

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

COBO OPEN INNOVATION - Call 4 Tech & Solution - Second Edition

Annex 3 - 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