



CIPS

Capital Innovation Point Serbia



Deliverable title:	Presentation of infrastructural capabilities
Deliverable No.	D2.2.
Submission date:	30.04.2025.
Version:	1.1.

Project Information

Project 101191422 — CAPITAL INNOVATION POINT SERBIA - CIPS

Call: DIGITAL-2023-EDIH-04

Topic: DIGITAL-2023-EDIH-04-ASSOCIATED

Lead partner: Science Technology Park Belgrade

Start of the project: 01/11/2024

Duration: 48 months

Deliverable Information

Deliverable Title	Presentation of infrastructural capabilities
Deliverable No.	D2.2
Due time	6
Submission date	30.04.2025.
Dissemination level	Public
Version	1.1

Lead author/s	Srđan Simović, Milorad Stojanović, Jelena Ilijevski
Contributors	Zoran Đorović
Feedback	All partners
Reviewed by	Coordinator, Monitoring and Quality Assurance Manager (CCO/QM)

PRESENTATION OF INFRASTRUCTURAL CAPABILITIES

No.	Partner name:	Role:
1	SCIENCE TECHNOLOGY PARK BEOGRAD	Lead partner
Laboratories, communication and computer equipment		
STP Belgrade has three innovation laboratories equipped with state-of-the-art technology for prototype development and/or final product manufacturing: • 3D Innolab: • Equipment for 3D modeling and prototype development • Equipment for measuring electrical parameters • Laser & UV Innolab: • Laser cutting and engraving machines, UV printer, UV Innolab • CNC Lab Digital services and access to subscriptions on various platforms such as Amazon, Intercom, HubSpot, and others are also available. Additional equipment (for communication, etc.): • Equipment for live and online meetings and conferences		
Spatial facilities		
16,000 m² of office space, which includes: • Coworking area • Meeting rooms • A modular conference center covering approximately 500 m², with a capacity of up to 200 seats		
Professional staff		
User support throughout the use of infrastructure facilities		

No.	Partner name:	Role:
2	NALED	Partner
Laboratories, communication and computer equipment		
Communication and Video Conferencing: • MS Teams • Zoom • Web cameras • Microphones • Sound system • Audio distribution Computer Equipment: • Laptops (100 units) • Monitors (30 units) • Internet Wi-Fi networks, Ethernet cables Presentation Equipment: • LCD TVs (5 units) • Projector • Flipchart • Whiteboards Printing and Audio Equipment: • Printers (12 units)		
Spatial facilities		
• An event lab with two rooms, each with a capacity of 24–60 people (Lab Room 1 and 2) • Two small meeting rooms, each with a capacity of 10–16 people (Small Room 1 and 2) • A space specifically adapted for organizing events, trainings, webinars, and meetings, with a total area of 300 m², including 153 m² of conference, training, and meeting rooms, and 50 m² of technical rooms • Through regional and local partner organizations, NALED can provide venues for training sessions and other activities at the local level, practically in any municipality in the Republic of Serbia		
Professional staff		
Engagement of 7 employees (part-time), and external associates as needed		

No.	Partner name:	Role:
3	SCIENCE TECHNOLOGY PARK NOVI SAD	Partner
Laboratories, communication and computer equipment		
• Laboratory for 3D Printing and Scanning, equipped with multiple 3D printers (Prusa MK4S, Prusa Mini, Prusa SLS1, Bambulab X1C, and Bambulab P1P) and a 3D scanner (MatterForm). • Laboratory for Laser Processing (Laser Cutter SR4060). • Virtual Reality Equipment (HTV Vive and Oculus QUEST 2). • Educational Equipment and Infrastructure: Laboratory for Active Learning and Training (DEAL), equipped with Siemens Teamcenter software. • Equipment for Robotics and Autonomous Systems Development: autonomous robots with AI support (Mecabot Nano and NVIDIA JetRacer).		
Spatial facilities		
20,000 m² – including: • Amphitheater (220 seats) • Conference Room (65 seats) • Meeting Room 1 (40 seats) • Meeting Room 2 (30 seats) • Presentation Room (20 seats) • 4 small meeting rooms		
Professional staff		
Engagement of 3-4 full-time employees (part-time), with external associates engaged as needed.		

No.	Partner name:	Role:
4	FACULTY OF TECHNICAL SCIENCE NOVI SAD	Partner
<i>Laboratories, communication and computer equipment</i>		
• Laboratory equipped for testing with: • Power up to 15 kVA, including PV emulator, electronic load (e-load), and various battery systems • SCADA monitoring system for FTN microgrid monitoring, as well as a web SCADA system • Own microgrid, functioning as a smart grid, enabling advanced research in renewable energy sources and energy efficiency Within these capacities, the faculty has a solar tree and solar panels for charging bicycles and electric cars, each with a capacity of 3 kW. There are also solar power plants with various capacities: one with 50 kW, another with 16 kW, and a third with 8 kW. Additionally, there is a wind turbine with a capacity of 3 kW. • Research Center ICONIC at the Faculty of Technical Sciences - University of Novi Sad has a well-structured team and advanced research facilities, enabling a wide range of experiments and studies in the fields of IoT, edge, and cloud technologies. Overview of capabilities: • Testbed for Software-Defined Radio Devices: Includes 16 USRP nodes for emulating a laboratory version of a 4G LTE network and experimenting with the 3GPP LTE protocol stack. Core network components are virtualized in their Cloud testbed. • LP-WAN Testbed: Development towards main LP-WAN technologies such as 3GPP NB-IoT and LoRaWAN, including a testbed for experimenting with the Smart Building concept and another 50 NB-IoT nodes for smart logistics. They are also installing a Kerlink base station for LoRaWAN. • UAV Communication Testbed: Uses DJI Matrice 600 Pro drone for experiments with UAV-based communication systems, including 4G/5G/NB-IoT equipment. • IoT/WSN Testbed: Houses over 100 Crossbow sensor boards. • Mobile Edge Computing (MEC) Testbed: Focuses on IoT applications with low end-to-end latency and tests various information processing algorithms and machine learning techniques. • Distributed Computing Testbed: Uses a large number of Raspberry Pi nodes to test distributed optimization and inference algorithms under emulated communication constraints.		

- Cloud Computing and Storage Testbed: The central part of ICONIC's infrastructure, includes general-purpose servers, GPU cards, and experimentation in Software-Defined Networking (SDN), Network Function Virtualization (NFV), and cloud-based services.

Spatial facilities

Faculty Facilities - 10.331m²:

- Amphitheater I (250 seats)
- Amphitheater II (200 seats)
- Amphitheater III (100 seats)
- Ceremonial Hall (180 seats)
- Laboratory for Renewable Energy Sources and Energy Efficiency

Professional staff

Engagement of 3-4 full-time employees (part-time), with external associates engaged as needed.

No.	Partner name:	Role:
5	DATA CLOUD TECHNOLOGY	Partner

Laboratories, communication and computer equipment

- A certain number of virtual servers (VMs) hosted on the DCT infrastructure on the Government Data Center with the following specifications:
 - 4 vCPUs
 - 8 GB RAM
 - 500 GB HDD, with potential resource modification based on requirements.

These servers may be available to the Consortium for testing purposes and conducting experiments with controlled access.

National Artificial Intelligence Platform, hosted at the Government Data Center, where Science and Technology Parks and Faculties, as project partners, are beneficiaries and users of the AI cluster, in collaboration with the Office for IT and eGovernment.

National AI platform consist of 4 nVidia DGX-A100 compute nodes, each of which has:

- 8 nVidia A100 GPU with 40 GB vRAM per GPU, in total 32 GPU
- 2 AMD EPYC™ 7742 processors, with total of 256 thread, in total 1024 CPU threads
- 1 TB RAM, in total 4 TB System memory
- 120 TB DDN Storage
- HDR network (InfiniBand 200Gb/s)
- 5 PetaFlops AI performance
- GUI Data Science Platform (FMLE)

First upgrade of the National AI Platform will be available for use in late September/October, and will consist of 6 nVidia DGX-H200 compute nodes, each of which has:

- 8 nVidia H200 GPU with 141 GB vRAM per GPU, in total 48 GPU
- 2 Dual Intel® Xeon® Platinum 8480C Processors, with total of 224 thread, in total 1344 CPU threads
- 2 TB RAM, in total 12 TB System memory
- 120 TB DDN Storage
- NDR network (InfiniBand 400Gb/s)
- 32 PetaFlops AI performance
- nVidia AI Enterprise

Second upgrade of the National AI Platform will be available for use during next year (summer of 2026.), with these specifications:

- 640 nVIDIA GraceHopper Superchip with 96 GB vRAM per superchip
- 2.5 PB DDN Storage
- NDR network (InfiniBand 400Gb/s)
- Jarvice AI platform (with GUI for users)
- Direct to Chip Liquid Cooling

Spatial facilities

- 2 meeting rooms with a capacity of 10 seats each in the company's administrative space.
- Periodic visits to the Government Data Center in Kragujevac in groups of up to 15 visitors for introduction with the infrastructure resources (in accordance with technical and organizational capabilities, and prior confirmation from the Office for IT and eGovernment, with a 48-hour advance notice for each individual and verification by the relevant authorities).

Professional staff

Engagement of up to 3 experts for Cloud technologies/IT infrastructure, Cybersecurity, with external associates engaged as needed.

r.b.	Name of the partner:	Role:
5	FACULTY OF ELECTRICAL ENGINEERING BEOGRAD	Associated partner
<i>Laboratories, communication and computer equipment</i>		
• Department of Electronics and Digital Systems: • Research group for Signal Processing Algorithms and Architectures • Laboratory for Power Electronics • Laboratory for Digital Signal Processing • Laboratory for Embedded Systems • Laboratory for integrated circuit design • Department of Power Systems: • Power Systems Department • Laboratory for Power System Protection • High Voltage Laboratory • Department of Power Converters and Drives: • Laboratories for digital drive control and drives and electric vehicles • Laboratory for Thermal Processes in Electrical Power Engineering • Laboratory for Testing Low-Voltage Electrical Installations • Power Converters Laboratory • Laboratory for Electrical drive • Department of Microelectronics and Technical Physics: • Laboratory for optical communications • Laboratory for electrooptics and fiber optic sensors • Department of General Electrical Engineering: • Group for Electromagnetics, Antennas, and Microwaves • Laboratory for Fundamentals of Electrical Engineering • Laboratory for Microwave Engineering • Laboratory for Antennas and Propagation • Department of Applied Mathematics: • Laboratory for applied mathematics • The Department of Computer Science and Information Technology: • Computer Architecture and Distributed Programming Laboratory • Laboratory for Computer Engineering and Informatics • Laboratory for Information Security		

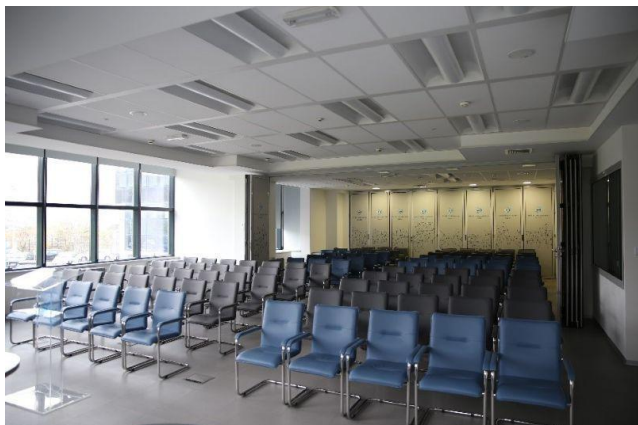
- Department of Signals and Systems:
 - ETF Robotics group
 - Research Group for Biomedical Instrumentation and Technologies
 - Laboratory for Process Control and Signal Processing
 - Laboratory for BioMedical Instrumentation and Technology
 - Laboratory for Robotics
 - Laboratory for Automation
- Department of Telecommunications:
 - Laboratory for Acoustics
 - Laboratory for Radio Communications
 - Laboratory for Acoustics
 - Laboratory for IP Communications
 - Networks and IoT Lab
 - Laboratory for Radio Communications
 - Laboratory for Development of Internet Technologies

Spatial facilities

- 19 thematic Centers where scientific research is conducted within the Science Palace: <https://palatanauke.rs/naucni-centri/>, which also includes:
 - 3 modernly equipped conference halls with capacities of 80, 40, and 40 seats
 - Student Center for student teams developing their ideas
 - Alumni Center for the work of FTN alumni and colleagues from abroad during their stay in Serbia

PHOTO DOCUMENTATION¹

SCIENCE TECHNOLOGY PARK BEOGRAD



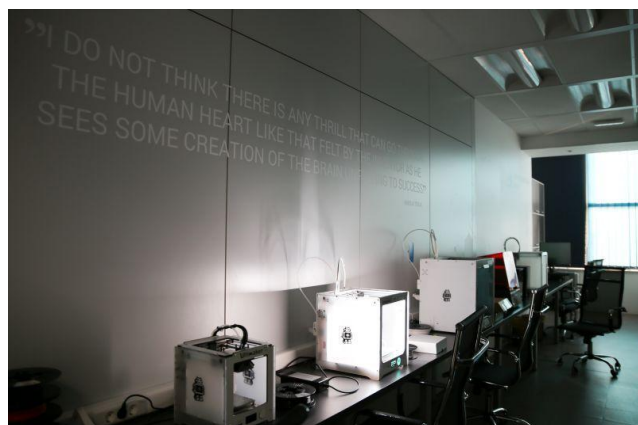
Conference center



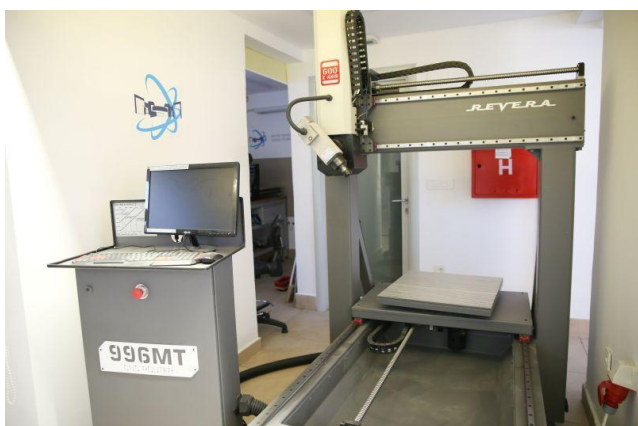
Conference center



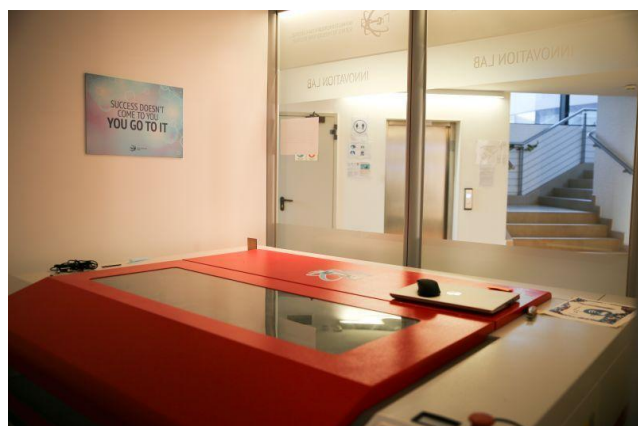
3D Innolab



3D Innolab

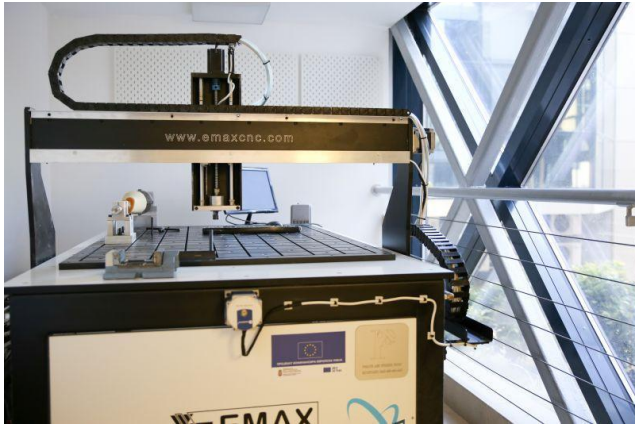


CNC Innolab



Laser & UV Innolab

¹ Selected infrastructure shown for illustrative purposes



CNC Innolab

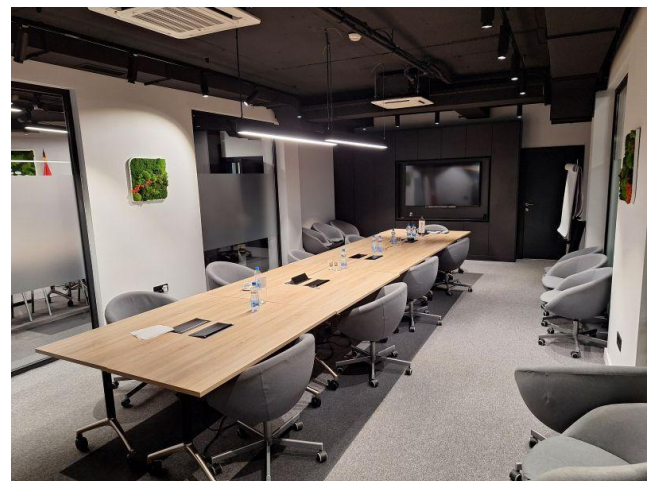


Conference center

NALED



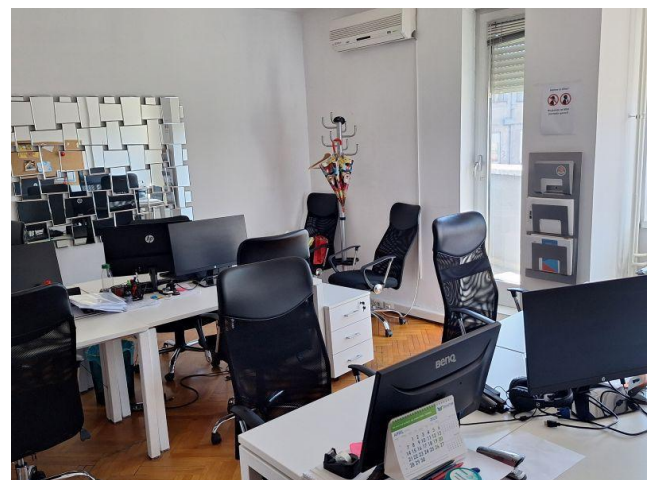
Lab 1



Lab 2



Small meeting room



Monitors



Printers



LCD TV

SCIENCE TECHNOLOGY PARK NOVI SAD



3D scanner MaterForm



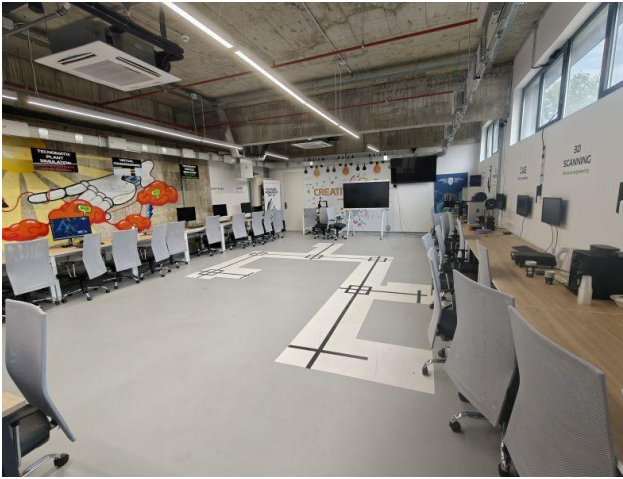
3D printer Prusa Mini



3D printer Prusa MK4S



Robot JetRacer Nvidia ROS AI



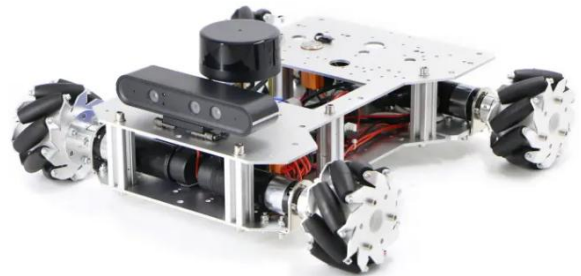
Laboratory DEAL Siemens Team Center



3D printer Bambulab X1C



Laser Cutter SRELE4060



Robot Mecabot Nano



VR set HTC Vive



VR set Oculus Quest 2

FACULTY OF TECHNICAL SCIENCE NOVI SAD



Micro Grid



dSPACE R&DStation



Cinergia GE-PV Emulator



eGolf



DJIMatrice600Pro



Software Defined Radio Devices

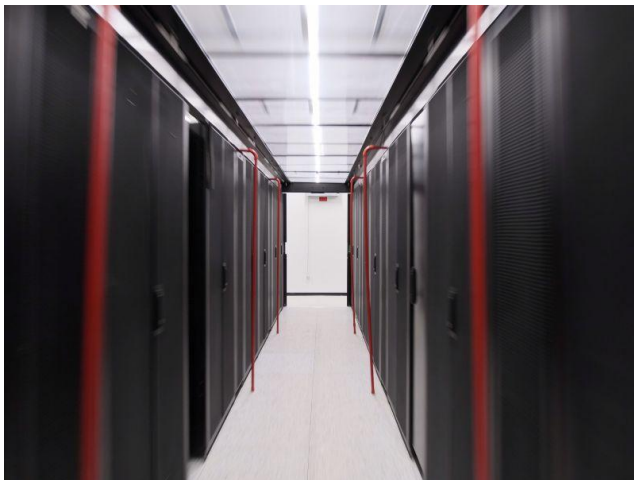
DATA CLOUD TECHNOLOGY KRAGUJEVAC



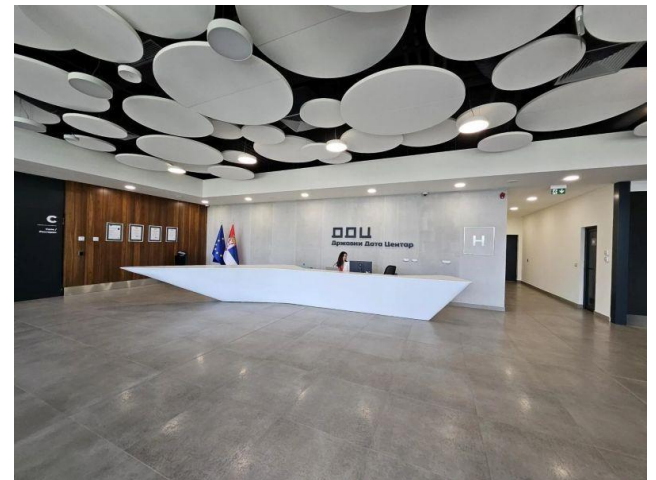
Government Data Center



Government Data Center



Server room



GDC Lobby



National AI Platform



National AI Platform



New lab



Computer-vision and AI handling moving objects of arbitrary shape



Cobot-supported neuroergonomics workstation for Industry 5.0



Cooperative industrial robot cell (by ABB, Denso and Siemens)



Mobile cobot on omniwheel base



Mobile cobot (Franka Research III on Robotnik omniwheel base)