Towards 6G
What’s needed in terms of software technology evolution?

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Imagine a seamless reality
A safer and more sustainable world

- Massive amounts of small zero-energy sensors and actuators of various rates
- Joint communication and sensing
- Real time and very low latency
- Secure and reliable communication
A personal concierge cloud

- Security, privacy, processing in cloud
- Automatic personalization of surroundings
- Personal intent management
A more authentic communication between people

- Advancements in devices (AR glasses, contact lenses, haptics...)
- High bandwidth and cell density (when used at scale)
- Edge compute and spatial mapping
2030 scenarios

The Internet of Senses

Connected intelligent machines

Connected sustainable world

Digitalized and programmable physical world

Limitless connectivity

Trustworthy systems

Cognitive network

Network compute fabric

6G network platform

Human and society needs

Fundamentals of a 6G network platform
Connecting a cyber-physical world

The network platform provides intelligence, ever-present connectivity, and full synchronization in a cyber-physical continuum.

Countless sensors embedded in physical world send data to update the digital representation in real time.

Actuators in the real world carry out functions that is programmed in the digital representation.

Digital world

Cyber-physical continuum

Physical world

Connected intelligent machines

Internet of senses

Connected sustainable world

Observe and act in real-time

Trace back and analyze

Past

Future

Simulate, predict and program
6G technology areas

Cost-efficient and sustainable solutions

- Extreme performance and coverage
- Enhanced end-to-end connectivity
- Network adaptability
- Cognitive networks
- Network compute fabric
- Trustworthy systems
- Embedded devices everywhere
- Joint communication and sensing
- Extreme performance and coverage

- Joint communication and sensing
- Enhanced end-to-end connectivity
- Network adaptability
- Cognitive networks
- Network compute fabric
- Trustworthy systems
- Embedded devices everywhere
Software enablers needed

**Software to support CI/CD Operations and software life-cycle**
- Automated DevOps and DataOps Pipelines
- Software solutions to enable AI and self learning
- Software for resilient and secure end-to-end systems
- Software enablers for data driven development
- Heterogeneous multi-layered distributed software systems

**Software technologies to support Run-Time**

**Software tools for code Design, test design, analysis and quality assessment**
- Core and emerging software and compute paradigms
- Tools to aid development efficiency and simplify implementation of complex software systems