What are the expectations for 6G?

**2030s operation target**

- **Enabling societal value and innovation**
- **Support societal requirements**
- **Satisfy operational necessities**

**2020s 5G field operation**

- 5G Standalone Architecture
- Networks cloudification
- Networks disaggregation
- Edge computing

Feedback
6G possible technological disruptions

- TeraHertz spectrum (100 GHz - 3 THz) *
- Radio sensing and imaging
- Zero-energy devices *
- Reconfigurable intelligent surfaces to control propagation *

- AI to optimise the performance of all network elements, including the physical layer *

Some applications for 6G

- advanced industrial and robotics applications
- more immersive communication / communication of the five senses
- massive twinning

* currently investigated by Orange
6G for sustainability

Need to build a technology enabling services that will provide value to the Society, particularly towards the green and digital transition.

Need for reinforced collaboration between ICT and various sectors (e.g. Energy, Industry, Agriculture) to identify these services and related technical capabilities.
Sustainable 6G

Need to define 6G societal requirements, to be considered with the same importance as performance requirements.

Research challenges to define indicators and tools to evaluate them, and technical solutions pushing the limits of technology in these directions.
Operational necessities

- Flexibility
  - for upgrades, to support new needs
  - to set trade-offs according to operators needs

- Ease of operation
  - Automation, AI
  - Full system monitoring

- Economical sustainability

- Trustworthiness
Conclusion: 6G development stakes

- Orange has the high-level objective for 6G to provide value to the society, being environmentally and economically sustainable.
- We need to identify **target services bringing value to the society** to guide the technology development.
- **Societal requirements** need to be defined in addition to performance requirements.
- **Technical solutions** need to be designed to meet performance **AND societal requirements**.
- A dialogue with the society at large is necessary all along the future technology development to collect needs and feedback, and ensure correct public information.
Thank you