FONDAZIONE BRUNO KESSLER
MAGAZINE

Reusable, secure and trustworthy AI solutions in the Network Edge

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Fondazione Bruno Kessler coordinates AI@EDGE, one of the 9 research projects retained from the 81 proposals submitted to the European Commission in response to the 5G-PPP ICT-52-2020 call: 5G-PPP Smart Connectivity beyond 5G. The project, started in January 2021, lasts 3 years and involves 19 partners among industries, universities and research institutes from 8 countries.

Artificial Intelligence has become a major innovative force, and it is one of the pillars of the fourth industrial revolution. While significant progress has been made during the last years concerning AI-enabled platforms' accuracy and performance, their integration in potentially autonomous decision-making systems or even critical infrastructures requires assuring end-to-end quality.

The goal of the H2020 AI@EDGE is to address this issue by introducing reusable, secure and trustworthy AI solutions in the Network Edge.

AI@EDGE aims to revolutionise communication networks achieving an EU-wide impact on industry-relevant aspects of the AI-for-networks and networks-for-AI paradigms in beyond 5G systems, with a variety of applications including vehicles, industrial networks, aviation and in-flight entertainment.

AI@EDGE targets significant breakthroughs in two fields:

1. general-purpose frameworks for closed-loop network automation capable of supporting flexible and programmable pipelines for the creation, utilization, and adaptation of the secure, reusable, and trustworthy AI/ML models;
2. definition of a converged Connect Compute platform for creating and managing resilient, elastic, and secure end-to-end slices capable of supporting a diverse range of AI-enabled network applications.

The introduction of AI and Machine Learning (ML) technologies in the cloud-network convergence process will be crucial and help operators achieve a higher

level of automation, increase network performance, and decrease the time-to-market of new features.

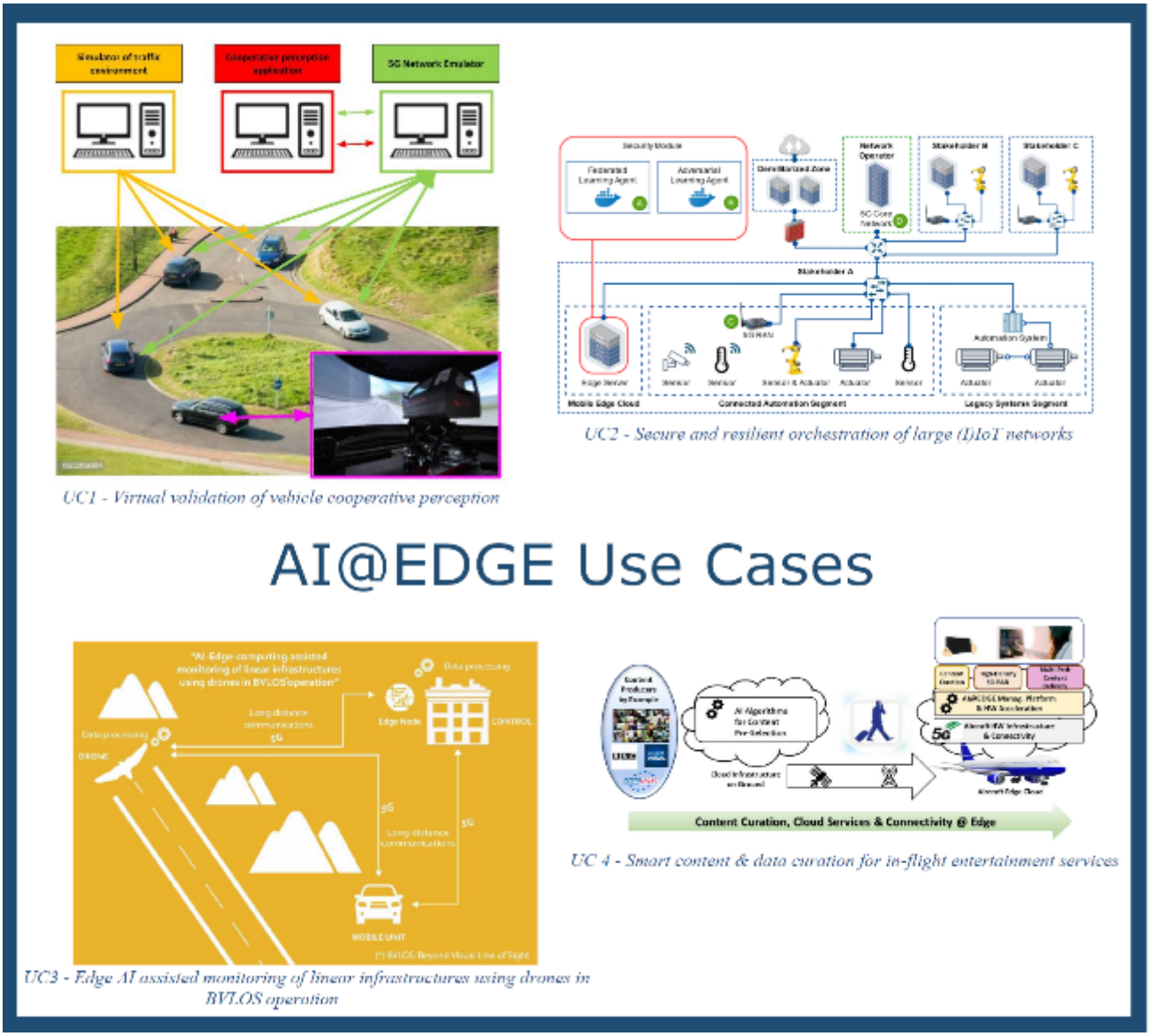
The results of AI@EDGE will be validated against four use cases with specific requirements that cannot be satisfied by current 5G networks:

1. Connected and Automated Mobility,
2. Industrial IoT,
3. In-Flight Entertainment
4. Industrial Operations-oriented UAV.

Ultra-low latency, secure communication, connectivity, resilience, and service continuity under mobile conditions are some of the prominent challenges that the AI@EDGE Use Cases will address.

The project consortium includes: Fondazione Bruno Kessler, Centro Ricerche FIAT, Politecnico di Milano, Athonet, TIM, Italtel (Italy); RISE, Ericsson AB, University of Lund (Sweden); ATOS, Fundació Privada i2CAT, AeroTools UAV S.L. (Spain); DFKI, Safran Passenger Innovations (Germany); CNAM, INRIA (France); Institute of Communication and Computer Systems (Greece); 8BELLS (Cyprus); Software Radio Systems (Ireland).

More information on the project can be found visiting the project's **website**, following the **AI@EDGE** social profiles on Twitter (**@AIatEdgeH2020**) and **LinkedIn** or subscribing to receive the bi-annual project **newsletter**.



UC1 - Virtual validation of vehicle cooperative perception

UC2 - Secure and resilient orchestration of large (I)IoT networks

AI@EDGE Use Cases

UC3 - Edge AI assisted monitoring of linear infrastructures using drones in BVLOS operation

UC 4 - Smart content & data curation for in-flight entertainment services

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https://magazine.fbk.eu/en/news/reusable-secure-and-trustworthy-ai-solutions-in-the-network-edge/

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