FESNS

Open Calls – Results 6G-PATH Project



6G-Path

SUMMARY OF EXPERIMENTS AND IMPLEMENTATIONS

Results Achieved by 3rd Parties involved in 6G SNS Projects through the mechanism of Cascading Funding – Open Calls



SUMMARY OF EXPERIMENTS AND IMPLEMENTATIONS

Results Achieved by 3rd Parties involved in 6G SNS Projects through the mechanism of Cascading Funding – Open Calls

6G-PATH PROJECT

6G Pilots and Trials Through Europe

OVERVIEW

The 6G-PATH project aims to foster the development of new technologies supporting 6G, both in close collaboration with other 6G-IA projects and through the process of Open Calls (OCs) to engage European companies developing innovations for B5G and 6G systems, as well as bringing new UCs and pilot sites to the ecosystem. Such technologies and pilots will be combined in relevant platforms to be used by a set of applications in UCs corresponding to the four "key verticals" where 6G-PATH is present: Health, Education, Smart Cities and Farming (in line with the Use Case Priority 2 of the respective Horizon EU Call). Such UCs and their corresponding applications intend to create demanding requirements from the platforms, thus requiring a proper validation through respective Key Performance Indicators (KPIs)^{1,2} 2 and Key Value Indicators (KVIs)³. The work to be carried out in 6G-PATH during the entire lifetime of the project effort, involves the refinement of those indicators, which will adopt the work of 3GPP Release 18⁴ as "starting basis", to closely align with the standards⁵.

⁵ Nidhi, Khan, B., Mihovska, A., Prasad, R. and Velez, F.J.: Trends in Standardization Towards 6G. Journal of ICT Standardization 9(3), 327--348 (2021), doi: https://doi.org/10.13052/jicts2245-800X.932





¹ 5G Infrastructure Public Private Partnership (5G PPP): KPIs Measurement Tools. From KPI definition to KPI validation enablement (White Paper) (2023), https://5g-ppp.eu/wp-content/uploads/2023/05/TMV-KPI-Measurement-Tools_1.0-published.pdf

² 5G Infrastructure Public Private Partnership (5G PPP): White Paper - Beyond 5G/6G KPI Measurement (2023), https://5g-ppp.eu/wp-content/uploads/2023/06/white_paper_b5g-6g_kpi_measurement_FINAL.pdf

³ 6G Industry Association (6G-IA): What societal values will 6G address? Societal Key Values and Key Value Indicators analysed through 6G use cases (2022), https://5g-ppp.eu/wp-content/uploads/2022/05/What-societal-values-will-6G-address-White-Paper-v1.0-final.pdf

⁴ The 3rd Generation Partnership Project (3GPP): TR 21.918 V18.0.0 (2025-03): "Technical Specification Group Services and System Aspects; Release 18 Description; Summary of Rel-18 Work Items (Release 18)" (2025), https://www.3gpp.org/specifications-technologies/releases/releases/release-18



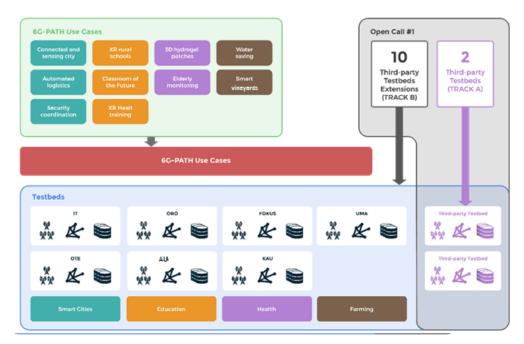


Figure 1. 6G-PATH Use Cases, Testbeds and Open Calls and Third-parties

Figure 1 represents the relationships between verticals, testbeds, third-parties and use cases considered in the 6G-PATH project. Initially, 7 testbeds, 4 verticals and 10 use cases are planned in 6G-PATH. Moreover, via the Financial Support to Third-Parties (FSTP) and by applying two phases of Open Calls, 30 additional third-party experiments, 2 third-party testbeds and 10 third-party testbed extensions will be considered.

The 6G-PATH project has a total of €3 million for FSTP to be distributed in two open calls. The first open call reserved €1.2 million to fund up to 12 projects: two "Track A" and "Track B" 10 projects.

- "Track A": Infrastructure Deployment focused on establishing new pilot sites capable of deploying B5G/6G network infrastructures, to enable the testing and validation of advanced services and applications.
- "Track B": Infrastructure Software Extensions targeted the development of software solutions
 to enhance the functionality of the seven 6G-PATH testbeds, ensuring alignment with B5G/6G
 standards and objectives.

"Track A" projects received up to €300,000 each, while "Track B" projects had a funding cap of €60,000 per application. 6G-PATH supported financially a range of third-party activities, including project management, infrastructure deployment, software development, testing and validation, business development and mentoring.

The 6G-PATH – Open Call #1 was launched on 23 September 2024 and ran until 21 November 2024, attracting 62 submissions: 27 applications were submitted under "Track A" and 35 under "Track B".

The project profiles below are those of the 12 selected sub-granted projects.







PRESENTATION OF OPEN CALLS PROJECTS

6GAnywhere

OC Project Title	A Self-powered 6G Communication Station with Satellite Connectivity for Anywhere Deployment			
Benefiaciary(s)/Country	University of Navarra (Spain)			
Project Description	Networking connectivity is essential for empowering smart applications. However, delivering networking services to many locations remains challenging, especially in hard-to-reach areas such as oceans, deserts, ultra-rural farms. To address this challenge, this project aims to develop enabling technologies for delivering 6G network services wherever needed by leveraging recent breakthrough in non-terrestrial Low-Earth Orbit (LEO) satellite communication and renewable energy solutions. Specifically, we will develop a self-powered 6G communication station			
	with LEO satellite connectivity that can be easily deployed wherever needed to deliver either on-demand or long-term 6G network services.			
Vertical	Farming			
Testbed	UMA Testbed			
Implementation timeframe	March 2025 – October 2026 (20 months)			
Results & Impact	The features of the 6GAnywhere station will include:			
	 Creation of 6G wireless cellular networks following the standardized architecture of Open Radio Access Network (O-RAN) and offering 6G services to smart devices such as drones and automated guided vehicles (AGVs). Integration of the created RAN network into the 6G-PATH pilot testbeds using LEO satellite connectivity as backhaul to enable bidirectional data exchange between smart devices and remote applications. Powering of the 6GAnywhere station by off-grid renewable energy generation and storage systems, allowing fast and easy deployment in any location. 			
	For validation and performance evaluation, the 6GAnywhere station will be installed in La Mayora, a pioneering experimental station of agriculture and the food industry in Spain.			







6G-INCOGNICO

OC Project Title	6G testbeds In a Cognitive Continuum federation
Benefiaciary(s)/Country	 ATHINA-EREVNITIKO KENTRO KAINOTOMIAS STIS TECHNOLOGIES TIS PLIROFORIAS, TON EPIKOINONION KAI TIS GNOSIS (Greece) IQUADRAT INFORMATICA S.L. (Spain)
Project Description	6G-INCOGNICO aims to federate the innovative ISI/ATH testbed with the 6G-PATH ecosystem and offer it for experimentation and vertical application deployment. 6G-INCOGNICO will deliver a multi-faceted approach to federate the ISI/ATH testbed with the 6G-PATH ecosystem, to the benefit of all project stakeholders. 6G-PATH experimenters can benefit from the deployment of their applications at the ISI/ATH infrastructure, where they can benchmark their execution and measure the KPI improvement from the innovative Cognitive Compute Continuum 6G enabler. 6G-PATH testbeds interested to become part of the SUNRISE-6G federation can achieve this via the ISI/ATH testbed which acts as a SUNRISE-6G aggregator, aiming to provide access to the pan-european 6G infrastructures federation. The ISI/ATH testbed will also be integrated with the 6G-PATH Experiment Lifecycle Management (ELCM) and the Monitoring & Analytics component, sharing all telemetry collected by experimenters and helping create and share open datasets.
Vertical	Education, Farming, Health, Smart Cities
Testbed	N/A
Implementation timeframe	March 2025 – October 2026 (20 months)
Results & Impact	6G-INCOGNICO will provide 6G-PATH vertical owners and open call participants a highly automated experimentation workflow, allowing the onboarding of their applications via CAMARA APIs in multiple federated testbeds, seamlessly collect KPIs, and compare performance in different research infrastructures.







6G-PathToVLC

OC Project Title	Paving the Way to Valencia's Future 6G connectivity			
Benefiaciary(s)/Country	Universitat Politècnica de València (Spain)Fivecomm (Spain)			
Project Description	The 6G-PathToVLC project, extends Europe's pre-6G ecosystem by integrating the Universitat Politècnica de Valencia (UPV)'s advanced Beyond-5G (B5G) testbed. Originating from the Spanish UNICO I+D initiative, UPV became Spain's first university licensed as a private 5G network operator, with its testbed already supporting EU research like IMAGINE-B5G and upcoming open-call experiments. In this project, the testbed will be upgraded with 5G Rel-17 and RedCap capabilities, enabling future 6G use case trials.			
	UPV brings extensive 5G experience through past projects (FUDGE-5G, 5G-INDUCE, iNGENIOUS), maintaining active interconnections with industrial and logistics test sites. It is also connected to frameworks like FIDAL-VLC and supports 6G-PATH's southbound APIs Network-as-Code, and CAPIF features.			
	The consortium also includes Fivecomm, a Spanish SME specializing in 5G/IoT devices, which will provide 5G Rel-16/17 and RedCap devices for experiments.			
	The project focuses on two key 6G-PATH verticals: smart cities and education. For smart cities, UPV's campus—hosting over 30,000 people—offers a realistic urban environment with mmWave and sub-6 GHz deployments, soon to include RedCap. For education, a B5G immersive lab with XR, haptics, and AI-based personalized learning enables cutting-edge educational trials.			
Vertical	Education, Smart Cities			
Testbed	N/A			
Implementation timeframe	March 2025 – October 2026 (20 months)			
Results & Impact	6G-PathToVLC will generate scientific outputs and contribute to UPV's educational innovation projects, while strengthening Fivecomm's role in the European B5G/6G and IoT landscape. The project positions Valencia as a frontrunner in 6G innovation and supports the development of a sustainable, connected digital future.			







6G-Rescue

OC Project Title	6G Driven Smart Robots in Disaster Management Scenarios		
Benefiaciary(s)/Country	Newcastle University (United Kingdom)		
Project Description	Edge computing is set to accelerate innovation leading to new opportunities as it becomes an essential part of digital transformation across industries as more devices and applications demand low latency, real-time processing, and enhanced security. The 6G capabilities, such as network slicing, virtualisation and communication are of the great importance, but these solutions also require support for ML model training and deployment to the end devices.		
	The heterogeneity of the edge devices, their limited resources such as processing power and energy, calls for the dedicated services for fast ML model updates, model retraining and optimisation for embedded devices. Therefore, the edge component for efficient model serving and data processing for fast system reaction should be supported by the infrastructure. In the project, we will provide an extension enabling efficient MLOps operations on the edge as an addition to the core cloud services. One of the notable examples will be hospitality and cleaning robots, which are automated machines and robotic systems designed to assist or enhance services in the hospitality industry, which includes hotels, restaurants, resorts, and other guest-centric businesses. In addition to their regular functions, they can be instrumental in disaster management. During events like natural disasters or security incidents, these robots can operate as support tools, helping locate people, detect suspicious objects, and provide essential information from their sensors and cameras. For such a scenario, the functionality of the robots and the communication requirements must be promptly reconfigured and updated. The object detection models should be fine-tuned with the		
	images of lost people and deployed on the robots, while the video streams from the cameras should be prioritised to deliver life-saving information to crisis management centres.		
Vertical	Education, Farming, Health, Smart Cities		
Testbed	UWS Testbed		
Implementation timeframe	March 2025 – October 2026 (20 months)		
Results & Impact	6G is expected to bring transformative improvements that could significantly benefit Edge Machine Learning Operations) for always-on battery-powered edge devices by enhancing customised hardware awareness, model deployment, real-time data processing, and distributed machine learning workflows. The project will provide (1) software extension to the 6G testbed (UWS testbed) for ML model training, management and deployment, which will be validated in (2) a smart robot use-case scenario that extensively uses the other 6G offerings as well.		







AgriNext

OC Project Title	Agricultural Networked Environment for eXtended Technology					
Benefiaciary(s)/Country	Xilbi	Sistemas	de	Informacion	SL	(Spain)
Project Description	platforn tools. I delivers	n enhancing t Leveraging UM	he UMA [*] IA's 5G a d precision	de Información SI Testbed with AI-a nd pre-6G infras n agriculture solu iciency.	is-a-Servio tructure,	ce (AlaaS) AgriNEXT
	operate		d, intermit	tal farm, La Ma tent, and intercon	•	•
	collect comput represe and AR pest ma	data on soil, cring. Its 2D/3 ntation of the figlasses, offering and general and general Andres A	ops, and of the digital of the digit	s, robotics, and 50 climate, processed twin models onment, accessible ors actionable ins nitoring. Satellite d ons, ensuring co	d locally uprovide evia webuights for late, like C	a virtual interfaces irrigation, copernicus
Vertical	Farming	S				
Testbed	UMA Te	stbed				
Implementation timeframe	March 2	2025 – October	2026 (20	months)		
Results & Impact	SDG 2, waste network econom adoptio €250 m	AgriNEXT pro and pesticide s slicing, edge nic growth, cr n in agriculture	motes sus use while AI, and eating skile. With a S AgriNEXT	n Deal's "Farm to stainable farming, le increasing proscended in scalable softwardled jobs and dreviceable Availabadvances 6G-PATH ical industries.	reducing ductivity. Te, it fos iving tecole Marke	resource Through ters rural hnological t (SAM) of







OC Project Title	City Sensing
Benefiaciary(s)/Country	 Institute of Accelerating Systems and Applications (Greece) BubbleRAN (France)
Project Description	B5G networks aim at a fully softwarised network architecture, where hardware and software are used to support automated delivery of optimised network services, while Artificial Intelligence (AI) and Machine Learning (ML) techniques are being increasingly adopted in 5G systems to offer intelligent automation, proactive network management, and resource allocation optimization. In this environment, the role of Management and Orchestration (MANO) is vital to ensure efficient infrastructure utilization and fulfilment of heterogeneous service requirements. Despite the development of various tools and platforms to facilitate MANO in 5G systems, in most cases there is still the need of human intervention and manual input for configuring the 5G elements according to service requirements. In view of this, CITYSENS will build on top of the key technologies and concepts envisioned in 6G-PATH providing a set of software tools that automate provisioning, deployment, management and orchestration of network slices and services offered over B5G networks. This framework can be used to easily deploy, manage, modify, and delete services and functions, without human intervention. The developed framework will provide full lifecycle management (LCM) of the 5G components and associated services, in order to achieve an operational environment with minimal human intervention or manual configuration in accordance to the Zero Touch Networks (ZTN) paradigm.
Vertical	Smart Cities
Testbed	OTE Testbed
Implementation timeframe	March 2025 – October 2026 (20 months)
Results & Impact	 CITYSENS will deliver and enhance the 6G-PATH framework with a set of software components that will allow to: Host and instantiate various 5G deployment options involving multiple network slices and sophisticated topologies. Handle LCM operations and manage network slices, leveraging domain NFV Orchestrators (NFVOs) and controllers. Monitor the entire 5G system collecting a variety of performance measurements for the virtualized network functions and the underlying physical entities. Take intelligent and fully optimized decisions leveraging AI/ML algorithms.



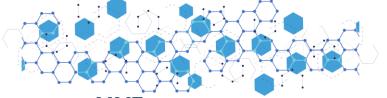




OC Project Title	Intelligent ai-driveN inTENT interpretatION for 6G operAtors and verticaLs	
Benefiaciary(s)/Country	Nextworks (Italy)	
Project Description	INTENTIONAL facilitates the declaration and management of intents for B5G/6G vertical services, which can be used as baseline for the request of experiments in 6G-PATH. Intent-driven experiments will speed-up the experiment definition, setup, configuration, execution and validation for vertical application developers. Asking just for what they need from the mobile network, they will not have to specify complex configuration settings. Relying on advanced technologies, like LLMs, context recognition, experimenters' profiling, slicing, service and network automation via closed loops, INTENTIONAL will translate and manage the verticals' intent, guaranteeing accurate interpretation, immediate fulfilment and continuous assurance. INTENTIONAL makes wide use of standard interfaces based on TMForum and 3GPP specifications. This allows to facilitate internal interoperability with multi-vendor or multi-platform management systems, and to offer common APIs and information models at the	
Vertical	northbound interface for vertical users or third-party components. Education	
Testbed	ORO Testbed	
Implementation timeframe	March 2025 – October 2026 (20 months)	
Results & Impact	 INTENTIONAL introduces three advancements into the 6G-PATH framework: An Intent Interpreter, to allow user-friendly declaration of service intents through a generative AI prompt offering bidirectional interactions and mechanisms to enrich the intent with information from the surrounding context or experimenters' profile. An Intent Manager, embedding features for intent translation, preliminary assessment, fulfilment and assurance, and operating at the service, network and infrastructure layers. Support of TMForum APIs for service intents, service catalogue, service ordering and activation, and 5G slice service activation management (TMF 921, 633, 640, 641, 924), as well as 3GPP modelling of network intents (3GPP TS 28.312). 	







OC Project Title	Multiplayer VR Medical training with Magos haptic gloves	
Benefiaciary(s)/Country	Quanta & Qualia (Greece)	
Project Description	The MMT project is set to revolutionize professional training by seamlessly combining VR, Magos haptic gloves with 6G-PATH deploying a VR multiplayer application.	
	The VR training application will focus on integrating the 5G-6G connectivity provided by 6G-PATH (KAU) and will test existing VR scenarios around healthcare. During the support and evaluation period our solution will be tested and validated including feedback for future improvements.	
	Addressing the critical challenge of training and upskilling professionals, the MMT project aims to overcome significant limitations faced by current VR haptic gloves and other VR applications. These limitations include challenges in accurately and consistently tracking finger motions in complex and fast-paced scenarios and to interact via voice for guidance. The primary objective of the MMT project is to provide a more immersive training environment. Magos gloves, renowned for their high precision finger tracking, physics-based interactions, and haptic feedback capabilities, combining with 6G/5G connectivity will significantly enhance the collaboration, realism and effectiveness of VR training environments. To evaluate the effectiveness of the training, an evaluation component will be developed, leveraging data from Magos gloves to provide detailed performance assessments.	
Vertical	Education, Health	
Testbed	KAU Testbed	
Implementation timeframe	March 2025 – October 2026 (20 months)	
Results & Impact	 Creation of a highly immersive and realistic training solution that significantly improves trainee skill acquisition and engagement. The solution will be scalable, replicable and adaptable for various professional training scenarios including healthcare, aviation, industry 4.0, robotics, and gaming. Adoption of Magos gloves within the 6G-PATH ecosystem, providing educators and developers with a powerful tool to enhance their applications. Demonstration of significant socio-economic benefits, including job creation and improved training outcomes across multiple industries. Aligned with the 6G-PATH's mission and objectives to advance XR technologies in education, the MMT project promises to deliver an innovative and effective solution for training young professionals, setting new standards for immersive learning and professional development. 	







NU-TAF

OC Project Title	Network Upgrade: Trusted AF (Network as a Platform or NaaP)		
Benefiaciary(s)/Country	Slicefinity Limited (United Kingdom)		
Contact point (Name,email)	Rohit Sengupta (rohit.sengupta@slicefinity.com)		
Project Description	The project introduces a Trusted Application Function (T-AF) as a software extension to the 6G-PATH lab, connecting to the lab's 5G Core via SBI interfaces, NEF, and optionally NWDAF, using Network APIs. It enables application developers to build use cases with one or multiple Network APIs. The proposed AF will expose network capability as a platform (NaaP), contributing to the "Network Upgrade" and enhancing 6G-PATH's ability to empower innovation. One of the unique technical levers of 5G Standalone is the "Network API," enabled by the 3GPP network function NEF (3GPP TS 29.522). Extending from 3GPP TS 29.122, basic Network APIs such as Monitoring Event Exposure (Change of SUPI/PEI association, Location Report), Device Triggering, Traffic Influence, and AF-required QoS were introduced. Subsequent Release 18 adds more APIs, such as AF-triggered Access and Mobility Influence, Data Reporting Session Management & Provisioning, and Network Slice Usage Control Parameters Provisioning. One of the biggest changes in 3GPP is in TS 29.522 and related specs (e.g. 29.520), expanding to 45 Network APIs in Rel-18. The industry aim is to enable application developers to create use cases just as they use Android and iOS APIs. The objective is to provide an Open API Framework with libraries combining Network APIs, Service APIs (CAMARA), and new APIs (part of the 6G Innovation). This framework allows application developers to access network information (Event Exposure, Analytics Info) and influence user (Human & Machine) experience (Slice/sNSSAI, URSP, 5QI), enabling impactful use cases. At project conclusion, the Trusted AF will expose network capabilities and information (location, reachability, congestion), and enable changes in user experience via sNSSAI, 5QI, and URSP for 3pp applications, helping them develop use cases for 6G-PATH. Network APIs remain largely unfamiliar to application developers, limiting their commercial uptake. Despite the inclusion of 45 APIs in abstraction, developers still lack a robust environmen		
Vertical	Education, Farming, Health, Smart Cities		
Testbed	FOKUS Testbed		
Implementation timeframe	March 2025 – October 2026 (20 months)		
Results & Impact	The project will "expose network capabilities and information" (location, reachability, congestion etc.), allow change in user experience (via sNSSAI, 5QI, URSP) to 3PP applications who would consume these APIs to develop use cases relevant for 6G-PATH.		







OC Project Title	Extension of the Aveiro Tech City platform with the OAIBOX open source 5G/6G test network
Benefiaciary(s)/Country	Allbesmart Lda. (Portugal)
Project Description	The main objective of this Open Call project is to extend the Aveiro Tech City Living lab with the OAIBOX Open RAN software modules (O-CU, O-DU, RIC, and the OAIBOX dashboard), bringing additional 5G Advanced open-source features and improved network performance for the Aveiro Tech City test infrastructure. To showcase the value of the OAIBOX extension, end-to-end network slicing will be implemented and tested within the context of a 6G-PATH smart city use case and for RAN sharing between eMBB and URLLC applications over a common spectrum band.
Vertical	Smart Cities
Testbed	IT/ALB Testbed
Implementation timeframe	March 2025 – October 2026 (20 months)
Results & Impact	Based on QoS requirements an xApp will automatically configure 5G Network Slices to meet a specific SLA (Service Level Agreement) for different smart city applications. A closed-loop control workflow will be implemented where upon detecting a QoS performance degradation, the xApp immediately computes and adjusts the resources allocation in the MAC layer for the degraded slices to restore the expected performance.







OC Project Title	Pollination Intelligent Tracking and Control Environment for Pitahaya		
Benefiaciary(s)/Country	Cubic Fort Consultores SL (Spain)		
	Juno Smart Digital Solutions SL (Spain)		
Project Description	PITANCE is an innovative project that leverages artificial intelligence and computer vision to optimize the pollination process in dragon fruit plantations. Focused on improving yields and reducing manual labour in remote agricultural settings, PITANCE detects the precise moment when flowers are ready to be pollinated.		
	Using high-resolution cameras installed in the field, PITANCE captures images of dragon fruit flowers and processes them locally to identify bloom stages with minimal latency. The project addresses a critical challenge in agriculture: knowing exactly when and where to intervene to ensure effective pollination. By doing so, it enables growers to act at the right time—automatically or through assisted decisions.		
	Given the limited wireless connectivity in rural areas, PITANCE integrates edge computing and leverages autonomous aerial vehicles (AAVs) for data retrieval and monitoring. The project also incorporates sensors and robotics supported by the UMA testbed, which provides 5G connectivity, agricultural machinery, and AI-as-a-Service capabilities.		
Vertical	Farming		
Testbed	UMA Testbed		
Implementation timeframe	March 2025 – October 2026 (20 months)		
Results & Impact	The main result of PITANCE is to bring cutting-edge AI to the field, helping farmers make smarter, data-driven decisions in real time, and laying the groundwork for sustainable, high-tech agriculture.		







OC Project Title	Towards Evolved 5G Radio Access Network Testing Infrastructure with Edge-computing Capabilities
Benefiaciary(s)/Country	Universitat Politècnica de Catalunya (Spain)
Project Description	The TERANTIEC proposal aims to extend the capabilities of the OTE testbed of the 6G-PATH project by providing the support of the Multi-Access Edge Computing (MEC) Application slices. This is a newly introduced concept by the ETSI MEC standardization group that extends the network slicing concept to the edge computing domain. In order to include this new concept in the OTE testbed, TERANTIEC proposes the creation of a remote laboratory at UPC premises that will be accessible from OTE platform. The remote laboratory will include equipment to provide 5G connectivity and edge computing services, with the applications associated to different services deployed in different MEC application slices.
Vertical	Smart Cities
Testbed	OTE Testbed
Implementation timeframe	March 2025 – October 2026 (20 months)
Results & Impact	The main output is the development of a platform to experiment with MEC application slices for services with differentiated QoS requirements, allowing further exploration of the needs and potential benefits of MEC application slices.



