ANTENNA SYSTEMS
- Multielement antennae for vehicles connected with technology based on beamforming
- Data modulation for WiFi devices to communicate with non-WiFi devices
- IoT mesh networks with low-power radios
- Management of interference in communications and information processing

SDN/NFV RADIO ACCESS NETWORK
- Signal protocol models to improve efficiency in handover mechanisms via a software-defined network (SDN)

EHEALTH
- Serious games for remote rehabilitation
- Devices for low-cost, remote cardiovascular monitoring
- Image processing to diagnose anterior cruciate ligament injuries in the knee and to identify and characterise epigastric perforators
- Differential diagnosis in patients with Parkinson’s disease using biomechanical tests
ENERGY EFFICIENCY
- Algorithms for energy optimisation for 5G networks
- Low-cost radiofrequency (RF) links with low energy consumption

SATELLITE COMMUNICATIONS
- Improved geolocation for shared vehicles in critical areas of the city through Galileo

NEW PROCESSORS
- Efficient processors for intelligent computing systems that can carry out cognitive functions
- Faster processors with lower energy consumption for artificial intelligence and automatic learning

NEW ARCHITECTURES
- Architectures and technologies for the control and management of virtual infrastructure resources for the optimal supply of end-to-end services
- Optimisation of massive multiple input multiple output (MIMO) communications
- Miniaturised, wireless graphene antennae that can operate in the terahertz band
CYBERSECURITY
- Algorithms to detect cyber-physical attacks
- Intrusion detection system (IDS)/intrusion prevention system (IPS)
- More efficient, safer hardware security systems for memory devices (memristors)

COGNITIVE NETWORKS
- Advanced management and control system for 5G networks

APPLICATIONS
- Industry 4.0
- Digital economy
- Data science
- Internet of everything
- Mobility
- Sustainability
- Health
- Artificial Intelligence
- Smart agriculture
- Blockchain
- Cloud
- Automation systems