



# EDGE APPLICATION DEVELOPER

This Project Group Charter establishes the scope, intellectual property and copyright terms used to develop the materials identified in this Project Group. Only Participants that execute this Working Group Charter will be bound by its terms and be permitted to participate in this Project Group and shall be considered “Contributors” in the Project Group as defined in the **Telecom Infra Project IPR Policy document**.

TIP Board of Directors Approval Date: 9/5/2018

## 1. PROJECT GROUP NAME

Edge Application Developer

## 2. PURPOSE

Develop open cellular APIs and SDKs to deal with mobility, identity, location, location-based groups, edge resource discovery, etc for the current and the next generation of pervasive and immersive applications and devices in an open source and royalty-free fashion

## 3. PROBLEM

- Developer view: A new class of pervasive and immersive applications are emerging, a growing number of which will require native mobility, high compute and high bandwidth. The current class of devices are power, form-factor, compute and cost constrained and need operator-independent edge resources based on their identity and location to offer reliable offload to be successful.
- End user view: end users want more natural interface- based applications and are becoming more conscious of privacy and security which is being reflected in both user behavior as well as government-led policy decisions (e.g. GDPR). They would like to benefit from edge offload that they can trust.

- Operator view: Operators are in the midst of several transformation programs (e.g. 5G, NFV/ SDN) which involve building up and deploying computing clusters in their network. Many of these resources are underutilized and would provide better ROI if they could be monetized with edge offload use cases.

#### 4. PROJECT GROUP SCOPE

In-scope:

The project group will focus on the following areas:

- Enabling telecom operators (and extending to others) to discover, inventory and make available infrastructure assets (including but not limited to compute infrastructure, network APIs for identity, location etc) to be consumed by 3<sup>rd</sup> party application developers
- Developing capabilities, APIs and SDKs to allow application developers to easily consume cellular APIs to develop and deploy, test and trial applications which are deployed at the network edge
- Providing a testing/proving environment which makes use of facilities such as the TIP Community Labs to test such applications within a “host” network provided by a sponsoring telecom operator

Out of scope:

- The project group will not focus on developing new use cases – rather focus on enabling the use cases that are already pretty obvious/known.
- The project group will not focus on the infrastructure (IaaS) layer. While a reference framework for Edge infrastructure implementation will be made available, the focus is geared towards developers who stand to gain from access to this infrastructure rather than supporting the build-out of this network infrastructure

#### 5. PROJECT GROUP DELIVERABLES

- Developer-friendly, operator-agnostic APIs and SDKs allowing developers to easily access a set of network operator assets including (but not limited to) identity, location, network topology, and Cloudlets (edge infrastructure at a given location).

- A reference architecture/ framework for an operator edge infrastructure deployment based on OpenStack which will be capable of supporting a broad set of known edge-enabled applications. This part will be achieved by working with other communities and vendors.
- A reference deployment of an Edge-in-a-box which will be hosted in the TIP Community Labs, initially in Menlo Park (Facebook) and Berlin (Deutsche Telekom) with all relevant interfaces made available to developers.
- A development and deployment environment where a developer can deploy a containerized application which then runs on a cloudlet meeting a set of requirements.
- Hosting and maintaining a collaboration portal holding documentation and guidelines for contributors including software developers, OEM, integrators and operators.

## 6. PATENT LICENSING

The patent license for all Contributions, Draft Specifications and Final Specifications within this Project Group shall be:

*[Check one box]*

- RAND License Option**, as set forth in Section 5.2.1 of the Telecom Infra Project IPR Policy.
- Royalty-free License Option**, as set forth in Section 5.2.2 of the Telecom Infra Project IPR Policy.

## 7. FINAL DELIVERABLE COPYRIGHT LICENSING

Project Group agrees to grant the following copyright license for the Final Specification:

*[Check one box]*

- Creative Commons Copyright Attribution 4**, Each Project Group Contributor agrees that its Contributions are subject to the Creative Commons Attribution 4.0 International license - <http://creativecommons.org/licenses/by/4.0/legalcode>.

x **Full Release of Copyright into the public domain**, Each Project Group Contributor agrees to release its Contributions to the public domain and waive all copyrights associated with them.

## 8. INITIAL PROJECT CHAMPIONS

- Deutsche Telekom AG
- MobileEdgeX

## 9. PROJECT GROUP SUPPORTERS

- Intel

## 10. CHAIR AND(OR) CO-CHAIR OF PROJECT GROUP

### Chair

YangYoon Johnny Kim

### Co-Chair

To be added later

## 11. PARTICIPATION CRITERIA

Participants of the working group need to commit to the licensing terms set out in this project charter and actively contribute to one or multiple activities listed in the project group scope. Active participation hereby means:

- For operators – access to their network edge infrastructure and APIs (along with support) for testing purposes
- Software contributions related to the focus areas under the framework described above
- Development and testing of applications (and new devices) which can utilize the capabilities of the network operator Edge