

SERVIZI BI-REX ++

TEST BEFORE INVEST

Partner	Type	Tech	Description of the services	UoM
CINECA	T&V	HPC	Simulation code optimization: Supporting SMEs developing in-house codes optimization and porting	20 days
CINECA	T&V	HPC	AI feasibility: Support feasibility assessment of AI, data quality assessment, problem definition, tools	20 days
CINECA	T&V	HPC	AI workflows optimization: Supporting SMEs developing AI applications and porting to multi-GPUs HPC environment	20 days
CINECA	PoC	HPC	Simulation-based PoC: Service/product co-design, benchmark and test by simulation on HPC infrastructure	60 days
CINECA	PoC	HPC	CINECA AI-based PoC: AI/ML workflow co-design, benchmark and test by simulation on HPC infrastructure	60 days
CINECA	Demo	SIM	Digital Twin: datacenter digital twin for preemptive maintenance and cooling optimization	1 day
CINECA	Demo	AI	Sentiment analysis of social media data for supporting service or product marketing	1 day
CINECA	Demo	AI	Integration of meteo data and weather forecasts in smart services	1 day
CINECA	Demo	VR/AR	Virtual reconstruction of inaccessible or lost ambients	1 day
CINECA	Demo	SIM	Exploiting CFD in industry without CFD experts: a virtual naval basin example	1 day
CINECA	Demo	SIM	External aerodynamics optimization: approaches and examples	1 day
CINECA	Demo	HPC	Quantum computing applications for industrial use cases: an appraisal	1 day
CINECA	Demo	SIM	Combining HPC and cloud workloads in complex simulation workflows	1 day
BI-REX	Demo	CS	Cybersecurity: live demo on Pilot Plant an example of industrial environment (IEC compliant)	1 day
BI-REX	Demo	ROB	Flexible robotics: collaborative assembly station and mobile robotics for sustainable process	1 day
BI-REX	Demo	AM	Additive manufacturing (Metal): Optimization topology to reduce weight on electric vehicles	1 day
BI-REX	Demo	AM	Additive manufacturing for logistic optimiaztion: stock reduction	1 day
BI-REX	Demo	AM	Cladding with hard materials in braking system system for powder emissions reduction	1 day
BI-REX	Demo	COM	5G network: smart receiver devices for resource optimization (energy, logistic, material)	1 day
BI-REX	Demo	SIM	Reverse engineering: re-desing of old components with functional continuity	1 day
BI-REX	Demo	SIM	Digital Twin: whole plant simulation and CNC machining tool digital twin for optimization	1 day
BI-REX	Demo	AI	Smart manufactuirng: Ai powered CNC machining and self-learning visual inspection	1 day
BI-REX	Demo	IOT	Servitization through smart product: sensorization of gearbox and titanium screw	1 day
BI-REX	Demo	AI	Big data processing driving AR and predictive maintenance on industrial machinery	1 day
BI-REX	Demo	VR/AR	Augmented reality for remote training and field operation	1 day
BI-REX	Demo	IOT	Edge comptuing: resource management through AI optimization	1 day
BI-REX	Demo	AI	Quality inspection throughadvanced vision system and self-learning algorithms	1 day
BI-REX	Demo	IOT	IoT platorms for data gathering and multi-process aggregation	1 day
BI-REX	Demo	IOT	IoT and data intelligence for logistics optimization of the manufacturing cycles for sustainability	1 day

BI-REX	Demo	VR/AR	Virtual and augmented reality for manufacturing: a new way to sustainability	1 day
BI-REX	Demo	AI	Production planning for sustainability	1 day

BI-REX	T&V	VR/AR	Integration of IoT application, Augmented Reality with 5G connectivity in industrial plant	20 days
BI-REX	T&V	ROB	Integration of mobile vehicles and robotics with 5G connectivity in industrial plant	20 days
BI-REX	T&V	AM	Mechanical Validation of 3D printed component: analysis on strenght, vacancies, conductivity, corrosion et al.	20 days
BI-REX	T&V	IOT	Testing of IoT platoform to gather, organize, monitor and elaborate manufacturing data	20 days
BI-REX	PoC	AM	Additive manufacturing for sustainable and lightweight components and metal replacement,	60 days
BI-REX	PoC	AM	Test of technologies for SME (pros and cons, cost analysis). Tehnologies: LPBF and DED	60 days
BI-REX	PoC	COMM	5G private network for industrial connectivity: data gathering for smart manufacturing	60 days
BI-REX	PoC	COMM	Integration of IoT application, Augmented Reality with 5G connectivity in industrial plant	60 days
BI-REX	PoC	SIM	Reverse engineering: scan, re-desing and optimization of components	60 days
BI-REX	PoC	SIM	Digital twin for virtual comissioning of manufacturing machines	60 days
BI-REX	RaaS	COMM	Industrial infrastructure: 5G private network at 27Ghz for low-latency high throughput industrial application	1 hour
BI-REX	RaaS	COMM	Industrial infrastructure: Several edges devices, on-premise and on-cloud IoT platforms for data storage, monitoring and elaboration	1 hour
BI-REX	RaaS	COMM	Industrial infrastructure: A hybrid cloud architector with with open source orchestrator for Platform-as-a-service and container hosting.	1 hour
BI-REX	RaaS	SIM	Concept Designer, TIA Portal,	1 hour
BI-REX	RaaS	SIM	Software for design: CAD, CAM, Topology Optimization. Non-exhaustive list : CREO Design Premium Plus, NX-Mach 3 Additive Design with Convergent Modeling, Magics	1 hour
BI-REX	RaaS	SIM	Software for simulation: multiphysics simulation or process-based simulation. Non-exhaustive list :Altair Hyperworks suite, Simatic, Creo Real Time Simulations, NX Simulations	1 hour
BI-REX	RaaS	SIM	Software PLM and MES/MOM: Windchill, Teamcenter, CPP 4.0 Eascon, Opcenter Execution Discrete	1 hour
BI-REX	RaaS	SIM	SoftwareIoT platforms: Non-exhaustive list: Thingworx and Kepware, Mindsphere, MOMIS,	1 hour
BI-REX	RaaS	BD	BIREX Advisory on Robotic Process Automation. Analytics, Applied AI, data lake fed by heterogeneous IT-OT layers	1 hour
BI-REX	RaaS	SIM	BIREX Advisory on H2M, CX, AR/VR	1 hour
BI-REX	RaaS	BD	Provision of manufacturing dataset: CNC machining parameters for smart manufacturing (torque, current, temperature, pressure, forces)	1 hour
BI-REX	RaaS	BD	Provision of manufacturing dataset: Laser Poder Bed Fusion parameters (power, air and gas flow, laser spot, density, images)	1 hour
BI-REX	RaaS	BD	Provision of manufacturing dataset: Mobile and collaborative robot dataset (forces, torque, currents, images)	1 hour
BI-REX	RaaS	AM	Technology: Laser Powder Bed Fusion (LPBF) for metellic materials (steels, alluminium and titanium alloys)	1 hour
BI-REX	RaaS	AM	hardening	1 hour
BI-REX	RaaS	AM	Technology: Polymers 3D rpinting from granular material	1 hour
BI-REX	RaaS	SIM	Technology: Scan arm with touch probe and blue laser for reverse engineering and measuring	1 hour
BI-REX	RaaS	ROB	Technology: Mobile robotics, autonomous mobile robots (AMR) with	1 hour

BI-REX	RaaS	ROB	Technology: Collaborative robot arm (cobot) for assembly and logistic task	1 hour
Unibo	Demo	AI	INTRODUCTION TO SUSTAINABLE ICT AND AI.	1 day
Unibo	Demo	IOT	COMPARISON AND INTEGRATION OF INDUSTRIAL IOT MONITORING PLATFORMS	1 day

Unibo	Demo	IOT	HOW TO INTEGRATE AN INDUSTRIAL IOT MONITORING PLATFORM INTO A SPECIFIC INDUSTRIAL PROCESS/PLANT	1 day
Unibo	Demo	AM	Advanced servomechanisms enabled by Additive Manufacturing: Supporting SMEs in exploring the unprecedented design space enabled by additive manufacturing	1 day
Unibo	T&V	IOT	AI-based control: support in developing in-house control toolboxes based on optimization and AI for realtime operation	20 days
Unibo	T&V	IOT	AI for big-data analytics: support in the design of innovative AI	20 days
Unibo	T&V	IOT	Cooperative autonomous robots: support in the design of software tools and platforms for cooperative fleets of AMR	20 days
Unibo	T&V	COMM	QUALITY-AWARE 5G-ENABLED MONITORING IN A PRODUCTION PLANT	20 days
Unibo	T&V	COMM	Supporting SMEs to identify relevant smart manufacturing use cases where embedded devices are connected to the network.	20 days
Unibo	T&V	COMM	Supporting SMEs to identify key technologies to connect embedded devices to the network.	20 days
Unibo	T&V	COMM	Co-design of PoCs with networked sensors/actuators in industry plants/machines.	20 days
Unibo	PoC	COMM	Supporting SMEs in designing end-to-end PoCs: from networked devices, to network, application and service.	60 days
Unibo	Demo	AI	DISTRIBUTED MACHINE LEARNING FOR PRODUCTION LINES	1 day
Unibo	T&V	AI	DISTRIBUTED MACHINE LEARNING AT THE EDGE FOR THE MANUFACTURING INDUSTRY	20 days
Unibo	T&V	HPC	MANAGEMENT OF HYBRID MULTI-CLOUD ENVIRONMENTS.	20 days
Unibo	T&V	HPC	ORCHESTRATION MIDDLEWARE FOR INDUSTRIAL CLOUD AND CLOUD CONTINUUM FOR PRODUCTION LINES	20 days
Unibo	T&V	HPC	EFFICIENT EXPLOITATION OF CLOUD&HPC RESOURCES FOR MANUFACTURING DIGITAL TWINS	20 days
Unibo	T&V	BD	RELATIONAL-NOSQL TRANSITION	20 days
Unibo	T&V	BD	ON-LINE ANALYSIS OF MASSIVE DATA STREAMS	20 days
Unibo	PoC	SIM	Industrial Control and Automation: Supporting SMEs in defining methodologies, SW/HW tools/platforms and operative procedures	60 days
Unibo	PoC	SIM	Supervision and Management of Industrial Plants: Supporting SMEs in defining tailored Digital Twin solutions for condition monitoring, diagnostics and predictive maintenance of industrial apparatuses and plants	60 days
Unibo	Demo	GAM	GAMIFICATION AND CROWDSENSING FOR PUBLIC ENGAGEMENT Introduction to the main concepts at the basis of the gamification, detailing classifications and taxonomies of player types,	1 day
Unibo	PoC	GAM	GAMIFICATION AND CROWDSENSING: Analysis and identification of gamification strategies and crowdsensing frameworks.	60 days
Unibo	T&V	GRE	INTRODUCTION TO SUSTAINABLE ICT AND AI. Introduction to the main aspects which should be considered for the development of sustainable ICT applications.	20 days
Unibo	T&V	GRE	AI models for sustainability measurements for ICT real cases	20 d
CINI	Demo	IOT	TECHNOLOGIES FOR DEVELOPMENT OF INNOVATIVE EMBEDDED AND IOT PLATFORMS AND APPLICATIONS FOR THE INDUSTRY.	1 day
CINI	Demo	AI	Creation of awareness on the possibilities offered by deep learning and AI for industrial applications. Examples are computer vision for manufacturing, predictive maintenance, federated learning, etc.	1 day
CINI	T&V	GRE	ENERGY AWARE DESIGN OF COMPUTING PLATFORMS	20 days

CINI	T&V	HPC	EXPLOITATION OF HPC AND CLOUD IN INDUSTRY	20 days
CINI	T&V	HPC	Advising on pilot technology adoption	20 days
CINI	T&V	HPC	advisory on site on tech and/or training needs assessment	20 days
TIM	PoC	BD	Application deployment, configuration and support on edge architecture	60 days
ATOS	Demo	HPC	Algoritmo di Grover – algorithm implementation	1 day

ATOS	Demo	HPC	Number Partitioning – Quantum simulated annealing	1 day
ATOS	Demo	HPC	Noisy QFT – Quantum Fourier Trasform implementation	1 day
ATOS	Demo	HPC	Sycamore Experiment – Quantum Supremacy with Google Circuits	1 day
ATOS	T&V	HPC	Logistics: Optimization of the distribution of goods from manufacturing companies to receiving bodies	20 days
ATOS	T&V	HPC	RESEARCH MATERIALS: Molecular interaction simulation	20 days
ATOS	T&V	SIM	SCREENING: Immunizations / analysis of complex graphs	20 days
ATOS	T&V	CS	CYBERSECURITY: analysis of the weakness of encryption keys with the use of the "Quantum Fourier Transform" (QFT)	20 days
ATOS	PoC	HPC	HPC In cloud: service design and provisioning on simulation for manufacturing	60 days
ATOS	PoC	HPC	AI: artificial intelligence modelling	60 days
ATOS	RaaS	HPC	Quantum learning machine programming	1 hour
ATOS	RaaS	HPC	Additive manufacturing simulation	1 hour
ATOS	RaaS	IOT	IoT application in Manufacturing	1 hour
ATOS	RaaS	HPC	QLM utilization	1 hour