

PROJECT "House of Emerging Technologies - Municipality of Bologna" (CUP F39I22001840004)

## COBO ACCELERATOR

### Annex 2 - Asset and skills

#### **Extended reality (Augmented & Virtual Reality):**

- Visors for developing and testing applications based on extended reality technologies (*Meta Quest 2, HTC vive Pro, Hololens 2, other devices TBD*);
- Platform made available by TIM Extended Reality for Virtual / Augmented reality projects

#### **5G networks:**

- Platforms connecting devices to the 5G network for remote control
- Public 5G network outdoor on CTE spokes and indoor at 7 sites
- Instruments for 5G electromagnetic field measurements
- Open-source standalone 5G network operating in sub-6 GHz bands
- Low Power Area Network Connectivity - NB-IoT

#### **Additive Manufacturing:**

- 2D large area and unconventional substrate printing platforms:
- Micro-nano fabrication platform
- Polymeric 3D printers
- SLM 3D printers for metal powders

#### **EDGE / cloud computing:**

- Infrastructure with Edge/Cloud computing resources
- Quantum Key Distribution
- TIM Urban Genius Platform for Smart Cities and Innovative Urban Services
- SIM Management Platform - TIM M2M Smart and NB IoT

#### **Artificial intelligence:**

- Applications and platforms for managing and deploying AI solutions

#### **Electronics:**

- Platforms for electrical and mechanical characterisation of substrates, materials, fabrics, and

sensors

- Electron microscopy platform
- Atomic force microscopy platform
- Optical spectroscopy platform
- Instrumentation for 3D scanning and georeferencing of the acquired data consisting of: a) Leica RTC360 long-range laser scanner; b) Leica BLK2GO handheld laser scanner; c) Leica Geosystems "Pegasus: Two Ultimate" mobile mapping platform; Leica TS13 Total station; Leica GS18 (base+rover) GNSS RTK unit.
- 77 GHz radar for centimetric location of objects and people

### HPC (High Performance Computing):

- Quantum Machine
- Access to Pre hexascale supercomputer "LEONARDO"
  - 3456 Booster module nodes
  - 1536 General Purpose module nodes
  - 980 nodes equipped with:
    - 2x16 cores IBM POWER9 AC922 at 3.1 GHz
    - 4 x NVIDIA Volta V100 GPUs, Nvlink 2.0, 16GB
    - 256 GB RAM
  - 554 nodes equipped with
    - 2 x 24 cores CPU Intel CascadeLake 8260
    - 384GB RAM

Divided into:

- 340 standard nodes ("thin nodes") 480 GB SSD
- 180 data processing nodes ("fat nodes") 2TB SSD, 3TB Intel Optane
- 34 (visualisation "viz") GPU nodes with 2x NVIDIA GPU V100