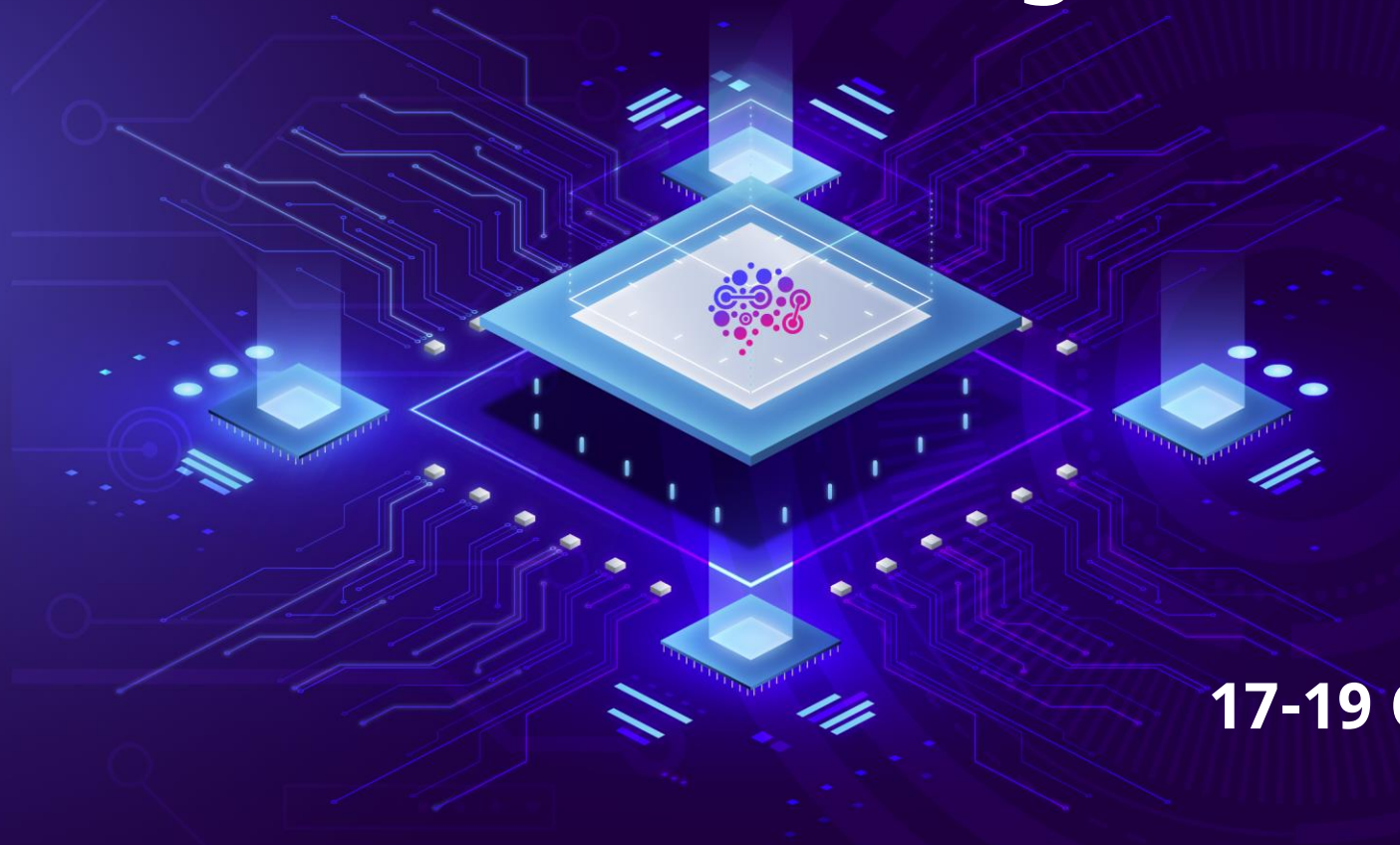
European Conference on EDGE AI Technologies and Applications - EEAI



Advancing emerging edge AI technologies and driving next generation intelligent applications.

17-19 October 2023, Athens, Greece

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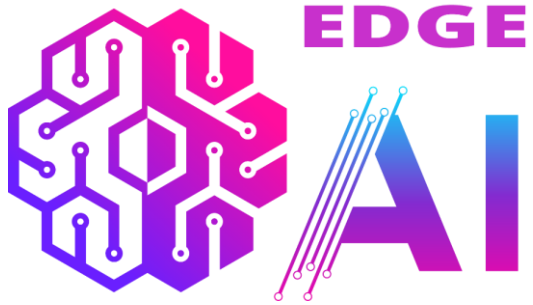

Collaborative edge-cLoud continuum and Embedded AI for a Visionary industry of thE future (CLEVER)

Luca Valcarenghi

Scuola Superiore Sant'Anna, Pisa, Italy

17-19 October 2023 Athens, Greece

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CLEVER in a nutshell

Project Information

CLEVER

Grant agreement ID: 101097560

DOI

10.3030/101097560

Start date	End date
1 January 2023	31 December 2025

Funded under

Digital, Industry and Space

Total cost

€ 15 634 605,00

EU contribution

€ 4 662 165,27

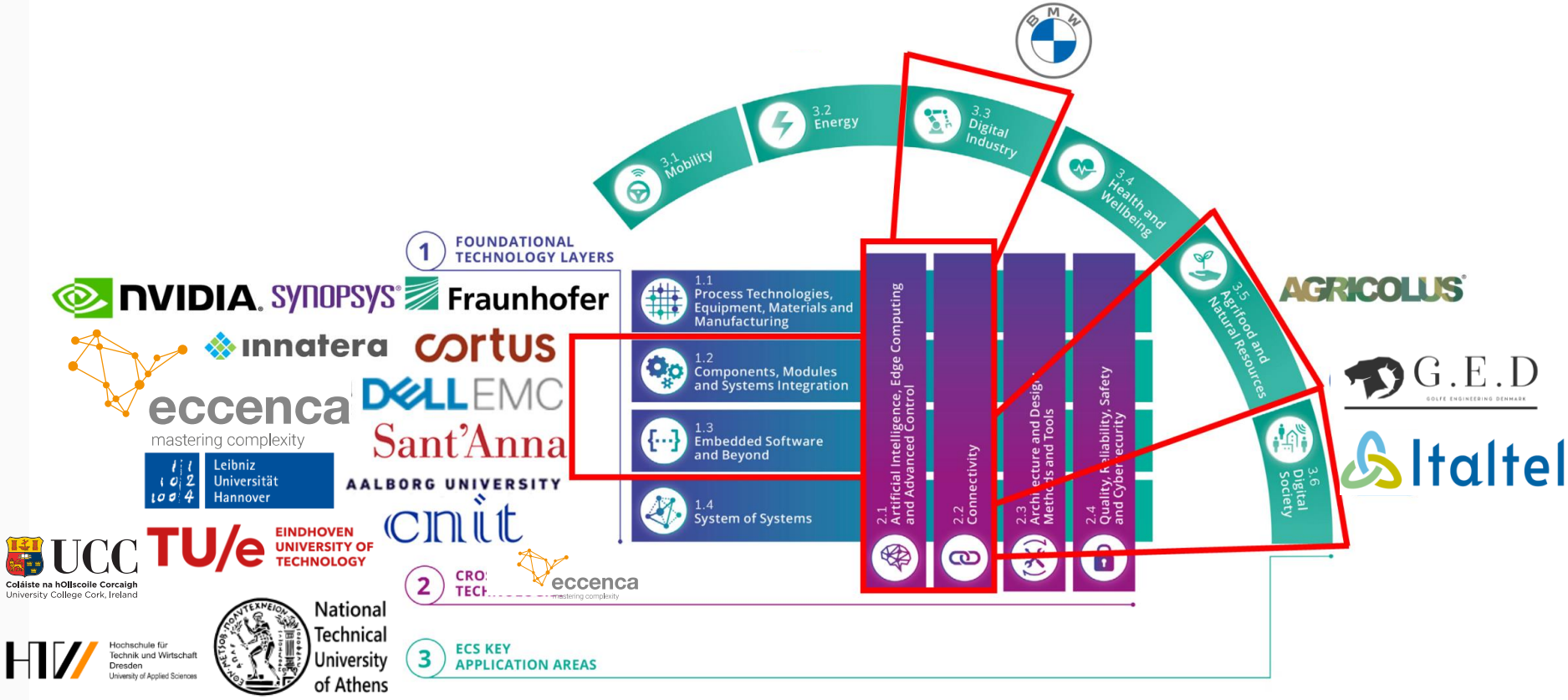
Coordinated by

SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO S ANNA

Italy

Consortium

Positioning of CLEVER in the context of the ECS roadmap



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CLEVER Objectives

- Objectives
  - **related to Edge computing**
    - Enable long haul direct memory access
    - Innovate in middleware components
    - Secure onboarding
    - Build middleware components
    - Energy efficient orchestration
  - **related to Hardware accelerators for AI**
    - Enable novel AI-native HW processors
    - Demonstrate silicon or FPGA-based accelerators
    - Provide firmware solutions
  - **related to Connectivity**
    - Enable RF front end silicon for 6G/NB-IoT connectivity
    - Enable direct memory access among components in the same fabric

- Objectives
  - **related to networking, middleware, and management**
    - Establish trustworthy edge platforms
    - Enable graph generation and orchestration through AI
    - Design and implement automated orchestration
    - Develop monitoring and telemetry middleware
    - develop innovative workload assignment and resource allocation
  - **related to AI services and applications**
    - develop a reinforcement learning core engine for industrial twin applications
    - enable a video flow platform in low-connectivity
    - generate interfaces for digital twins and 3D CAD models
    - effectively offload AI processes to GPUs, FPGAs and dedicated hardware accelerators
    - integrate sensorized environments with digital

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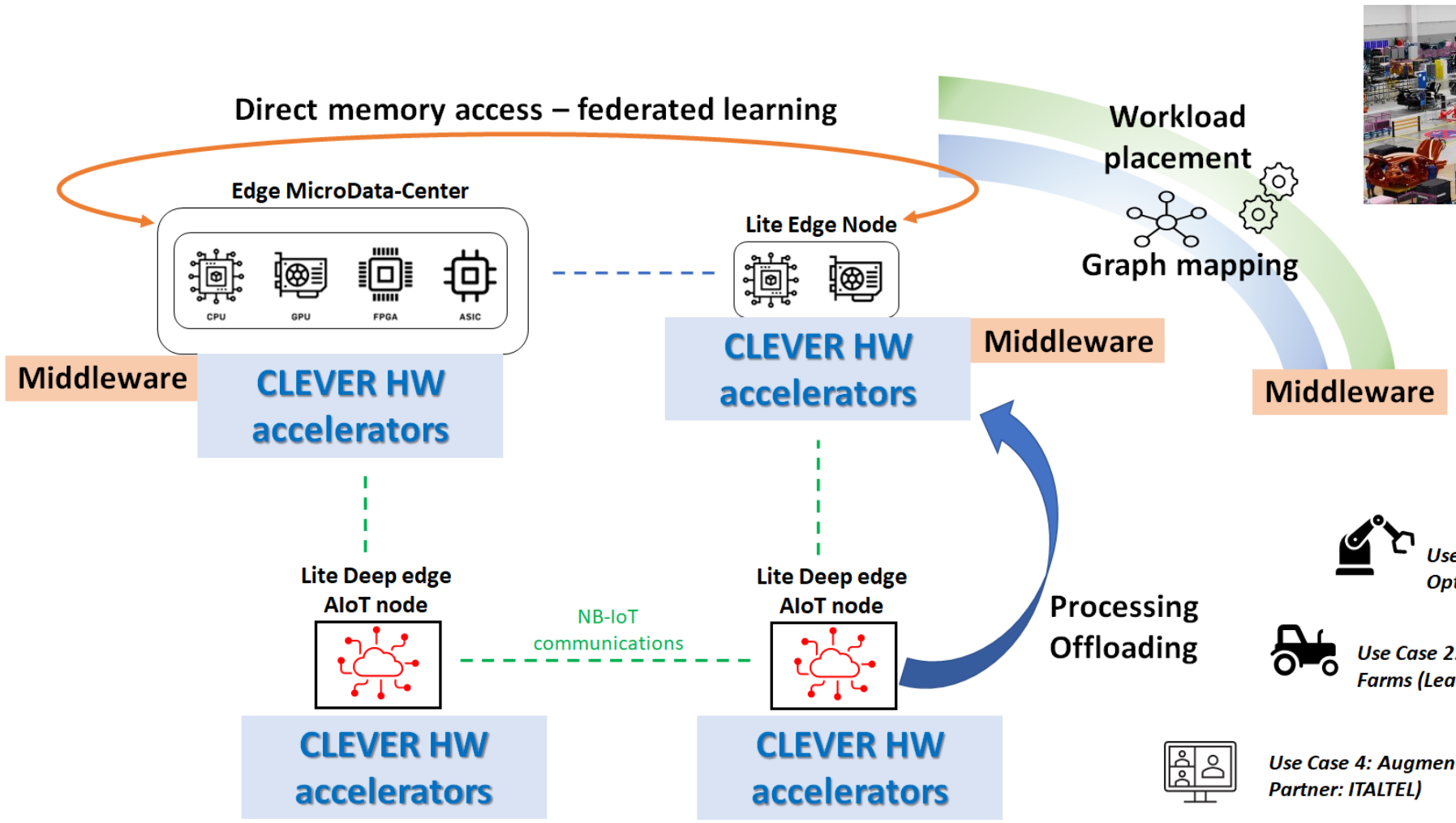
CLEVER Methodology



Use Case 1: Digital Twin for In-Factory Optimization (Lead Partner: BMW)

Use Case 2: Smart Agriculture for High Yield Eco-Farms (Lead Partner: AGRICOLUS)

Use Case 4: Augmented Reality for Shopping Sites (Lead Partner: ITALTEL)

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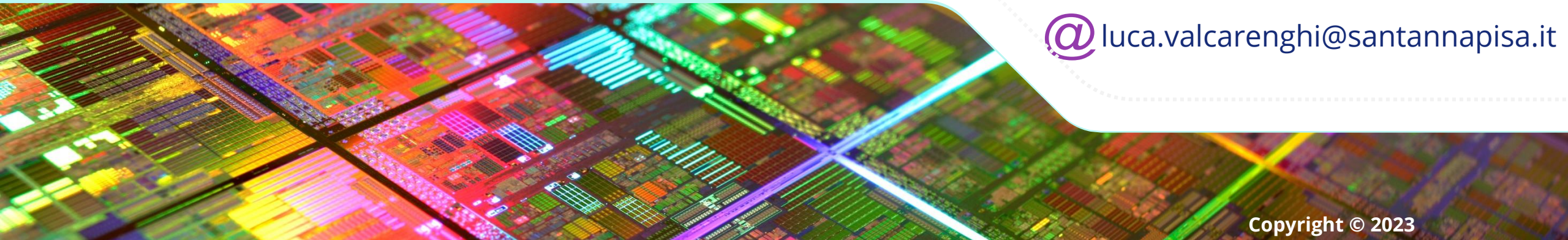

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