



**Tehnologia de mâine  
este astăzi aici**

**5G Lab**



# The most innovative thing about 5G is what we'll do with it

Orange Group is developing 5G in three key areas

## Improving mobile broadband for new immersive experiences

- significantly increase the performance of Cloud services
- enable 360° immersive experiences (AR & VR)
- provides average speeds 3 to 4 times faster than those of 4G

## Transformation of businesses and society

- new capabilities to massively connect objects using AI
- improve productivity through automation
- develop the future of mobility (autonomous transport)

## Alternative solution for fixed broadband access

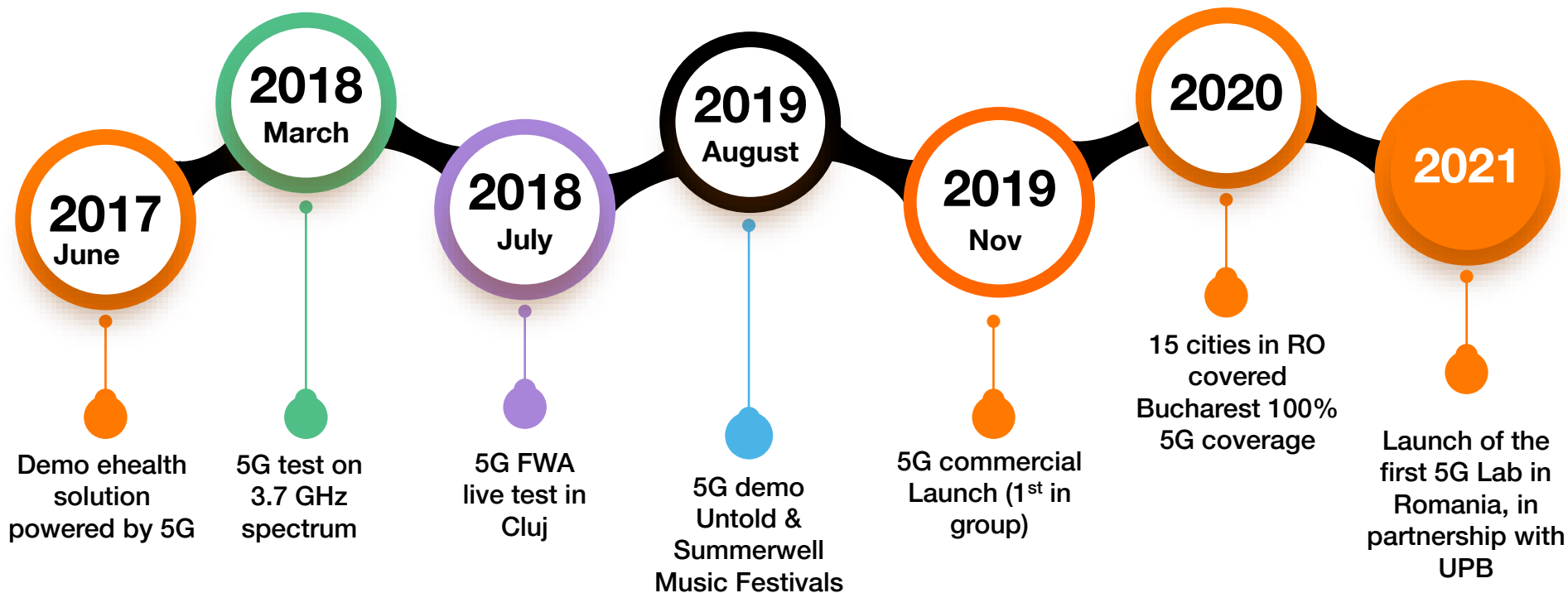
- new frequency bands with capabilities similar to fiber optics
- an alternative for places where fiber cannot be deployed

# Why we invest in 5G

5G represents at the same time a evolution and a revolution

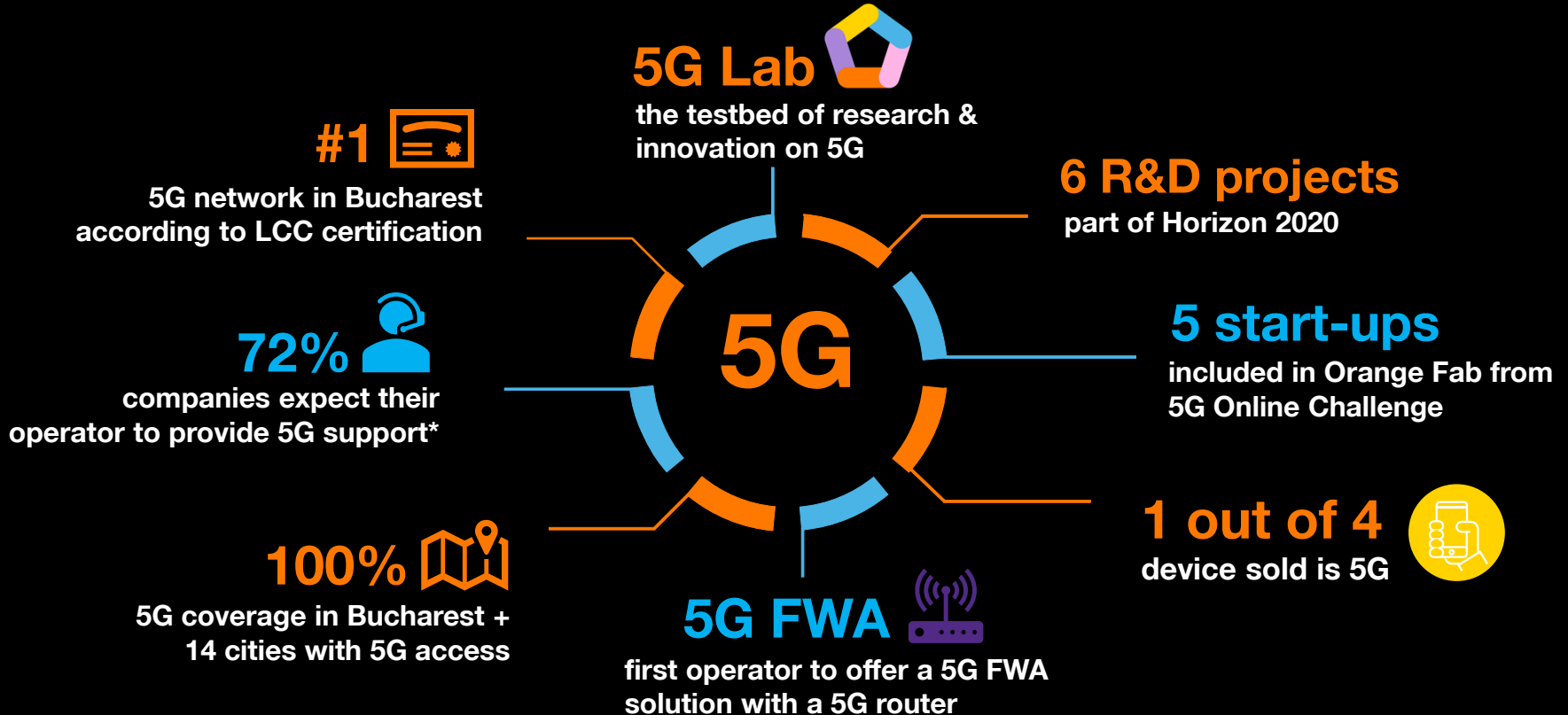
Evolution of the mobile network	<ul style="list-style-type: none"><li>▪ new 3GPP standard</li><li>▪ new terminals 5G compatible</li><li>▪ additional spectrum for new coverage</li><li>▪ new core architecture</li></ul>
5G revolution coincides with technological transformation	<ul style="list-style-type: none"><li>▪ new antenna systems</li><li>▪ network virtualization</li><li>▪ edge computing</li><li>▪ programmable networks</li><li>▪ full slicing capability</li></ul>
Open RAN and Open CORE	Contribute to the virtualization of the functionality of the radio network or the core network
Green technology	<ul style="list-style-type: none"><li>▪ better power consumption vs. 4G</li><li>▪ spectral efficiency</li><li>▪ IoT applications to better manage resources</li></ul>

# Orange Romania Journey to 5G



# 5G ecosystem

Research, innovation, network development and usage



# Holistic approach to innovation

# 1

Research and  
**innovation** projects

6 years

4.1m € funding for EU

- Two new R&D projects part of Horizon 2020: **5G ASP & VITAL-5G**
- **6 research - innovation projects** on Horizon 2020, 4 of them with 5G-PPP
- **30 PhD graduates and students** working at ORO

# 2

Orange **Fab**  
initiatives

4 years

900k € investment

- support star-ups to develop innovative products & solutions
- **30 start-ups** included in Orange Fab
- Start-up calls: Cities of the Future, 5G Online Challenge

# 3

Orange **Educational**  
Program

18 years

1.1m € investment

- Partnerships with universities to familiarize future graduates with **5G**, Wi-Fi6, virtualization, IoT & cybersecurity platforms
- 40% from Orange technical team has graduated Orange Educational Program

# 5G Lab. What it is

an international Orange program **targeting academic research labs, start-ups, SMEs and large companies** that design, develop and use innovative 5G services and solutions.

in Romania, the 5G Lab is developed **in partnership with the UPB CAMPUS Research Institute** and reaches **a 500K euro investment**.



a **co-innovation** program to demonstrate **the utility and the benefits of 5G** through **break-through use cases**



a **dedicated location** on the **CAMPUS** premises



an **open framework, free of charge, with no commitment** beyond the **joint experiments** that are carried out



a **lab with the latest 5G technologies**