS 23.501) to corresponding EVCs and CoS IDs.



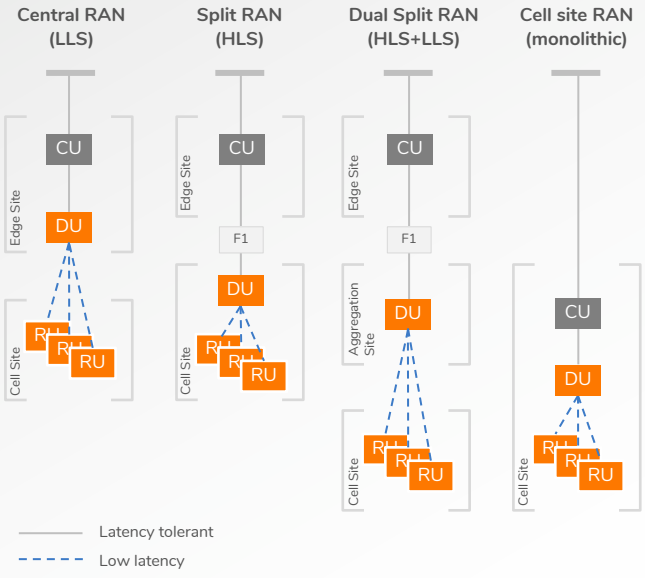
Slicing for Shared 5G Fronthaul and Backhaul

Mobile Network Operators (MNOs) around the globe have started transitioning from 4G to 5G infrastructure. However, rollout of 5G access infrastructure requires very large investments by MNOs, for example: spectrum licensing, right-of-way for cell tower placement, cell towers and associated equipment. Substantial investment is also required to build out or use networks suitable for connecting the 5G radio access network (RAN) functional elements. To enable faster 5G network build-out, MNOs are developing new business models based on mobile network sharing and network slicing. With revenue from services providing full or partial 5G mobile network sharing and slicing, MNOs can accelerate their return on investment for existing infrastructure and speed up the build-out of new infrastructure for areas where they do not have coverage. Network slicing can enable the sharing of 5G RAN functional elements and the transport network.



Source: McKinsey Analysis (www.mckinsey.com)

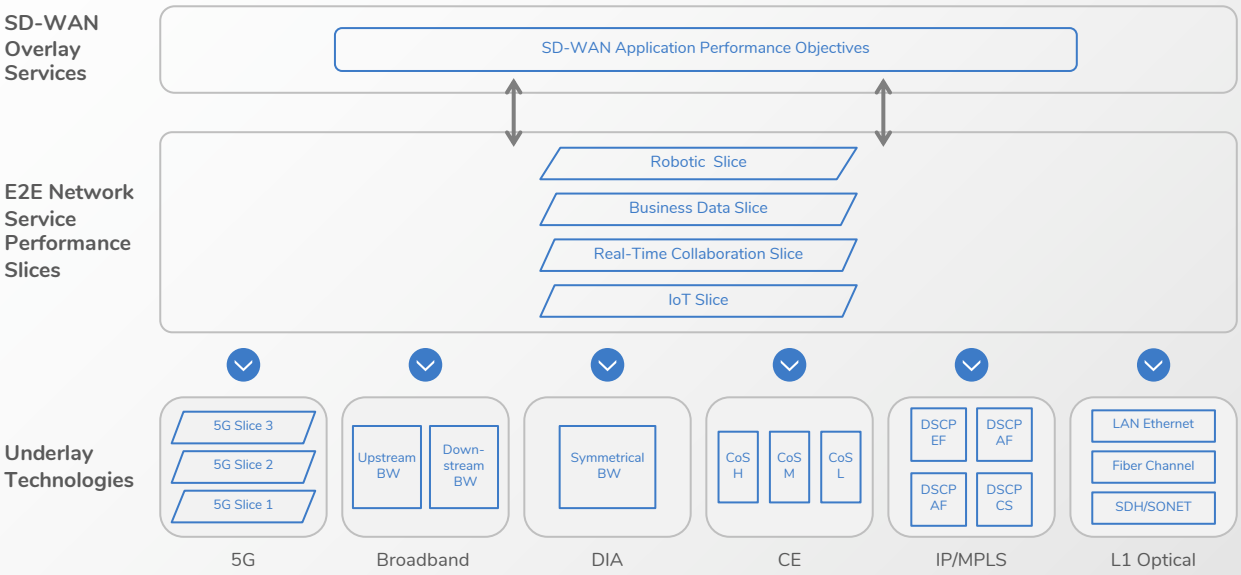
The MEF's recently published **'Slicing for Shared 5G Fronthaul and Backhaul' White Paper** introduces the concept of 5G mobile access network sharing and use cases for providing multiple mobile access network services over a common underlying fronthaul and backhaul infrastructure. The use cases are described in the context of current MEF Services and the MEF Lifecycle Service Orchestration (LSO) reference architecture.



3

Optimizing 5G for SD-WAN Services

SD-WAN and E2E Slicing



5G Slices

Beyond enabling more effective sharing by MNOs of fronthaul and backhaul, 5G slices will serve different needs in a variety of use cases. MEF is working with other SDOs to identify those use cases and relevant existing definitions of 5G slices that can be used to support, for example, SD-WAN managed services. MEF work is also expected to be introduced, aimed at optimizing the mapping of SD-WAN services to those different 5G slice types.

End-to-End Slicing

Network slicing for 5G is an important topic and several SDOs have already started working towards solutions/specifications. Evolving networking ecosystems that include 5G are expected to consist of more than the familiar three layers of resources/infrastructure, management-control, services and applications. Slices are already inherent in SDN implementations. The term 'slicing' is not new however the term is used differently in several contexts causing market confusion. A MEF project (MEF W84) is currently clarifying and documenting what network slicing means, especially in the context slice management using LSO and mapping MEF services to network slices. This will make a significant contribution to the ultimate goal of using 5G to extend the reach of MEF-defined SD-WAN managed services by providing a framework for end-to-end network slices.

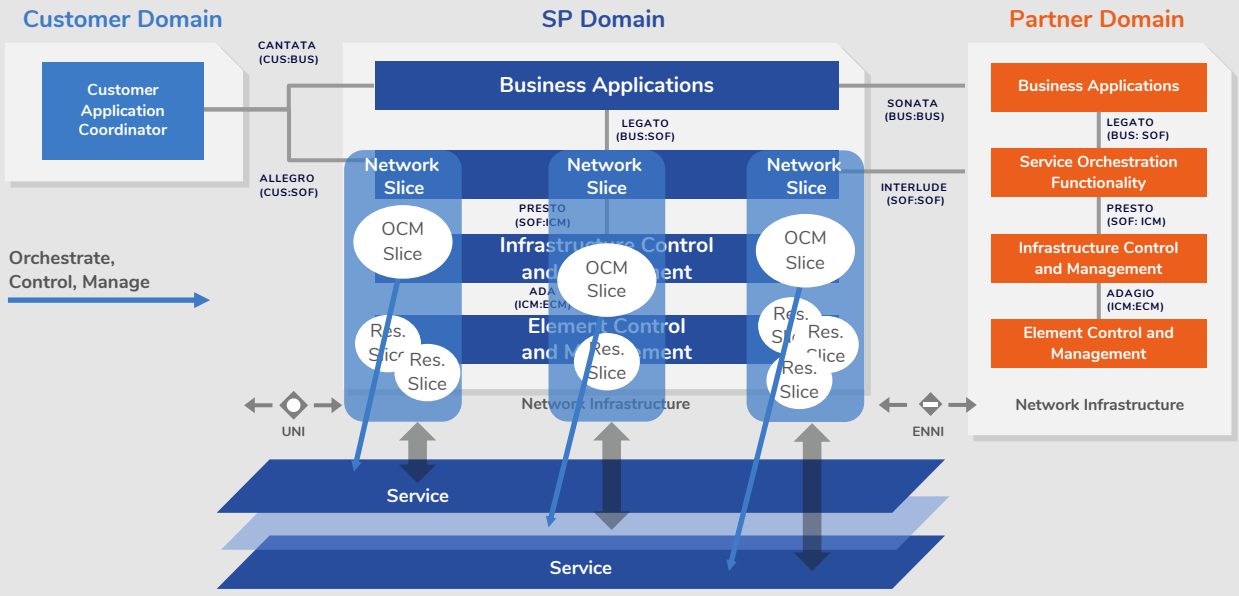
4

Orchestrating 5G Local Loops

The ability of a service provider to orchestrate 5G local loops in a manner consistent with how they orchestrate all their other network assets is essential.

MEF expects to extend the work on **LSO Presto APIs** to include the specific requirements of 5G local loop orchestration.

Similarly, wholesale providers of 5G local loops will want their offerings to be available in near-real time through automation of inter-provider business and operational interfaces.



MEF expects to extend its current work on **LSO Sonata APIs** to support not only Carrier Ethernet product payloads but also those of other products including 5G local loops. This will require definitions work on **5G UNI attributes** which will be derived in some part from MEF 61.1 on IP Service Attributes.

5

Information and Participation

MEF members can access the latest activities for participation and related project information on the MEF 5G Hub.

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