API Overview and Roadmap

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The founding vision of the 5G Future Forum is to accelerate the deployment and adoption of 5G MEC services. The driving force behind our vision is to facilitate interoperability of MEC services between telecom operators and across borders.

The 5GFF API Roadmap consists of a series of APIs that will enable developers to immediately launch and scale their applications on telecom MEC platforms, no matter where they are in the world. Our engagement with ISVs, SIs, and OEMs ensures the relevance and practicality of these APIs. They are further validated by our Commercial Ecosystems teams who work with members of the growing 5G ecosystem to put together demos and Proofs of Concept, focusing on emerging 5G use cases in a cross-operator scenario.

Below is an overview of the APIs that are currently being developed by the 5GFF technical teams, each one designed to enable a specific aspect of MEC interoperability across operators.

For any additional information or clarification regarding the 5GFF APIs, please reach out to us via the *Contact Us* section on the 5GFF website.

Edge Discovery Service (EDS)

The power of MEC resides in part in its ability to provide local computing with low latency, by having mobile clients use the nearest MEC node to handle application traffic. Existing traffic orchestration processes are complex and often rely on heavy lifting that is not specific to an application type, including identifying client geolocation through best-effort services or, even worse, manually mapping carrier IP addresses.

The 5GFF Edge Discovery Service (EDS) addresses the most fundamental challenge of the rapidly evolving edge-computing landscape: optimizing dynamic routing from mobile devices to an ever-changing set of MEC nodes by enabling seamless discovery and connectivity to MEC locations with the lowest latency.

The EDS can direct and connect application clients to optimal MEC endpoints for every application session. The Edge Discovery Service considers the device location, IP anchor location, current network traffic, and other factors to determine the ideal 5G MEC platform for a device to be connected to.

The EDS is designed to enable developers to launch and scale their application and solutions simultaneously across different operators and networks and across the world. As adoption of these APIs broaden, developers will be able to use a common EDS API across all 5GFF members – minimizing the cost and time required to provide end-users with a seamless application experience.

Workload Orchestration (WO)

With the EDS as a foundational layer, the Workload Orchestration API defines various specifications enabling developers to orchestrate the workload of an application through an intent based API.

The WO APIs are service provider agnostic, in which developers must ensure workloads are cloud native. With the 5GFF adopting a 5G-centric application and workload focus, service providers would also have to deploy the necessary infrastructure to support cloud native workloads.

Some of the intents that the WO APIs aim to support are Workload Placement, Compute Reservation, Application Lifecycle Management, Workload Migration, and Health Monitoring.

Bi-Directional APIs

MEC empowers emerging use cases that demand low latency, reduced jitter, and localised secure information processing. However, the proliferation of MEC poses unique challenges that need to be addressed for the network to make some of these applications a reality. Addressing these issues can expedite how Telecommunication Service Providers (TSPs) and Cloud Service Providers (CSPs) can drive value from their platforms and services.

These Bi-Directional APIs for MEC enable the exchange of information between TSPs and CSPs, offering maximized experiences for both developers and consumers.

5GFF is collaborating with CSPs on the development of these APIs that will outline the specific information to be exchanged as well as specific event flows between TSPs and CSPs. The information shared through these APIs will play a foundational role in discovering, assigning, and managing optimal MEC resources effectively, no matter how the workload has been provisioned. This allows for either the TSP or CSP to have the data required to serve applications at the right location and required computing power to maximize the value of a MEC offering.

Quality of Service Management (QoS)

Certain 5G- and MEC-enabled use cases require more technical support than only being hosted on a MEC platform. Network KPIs such as latency and bandwidth, among others, are critical to support some of these use cases. These KPIs are usually used to support User Equipment (UE) differentiation and application flow differentiation.

The QoS API allows applications to request for enhanced quality of service, based on the application and user requirements, provisioned dynamically in real time.

Network Intelligence Exposure

Telecommunication providers have access to a wealth of network-related data, only accessible internally. As MEC brings computing to the edge of the network, telecom network KPIs now have increased relevance for external consumption, specifically for applications hosted on MEC platforms.

5GFF aims to expose key network KPIs like Network Utilization, Throughput, Latency, Jitter, and Packet loss via these APIs, enabling applications to take real time compute decisions, in turn leading to improved end user experience.

Network Slicing

With the advent of a wide array of 5G and MEC-enabled use cases comes a host of varying requirements from developer applications – specifically with respect to network configurations associated with application end-users.

The Network Slicing API enables applications to have more control around various network requirements, promoting an increasingly seamless end-user experience. By automating a significant portion of underlying network elements, this API will provide developers the flexibility to develop new products and services, rather than allocating time and resources to identify the required configurations for end-users.