30 In 2020, we...

# **Innovated together** to explore different uses of 5G

Businesses have much to gain from 5G, which is why we work closely with them to develop new ways of using this ultra-fast network.

### **Smart Ports**



**Partner: Port of Antwerp** 

Project: Orange Belgium worked with a group of partners at the port of Antwerp—the second largest port in Europe—to set up a campus with the country's first large-scale stand-alone 5G network.

### Trial 1

→ Improve towing efficiency by enabling the port authority to analyze real-time information from a 360° HD camera and radars on vessels and the quay.

# Trial 2

→ Facilitate critical communication for petrochemical professionals with 5G smartphones and test out an alert solution to locate people in the event of an incident.

Enable site inspections where operators can use a tablet or smart glasses to connect in real time to a large amount of technical data and videos, including 3D visualizations of the facilities.

### Sports entertainment



**Project: An official partner** of the French Open for almost 20 years, Orange offered spectators a unique experience in 2020.

Using 5G to broadcast a multiplex video stream so that spectators could watch center-court matches live or on demand without ever missing a ball (zoom, slow motion and a range of camera angles).

# Trial 2

Livestreaming an interview recorded for a France Télévisions program using mobile recording equipment connected to 5G.

### Trial 3

→ Providing Oppo Find X2

# **Smart Ports**



**Project: Orange Spain plays** a leading role in several 5G collaborative innovation pilot projects funded by the Spanish government, such as a project in Galicia, where several partner companies, including Orange Spain, have formed a temporary business alliance to design future network applications together.

→ Implement a maritime surveillance system using drones and intelligent video technology to detect unauthorized activity and send alerts in real time Trial 2

Monitor access to the fish market using a facial recognition system.

# Industry 4.0

Partner: Schneider Electric, a leading specialist in the digital transformation of energy management and automation

Project: Trialing augmented reality to make life easier for maintenance technicians and a mobile telepresence robot for remote site visits at the Vaudreuil factory (Normandy,

## Trial 1

→ Provide maintenance operators with access to an augmented reality app on 5G-compatible smartphones to superimpose real-time data or virtual objects on a machine or the entire factory. The app also cuts machine downtime, speeds up maintenance work and reduces human error.

→ Use 5G networks to control a telepresence robot equipped with a very high quality video camera, the ultimate goal being to organize remote site visits, minimize the number of journeys and, in turn, reduce the factory's carbon footprint.

# Industry 4.0

Partner: LACROIX Group, an international technological equipment supplier

Project: Trialing 5G applications as part of the Symbiose project to design the electronics factory of the future in

Adapt the factory and organize the machines to suit production using a reliable and flexible wireless connection.

> Enhance quality control by taking high-resolution photos of electronic processes so they can be checked in real time by error detection algorithms.

→ Accurately measure the real-time temperature and humidity within areas producing circuit boards—for the aviation industry for instance—to avoid excessive energy use.

# Transport

Partner: Helicus, a Belgian start-up specialized in medical transport by drones

Project: Planning for and securing drone fleets delivering medical equipment (supplies, laboratory samples, etc.) in Belgium.

## Trial

→ Maintain a video connection established by drones controlled from the ground and/or hospital and transfer video footage using a reliable, very high-speed 5G connection with minimal delays.



Pro 5G smartphone users with a 360° immersive video experience to follow matches on the Suzanne Lenglen court, enabling them to watch close-up angles around the

Orange 2020 Integrated Annual Report