OUR CONSORTIUM

11 partners including RTOs, universities, small and large companies, from 8 Member or Associated Member States, collaborating to advance research in 6G.

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6G-TWIN

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6G TWIN

Integrating Network Digital Twinning into Future AI-based 6G Systems

6G SNS

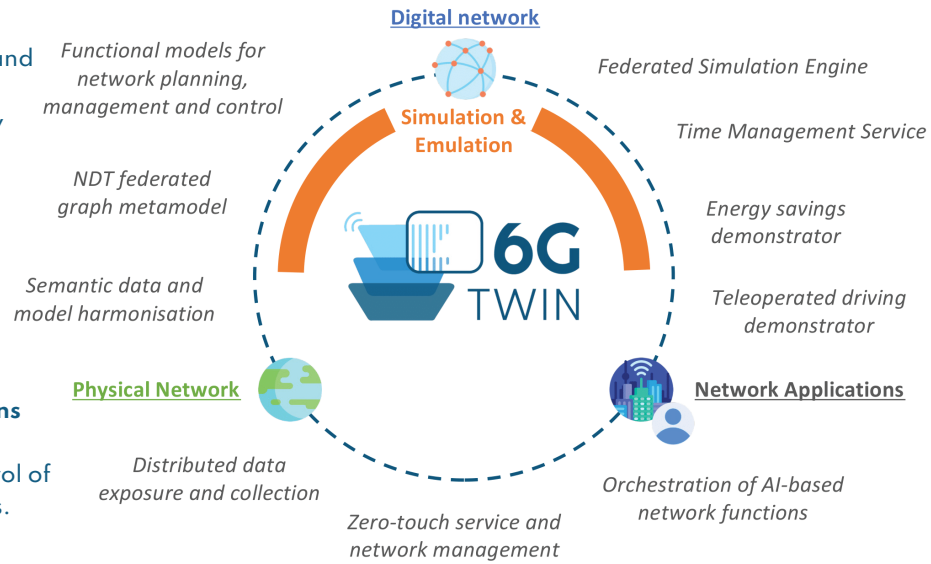
Co-funded by the European Union

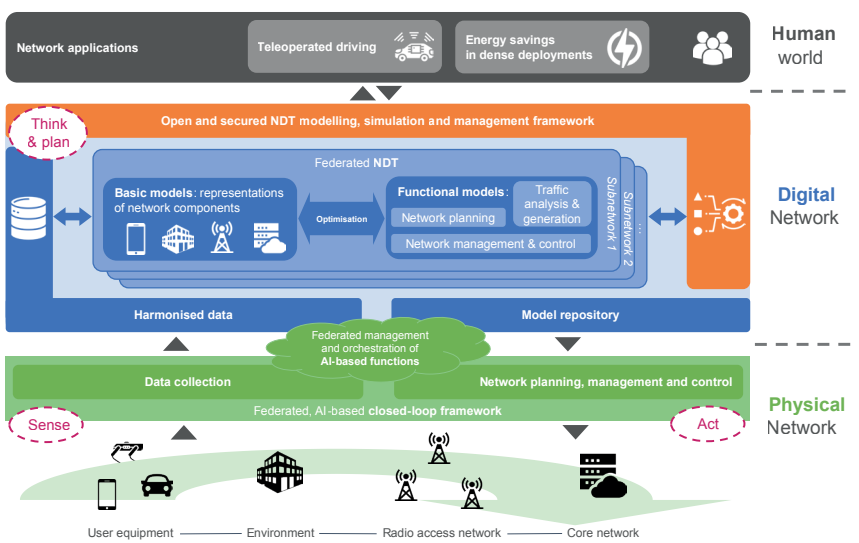
CONCEPT AND OBJECTIVES

Enabling a Cyber-Physical Continuum for Next-Generation 6G Systems

Networks are becoming increasingly complex and distributed, requiring a large variety of technologies to operate. With 6G, which is now on the horizon for around 2030, it is essential to design, experiment and standardize new network architectures with more intelligence and automation.

6G-TWIN will provide the foundation for the design, implementation and validation of an **AI-native reference architecture** for 6G systems that incorporates **Network Digital Twins (NDT)** as a core mechanism for the end-to-end, real-time optimisation, management and control of highly dynamic and complex network scenarios.





Key expected results include:

> **Federated and AI-native network reference architecture that integrates multiple NDTs** for real-time data analytics and decision-making.

> **On-the-fly AI approaches** for orchestrating network functions (NF) and services (NS).

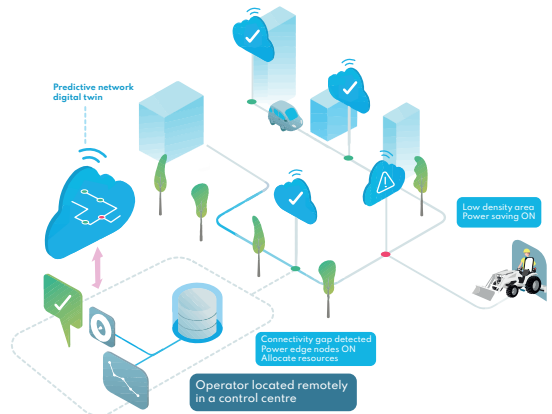
› **AI-based NF/NS** for data analytics and/or decision-making to optimise network performance.

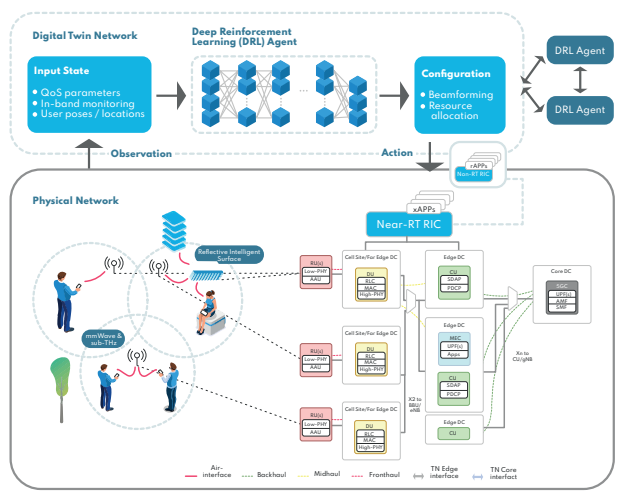
› Accurate, reliable, open and secured **modelling and simulation framework** for testing the 6G architecture.

DEMONSTRATORS

1. Teleoperated driving

NDT solutions to anticipate the network behaviour that could face a teleoperated vehicle prior to its departure, to ensure an extreme quality of service and availability of the network resources all along its journey (i.e., **predictive** DT).



2. Energy savings

NDT solutions to adapt the network behaviour in near real time with the objective to optimise the overall, end-to-end energy efficiency of the network (i.e., **reactive** DT).