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

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MAIN OBJECTIVES

5G-Transformer aims to transform today's mobile transport network into an SDN/NFV-based Mobile Transport and Computing Platform (MTP), which brings the "Network Slicing" paradigm into mobile transport networks by provisioning and managing MTP slices tailored to the specific needs of vertical industries. The technical approach is twofold:

(1) Enable vertical industries to meet their service requirements within customised MTP slices; and

(2) Aggregate and federate transport networking and computing fabric, from the edge all the way to the core and cloud, to create and manage MTP slices throughout a federated virtualized infrastructure.

The goal of 5G-Transformer is to design, implement and demonstrate a 5G platform that addresses the aforementioned challenges.

USE CASES

The project will demonstrate several vertical industry use cases:

- *Automotive:* Autonomous Cruise Control (ACC) enforcement application, Collaborative Advanced Driver Assistance Systems (ADAS) application and Remote Vehicle Interaction (RVI) application.
- *eHealth:* Improvement of the municipal emergency communication network and development of a new technological solution for health workers and volunteers.
- *Media & Entertainment:* Media applications for stadia and the Olympic Games.

TECHNICAL AND RESEARCH CHALLENGES

5G-Transformer defines three novel building blocks that will be developed and demonstrated integrating the aforementioned three vertical industries:

(1) *Vertical Slicer* as the logical entry point (i.e., one stop shop) for verticals to request the creation of their respective transport slices in a short time-scale (in the order of minutes).

(2) *Service Orchestrator* for end-to-end service orchestration and federation of transport networking and computing resources from multiple MTP domains and for management of their allocation to slices.

(3) *Mobile Transport and Computing Platform* as the underlying unified transport stratum for integrated fronthaul and backhaul networks, hence building on the foundations of 5GPPP Phase 1 projects.

EXPECTED IMPACT

5G-Transformer targets several 5GPPP KPIs, such as reduced service deployment times or OPEX and CAPEX reduction.

The 5G-TRANSFORMER project is an ambitious initiative that will certainly have strong impact in industry. In fact, the project implements a plan for communication, dissemination, and exploitation to maximise its impact, which includes products and standardisation (e.g., ETSI, IETF and ONF). Therefore, innovation management is also a key component.

The technologies developed in 5G-TRANSFORMER are expected to strengthen the position of European companies in the upcoming 5G Mobile Network market, both in Europe and Worldwide, for the whole value chain (Verticals, Operators, Service Providers, Manufacturers, SMEs, and Complementary Industries).

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