

## RELIANCE

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### Partners:

Bombardier Transportation Sweden AB, Sweden

Eduro AB, Sweden

Keyland Sistemas de Gestion S.L., Spain

NETAS Telecommunications A.S., Turkey

RISE Research Institutes of Sweden AB, Sweden

Saint Patrich Technology S. L., Spain

SII Concatel S. L., Spain

Turkcell Teknoloji, Turkey

ULAK Communications Inc., Turkey

Westermo Network Technologies AB, Sweden

### Co-ordinator:

Elio Saltalamacchia

SII Concatel S.L., Spain

E-Mail: elio.saltalamacchia@concatel.com

### Project Websites

[www.celticplus.eu/project-reliance](http://www.celticplus.eu/project-reliance)

<https://projectreliance.com>

## Resilient and Scalable Sclicing over Multiple Domains

The main goal of RELIANCE is to extend the 5G network architecture with new functionalities needed for multi-service and multi-domain management, with the related abstractions, interfaces, and mechanisms to support needed resilience, security, and scalability.

### Main focus

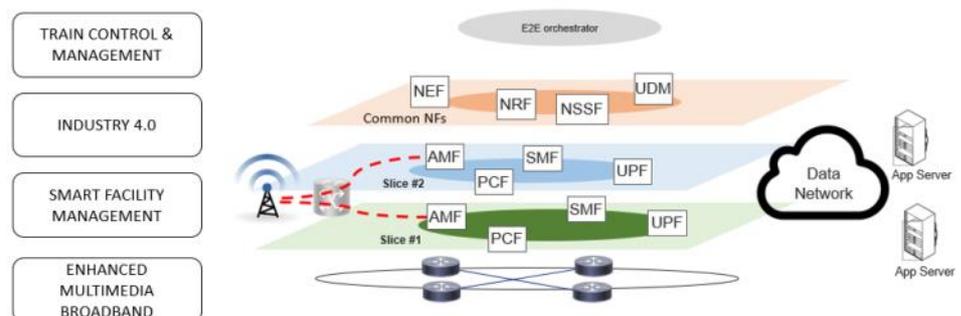
RELIANCE aims to conduct research activities on the concept of federated network slicing to compose end-to-end services that span across different technical and administrative domains. A key innovation of the project is the highly scalable and robust slice choreography plane that enables the offering of vertical-tailored slices "as-a-Service", ensuring the required scalability, security, and resilience features. It facilitates the mapping of service requirements from the verticals with their predicted traffic demands into dedicated networking and cloud resources through automated multiparty negotiation. Scalable slice federation is complemented with protocols for deployment and runtime adaptation of resilience and security mechanisms over heterogeneous infrastructures, so to enable a unified reliability framework.

### Approach

The architectural work of RELIANCE is driven by the diverse needs and requirements stemming from vertical industries (industry 4.0, Smart Cities, Enhanced multimedia broadband & Transportation -train control & management-). The RELIANCE framework will be implemented and validated on selected use-cases through proof-of-concepts, aiming at demonstrating the envisioned benefits of the RELIANCE framework.

### Main results

RELIANCE is an innovate action which will certainly have strong strategic impact in the industry including verticals beyond the communications industry. The innovation potential of the project spans across multiple complementary areas, involving different stakeholders which would benefit from the different innovations RELIANCE aims to develop. RELIANCE aims to create a dynamic marketplace whereby multiple stakeholders, including infrastructure providers and operators, will provide end-to-end slices for different verticals. The researches on automated service negotiation and contracting mechanisms, provided by RELIANCE, will be the initial step



*RELIANCE network slicing over multiple domains*

towards trustworthy and reliable federation of compute, storage and connectivity resources from multiple providers.

## Impact

The flexibility and agility offered by RELIANCE in the provisioning and management of slices will encourage vertical industry actors to access this new network slice market place, thus bridging the gap between verticals and telco industries. In addition, the creation of these novel business interactions and models will enable verticals to either deploy new customized services or improve existing ones, thus strengthening their positions in their respective markets. This is also reflected on the telco industry side, whereby operators will have opportunities to engage new customers from the vertical sectors with more appealing service offerings. Moreover, the extremely-flexible and agile RELIANCE approach, based on recursive abstraction and virtualisation of resources, will enable network operators to improve their products portfolio beyond network connectivity services.

## About Celtic-Plus

Celtic-Plus is an industry-driven European research initiative to define, perform and finance through public and private funding common research projects in the area of telecommunications, new media, future Internet, and applications & services focusing on a new „Smart Connected World“ paradigm. Celtic-Plus is a EUREKA ICT cluster and belongs to the inter-governmental EUREKA network. Celtic-Plus is open to any type of company covering the Celtic-Plus research areas, large industry as well as small companies

or universities and research organisations. Even companies outside the EUREKA countries may get some possibilities to join a Celtic-Plus project under certain conditions.

### Celtic Office

c/o Eurescom, Wieblinger Weg 19/4  
69123 Heidelberg, Germany  
Phone: +49 6221 989 381  
E-mail: [office@celticplus.eu](mailto:office@celticplus.eu)  
[www.celticplus.eu](http://www.celticplus.eu)

