

# Delivering Powerful 6G Applications that will Drive Future Innovation



## Multi-Sensory Extended Reality (XR)

Innovative collection of immersive technologies that include Artificial Reality (AR), Mixed Reality (MR), and Virtual Reality (VR) online sports and gaming, coordination for remote team operations, and interactive classrooms.

- Ultra-realistic interactive sports
- Immersive gaming/entertainment
- Digital Twins
- MR co-design
- MR telepresence
- Immersive education
- High-speed connectivity to aerial vehicles

User interface depends on high-fidelity pictures (8K, 16K, 3D displays) e.g., holographic imaging, and ultra-sensitive and responsive interactions between the user and controlled objects.



## Distributed Sensing and Communications

Sensors tightly integrated with communications to support autonomous systems. Markets include health care, agriculture, and environmental/public safety.

- Remote data collection
- Untethered wearables and implants
- Addressing quality, availability, and adoption to eliminate digital divide
- Public safety applications
- Synchronous data channels for sensors
- In-body networks for health care

Ubiquitous connectivity with options such as massive throughput and ultra-low power operating modes from network providers and device manufacturers.

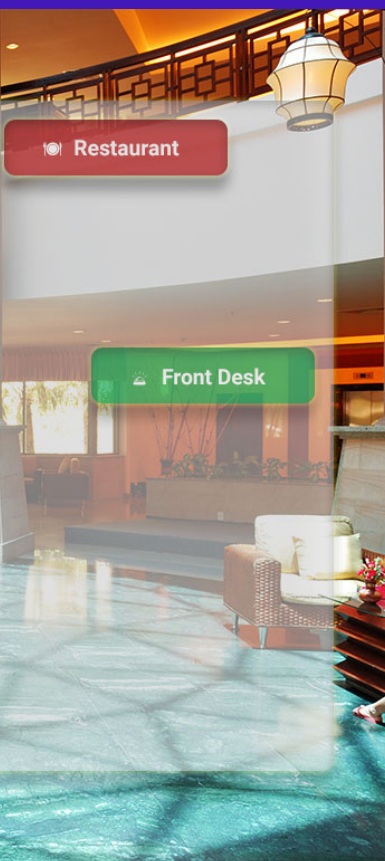


## Network Enabled Robotics and Autonomous Systems

Network enabled and connected systems perceive their surroundings using sensors such as GPS, light detection and ranging, sonar, radar, camera, and odometry. Includes cooperative service robots and field robots.

- Online cooperative operation among a group of service robots
- Field robots for hazardous environments
- Robot sensing systems
- Other critical role needs

Enabling robotic and autonomous systems to interact with humans in natural ways and to make decisions necessary to assist or support a set of tasks utilizing communication services.



## Personalized User Experience

Real-time, fully automated, and secure personalization of devices, networks, products, and services for applications such as shopping, air travel, education and learning.

- Personalized leisure and travel experiences
- Personalized shopping experiences
- Personalized learning education experiences
- Management of user-oriented security and privacy
- Situational context of user to deliver personalized user experience (UX)

Automating real/pseudo-real time secure personalization of applications based on user's profile and situational context.

