

5G-CORAL: 5G Mobile Transport Platform for Verticals



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END DATE: 31/08/2019

COST: 2,497,223.75€

MORE INFORMATION

www.5g-coral.eu

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MAIN OBJECTIVES

5G-CORAL aims at delivering a convergent 5G multi-RAT access through an integrated virtualised edge and fog solution that is flexible, scalable, and interoperable with other domains including transport (fronthaul, backhaul), core and clouds. Major objectives:

- o Develop a system model including use cases, requirements, architecture, and business models to design and validate the 5G-CORAL solution.
- o Design virtualised Radio Access Network (RAN) functions, services, and applications for hosting in the 5G-CORAL Edge and Fog computing System (EFS), which subsuming all the edge and fog computing substrate offered as a shared hosting environment for virtualised functions, services, and applications
- o Design an Orchestration and Control system (OCS) for dynamic federation and optimised allocation of 5G-CORAL EFS resources, including its interworking with other (non-EFS) domains
- o Integrate and demonstrate 5G-CORAL technologies in large-scale testbeds making use of facilities offered by Taiwan, and measure their Key Performance Indicators.
- o Disseminate and contribute 5G-CORAL results into international research and innovation venues to pave the way for their successful exploitation.

USE CASES

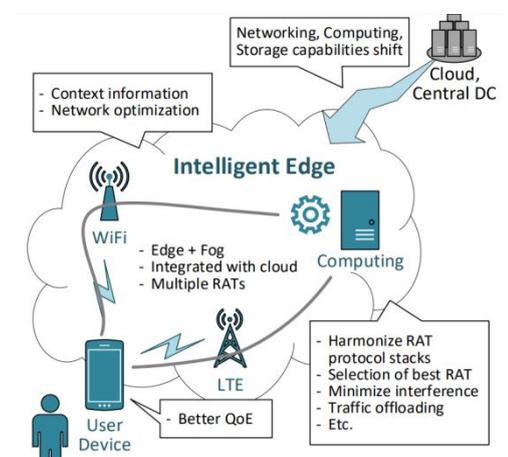
5G-CORAL project will be validated in three testbeds.

1. Shopping mall (Taiwan)
2. High-speed train (Taiwan)
3. Connected cars (Taiwan and Italy)

TECHNICAL AND RESEARCH CHALLENGES

5G-CORAL project leverages on the pervasiveness of edge and fog computing in the RAN to create a unique opportunity for access convergence. This is envisioned by means of an integrated and virtualised networking and computing solution where virtualised functions, context-aware services, and user and third-party applications are blended together to offer enhanced connectivity and better quality of experience.

The proposed solution contemplates two major building blocks, namely the EFS and the OCS. As for the EFS, there are several foreseeable technological issues to be discussed: Volatility of Resources, Heterogeneity of RATs, Applicability to Internet of Things and End User Terminal Virtualization. For the OCS, there is still not yet a corresponding framework defined. Such framework will need to satisfy requirements of real-time communication utilizing edge nodes, federation among multiple stakeholders, and dynamic resource discovery of volatile and non-volatile resources.



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