Affordable5G, led by ATOS, aims at creating a 5G network that will deliver a complete and affordable solution covering the needs of private and enterprise networks through technical innovation that span across all parts of 5G network.

The project leverages the need of cell densification, RU/DU/CU disaggregation on RAN, hardware acceleration, edge computing and core network virtualisation, seamlessly combined with the adoption of Open RAN, MEC deployments and open source MANO solutions, for cloud-native and micro-service based 5G roll-outs. With the combination of several European SMEs products with open interfaces, Affordable5G will offer a first-class opportunity to SMEs to become frontrunners in the global 5G competition, facilitating them in their commercialisation paths in 5G private networks. A private 5G network is a particular realization of the 5G system designed and configured for a private use by an enterprise or an exclusive group of users. It can be deployed to cover the needs of a specific application, or multiple applications or even a vertical domain.

The project goals and achievements will be evaluated and validated in three vertical use cases that will be demonstrated in two pilots and a proof-of concept.
The use cases are used to identify and characterise the system requirements that allows the selection of the network elements and the 3GPP, ETSI and O-RAN specifications that are taken as a reference in the Affordable5G system architecture led by National and Kapodistrian University of Athens.

The first use case is related to emergency communications, aiming to demonstrate the 5G private network concept, and the performance and reliability requirements of Mission Critical Services (MCS), allowing the owner to control their 5G network to serve a limited geographic area with optimised services using dedicated equipment.

The second use case is related to smart cities. In this context, Affordable5G will validate the 5G technology for efficient smart city monitoring, combining IoT data collection sensors integration and edge processing. This will allow deploying new applications for enhancing urban sustainability, mobility and safety and reducing deployment costs.

The third pilot consists of two use cases covering different parts of the manufacturing process (process automation and Automated Mobile Robots management), to be demonstrated only as lab proof of concept focusing on Time Sensitive Network (TSN) and the offer of 5G LAN functionality.

The Affordable5G consortium brings together a wide range of complementary skills and competencies, from idea generation to analysis of requirements, specification and design, low-cost implementation and system integration, until demonstration, validation, and beyond.
The international partners feature SMEs, MNOs and system integrators (alongside coordinator Atos: ADVA, Cellnex, Accelleran, Athonet, Think Silicon, RunEL, Nemergent Solutions, Ubiwhere, Martel Innovate, inCITES, Eight Bells and Nearby

Computing) which are complemented by research institutes (University of Malaga, National and Kapodistrian University of Athens, i2Cat and Eurecom) - All grasping the opportunity to enhance their products, according to their respective roadmap, while fostering collaboration between themselves.