5GINFIRE

Newsletter
No-1 2019

NEW – Collaborative 5GINFIRE Open Call!

In alignment with the overall project objectives, the 5GINFIRE project is organizing the collaborative open call targeting external organizations, including industry, SMEs, research institutions, and academia, interested in performing experiments on the top of the infrastructure provided by 5GINFIRE. This 5GINFIRE open call invites experimenters to use the 5GINFIRE experimental facilities, taking advantage of the provided testbed features such as SDN, NFV, and VxFs to test vertical applications and other services in context of the 5G networks.

The 5GINFIRE experimental facilities for the call (available testbeds / infrastructures and experimenters tools) are described on the 5GINFIRE website (https://5ginfire.eu/) along further related details and instructions as well as link to the proposal submission portal.

Remarks:

- There is no funding available for experimenters participating in this open call
- The best experiments from the open call will be awarded by web presence and invitation to participate and talk at the Final 5GINFIRE Workshop

Submission deadline: 3 July 2019 at 17:00 CET (Brussels local time)

Deadline for feasibility check: 30 June 2019

Website: www.5ginfire.eu

Contact: contact@5GinFIRE.eu

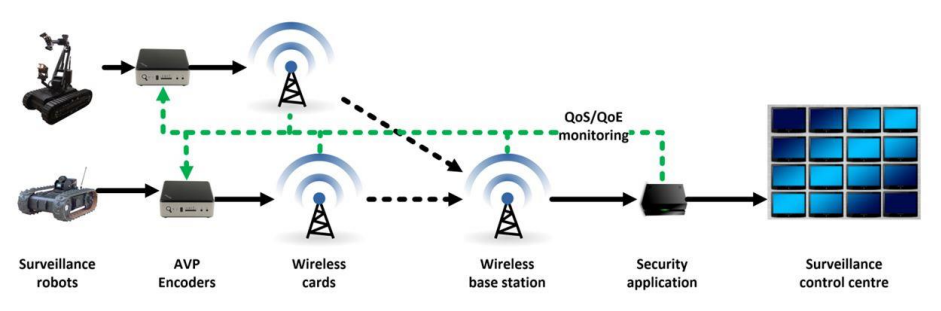
Twitter: 5GinFIRE

COMPLETED EXPERIMENTS

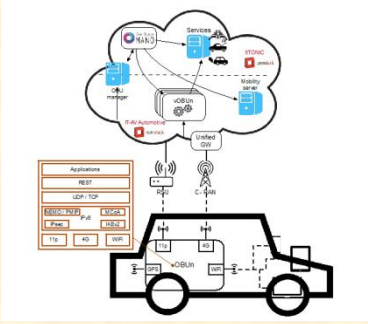
First five experiments using the 5GINFIRE testbeds and infrastructure have been finished and are briefly presented below. More information about the experiments is available on the 5GINFIRE website at www.5ginfire.eu.

Context-Aware Video Controller for autonomous transport and security monitoring experiment demonstrated how several techniques can be merged to provide a new class of services on the basis of partial results. Video QoE and network QoS has been measured to adjust video encoder in order to save transmission bandwidth or improve image fidelity depending on the transmission environment. ***CAVICO experiment by ITTI, Poland***

5G Smart City Robotic Surveillance Platform experiment tested correlations between QoS and QoE, as well as defined encoding and transmission profiles for various surveillance scenarios. Having the media routing on an edge node allows disabling the sending of the other videos to the monitoring application, and only to the storage, which can be placed at a different location. Finally, a new VNF for providing real-time QoE measurement for video streams has been tested. ***RobotView5G experiment by Cybernetic Technologies NETICTECH S.A., Poland***



Service Function Chaining orchestration application for low latency guarantees experiment focused on the evaluation of a tenant-side Service Function Chaining management solution. Concerning the impact on resource consumption the implemented approach appeared sustainable. Also, the deviation between the estimated latency computed on the abstract topology and the measured end-to-end latency along the established chain resulted in a reasonable average of 3.8%. ***SFCLola experiment by CNIT, Italy***

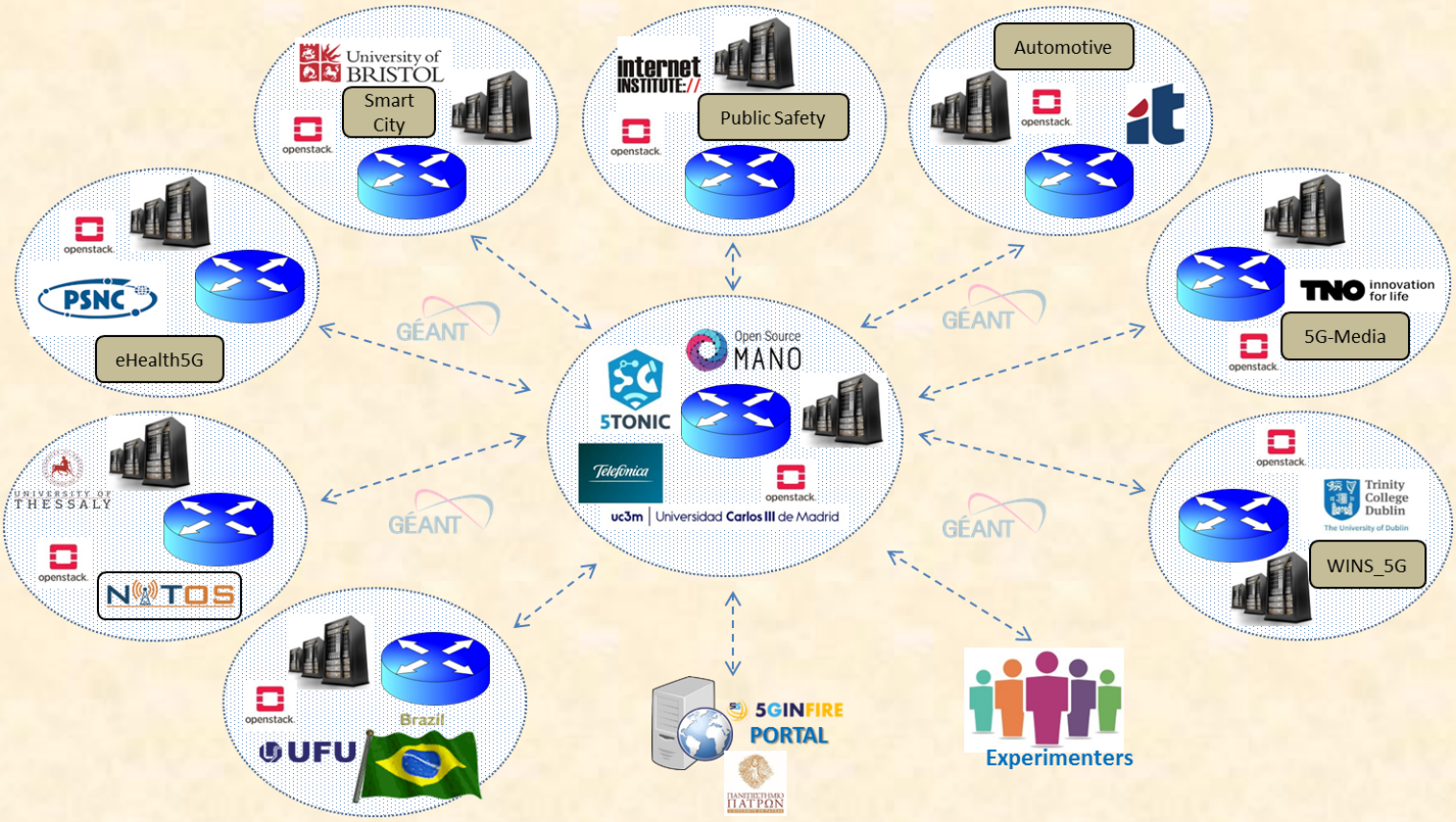


Hybrid Communications to Foster 5G Vehicular Services experiment presents advantages in the area of high-performance data processing from OBUs. The results show that an improvement of several orders of magnitude (from 80 to 2 msec) can be achieved if it is not necessary to receive data from a physical OBU for a data that can be provided by a virtual OBU. Further improvements could be achieved if higher processing loads would be moved from the physical OBU to its virtual counterpart. ***SURROGATES experiment by University of Murcia, Spain***

Vulnerable Road Users Safety using a hybrid Cloud RAN and Edge Computing model experiment showcased the performance of a MEC-based and a cloud/VNF-based system. The cloud-based outperforms the Road Side Unit (RSU)-based deployment in the majority of the scenarios, but both systems exhibit end-to-end delays, satisfying requirements of V2X applications. With respect to the system scalability, the results show that the VNF-based deployment performs in a more stable manner. ***VRU-SAFE experiment by University of Athens, Greece***

THE EXPERIMENTAL INFRASTRUCTURE

The 5GINFIRE project established its framework at an early stage, to enable a variety of external experiments. The initial 5GINFIRE experimental infrastructure included an automotive and a smart city testbed as well as 5TONIC facility, which was extended through competitive open calls to eight 5GINFIRE testbeds enabling remote implementation of experiments, by using the 5GINFIRE experimenter portal, and addressing various vertical sectors and 5G oriented networking experimentation. In addition, the 5GINFIRE has links with testbeds in Brazil through connection with the Federal University of Uberlândia.



5TONIC laboratory hosts the 5GINFIRE orchestration service and the NFV infrastructure as well as is serves to evaluate and demonstrate the capabilities and interoperation of pre-commercial 5G equipment and devices, services, and applications. This multipurpose environment of multiple racks can be flexibly interconnected according to any experimentation requirements. In particular, secure external access may be provided, allowing remote solutions to support management, control, and data operations.

IT-Aveiro Automotive Environment consists of On-Board Units (OBU) in the vehicles and roadside units connected to the Internet, where each OBU has multiple wireless interfaces, enabling communications with other vehicles and the entire testbed infrastructure. The OBUs have access to the vehicular information such as velocity, position, and heading as well as information about the surroundings.

5GINFIRE

University of Bristol 5G testbed is a multisite network connected through a 10km fibre with several active switching nodes, including the core network and an extra edge computing node. Access points using various technologies are located in the city center. The available radio access technologies deliver high bandwidth, high-bitrate, and high-reliability connections, where availability of LTE-Advanced and future installations of 5G access points are of particular importance.

e-Health experimental infrastructure located in Poznan Supercomputing and Networking Center consists of cutting-edge equipment enabling implementation and testing of e-Health cloud applications, products, or services. The infrastructure makes accessible to experimenters e-Health devices from three functional groups: the operating room, the physiological sensors, and the patient wellbeing sensors.

5G Media testbed enables execution of media use cases beyond current state of the art, looking at two target areas; 6-degrees-of-freedom (6DoF) VR streaming and professional video production (uplink streaming) for live TV. The testbed provides hardware components, such as data plane acceleration modules, encoding/decoding modules, GPUs, etc., to meet necessary requirements, in terms of bandwidth and latency, to the target classes of future media applications.

PPDR ONE is a 5G enabled telco-grade development, testing, and verification facility for outdoor and indoor experimentation on network architectures and services for **Public Protection and Disaster Relief**. PPDR ONE is representing an all-in-one facility which includes SDR-based radio and core mobile system, cloud backend infrastructure, etc. A portable compact PPDR ONE node is ready to be shipped and deployed anywhere in the EU, covering both indoor scenarios and field operation.

NITOS testbed is one of the largest single-site open experimental facilities in Europe, allowing users to take advantage of highly programmable equipment supporting a variety of wireless technologies, such as IEEE 802.11 compatible equipment, LTE, WIMAX, SDR 5G, etc., which are all interconnected via OpenFlow switches and a cloud computing testbed. The equipment is distributed across three different testbed locations in the city of Volos and can be combined with each other as required.

WINS-5G testbed provides a radio slicing and virtualization tool called Hypervisor for Software Defined Radios (HyDRA), developed to support experimentation monitoring in wireless, packet, and optical networks. HyDRA as a VNF is available in other 5GINFIRE testbeds equipped with Universal Software Radio Peripherals (USRPs) N210s, offering an opportunity to test and evaluate advanced 5G use case scenarios with massive communications needs and ultra-low latency requirements.

Website: www.5ginfire.eu

Contact: contact@5GinFIRE.eu

Twitter: 5GinFIRE