# Ericsson Research in Türkiye

ICT Türkiye 2025 Workshop#3 Digital, Chips and 6G

Güneş Kesik

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# Briefly about Ericsson: A world leader in ICT and 5G

**Ericsson Purpose and Vision:**

Empowering an intelligent, sustainable and connected world

**Leveraging on four core pillars:**

- Technology leadership
- Cost efficiency
- Data-driven operations
- Global skill and scale

**By the numbers:**

- 94,236 employees
- 180+ countries
- 53,5 BSEK in R&D
- 60,000 Patents
- 1 billion users in networks we manage

**Business areas:**

- Cloud Software & Services
- Enterprise Wireless Solutions
- Global Communications Platform
- Networks
- Technologies & New Businesses
- Media Solutions
- Red Bee Media

# Ericsson Research organization

# Ericsson Research globally

- 750+ researchers
- 50+% Ph.D.
- 14 countries
- 4 continents

**2G, 3G, 4G, 5G, ...6G**
it's all invented here

**>50%**
it's all invented here

**Global networking**
cooperating in a world-wide network of leaders

Competence and people.

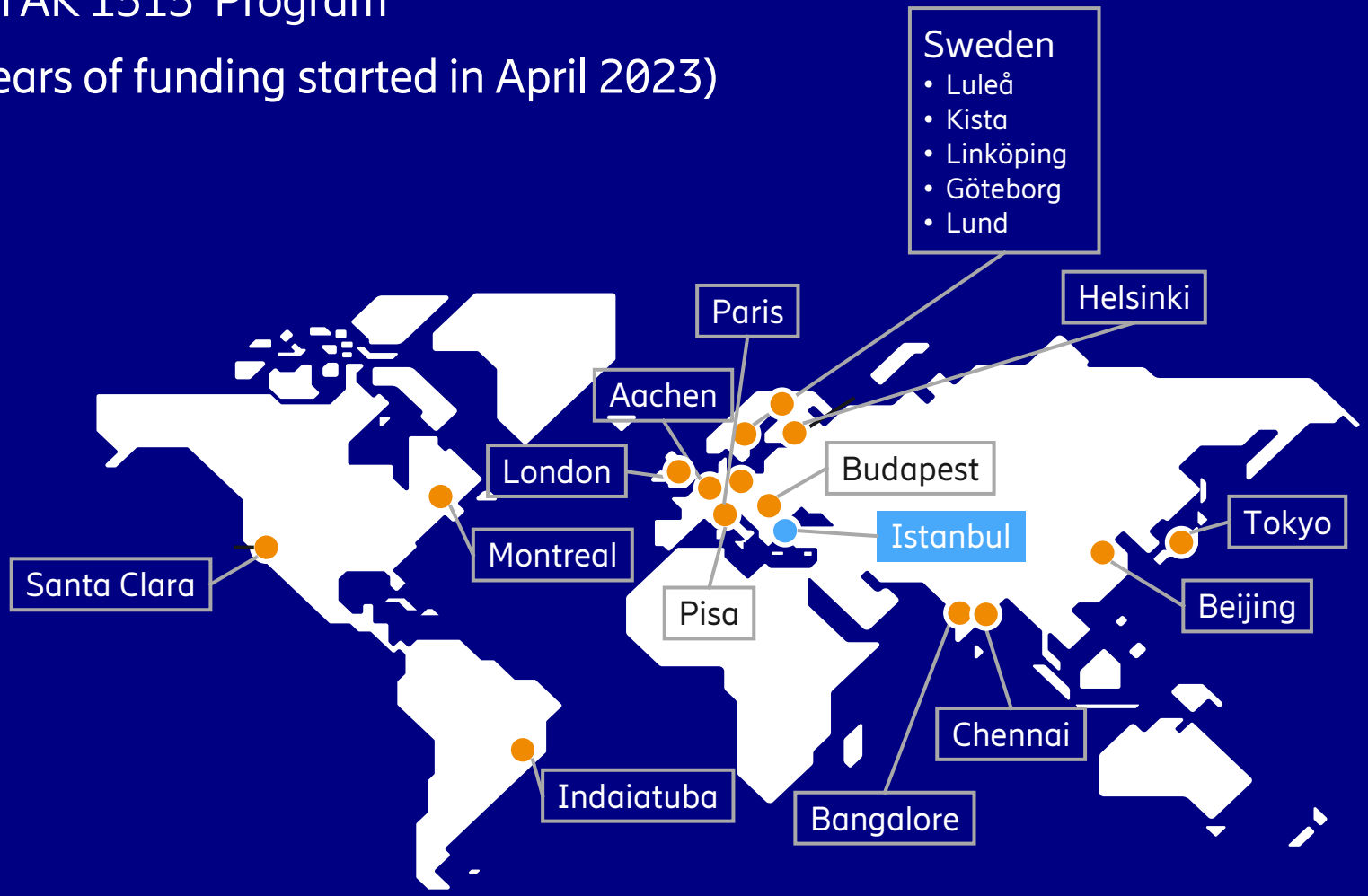
Leading research in our industry's technologies.

Collaboration with leading universities and industries.

# Ericsson Research in Türkiye – ONE of 14

Established in 2018 with the support of TUBITAK 1515 Program

(+5 years of funding started in April 2023)




**~50%**
PhDs

**14**
Countries

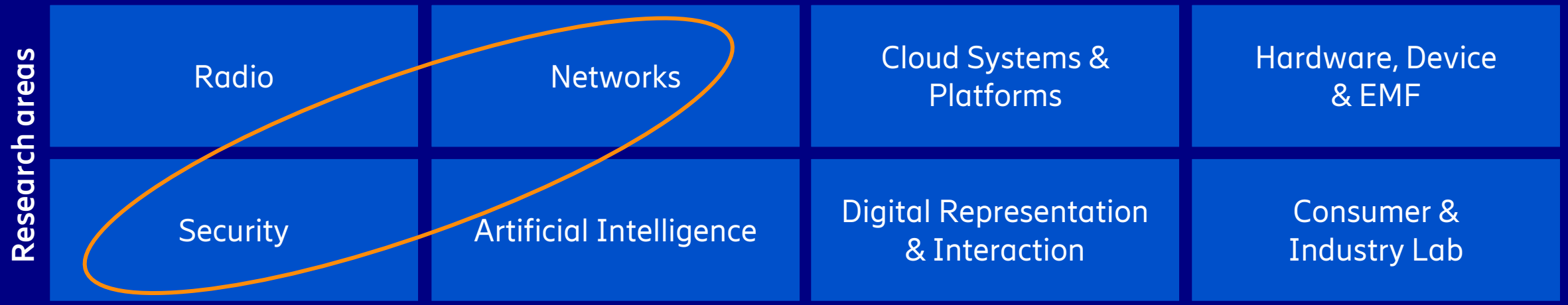
**750**
Employees worldwide

| ER Türkiye | |
|---|---|
| 21 Researchers | ~60% PhDs |

# Ericsson Research (ER) – In Türkiye (ER TR)

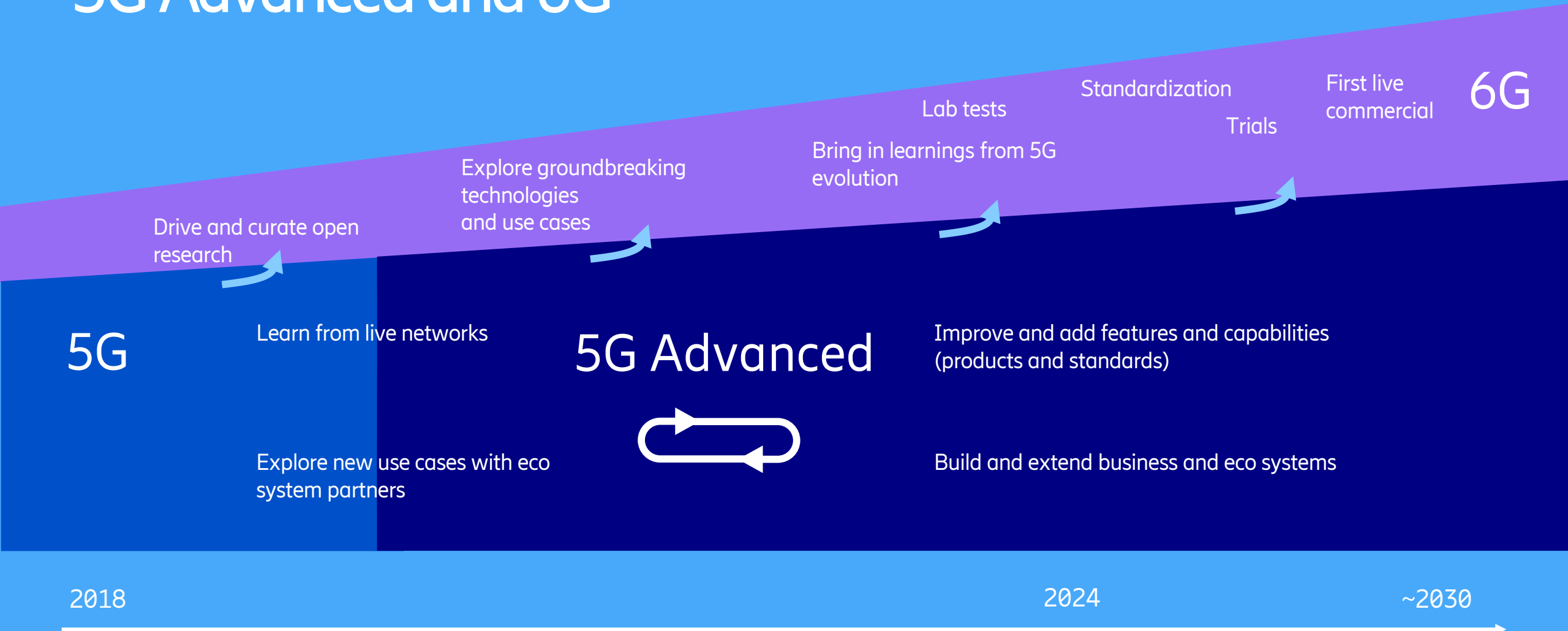
**Mission:**
Creating the full value of connectivity through world-leading research

**Vision:**
Empowering an intelligent, sustainable and connected world by relentlessly innovating technologies that are easy to adopt, use and scale




ER is developing new technologies and system concepts that will shape the industry in 5 to 10 years time.

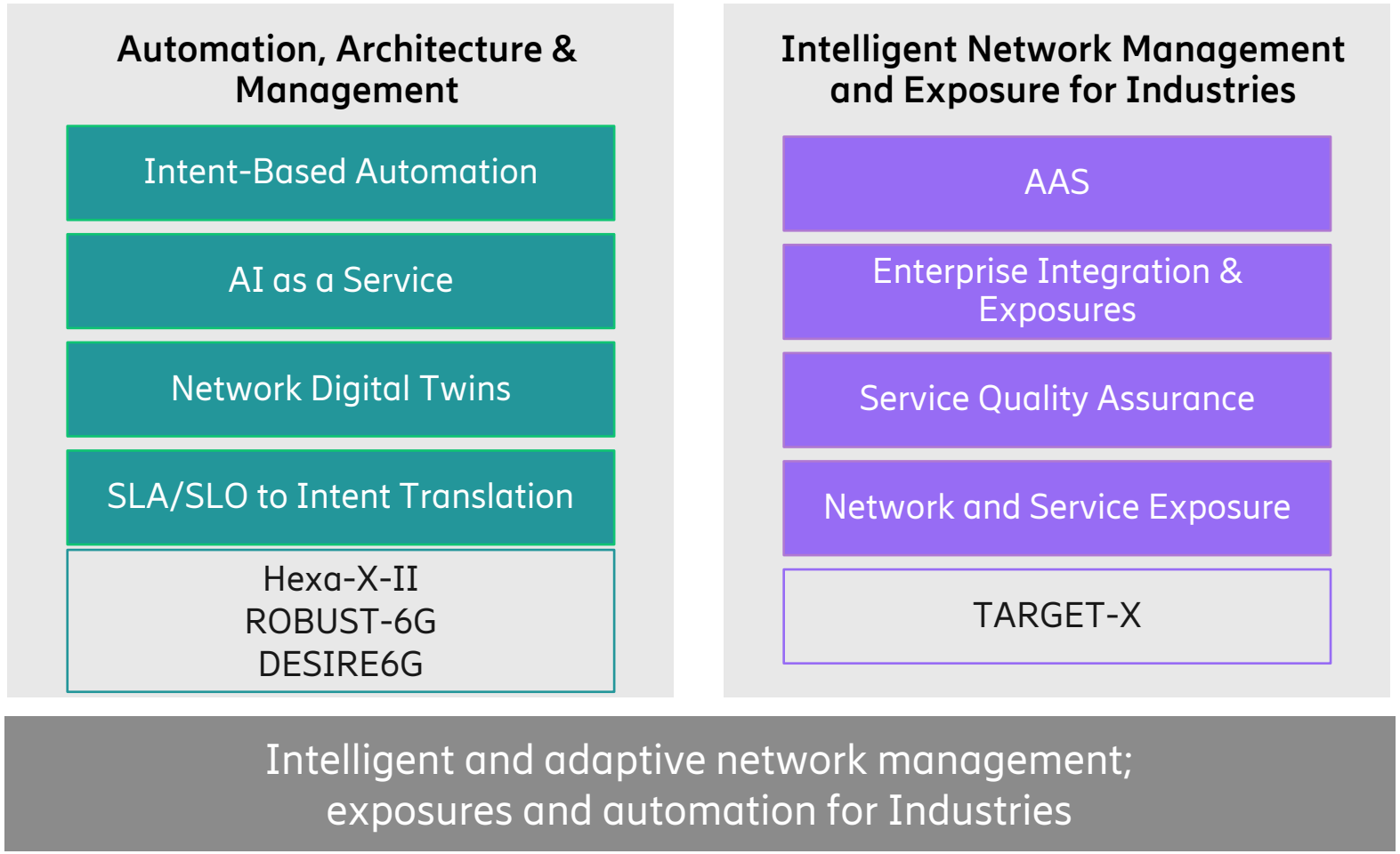
# Evolution and long-term horizon
# 5G Advanced and 6G



# ER Security Turkey Team Focus Areas

| Trustworthy AI/ML | AI/ML for Security | 6G Security | Secure Industries | Other topics |
|---|---|---|---|---|
| Privacy Preserving Collaborative ML | ML-based detection of attacks (i.e., DDoS) | Physical Layer Security | Security of 5G Private Networks | Standardization 3GPP SA3 |
| Security of AI-driven 6G use cases (i.e., D-MIMO, RIS) | AI-driven security automation | 6G Threat Analysis | Security/Privacy of XR & Digital Twins | Wireless System Security (Jamming, False Base Station) |
| XAI for Security, Security for XAI | ML-based Software Vulnerability Prediction | Security Intent Handling | Digital Twin enabled Sec. Automation | O-RAN Security |
| | | Sec./Privacy of AIaaS | | |
| | | ROBUST-6G, Hexa-X II, 6GTWIN | | |

# ER Networks Turkey Focus Areas



# Ericsson Research Activities in Türkiye

Leading role in 6G

Collaboration with Innovation Ecosystem

Teaching & thesis supervision

EU-funded projects

IPRs & publications in top journals

Presentations at top venues

Standardization contributions

Research outputs contributing to products

# EU Projects of Ericsson Research in Türkiye

2020

**Hexa-X**
6G vision and intelligent fabric of technology enablers connecting human, physical, and digital worlds

2022

**VERGE**
AI-powered evolution towards open and secure edge architectures

**DESIRE6G**
Deep programmability and secure distributed intelligence for real time end-to-end 6G Networks

**HEXA-X II**
6G Systemization

**TARGET-X**
Trial platform for 5G evolution cross-industry on large scale

2023

**ROBUST-6G**
Smart, Automated, and Reliable Security Service Platform For 6G

**6GTWIN**
AI-native reference architecture for 6G systems that incorporates Network Digital Twins

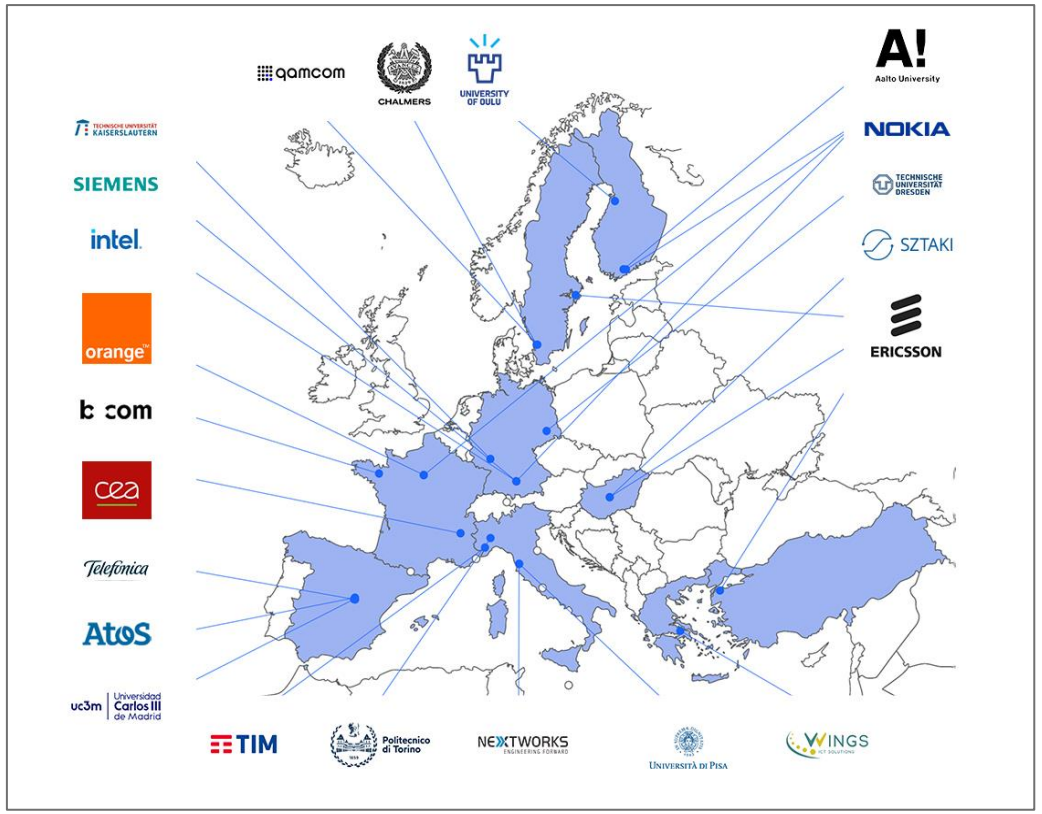
**6GPHYSEC**
Physical layer security for trustworthy and resilient 6G systems

Total Grant: € 2 Million

# Hexa-X and Hexa-X II 6G Flagship Projects of EU

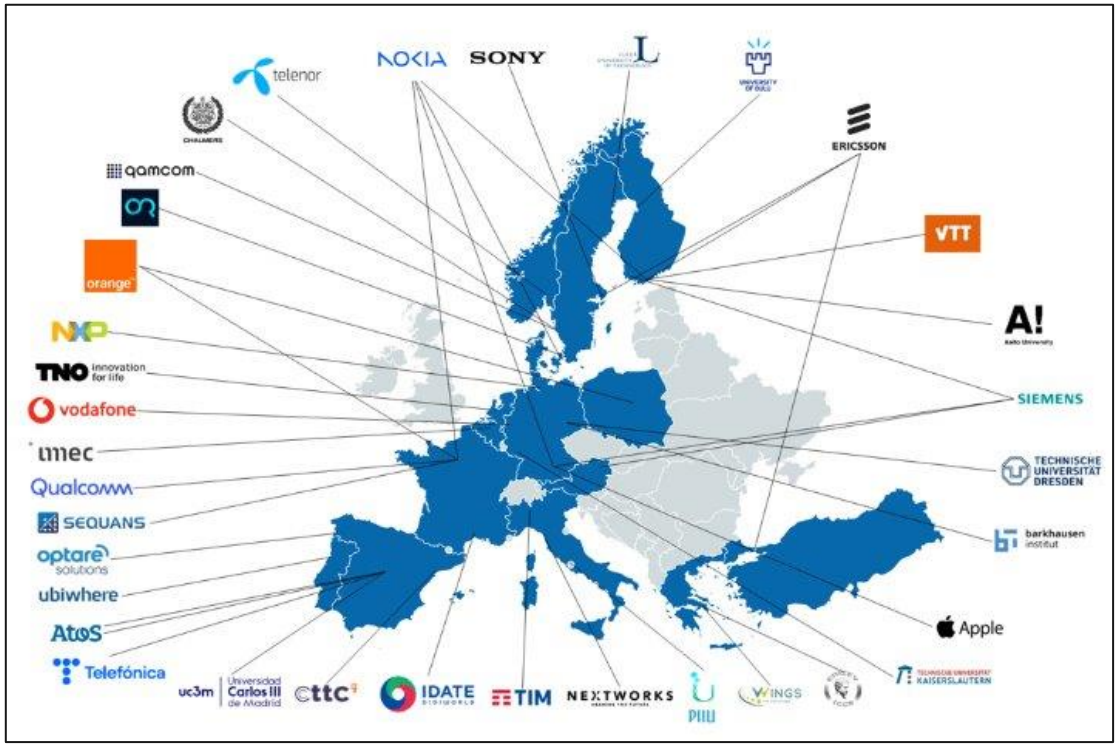
## Hexa-X

6G vision and intelligent fabric of technology enablers connecting human, physical, and digital worlds




## Hexa-X II

E2E 6G network platform and system design for novel 6G services



# Smart, Automated, And Reliable Security Service Platform For 6G

**Project Coordinator:**

- Ericsson Türkiye

**Technical Management Committee**

- University College Dublin (Lead)
- Universidad de Murcia
- Universita Degli Studi di Padova

**Duration:**

- 01/01/2024 – 30/06/2026

**Total Budget:**

- 4.201.741,25 EUR

# Motivation


## Convergence of digital and physical worlds

- 6G aims to create seamless interactions between digital, physical and human worlds
- Demanding use cases such as massive digital twinning, autonomous mobility and mixed reality

## Complexity in management and operation

- The anticipated programmability and adaptability of 6G networks come with increased complexity in management and operation
- Demands full automation of network and service management

## Expansion of threat landscape

- The expansion of the 6G threat landscape introduces new cybersecurity challenges that need to be addressed to protect services, infrastructure, and data

# Context

## AI/ML Integration

- The native use of AI/ML across the network is crucial for automating decision-making, enhancing performance, achieving zero-touch automation, and ensuring end-to-end security.

## Data Management and Privacy

- Efficient data management solutions are necessary to support AI-driven processes.
- Ensuring privacy and security of data, especially in AI systems, is a significant challenge.

## Trustworthiness and Robustness

- Trustworthiness in AI solutions is prioritized.
- Policymakers advocate for a human-centric approach focusing on transparency and explainability in AI/ML systems

## Energy Efficiency

- Promoting green and sustainable AI methodologies is essential to minimize energy consumption while maintaining performance in AI-driven security functions.

# Project Scope and Objectives

data-driven, AI/ML based security solutions

zero-touch network and service management (ZSM)

fully automated end-to-end smart network and service security management framework

ROBUST-6G

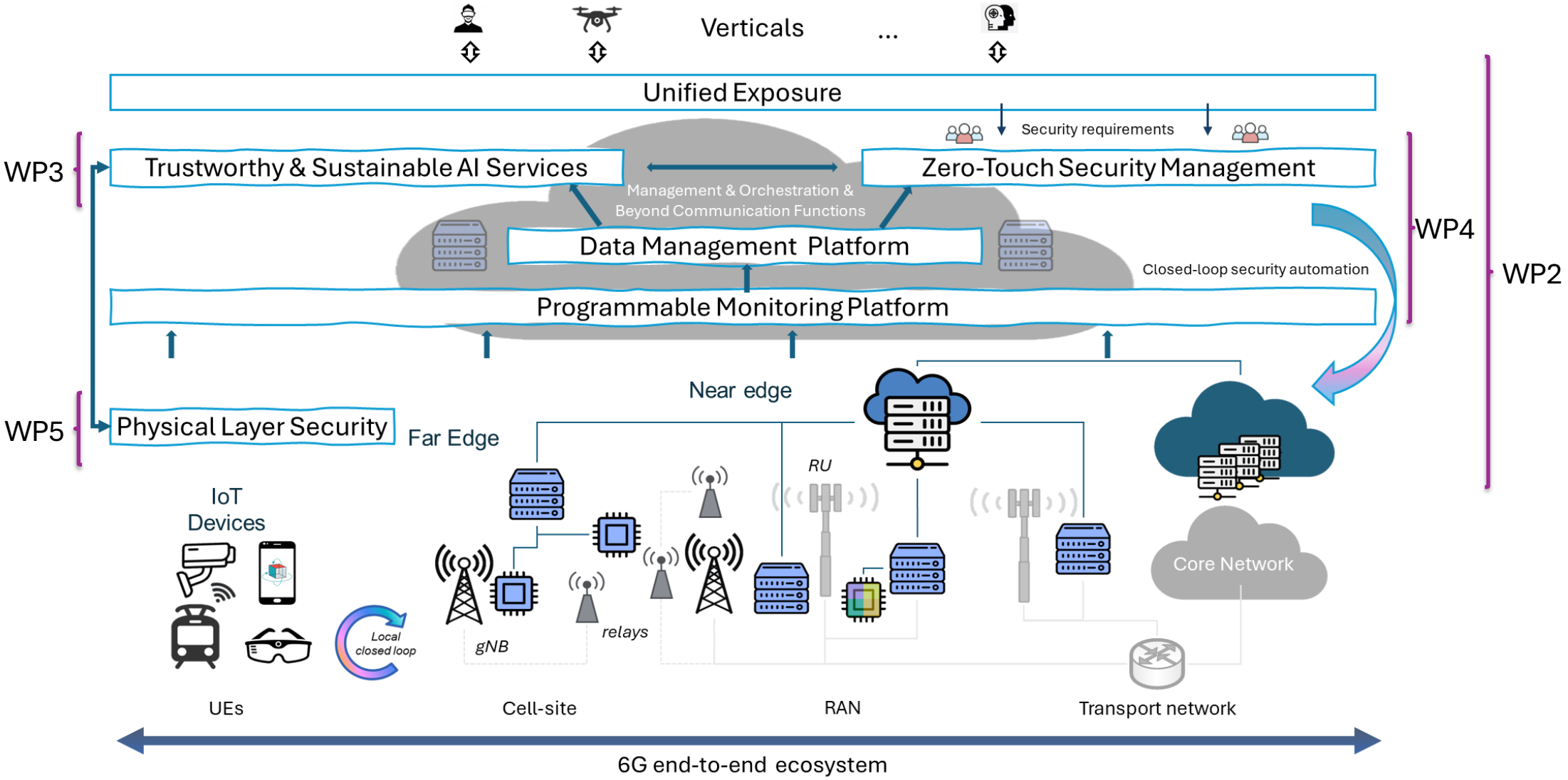
the security and robustness of distributed intelligence

privacy enhancements, and transparency by elaborating the explainability in AI/ML.

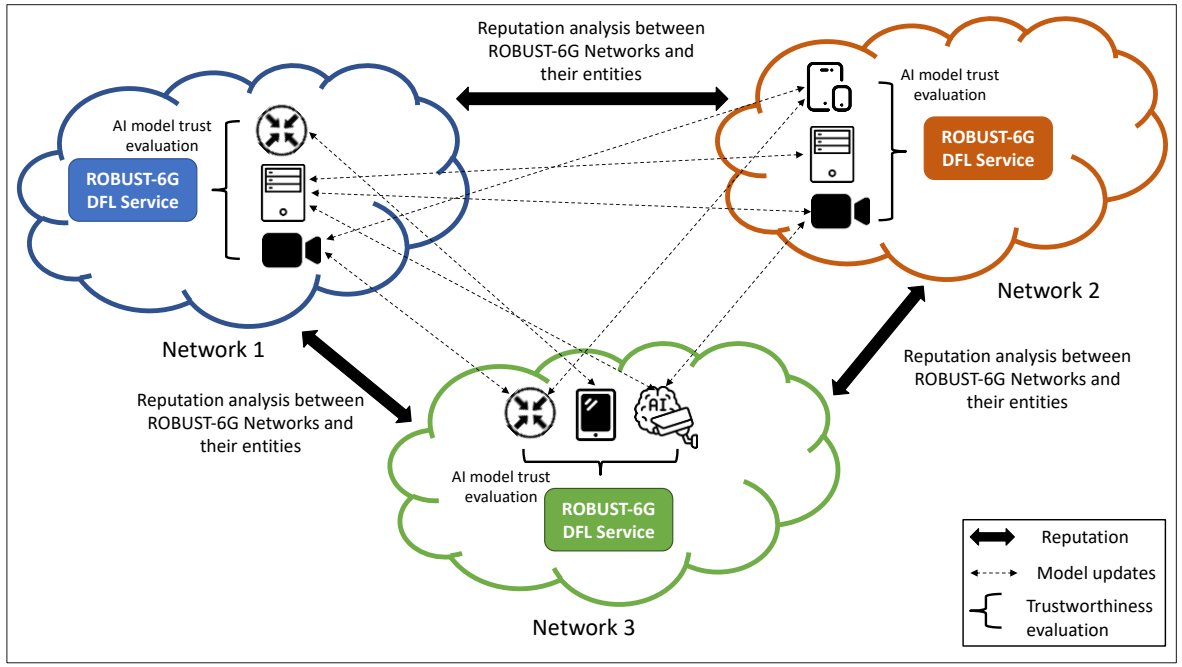
green and sustainable AI methodologies to optimize the computation requirements

trustworthiness and resilience of 6G Radio with PLS

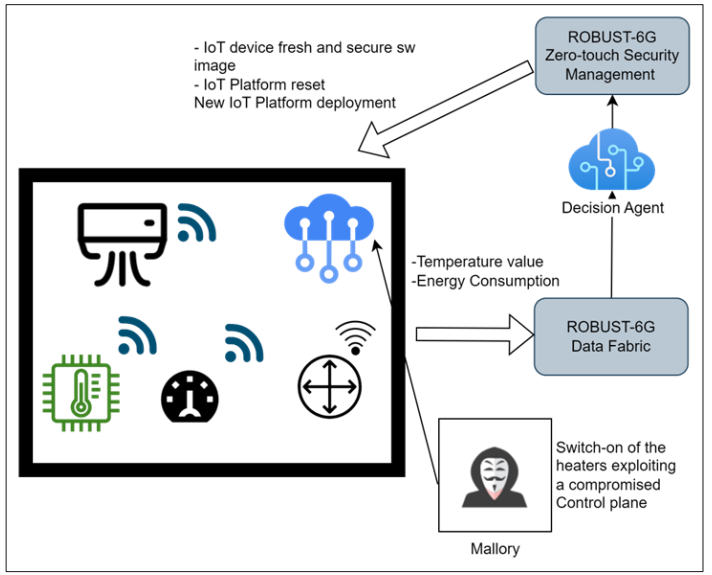
# ROBUST-6G High Level Architecture



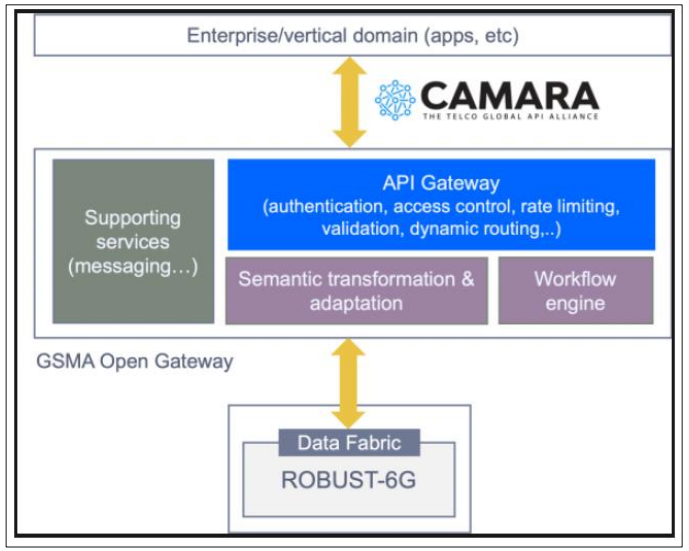
# ROBUST-6G Demonstrators




*Use case 1: AI Model Trustworthiness Evaluation in 6G Distributed Scenarios*




*Use case 2: Automatic Threat Detection and Mitigation in 6G-Enabled IoT Environments*




*Use case 3: Security Capability Exposure via NetSecaaS*

# Future Collaborations

## HE Cluster 4

Human and Data Destinations

## HE Cluster 3

Cybersecurity Destination

## HE SNS JU

All 2025 Calls

## HE MSCA

Doctoral Networks

Post Doctoral Fellowship

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gunes.kesik@ericsson.com