



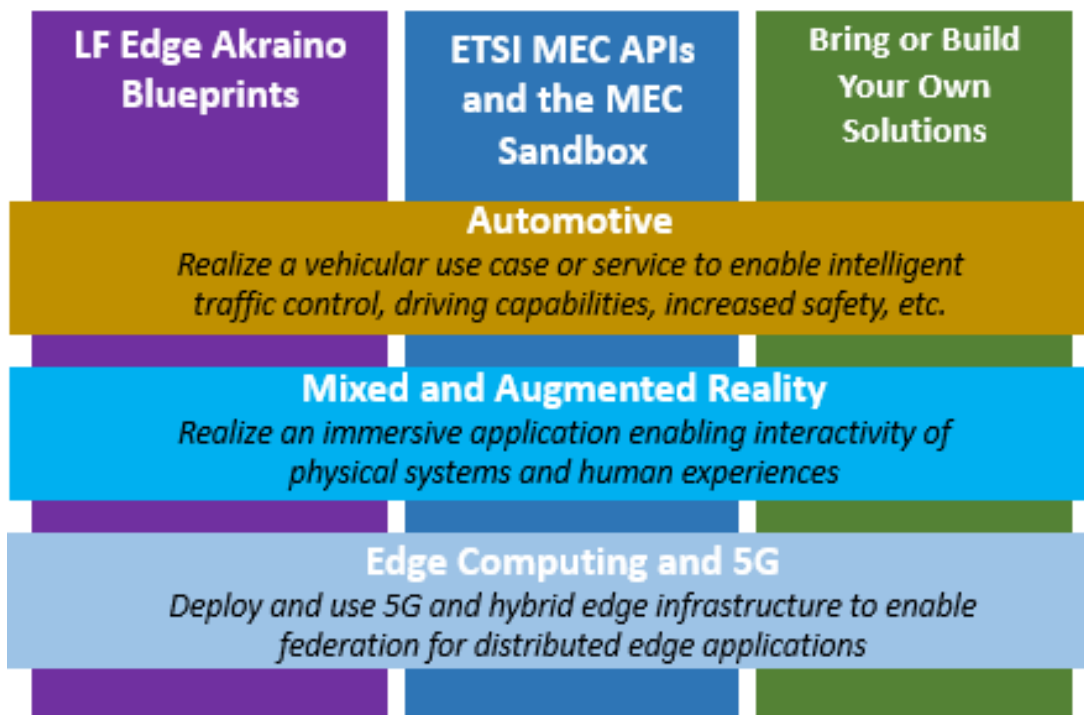
ETSI / LINUX Foundation – Edge Hackathon 2022

Driven by LF Edge Akraino and ETSI ISG MEC

Hosted at Edge Computing World, Europe (June '22) & Global (October '22)

Call for Edge Developers!

“Build your Edge Application or Solution with ETSI MEC APIs and LF Edge Akraino Blueprints”



Enter your team for this competition today!

You will be asked to develop an innovative Edge Application or Solution, utilizing ETSI MEC Service APIs and LF Edge Akraino Blueprints. Your solution may include any combination of client apps, edge apps or services, and cloud components. The Edge Hackathon will run remotely from June to September with a short-list of best teams invited to complete with demonstrations and a Hackathon “pitch-off” at the Edge Computing World, Global Event in Santa Clara in the Silicon Valley

Submissions are OPEN!! Final deadline is 29th June 2022

Registration Notification to the teams: 1 July 2022

Enter your team for this competition today!

As space is limited, only a selected number of developers’ teams will be admitted to the competition.



ETSI / LINUX Foundation – Edge Hackathon 2022

“Build your Edge App or Solution with ETSI MEC APIs and LF Edge Akraino Blueprints”

- Edge Computing provides developers with localized, low-latency resources that can be utilized to create new and innovative solutions, which are essential to many application vertical markets in the 5G era.
- ETSI’s [ISG MEC](#)¹ is standardizing an open environment that enables the integration of applications from infrastructure and edge service providers across MEC (**Multi-access Edge Computing**) platforms and systems.
- LF Edge’s [Akraino](#) project offers a set of open infrastructure and application Blueprints for Edge, spanning a broad variety of application vertical use-cases. Each blueprint offers a high-quality full-stack solution that is tested and validated, that are validated by the community.
- The purpose of this Hackathon is to demonstrate an innovative Edge Application or Solution focused on the following application vertical use-cases with supporting ETSI MEC Service APIs² and LF Edge Akraino Blueprint resources:
 - **Automotive:** Realize a vehicular use case or service to enable intelligent traffic control, driving capabilities, increased safety, etc.
 - **Mixed and Augmented Reality:** Realize an immersive application enabling interactivity of physical systems and human experiences.
 - **Edge Computing and 5G:** Deploy and use 5G and hybrid edge infrastructure to enable federation for distributed edge applications

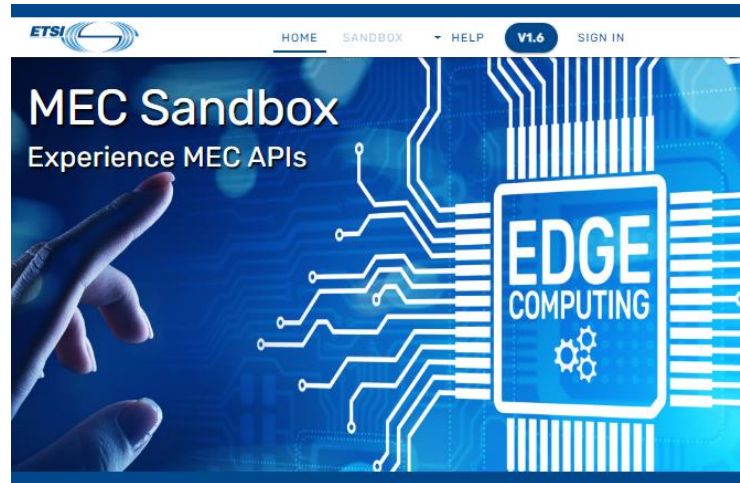
However, teams are also encouraged to be creative and propose to develop solutions in other application verticals than these highlighted. We are hoping for some surprises!!

- ETSI MEC offers a set of open standardized Edge Service APIs to enable the development and deployment of edge applications at scale. For this Hackathon, the following MEC Services are applicable. OpenAPI representations are available and development ready on forge.etsi.org:
 - 1) [MEC011](#) - Edge Platform Application Enablement (Mp1): MEC App and Service Support and Management (e.g., MEC application registration, MEC service advertisement and discovery)
 - 2) [MEC012](#) - Radio Network Information Service (RNIS): 4G / 5G radio network contextual info
 - 3) [MEC013](#) - Location Service: network and geo-location information about terminals and infrastructure, etc.
 - 4) [MEC021](#) - Application Mobility Service (AMS): relocation of user context between MEC application instances across deployed MEC platforms
 - 5) [MEC028](#) - WLAN Access Information Service (WAIS): WiFi network contextual info
 - 6) [MEC030](#) – V2X Information Service (VIS): predicted quality of service for vehicle routes.

¹ For more information on the ETSI MEC standard (including MEC architecture and MEC APIs), you can check the specification tab at this [URL](#).

² Refer to the ETSI white paper “Developing software for MEC”, available via this [link](#), for information on developing using ETSI MEC Service APIs.

- ISG MEC offers additional APIs to those highlighted and teams are encouraged to use any of them.
- Teams will be provided with a dedicated instance of the [ETSI MEC Sandbox](#)³ for their work over the duration of the Hackathon. The MEC Sandbox is an online environment where developers can access and interact with live ETSI MEC Service APIs (MEC011, MEC013, MEC021, MEC028, and MEC030) available in an emulated edge network set in Monaco, which includes 4G, 5G, & WiFi networks configurations, single & dual MEC platform deployments, etc.



- LF Edge Akraino offers the following Blueprints that are relevant for the Hackathon proposed edge application verticals:
 - ***Automotive:***
 - [MEC-based Stable Topology Prediction for Vehicular Networks](#): This blueprint enables a promising infrastructure where a stable network topology can be predicted locally to improve the network performance by providing intensive calculation for vehicles in the adjacent roads. Thus, converging the two concepts of MEC and topology prediction can provide a strong use case for the vehicular networks such as proactive path stabilization.
 - ***Mixed and Augmented Reality:***
 - [Virtual Classroom \(Integrated Edge Cloud Type 4\)](#): a fully integrated edge infrastructure solution, and the project is completely focused on Edge Computing. This open-source software stack provides critical infrastructure to enable high performance, reduce latency, improve availability, lower operational overhead, provide scalability, address security needs, and improve fault management. The IEC project will address multiple edge use cases and industry, not just Telco Industry. IEC intends to develop solutions and support carrier, provider, and the IoT networks. IEC Type 4 is focused on AR VR applications running on edge.

³ The ETSI MEC Sandbox is offered here: try-mec.etsi.org. Please refer to the Sandbox user guide ([link](#)), and the “Getting Started with the Sandbox” ([link](#)) & the “What’s new in the ETSI MEC Sandbox” ([link](#)) webinars.

- **Edge Computing and 5G:**
 - [Integrated Cloud Native NFV/App stack family](#): A reference architecture/integration initiative targeting edge computing use cases by enabling edge clouds with Intel-optimized ingredients including: SRIOV, QAT, CSI/Optane, OpenNESS, Clear Linux, K8s HPA.
 - [Public Cloud Edge Interface \(PCEI\) blueprint](#): Enables a set of open APIs, orchestration functionalities and edge capabilities for DevOps Multi-domain Infrastructure Orchestration and application deployment across the Operator Network Edge, the Public Cloud Core and Edge, the 3rd-Party Edge as well as the underlying infrastructure such as Data Centers, Computing Hardware, and Networks.
 - [Enterprise Applications on Lightweight 5G Telco Edge \(EALTE\)](#): EALT-EDGE BP intends to provide an edge computing platform along with application orchestration & management to host enterprise applications on lightweight Telco Edge. BP provides platform capabilities and features like Multi-Tenancy, Network-Isolation, Dynamic Orchestration, Network Capabilities exposure, enhanced identification etc. as needed for "MEC in an Enterprise Setting". Various applications were tested on EALT-EDGE, for example, Smart Shelf for Retail Enterprise as part of Remote Office Branch Office (ROBO).

- Challenge winning criteria will include:
 - 1) Innovation – how novel is the submitted edge app or service?
 - 2) Use-Case / Solution Credibility – how realistic is the solution commercially?
 - 3) Use of ETSI MEC Service APIs – especially, the use of multiple service APIs and interworking with them
 - 4) Use of LF Edge Akraino Blueprints – use of blueprints as solutions in any given focus area, or as an enabling platform for the solution in a focus area or across multiple focus areas, use of blueprints to interact with or implement ETSI MEC services
 - 5) Quality – quality of submission deliverables
 - 6) Pitch and Demonstration – quality of the team’s pitch (only for the selected short list)

- Teams are not required to use a specific edge hosting platform or MEC lifecycle management APIs. Developers may use any virtualization environment of their choosing. For teams that need edge computing resources including bare metal provisioned with operating systems and Internet access, these resources will be provided by the Equinix Metal platform (note that the teams will be responsible for installing their own VM and container environments). Information can be found at <https://metal.equinix.com/>

- Teams are encouraged to reuse their existing or past projects with their applications and apply/adapt them to the present challenge.



ETSI / LINUX Foundation – Edge Hackathon 2022

Team Submission Guidelines

- **Team size:** 5 members (maximum)
- Submissions will be accepted via the Edge Computing World, Europe [website](#), starting 1 June 2022.
- Submissions should include a description of your proposed Edge Application or Solution idea; anticipated use of ETSI MEC Service APIs; anticipated use of LF Edge Akraino Blueprints; how the proposed submission is innovative and will benefit the Edge Ecosystem; information on any intention to reuse / integrate code from past activities, or other projects / prototypes / products (highly recommended); and a short CV for each team member. Any supporting materials (e.g., short video clips) related to your idea are welcome.
- **IMPORTANT:** Submissions should clearly state how your team intends to use ETSI MEC APIs and LF Edge Akraino Blueprints.
- Teams are encouraged to utilize the ETSI MEC Sandbox (try-mec.etsi.org) as a development resource to learn and experiment with ETSI MEC Services. Please describe how your team may take advantage of the MEC Sandbox.
- **Submission due date: 29 June 2022**
Submissions will be evaluated by the Edge Hackathon Organizing Committee based on various criteria, e.g., relevance to the Call for Developers, innovativeness of the proposed solution, usage of ETSI MEC APIs, usage of LF Edge Akraino Blueprints, composition of the team, level of maturity of the project and proposed solution, etc.
- Selected teams will be notified by **1 July 2022**. Participants selected for the competition will be provided with dedicated instances of the ETSI MEC Sandbox and technical support.
- **Edge Hackathon Sessions at the Edge Computing World, Europe Event** – informative sessions will introduce developers to the Edge Hackathon, its application vertical use-cases, information on ETSI MEC Services and LF Edge Blueprints, and details on how to access the Edge Hackathon resources for their work.
- **Cost:** The submission is free of charge, as well as the Hackathon participation for the selected teams.
- **Hybrid Remote / On-site Hackathon Format:**
 - Teams will complete remotely from **1st July through 23rd September 2022**
 - **Mid-Hackathon Check-in:** Teams will be encouraged to complete an optional mid-hackathon (9th September 2022) submission. This submission will not be used in judging, but may be utilized to promote the Edge Computing World leading into the conference in Oct.
 - **Final Submissions:** Teams will be required to finalize their Hackathon submissions by **23rd September 2022**.
 - The organizing committee will judge the team submissions and “short-list” the three best teams for the Hackathon on-site competition.
 - Winners will be selected solely at the discretion of the Hackathon Jury, composed of representatives from the Organizing Committee.



- **On-site Hackathon Demos and “Pitch-off”:** The three best teams will be invited to demonstrate their solutions at the **Edge Computing World, Global 2022 event in Santa Clara, Silicon Valley**. Additionally, teams will compete in a “pitch-off” session to the Hackathon Jury as part of the conference programs.
- The Hackathon Organizing committee will provide a stipend for the team travel costs to Santa Clara, California.
- **The winning team will be selected following the “pitch-off” and announced at the conference.**
- Several **prizes**, courtesy of the Organizing Committee, will awarded including:
 - Cash Prize
 - more to come...
- All Edge Hackathon participants will have an excellent opportunity for networking with the Edge Computing World Conference Attendants and the Hackathon Jury Members who represent key stakeholders of the industry from all corners of the world.