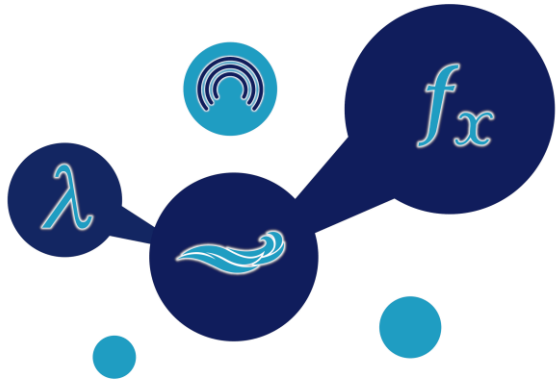


SIXG

Serverless Infrastructure for neXt-Generation 6G networks

Coordinator (presenter): Balázs Sonkoly | HUN-REN TKI

Technical coordinator: Luis M. Contreras | Telefónica Innovación Digital, S.L.

SIXG – Serverless Infrastructure for next-Generation 6G networks
Grant No. 101291424
https://sixg-project.eu

Project General Information

SIXG | SNS JU Stream B (B-01-01)

Serverless Infrastructure for neXt-Generation 6G Networks

Project coordinator:
Balázs Sonkoly (HUN-REN TKI)
Technical coordinator:
Luis M. Contreras (Telefónica Innovación Digital)

Consortium

Coordinator: HUN-REN TKI (Hungary)

CNIT (Italy) • URV (Spain) • Dell (Ireland/Spain)

Telefónica Innovación Digital (Spain) • ISRD (Poland) • HiveIntel (Germany)

Project facts

Grant Agreement: 101291424

Duration: 01 Jun 2026 – 31 May 2029

EU contribution: €2,999,987.50

Total cost: €3,186,312.50

www.sixg-project.eu

Core idea: Develop a real-time serverless computing framework for 6G, enabling (i) ultra-low-latency applications across the device–edge–cloud continuum and (ii) serverless functions embedded within the 6G network architecture, through joint application- and network-level optimization.

SIXG architecture: co-design across the 6G continuum

Use-case services
xAPPs, rAPPs and AIaaS enablers connect application requirements to 6G capabilities

Data streaming layer
Stream-native ingestion, transformations, tiered storage and state management for data-intensive / AI workloads

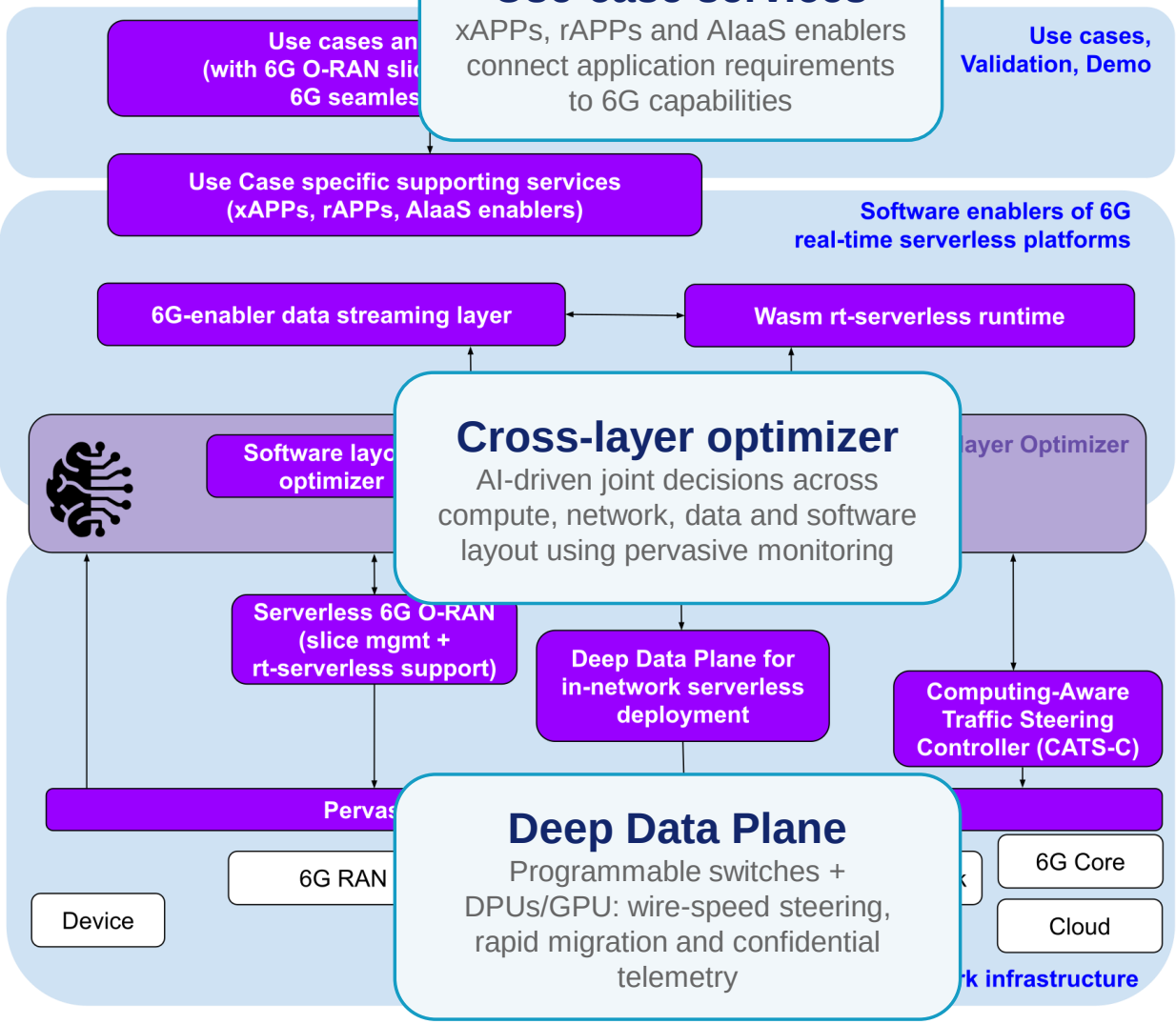
Wasm real-time runtime
Near-millisecond startup; extensible I/O; lightweight execution for edge AI and stream processing

Cross-layer optimizer
AI-driven joint decisions across compute, network, data and software layout using pervasive monitoring

Serverless O-RAN slicing
Create application-tailored slices and selected RAN elements on demand; Near-RT RIC in the loop

CATS-C
AI-driven, monitoring compute & network metrics, enabling dynamic placement of functions, adaptive resource allocation and traffic steering

Deep Data Plane
Programmable switches + DPUs/GPU: wire-speed steering, rapid migration and confidential telemetry



Key idea: application-level serverless pipelines and network-level functions adapt to each other through cross-layer control.

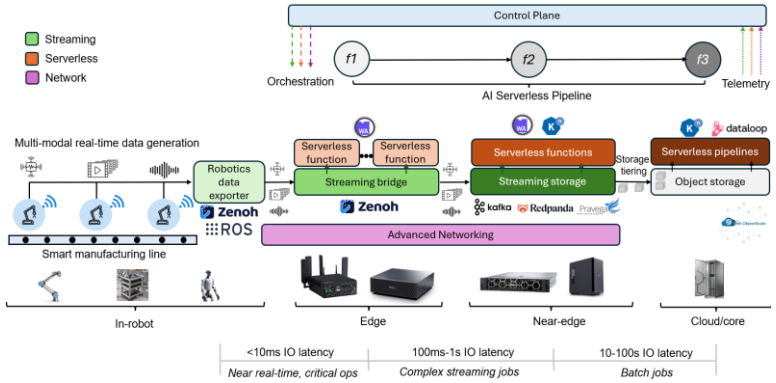
Validation: three Proofs of Concept

PoC #1

Elastic AI-driven serverless streaming

Smart manufacturing

Low-latency streaming + Wasm/serverless runtime + AI analytics; elastic scaling and real-time decisions.

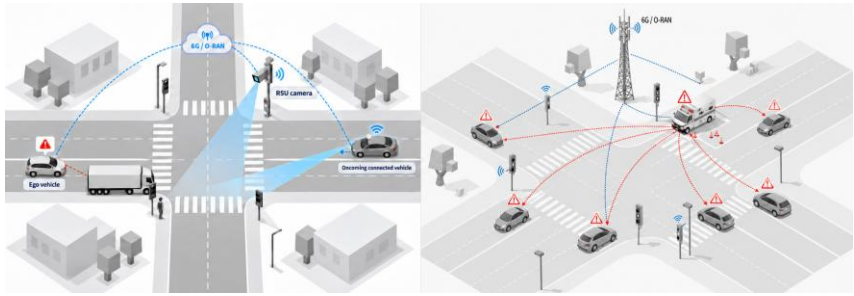


PoC #2

6G O-RAN slicing for ADAS

Connected mobility / ADAS

Dynamic, SLA-aware serverless slice instantiation and management with low latency and improved energy efficiency.

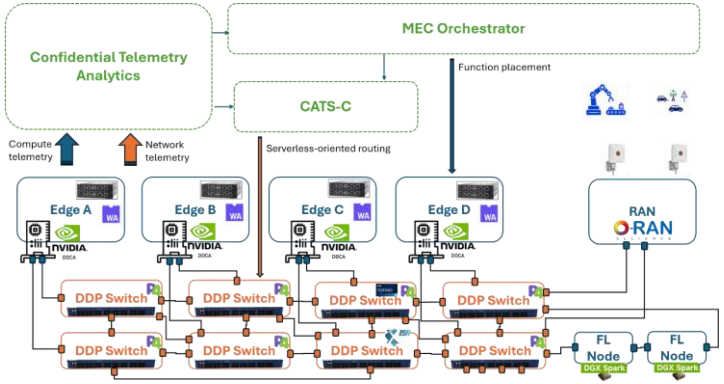


PoC #3

6G seamless service migration

Distributed edge

Stateful/stateless service migration across edge nodes using in-network telemetry, steering and AI-driven placement.



Integrated validation of the full path:
application → serverless platform → programmable 6G infrastructure → closed-loop adaptation