TENANCY AT THE SCIENCE AND TECHNOLOGY PARK OF SARDINIA
Characteristics and technical specifications of tenancy options

Main Centre at Pula
Macchiareddu Centre
Torregrande-Oristano Centre
Tramariglio-Alghero Centre

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1. The Science and Technology Park of Sardinia

The Science and Technology Park of Sardinia is a system of research and development facilities providing optimum conditions for companies pursuing research and technology development and its industrial applications.

Its operational configuration includes:
- A system of services, laboratories and technology platforms for innovation, research and technology development;
- A system of advanced facilities hosting innovative businesses and R&D activities.

The Park has four centres, specialising in different science-technology areas:

**The Main Centre at Pula-Cagliari:**
- ICTs – Information and Communication Technologies;
- Biomedicine and Health Technologies;

**Macchiareddu-Uta Centre (Cagliari):**
- Renewable Energies;

**Torregrande - Oristano Centre:**
- Marine and Coastal Ecosystems;

**Tramariglio-Alghero Centre (Sassari):**
- Biotechnologies;
- Food Technologies;
- ICTs - Information and Communication Technologies.
2. Services and Technology Platforms

2.1 Technology Development Services

These services are provided to tenant organisations based in Pula (Cagliari), Macchiareddu - Uta (Cagliari), Torregrande (Oristano) and Tramariglio - Alghero - (Sassari); their cost is included in the tenancy fee. The tenancy fee does not include possible requests involving any additional costs not listed below, as specified in the individual operating rules.

Information Services

- **Technical and scientific information (CDS sector)**
  - Outreach and dissemination days, sectoral workshops, thematic seminars, technology brokerage events, etc.
  - Information services on R&D programmes.
  - Calls update service (funding opportunities).

- **HR Training and Management Services**
  - Science School - With its "Science School" project, Sardegna Ricerche is funding the organisation of training courses at the sites of the Technology Park of Sardinia and focusing on the Park's areas of specialisation, namely, ICTs, biomedicine, renewable energies and biotechnologies and other key sectors of the Region's economy.
  - Training grants - Sardegna Ricerche regularly organises schemes targeting young graduates in scientific-technical subjects, who are offered training internships with the Park's tenant companies.
  - Training for enterprises - The Park's sites regularly host training courses for entrepreneurs, managers and would-be entrepreneurs, to encourage the uptake of product, process and management innovations by companies.

- **Library and Documentation Services (Technology Transfer Sector)**
  - Access to online journals and magazines from the users’ computers (from all Park sites).
  - Loans, interlibrary loans and document delivery.
  - Bibliographic information service.
  - Bibliographic and document searches.
  - Basic patent searches.
  - Prior art /novelty/legal status searches.
  - Technology watch.

Technology Transfer Services (TTS)

- **Intellectual Property Support Services**
  - General assistance prior to filing of a patent application (state of the art, novelty, patentability)
  - Trademark searches: searches for registered trademarks and trademark applications at European and international level, legal status searches.
  - Registered designs: searches on the legal status of designs registered at Italian and EU level.
  - Information support services on copyright and digital rights management.

- **Post-patenting and optimization support.**
  - General assistance for licensing and in the purchase/sale of patented technologies.
  - Dossiers, technology watch and competitive intelligence.

Technology Brokering Support

As a member of the Enterprise Europe Network- EEN, Sardegna Ricerche provides personalised, free assistance to enterprises to foster their growth, support the development of new international commercial and technology partnerships and assist in participation in EU funding programmes.

Communication and Marketing Services (CSD - Communication and Scientific Dissemination Sector)

- Support in institutional relations.
- Inclusion of tenant companies’ profiles in the Park communication tools (brochures, website, etc.).
- Assistance in relations with the press and other media.
- Promotion of tenant companies’ products/services during science and technology events.
- Dissemination of news and initiatives by companies on the official social media pages of Sardegna Ricerche.
• Inclusion of promotional initiatives in the Park’s communication plan.

**Park Helpdesk**

• Park tenancy opportunities.
• Technical, legal and administrative support in the following areas:
  o Administrative;
  o Financing;
  o Project management;
  o Organisation and development;
  o Networking and relations at the Park;
  o HR management;
  o Institutional relations;
  o Assistance in the sourcing of qualified staff.
• Training grants - The Park Helpdesk regularly organises schemes targeting young diploma holders and university graduates in scientific-technical subjects, who are offered training internships with the Park's tenant companies.
• The Park Helpdesk carries out regular surveys on the needs of tenant companies and assesses their feasibility and fitness for funding.

**Public Procurement Helpdesk**

This service provides assistance to businesses based in Sardinia wishing to access and gain a foothold in the public procurement market.

**Energy Helpdesk**

This service delivers training and information on energy and provides advice, both online and on-site, to all Sardinian businesses and public authorities. The Helpdesk is a gateway to services supporting and optimising the activity of businesses in the RES and energy efficiency sector, to encourage new projects and fresh "energy".

**European Research Helpdesk**

This service promotes participation in European funding programmes for research, innovation and entrepreneurship, and facilitates local cooperation between public and private players in the sector of science & technology research in Sardinia. To this end, it delivers information, training and technical assistance services and it organises seminars and events across the Region. It is also the Regional desk of APRE, the Agency for the Promotion of European Research.

**Intellectual Property Helpdesk**

This helpdesk offers specialist IPP services to businesses, researchers and inventors operating or based in Sardinia: prior art searches, novelty, document and screening searches, searches on the legal status of registered marks, patentability opinions, assistance in the filing of applications and registration of patents and marks, technology watch and competitive intelligence, technical and legal consultancy etc.

**Startup Helpdesk**

This helpdesk supports new business ideas with strong innovative content at all stages of development. The desk follows a systemic approach to survey the needs voiced by existing or proposed startups and to support their financing, organisational and technical requirements. It provides added value services and tools that target the real needs of businesses in the startup and early development stages and provides advice on easy-to-access financing tools which, while following stringent assessment procedures, have the fast response times required by startups.

The companies located at the Macchiareddu site can also access the services provided by the Support and Design Unit of the Renewable Energies Platform - see paragraph 3.2 (Macchiareddu Site).

### 2.2 Technology Laboratories

The technology laboratories consist of scientific equipment, machinery and know-how for collective use; they are major technology innovation tools, they promote R&D activity and help upgrade the know-how and laboratory capability of both Park tenants and the local research and business environment.

Each laboratory is manned by expert technicians who:
• ensure that the lab equipment functions effectively and provide the related services at a sustained high level of quality;
• support, enhance and personalise the quality of R&D activities;
• deliver education and training tailored to the vocational and scientific knowledge requirements of users.

Use of the technology labs is governed by specific operating rules that lay down access conditions, costs and procedures. In particular, the following activities may be pursued in the laboratories:
• basic research and other non-profit-making activities;
• R&D services provided under State aid schemes;
• research services relating to research and innovation projects.

The technology laboratories at the Pula Centre

○ FABLAB Laboratory (Building 2)
Sardegna Ricerche’s FabLab is a small-scale digital fabrication laboratory. It is open to all those wishing to design and produce their objects and inventions. FabLab follows the open source philosophy based on free exchange. The Laboratory comprises three separate areas.
- Workshop: a common open space with cutting and engraving equipment and tools for soldering electronic components.
- Coworking area: an open space with office desks and laboratory benches hosting the 3D printing area.
- Digital textile area: a space equipped for tailoring and embroidery, a meeting place between craftsmanship, fashion and new technologies.

○ Rapid Prototyping Laboratory (Building 2)
This laboratory offers state-of-the-art equipment and services for the development of new products and reverse engineering. It accompanies enterprises from generation of the new product concept, through engineering down to prototype development using Rapid Prototyping technologies. The Rapid prototyping Laboratory basically employs two Rapid Prototyping technologies:
1. “Layer Manufacturing” (additive technology) using the following equipment:
   - FDM (Fused Deposition Modelling);
   - Polyjet;
   - 3D Printing;
   - DMLS (Direct Metal Laser Sintering);
2. “3D milling” (subtractive technologies, which work by removing material) using a 4-axis 3D modelling milling machine.
The laboratory is equipped with software for Parametric CAD Design and Reverse Engineering and 3D morphology acquisition machines such as a spinning disc 3D laser scanner, contact scanner and structured-light scanner. The Lab also includes an area equipped for standard electronic testing and standard mechanical machining.

○ 10Lab (Building 10)
10lab is an interactive space created by Sardegna Ricerche for the promotion of science education and innovation, fostering dialogue between researchers, businesses, schools and citizens. 10lab organises activities targeting different audiences, and spanning the gamut from workshops for schools to temporary exhibitions. Its mission is to favour free and creative learning by people of all ages, promoting cross-cutting competences such as creative and divergent thinking, teamwork, problem solving and risk taking.

ICTs - INFORMATION AND COMMUNICATION TECHNOLOGIES

○ “Computing Centre” Laboratory (Building 1)
The Computing Centre is housed in building 1 of the Pula campus, and is managed by CRS4. This lab comprises dedicated equipment and technical support staff. It provides the following services:
- computing hours in the HPC cluster;
- storage service.

Technical characteristics of the Computing Centre:
- computing power: 290 TFlops (1 TeraFlop = 1012 Floating Point Operations Per Second);
- storage capacity: 5.5PB (Peta Byte = 1015 byte = 1 billiard bytes).

○ ‘Joint Innovation Center’ Laboratory
The Joint Innovation Center technology lab is located in Building 1 and is run by the staff of CRS4, Huawei and the SMEs participating in the JIC. The Joint Innovation Center has the following equipment:
- High-performance computing cluster with 2496 cores, Intel E5 2680 V3 with more than 14 TB RAM.
- BigData Cluster with at least 576 cores, Intel E5 2683 V3 and Intel E5 2618L V3 with at least 12 TB RAM
- Storage system Huawei OceanStor 6800V3 with 1.1 PB capacity on various types of disks (SSD, SAS, NearLine SAS)
- BigData storage system Huawei OceanStor 5300 V3 with about 100TB on SAS disks
- e-LTE operating and control system, core network
- Network security (firewall) operating systems (80Gbps guaranteed)
- Video-surveillance management system (Video Content Management) with 20 TB SAS image storage system and Video Cloud node
- Geographic Information System (GIS)
- Core Network systems for management of the laboratory's ultra high-performance LAN with a total of 144 1/10Gbps and 100Mpbs RJ45 ports, 480 10Gbps SFP+ ports and 84 40Gbps ports.
- Complete system for the installation and deployment of an LTE (e-LTE) private network inclusive of CoreNetwork, antennas, base station and management system.
- e-LTE Rapid Solution experimental system for field trials simulating emergencies/disasters.

BIOMEDICINE AND HEALTH TECHNOLOGIES

- **Massive Sequencing Laboratory (Building 3)**
  The New Generation Sequencing Platform has output capacity (2016 data) of 10 Tbase/month. It can handle large-scale sequencing projects, handling from data production to analysis.
  The facility has been used for large-scale projects in various areas, including complete sequencing of human genomes, transcriptomics, metagenomics, exome sequencing and target region sequencing. This experimental infrastructure is completed by high-throughput data analysis pipelines specialised in the combined analysis of the entire genome, exome and transcriptome.
  Since 2016, the facility's New Generation Sequencing services have been certified by the Illumina Propel Certification Program.

- **Microscopy Laboratory (Building 3)**
  The Microscopy Laboratory has extensive experience in optical and electronic microscopy. It provides services to businesses, universities and public and private research institutions in Italy.
  The MicroLab has state-of-the art equipment and over the years it has built up know-how and advanced expertise in various fields, especially in the areas of materials science, technology characterisation and diagnostics of microelectronic components, pharmaceutical sciences and environmental sciences.

- **Bioinformatics Laboratory (Building 1)**
  The laboratory operates in the following areas:
  - functional genomics: functional characterisation of genes and their interactions and of complex biological mechanisms, using data from post-genomic research and the latest sequencing technologies (next-generation sequencing);

- **NMR and Bio-analytical Technology (BAT) Laboratories – Building 5**
  The NMR and BAT Laboratories are housed in Building 5 at the Pula campus.
  They comprise two sections: one devoted to Nuclear Magnetic Resonance spectroscopy and the other housing the High Throughput multifunctional laboratory.
  The NMR lab is equipped with a 400 MHz Bruker Avance spectrometer, with 5mm BBO and DIFF30 probe. This lab can perform a range of liquid state NMR analyses, including: 1D and 2D analysis, measurement of self-diffusion coefficients, relaxation times and quadrupolar splitting. The HT laboratory, apart from having the standard equipment of an analytical chemistry laboratory, is also equipped for chromatography with triple quadrupole mass spectrometer and chromatography with diode array detector.

- **Animal Holding Facility (Building 5)**
  This facility is housed in Building 5 of the Technology Park at Pula, and comprises:
  - one semi-barrier animal facility
  - one barrier animal facility
  - the equipment necessary for their operation.
Laboratories at the Macchiareddu Centre (Renewable Energies Platform)

- **Biofuels and Biomass Laboratory**
  This lab provides technical assistance and applied research services for the development of power generation from biomass and on the use of biofuels. It performs experimental activities using pilot plants and it has a testing and measurement lab for the chemical-physical and energy characterisation of biomass. It operates in the sectors of anaerobic digestion, combustion, pyrolysis, gasification and biofuels, and microalgae production.

- **Electricity Laboratory**
  The laboratory provides services to enterprises and support to applied research in the electricity sector, with a focus on photovoltaic equipment and systems, energy efficiency and interfaces with electricity networks. In particular, the Laboratory is equipped and structured with specialised staff for the provision of services in the following specific sectors: photovoltaic systems, components and materials; smart microgrids; distributed storage; electric mobility; analysis and monitoring of electric power systems and components; testing of electronic power-regulating devices; electricity grid power quality analysis; monitoring of environmental conditions.

- **Solar Concentration and Hydrogen from RES Laboratory**
  This laboratory pursues research, development and technology transfer activities in the sector of small and medium-sized concentration solar power installations, power and hydrogen generation from renewable energy sources, cogeneration via fuel cells and innovative systems for the storage of hydrogen, electricity and thermal energy. The first section, addressing concentrating solar power technologies, is engaged in research on innovative thermal energy storage systems, heat transfer fluids and thermal storage materials, thermodynamic cycles and the performance of concentrating solar plants. The second section pursues research on energy technologies for obtaining hydrogen from RES and on fuel cells. Both sections study strategies for the operation of hybrid microgrids, with a focus on the storage of hydrogen and on thermal and electrochemical energy storage.

Laboratories at the Torregrande – Oristano Centre (Marine and Coastal Ecosystems)

- **Histology Laboratory**
  This laboratory is equipped for making histological preparations, which are obtained from specimens of animal biological tissues and organs and examined under optical microscopy. The laboratory is equipped for embedding in both paraffin and resin. It is also equipped with microtome for thin sections and ultramicrotome for extremely thin sections. The Histology laboratory has a Molecular Biology section, with the equipment for DNA/RNA extraction and for isolating specific genes of interest, gel-electrophoresis systems, PCR and cloning machines, a micro-spectrophotometer and a number of refrigerated centrifuges.

- **Microscopy Laboratory**
  This laboratory has several microscopes for the morphological analysis of histological preparations and of fresh samples of animal or vegetable origin. A high-resolution digital camera that can be coupled to a microscope or a stereo-microscope enables photo-analysis of histology slides or live organisms such as larvae, small animal species or microalgae. Moreover, image analysis software permits in vivo or photo measurements. The laboratory is equipped with a micromanipulator for isolating microscopic organisms from liquid cultures.

- **Environmental Chemistry and Sedimentology Laboratory**
  This laboratory provides testing and support to the research activities carried out in pilot installations and chemical-physical characterisation of water and sediments in marine and lagoon environments; it is equipped for colorimetry, spectrophotometry and particle size analysis; it also has tools for continuous and point measurements in the field.

The second building houses the "wet laboratory" facilities. The main equipment of this section includes a multifunction tank facility, a hatchery facility, a Microalgae facility, an Ostrinnova facility for the production of bivalve mollusc seed, a laboratory for benthic invertebrate aquaculture, a sample treatment facility and an educational mesocosm laboratory.

The multifunction tank facility is composed of 5 tanks with recirculation systems: 4 tanks measuring between 1 and 3 m³, and a larger tank measuring 9 m³.

- **Hatchery Laboratory**
  The hatchery facility is equipped for the induction of reproduction under controlled conditions of fish species of conservation and commercial interest and for the rearing of larvae and juveniles.
  It includes a phyto- and zooplankton production facility equipped with 4 annular photobioreactors for the cultivation of microalgae (215 litres) and 4 truncated cone tanks for the farming of rotifers (350 litres) - live feed for the early larval stages of many fish species.
A peristaltic pump delivers a flow of nutrients and vitamin to the photobioreactors. In this way, the microalgae culture can be concentrated or diluted according to need and, through an "overflow" mechanism is delivered to the rotifer farming tanks. The facility also has shelves housing the cultures, which provide air, light and carbon dioxide to the algal strains and to the rotifer culture.

The facility for housing and conditioning brood stock and for the rearing of larvae and juveniles is equipped with two independent recirculation systems each with a bio-filter, a mechanical filter, a UV lamp, chillers, a protein skimmer and a ventilation system. Two 2.5 m³ tanks intended for inducing reproduction are topped by siphons that gather the eggs produced into a collection tank. The four tanks for the rearing of larvae have a volume of 2 m³ each.

Three conical hatcheries of 300 litre capacity, complete with recirculation system, bio-filters, filtration systems, UV lamp and chiller, ensure the maintenance of controlled conditions for hatching.

- **Microalgae Laboratory and ancillary systems**
  This facility supports studies on the physiological and developmental needs of algae, to promote more efficient cultivation and harvesting. The studies conducted in the IMC labs target the production of algal biomass for use in aquaculture and wastewater treatment.
  These studies use equipment and instruments for the cultivation and production of biomass on both a laboratory and a pilot scale. This involves the use of completely controlled annular photobioreactors and a good range of biological services and analyses. The objective is to identify fast-growth cost-efficient cultivation and harvesting methods, using phototrophic techniques.
  A confined outdoor area next to the laboratories hosts a facility composed of two 10 m high green walls for the production of microalgae with sunlight.

- **Ostrinnova Laboratory**
  This facility was set up in the framework of the Top Down cluster project for the experimental production of triploid seed of Pacific cupped oyster. It is equipped for the pilot-scale production of bivalve mollusc seed. It comprises a breeding unit, a larval unit, a nursery and a phytoplankton unit.

- **Benthic Invertebrate Aquaculture Laboratory**
  This facility is structured so that it can be easily divided up and adapted to the farming of marine species with different biological and ecological characteristics. Currently, the laboratory is mainly used for the reproduction and rearing of benthic invertebrates, in particular the sea urchin Paracentrotus lividus.
  The facilities are suitable for experiments on aquaculture diets, techniques and conditions, both on a small, laboratory scale and on a larger scale.

- **Sample Processing Laboratory**
  This laboratory is equipped for the processing and sorting of animal and plant samples and sediment from field activities or produced in aquaculture and microalgae cultivation installations. It is equipped for measurements, dissections, concentration, drying and preparation of sub-samples for subsequent analyses.

- **Educational Mesocosm Laboratory**
  This “Interactive Learning Center” uses three mesocosms representing respectively river, lagoon and sea habitats to illustrate the journey from the “river to the sea”. They are reproduced in confined spaces, with sizes and colours imitating the reality of these habitats characterised by different degrees of salinity.
  At the end of the route, a touch tank allows children to observe benthic species and interact with them. Sets and educational panels provide information on the coastal marine habitats and socio-economic activities found in the Oristano territory and its wetlands.

The Oristano centre also holds the vehicles and boats of the IMC Foundation, plus an equipped diving centre, for field and underwater activities.

- **Laboratories at the Alghero (Tramariglio) Centre**
  **BIOTECNOLOGIE**

  - **Proteomics Laboratory**
    The Proteomics Laboratory is one of the most complete and up-to-date in Italy.
    The main services offered by the laboratory include: systematic and differential analysis of the proteome of tissues, cells, subcellular compartments or complex microbial communities by means of electrophoretic techniques, and protein identification by means of mass spectrometry; search, identification and characterisation of peptide and protein markers; protein purification by means of chromatographic techniques and validation of the primary structure through mass
spectrometry analysis, identification of post-translational modifications, high-quality protein extraction from FFPE tissues; peptide design, synthesis and purification.

The Laboratory also operates in the development of inter-omic analysis methodologies, integrating the (meta)proteomic data with the (meta)genomic data obtained at the Molecular Genetics Laboratory.

**Equipment**

The laboratory is equipped with high throughput systems for IEF and 2D-PAGE, advanced imaging systems for differential proteomic analysis, and state-of-the-art mass spectrometers (MALDI-TOF, ESI-Q-TOF, ESI-ION TRAP, LTQ Orbitrap Velos, Q-Exactive), as well as an automated microwave peptide synthesizer and other ancillary instruments.

- **Green Chemistry Laboratory**
  Design of green technologies for molecule extraction and synthesis. The laboratory can perform extractions from various biological matrices in both solid and liquid state, obtaining products with an exceptionally high degree of purity and free from toxic residues. The products obtained can be identified and quantified.

- **NMR and Molecular Imaging Laboratory**
  The laboratory performs structural and conformational analysis of small biological molecules and macromolecules. It can also perform characterisation studies on complex mixtures (foodstuffs, beverages, biofluids, biological tissues). Imaging equipment (MRI) is also employed to perform in vitro and in cell studies, and for the characterisation of contrast media for diagnostic imaging.

  **Equipment**

  The technology equipment and the know-how gained also enable relaxometric characterisation and diffusion studies on foodstuffs and materials:

  - **NMR Bruker Avance 600 MHz**
    This machine has three probes: Quadruple resonance probe (QXI): this is an inverse detection probe, for homonuclear and heteronuclear NMR measurements (1H, 13C, 31P and 15N) 1D, 2D and 3D on fluid samples (5mm tubes); BBO with inner coil optimized for observation of nuclei from 19F to 31P and 15N. It also enables decoupling tests and observation of nucleus 1H. The HRMAS probe enables the study of semi-solid samples (dual probe 1H, 13C). With z-gradient aligned with the magic angle. Processing software Bruker Topspin 2.1. Software SIMCA-P and Matlab script for multivariate statistical data analysis.

  - **MRI Bruker Avance 300 MHz**
    Dedicated to MR imaging applications, the Micro 2.5 probe is optimised for the micro-imaging of small objects (max. diam. 30 mm) and reaches resolutions of about 100 pm. Observe nucleus: 1H. 30 mm birdcage resonator. Two coils available, of diameters 4 mm and 3 cm. Water-cooled xyz gradient system (2.5 G/cm/A). Processing software Bruker Paravision 4.0. Matlab script for obtaining relaxation maps.

  - **Bruker TD-NMR minispec 20 m2 Analyzer (0.47 T)**
    With 10 mm and 18 mm probes, variable temperature (5°C-60°C), 4 T/m gradient system, sequence programmer ExpSpel and decay analysis software CONTIN. Pre-set for broad band measurements. Bruker Senterra Raman microscope with Bruker Vertex 70 V FT-IR interferometer.

  **Bruker MPA FT-NIR spectrometer**

  - **Molecular Genetics Laboratory**
    The laboratory provides services and research through genotyping and sequencing technologies. The main activities are in the sectors of human and animal genotyping and of the sequencing of microbial genomes and metagenomes for complex microbial communities.

    **Equipment**

    This laboratory is equipped with Illumina Bead Array technology (IScan and HiScan). Using sequencing by synthesis (SBS), the SQ module of the HiScan System can support genome sequencing and genotyping studies. Another Illumina sequencer (MiSeq, Illumina) is dedicated to the sequencing of small genomes and microbiomes. Furthermore, the platform is equipped with a Real Time PCR system for performing the same types of tests with narrower genome coverage, which can be used to validate the results obtained or for a candidate gene selection approach.

  - **Blue Biotechnology Laboratory**
    This laboratory provides services for the development of feed techniques in aquaculture.
Thanks to integration with the other technology labs, such as the Proteomics Laboratory and the NMR and Imaging Laboratory, the Blue Biotechnology Laboratory allows the development of molecular databases and the study of correlation between feed and fish product quality, animal stress reduction, improvement of fish farming performance and effects on fish preservability.

**Equipment**
It includes a 9 tank system for experimental infections, nutrition tests and genetic studies, and 4 metabolic chambers.

- **Diagnostic Systems Laboratory**
The laboratory's services address the set-up of immunodiagnostic systems.

  **Equipment**
The laboratory has cytotofluorimeter systems (FACS Canto II, BD) and other state-of-the-art devices for the set-up of immunodiagnostic systems for the qualitative and quantitative molecular study of immune system responses. The equipment also includes potentiostats complete with recorders, electrode welding stations, stereoscopes, microfluidic pump and other ancillary instruments.

**FOOD TECHNOLOGIES**

- **Packaging and Shelf Life Laboratory**
This laboratory offers advanced services for shelf-life studies on foodstuffs and on packaging systems. It is equipped with technology for analysing plastic films, the atmosphere inside the packaging and the food product. The services include chemical, physical, mechanical and microbiological food testing, estimation and determination of packaged food shelf life, packaging testing and optimisation of the foodstuff/packaging system.

  **Equipment**
The equipment available includes dynamometer, bell chamber shrink machine, vacuum skin packing machine, semi-automatic tray sealer, gas determination systems, plastic film permeability tester, water activity analyser, and other ancillary equipment.

- **Food Processes Laboratory**
This laboratory supports the development of new food products. Services range from product design to prototype development and production of the “new” food product. These services include all the chemical-physical and microbiological tests necessary to verify compliance with applicable legislation. The laboratory can also perform fermentation processes on various types of biomass.

  **Equipment**
The laboratory has the following equipment:
- low-impact processing systems (ohmic plant with aseptic filling and high pressure plant);
- small volume (1-3 litre) and large volume (10-30 litre) fermenting systems and ancillary equipment;
- brewery equipment: Anton-Paar Beer Analysis system composed of Alcolyzer Beer Plus for measurement of alcohol content % w/w, alcohol content % v/v, relative density of the corresponding water-alcohol solution, colour, pH value, relative density of the beer, relative density of the extract, real extract % w/w, apparent extract % w/w, original extract % w/w, actual degree of fermentation, apparent degree of fermentation. Carbonation measuring module for measuring CO2; Haffmans Nibem Foam Stability Tester to measure the stability of beer foam; NIR for the multiparameter testing of malt and barley for breweries;
- installation for the production of bread, pasta and bakery products; packaging machines; supporting testing equipment: dynamometer, rheometer, alveograph, consistograph, glutomatic, falling number, colorimeter, NIR, water activity analyzer, data tracer for moisture and temperature.

**ICTs – INFORMATION AND COMMUNICATION TECHNOLOGIES**

- **AIMA Laboratory (Advanced Imaging and Motion Analysis)**
The Advanced Imaging and Motion Analysis Laboratory (AIMA) offers services in the field of image analysis. The AIMA Laboratory provides support in the areas of face recognition, functional analysis, rehabilitation, thermal body mapping, thermal mapping of electrical or electronic components, thermal mapping of buildings.

  **Competencies and technologies**
  Image processing, motion analysis, statistical signal analysis.
3. Facilities for Tenant Businesses

3.1 Pula Centre

Tenancy spaces for enterprises
At the present time, the Main Park campus has 6 buildings placed along a ring route and numbered 1, 2, 3, 5 and 8; the average distance between buildings is about 500 m.
The buildings have offices and laboratories, available in three types: unfurnished, partially furnished or equipped with benches, chemical fume hoods and other basic laboratory furniture.
Office and/or laboratory premises are handed over in their actual condition, with the finishings, furniture and fittings described in Annex 2 to the Tenancy Agreement; the tenancy fee includes some minor adaptation and finishing works, while any modification to the premises – which is subject to prior authorisation – is at the tenant’s expense.

Building 10
The building that stands at the entrance to the Park is single storey, with an equilateral triangle ground plan, with a tower rising on the angle looking towards the sea. This building hosts an orientation/reception desk and the Park’s general control room.
The building has a “sealed” aspect: the outer walls are covered with granite panels. The external staircases leading to the tower have a frame in zinc-coated steel, steps in galvanised steel grating and handrails in galvanised and painted tubular elements.

Building 1
The building that stands at the entrance to the Park is single storey, with an equilateral triangle ground plan, with a tower rising on the angle looking towards the sea. This building hosts an orientation/reception desk and the Park’s general control room.
The building has a “sealed” aspect: the outer walls are covered with granite panels. The external staircases leading to the tower have a frame in zinc-coated steel, steps in galvanised steel grating and handrails in galvanised and painted tubular elements.

Building 2
This building has three floors, including a basement for parking, utility and equipment rooms and storerooms, and two above-ground floors, with a surface area of 2,500 m² each, for offices and IT labs.
Building 2 houses the offices of Sardegna Ricerche, the laboratories of IT enterprises, the main reception area, the unit responsible for general, innovation and information services, the education and training facilities and catering services. All spaces for use as offices and laboratories contain the standard utilities and infrastructure, including: HVAC system, lighting system, electrical outlets and structured phone-data cabling.

Building 3
Building 3 has the same architectural layout as the other Park buildings: three floors including a basement for parking, and two above-ground floors, with a surface area of about 2,000 m² each, for offices and labs. The operational spaces, which can host either laboratories or offices, have been equipped with water supply piping and sewer system for wet laboratories and, again for laboratory operations, with nitrogen, compressed air, vacuum and demineralised water piping systems. This building hosts the massive sequencing and microscopy laboratories.

Building 5
Like the other buildings, it has a basement and two above-ground floors, with the difference that the basement, besides the car park and storage rooms, also hosts the animal holding facility, a key facility where animal experiments are carried out (about 900 m² of floor space). The operational spaces, which can host laboratories, have been equipped with water supply piping and a sewer system for wet laboratories and with nitrogen, compressed air, vacuum and demineralised water piping systems. In addition to standard infrastructure, the building also has a range of high-throughput equipment for genomic and proteomic research, the nitrogen, helium and carbon dioxide piping systems and a UPS generator for equipment requiring no-break power.
Building 8
Building 8 has the same architectural layout as the other Park buildings: a basement for parking and two above-ground floors, with a surface area of about 1,200 m² each, for offices and labs.
The operational spaces, which can host either laboratories or offices, have been equipped with water supply and a sewer system for wet laboratories and, again for laboratory operations, the piping systems for the installation of nitrogen, compressed air, vacuum and demineralised water supply are in place.

The Territory
The Park's main campus is located in an area of outstanding environmental value, covering about 160 ha, in the Rio Palaceris Valley, at the foot of the Sulcis mountain range, about 3 km from the south-western coast of Sardinia and about 6 km from the town of Pula.
The area consists of a strip of land about 500/600 m wide which runs along the course of the Rio Palaceris for about 3.5 km from the crossing of the two current access roads.
In view of the area's outstanding environmental and landscape value and in compliance with the requirements issued by the municipal and regional authorities, the Park's design and construction has been based on strict environmental protection and enhancement criteria.

Infrastructure
Roads
The main route inside the campus consists of a ring road linking all buildings of the first and second development phase – including those still to be built – having a total length of 4,782 m.
The road is flanked by a low wall housing utility lines (phone line, fiber-optic cabling and lighting).
Along the campus perimeter, the first section of a footpath has been constructed, running at a height of 100 m a.s.l., and linked to the valley floor by the Forest Agency roads: the buildings are connected by this footpath in a seamless continuum.

Electricity supply
Electricity is supplied to each building through individual MV/LV transformer substations according to the type of voltage (low or medium) required.
LV electricity is distributed with TN-S system for feeding the buildings’ motive power and lighting circuits.
The user-side transformer substation of each building is equipped with two transformers, one exclusively feeding the building's light and motive power circuits, while the other supplies the HVAC systems of the offices and laboratories. In the event of grid power outage from (ENEL), each building is supplied by a power generator.
The electricity bills for premises given in exclusive use to tenants are payable by tenants (however, ICT Farm businesses are charged only for consumption in excess of 250kWh/month/business).

Fire-fighting network
The fire-fighting system consists of a main network along the ring road, and of a peripheral network, in the area of the 100 m a.s.l. footpath, supplying hoses located close to the buildings.

Water supply and sewer network
The Park's water supply network, which branches off the water mains along State Road 195, includes a boosting station, storage tank and the Park's internal distribution network.
The sewer network conveys the wastewater to the purification plant, while rainwater is discharged into the Palaceris stream.

Security systems
Security at the centre is assured by a comprehensive system which includes a CCTV system and access control at each building.
The security system comprises control rooms in each building and a "main" control room, currently under construction, in Building 10, which will pool all the data. The system is able to relay to the central station all events (alarms, breakdowns, ID card swipes, etc.) recorded by each building's security subsystems.

Adjacent to the Park’s campus there is a Forest Agency station with a fleet of three fire-fighting vehicles with water tanks and staff trained in handling emergencies (a staff of 47 persons including 24 trained for fire-fighting).

In the event of a fire, emergency response is provided, in addition to these Forestry guards, by the Forestry staff from the Pula station and by the local Fire-fighting station.

**Networks and communications**

**Data transmission and phone network**

All buildings at the main campus are connected by a 10 Gbps fiber-optic backbone for data transmission and copper cabling for phone lines.

In particular, phone connection consists at the present time of three primary accesses providing 30 urban lines shared among all Park users.

Wi-Fi internet connection is available in the whole of Building 2 and in the yards of the other buildings.

**Data network**

Internet connection is provided by a dedicated 100 Mbps line shared among all users. On request, tenants may be assigned public IP addresses. The dedicated line reaches the hub-and-spoke point in building 2: it then follows the campus backbone and connects through shunts to the individual buildings.

A server room in Building 2 is available for businesses wishing to locate their servers there. In addition, virtual servers provided by Sardegna Ricerche and/or storage capacity are available. Businesses using these services can access these resources directly from their offices by propagating their company network from the offices to the server room. The use of the server room is governed by a specific set of rules.

**Common-use spaces**

All common-use facilities are located in Building 2 (Services Centre and reception) and are available to tenant companies, in accordance with the priorities and methods set out in the relevant regulations.

**Auditorium**

The double-height auditorium, located at one end of the building, seats about 150 delegates. Auditorium equipment, adaptable to meet the requirements of a range of different events, includes audio-visual systems, such as a wall with screens for various types of projection, simultaneous translation booths, videoconferencing system, overhead projector, video projector, audio-visual control room etc.

**Meeting rooms**

These are two rooms, with floor space of about 70 m2 each, located on either side of the hall of building 2.

The first room can seat 15-20 people and is mainly intended for executive meetings. It is also equipped for videoconferencing and for audiovisual and multimedia presentations (Communications Room).

The second room, with a seating capacity of about 35-40, is mainly intended for PR and promotional events, i.e. briefings to visitors and external operators. Both rooms have audiovisual communication equipment, including overhead projector, video projector, DVD player, slide projector, screens and writing boards. (Conference Room)

**Training classrooms**

Building 2 has an area of more than 200 m2 dedicated to education and training activities. To ensure adaptability to different requirements, the rooms have soundproofed sliding partitions making it possible to modify their size. Training facilities include a computer classroom, fully equipped with teaching aids (video projector, overhead projector, slide projector etc.), and a seminar room with partition panels. The use of the training classrooms is governed by a set of specific regulations that sets out access conditions, costs and procedures.

**Library**

A spacious area within Building 2 houses the well-stocked library with books, journals and dailies for research, consultation and reading.

**Foyer**

A spacious area next to the Auditorium entrance, overlooking the hall. The foyer can host small exhibitions or science awareness events.
Bar - Restaurants
Catering facilities are located on the ground floor of Building 2; they look out over the square which can also be used for outdoor eating. The catering facilities have a total surface of about six hundred square metres, offering a range of services from quick snacks at the bar to cafeteria lunch service, to restaurant service. The cafeteria and restaurant have an overall capacity of more than 150 people, sized to meet the Park's estimated demand. There is also a reserved room for table service on request, which can accommodate about 20 persons.

Logistics and maintenance

Security and surveillance
Surveillance is provided by armed guards from 19:00 to 07:00 h on weekdays and 24 hours a day on weekends and holidays. The security service includes permanent manning of Building 10, which houses the control room with CCTV terminals and alarm systems, and night-time patrol service by armed guards.
At Building 2, reception service is available on weekdays from 07:00 to 08:30 h and, on Monday and Tuesday, from 18:00 to 19:00 h, from Wednesday to Friday from 15:00 to 17:00 h.

Links to Cagliari
The public bus service (ARST) makes five daily runs.
From Cagliari it can be boarded at 6 different pick-up points starting from the terminus at the following times: 07:45 - 08:45 - 13:00 - 16:30 - 17:45.
Bus arrival times at the Park: 08:50 - 09:50 - 14:05 - 17:35 - 18:20.
From the Park heading for Cagliari, the bus departs at the following times: 09:00 - 10:00 - 14:10 - 17:45 - 18:30.
Arrival in Cagliari (Piazza Giovanni XXIII) at the following times: 10:05 - 11:05 - 15:05 - 18:50 - 19:35.

Visitor reception
The service includes gate check and announcement of guests and visitors, who can also be accompanied by a Park vehicle. For groups and delegations, a shuttle service with Park vans is also available.

Use of shared areas and facilities
This service addresses the use of common spaces. The conditions, methods and timing of its delivery are set out in a specific set of regulations.

Ordinary and extraordinary maintenance
The tenancy fee covers: all extraordinary maintenance of buildings, infrastructure, utilities and landscaped areas around the buildings, as well as the ordinary maintenance of shared areas and facilities.
The costs of the ordinary and scheduled maintenance of premises assigned for exclusive use to businesses, except for Sardegna Ricerche subsidiaries, are allocated as follows:
- Labour costs for maintenance work are payable by Sardegna Ricerche;
- replacement materials or consumables are payable by the tenant companies. If the cost of these supplies is initially covered by Sardegna Ricerche, it will then be billed to the requesters.
The maintenance service includes infrastructure works (upgrading of utilities, subdivision and organisation of premises, etc.) deemed necessary by Sardegna Ricerche to adapt the premises and their furniture and fittings to meet users’ requirements, in accordance with the Park’s rules.
The service also includes ordinary and extraordinary maintenance of all outdoor spaces (roads, yards and squares, footpaths, etc.), and guarantees immediate response to risk events (e.g. fire outbreak, obstacles on the road, etc.).

Common supplies and utilities
This service concerns the supply of gas, diesel for power generators, deionised water resin regeneration, etc. to all plants and equipment supplying the buildings, hence shared among several users. Costs will be allocated among users in proportion to the floor space (m²) assigned to each, on the basis of the Building’s Rules.

Cleaning of common-use spaces
This service ensures regular cleaning of the common spaces in Buildings 2 and 10, including the squares and terraces of all buildings.

Water, purification and urban solid waste
This service concerns water consumption for civil use, operation of the sewage treatment plant, and management of collection points for urban solid waste. It does not include payment of the waste disposal taxes (TARI and TASI), which under the law are payable by the party having possession of the premises.
Electricity
This service includes lighting of common areas and streets, as well as electricity supply to common-use facilities.

Phone and data lines and cabling
Ordinary and extraordinary maintenance of phone and data line cabling and equipment is provided. The tenancy package also includes management and technical assistance service for telephone access points, allocation of the phone lines available, connection of the businesses’ local networks to the campus backbone and IP address assignment.

Personale services
Info desk
The info desk provides information on the local area: entertainment, eating out, accommodation, transport, and special concessions reserved for Park tenants.

Events
This service is available for the organisation of social and cultural events, exhibitions and miscellaneous events etc.

3.2 Macchiareddu Centre
The Sardegna Ricerche site at the Industrial Park of Macchiareddu hosts the R&D and innovation activities of the Renewable Energies Platform: a technology facility for renewable energy and energy efficiency at the disposal of the regional business and research system.

The Platform has three technology laboratories and a Support and Design Unit.
Tenant businesses at this site have access to the services provided by the laboratories and by the Support and Design Unit in accordance with the conditions, methods and timing set out in the Regulation for Access to the Renewable Energy Cluster.

Tenancy spaces for enterprises
The Renewable Energy Cluster Building is composed of two portions: one prefabricated with sandwich panels and the other, more recent, prefabricated in reinforced concrete.

The spaces for tenant businesses are located in the first portion of the building, which has a total covered surface area of 1133 m², divided into laboratory area and office area. The standard technical equipment comprises: HVAC system, lighting system, electrical outlets and structured phone-data cabling.

Specifically, the Renewable Energy Cluster makes available to prospective tenants at the Macchiareddu site 5 offices of 12 m² each, furnished with desks, plush chairs/armchairs, cabinets with wooden/glass doors of various heights and cabinets with drawers. All the offices are equipped with Internet connection with LAN and Wi-Fi network, VoIP telephone network and HVAC system.
Office spaces are handed over to tenants in their present condition; any modification to the premises – which is subject to prior authorisation – is at the tenant’s sole expense.

Services provided by the Support and Design Unit
The services provided by the Support and Design Unit for the thematic areas covered by the Renewable Energy Cluster include, for example and without limitation:

Information and training services
• Technical and scientific information:
  o Outreach and education days, sectoral workshops, thematic seminars, etc.;
  o Information services on R&D programmes;
• Technical and scientific training:
  o Technical-scientific training and updating courses provided free of charge.

Support and consulting services
• Support and consulting services:
  o identification of calls and funding sources;
  o drafting of research proposals and projects;
  o search for project partners;
  o investment guidance;
  o improvement of energy performance.
For a detailed list of services, together with the conditions and procedures for their provision, see the Regulation on access to the Renewable Energy Cluster.

**Common-use spaces**

**Conference room**
The conference room can host up to 70 people in comfortable plush armchairs arranged in two rows with central corridor. The front wall has 2 large writing boards. On request, it can be equipped with a video projection screen and flip chart on an easel. The conference room has Wi-Fi internet connection.

**Training room**
The training room is furnished with plush seats and desks and can accommodate up to 25 people. Along the walls there are a number of electrical and LAN data sockets. The room is also served by Wi-Fi. The front wall also has a writing board.

**Meeting room**
The meeting room is furnished with an oval boardroom table and plush seats, and can accommodate up to 12 people. Other furniture and equipment include a cabinet, wall-mounted writing board, flip chart with easel and, on request, video projection screen. The room is served by LAN sockets and Wi-Fi and a number of electrical sockets.

**Hall**
The entrance, with floorspace of about 50 m2, serves as reception and coffee break area. It is regularly used to welcome guests and visitors, as an info point on the activities carried out at the Cluster, also by means of demonstration kits and information panels. A quiet corner of the hall is furnished with armchairs and has a dispenser of snacks and cold and hot beverages.

**The territory and transport links**
The site of the Renewable Energy Cluster is located in the Macchiareddu Industrial Park, along VI strada ovest, next to the Cacip Service Centre and the Civil Protection Department. The site is easily reached from the main roads in southern Sardinia Sardegna (SS 131, SS 195, SS 554) and is about 10 minutes’ drive from the port, the airport, the capital city and the main towns in the hinterland. The area is also linked to the railway and bus stations by a bus service, called "ZI" operated by the City Transport Company (Consorzio Trasporti e Mobilità di Cagliari - CTM). The service has 5 daily runs, and operates as follows:
- Line from Cagliari (Piazza Matteotti) – to Macchiareddu (Sesta strada), at the following times: 7:20, 8:10, 13:25, 14:40, 17:00;
- Line from Macchiareddu (Sesta strada) – to Cagliari (Piazza Matteotti), at the following times: 08:30 - 08:50 - 13:45 - 15:00 - 17:20.

**Facilities and general services**

**Electricity supply**
Electricity is supplied via a single low-voltage (380V) supply point operated by ENEL, with available power of 250kW. The centre also has three PV installations: a traditional installation of 18.70kW and two concentrating PV plants (with outputs of 6.2kW and 8.9kW respectively) operated under the net metering system, which contribute to meet the power demands of the centre. Several local control panels ensure correct distribution of electricity, both within the laboratories and in the office areas. A 20kVA UPS unit covers the office power supply points.

**Data and phone network**
The building is connected to the Pula campus by a 1 Gbps fiber optic backbone which delivers both data transmission and VoIP telephone service. Telephone traffic is then channelled through a primary access providing 30 urban lines shared among Park users. Internet connection is provided by a dedicated 100 Mbps line shared among all users, including those based at the Macchiareddu site. This line reaches the hub-and-spoke point in Building 2 at Pula and is delivered to users via the campus backbone and the subsequent shunts connecting to the network systems on each floor.

**Security and site access**
Site security is guaranteed year round by:
- a security service manned by armed security guards who inspect the premises and outdoor spaces according to the procedures and time-frames established by Sardegna Ricerche and who promptly report to their control room and to Sardegna Ricerche any irregularity, fault or damage found;
• an alarm system with remote connection to the security firm's control room. The security firm guarantees year-round 24/7 phone hotline and fast response within 30 minutes from the alarm or report, by sending a patrol or alerting law enforcement.

Access to the Macchiareddu site is regulated by a badge reader that opens doors after user identification.

**Ordinary and extraordinary maintenance**
The tenancy fee covers: all extraordinary maintenance of the building, infrastructure, utilities and landscaped areas around the building, as well as the ordinary maintenance of shared areas and facilities.
The costs of the ordinary and scheduled maintenance of premises assigned for exclusive use to businesses, except for Sardegna Ricerche subsidiaries, are allocated as follows:
• labour costs for maintenance work are payable by Sardegna Ricerche;
• replacement materials or consumables are payable by the tenant companies.
The maintenance service includes infrastructure works (upgrading of utilities, subdivision and organisation of premises, etc.) deemed necessary by Sardegna Ricerche to adapt the premises and their furniture and fittings to meet users' requirements, in accordance with the Park's rules.

**Cleaning**
This service ensures regular cleaning of all spaces hosting tenant businesses, the laboratories, the common spaces and site grounds.

**Water, purification and urban solid waste**
The site is connected to the mains water supply, including water for domestic and industrial uses. The costs of water consumption, waste water treatment and solid waste disposal are included in the tenancy fee.

### 3.3 Site of Torregrande – Oristano (Fondazione IMC - International Marine Centre non-profit foundation)
The IMC Foundation is based in the district of Torregrande, belonging to the municipality of Oristano, the "Sa Mardini" locality. It pursues research activities in the field of sustainable aquaculture, the breeding of fish and invertebrates for re-population and for boosting the productivity of lagoons and coastal areas; it also pursues research on the management and conservation of marine and coastal ecosystems and their biodiversity.

The centre also hosts the Operational Unit in Oristano of the Marine-Coastal Environment Institute of the National Research Council (CNR), under a loan for use agreement, covering use of some office space and shared use of the laboratory facilities.

Tenant businesses at this site have access to the services offered by the IMC Foundation's facilities.

**Tenancy spaces for enterprises**
The centre, which stands in grounds of 11,130 m2 owned by the Municipality of Oristano and given in concession to the IMC Foundation with surface rights, includes two buildings connected with each other and an ancillary building, as well as external utility structures.

The main building, which is fully accessible to the disabled, consists of offices and laboratories and has two floors: a ground floor with floor space of 638 m2 and a first floor measuring 970 m2. The building has a conference room and a meeting room, office spaces and histology, microscopy and chemistry laboratories.

The second building houses the "wet laboratories" and consists of one floor, with a surface area of 810 m2.
The third building, separate from the first two, is a small ancillary facility consisting of an insulated metal cabin of 54 m2, used as storeroom for equipment and materials.

Specifically, the IMC Foundation makes available to prospective tenants at the Oristano site 3 offices of 12 m2 each, furnished with office furniture and equipped with Internet connection with LAN and Wi-Fi network, VoIP telephone network and HVAC system.

**Common-use spaces**
The conference room can host up to 50 people in comfortable plush armchairs arranged in two rows with central corridor.
The front wall has 2 large writing boards. It also has a video projection screen and flip chart on an easel. The conference room has Wi-Fi internet connection and a booth for simultaneous translation.

The meeting room, which adjoins the conference room and is separated from it by sliding partitions, has a rectangular boardroom table and chairs for 12 attendees.
A separate lounge is provided with snack and hot and cold beverage dispensers, and equipped with table, refrigerator and food and beverage heating equipment.

### 3.4 Alghero (Tramariglio) Centre

#### Tenancy spaces for enterprises
Office and lab spaces for businesses are available in the “Research” building. The buildings are furnished with desks, cabinets, chairs, data transmission line and phone line. The laboratories, which come in different sizes, are provided with worktops, benches, refrigerator and/or freezer, reagent cabinets, and cabinet for glassware. The set-up and furnishings are adapted to suit the companies’ requirements as far as possible.

#### The territory
This centre is located in the locality of Tramariglio, in the Municipality of Alghero, less than 17 km from Alghero-Fertilia airport, in one of the most scenic spots on the Coral Riviera. An enchanting place, where nature, history and culture form a unique backdrop to one of the most vibrant economies on the island.

The centre is about 8 km from the rocky headland of Capo Caccia, at whose foot opens the entrance to the famous Neptune’s Cave, which can be reached by boat or by walking down a panoramic stairway of 656 steps cut into the rock.

#### Infrastructure

##### Roads
The campus has an internal road and parking spaces in front of the Research, Guest Quarters and Food technology blocks.

##### Electricity supply
The electrical distribution grid consists of a single medium-voltage ENEL delivery point and a dedicated power transformer station (two 500 kVA resin transformers and one 600 kVA transformer) which feeds the buildings through a power centre. The system also has two power generators (500kVA and 600kVA) and two main backup units (UPS) (respectively 100 kVA and 60 kVA) feeding respectively the emergency power lines and the computer and data lines. In the offices and labs, local control panels distribute normal electricity supply and backup electricity to users. Users may not make arrangements for electricity supply directly with ENEL.

##### Fire-fighting network
The fire-fighting system consists of a main network fed from a water tank through electrical pumps, and conveying the water to the hoses located both inside and outside the buildings. The buildings are also equipped with a centralised fire detection system which makes it possible to immediately activate the emergency sprinkler system in the event of fire.

##### Water supply and sewer network
The Park’s water supply network, which branches off the water main along Provincial road S.P. 55, includes a boosting station, storage tank and the Park’s internal distribution network.

The sewer network conveys wastewater to the purification plant, while rainwater is discharged into the sea.

##### Data transmission and phone network
The Research and Food Technology buildings are interconnected by a fiber optic campus backbone. The main copper phone line links the Food technology, Guest Quarters and Research buildings. There is also audiovisual connection between the conference halls.

##### Auditorium and Nettuno
The phone line connection is provided by primary ISDN access with 15 channels shared among all Park users. A metering system makes it possible to bill users individually.

Internet connection is provided by a dedicated 8 Mbps line shared by all users, with guaranteed minimum bandwidth of 4 Mbps.

##### Security systems
Security at the centre is assured by a comprehensive system which includes:
- general site security provided by the Centre’s Security service;
- CCTV surveillance of the main gate and access control in the Research building.
The system includes a number of swipe card readers for door opening, controlling access to the various buildings and areas, and a main security control point in the switchboard room, where all data converge. The system relays to the central control room all events (alarms, breakdowns, ID card swipes, etc.) recorded by the card readers. The control room also includes the control panels for the fire alarm, utility monitoring and burglar alarm systems.

### Common-use spaces

The common-use spaces are located in the two buildings and include:

- **Auditorium**
  The double-height auditorium, located at one end of the building, seats about 200 delegates. The auditorium, adaptable to different events, is equipped with audio-visual systems, such as a wall with screens for various types of projection, simultaneous translation booths, videoconferencing system, video projector, audiovisual control room etc.

- **Meeting rooms**
  The Alghero centre has various meeting rooms, suitable for a variety of requirements.
    - **Nettuno Room**: it seats up to 100 participants and is mainly intended for conferences: equipment includes screens, overhead projector, video-projector, etc. It can also be linked to the Auditorium by a video-conferencing system.
    - **Anghelu Ruju Room**: it seats 40 delegates and is the most versatile, since it can be set up with different seating arrangements.
    - **Foradada Room**: a room for small meetings, seating 12/14 persons.
    - **Calik Room**: a room for small meetings, seating 12/14 persons.
    - **Palmavera Room**: this room, which seats 35 participants, can be used either for meetings or for teaching/training sessions.
    - **Dragunara Room**: this room can seat 10/12 persons and is mainly intended for executive meetings. It is equipped for video-conferencing and for meetings featuring audiovisual and multimedia presentations (Video-conferencing Room).
  
  All rooms are mainly intended for PR and promotional events, i.e. briefings to visitors and external operators, and feature audiovisual communication equipment, including video projectors, screens, writing boards and internet connection.

- **Training classrooms**
  The Centre has spaces for training activities, which can be adapted to various requirements. Training facilities include a computer classroom, fully equipped with audiovisual teaching aids.

- **Foyer**
  A spacious area next to the Auditorium entrance, overlooking the hall. The foyer can host small exhibitions or science awareness events.

- **Guest Accommodation**
  The Guest Accommodation facility has 19 single rooms with queen-sized bed, 8 double rooms on two levels and 4 double rooms on one level, all with en-suite bathroom. Rooms are equipped with TV, mini bar, hair dryer and HVAC system.

- **Hall and Reception**
  The reception and night porter service in the Guest Accommodation facility of Porto Conte Ricerche are available whenever guests are staying at the Centre.

- **Bar – Cafeteria – Restaurant**
  The bar of Porto Conte Ricerche is open year-round from 08:00 to 15:00 h. When conferences are in progress, opening hours are changed to meet the needs of participants. The cafeteria/restaurant can seat 100-120 persons. The cafeteria service (lunchtime) operates Monday through Friday, while restaurant service (including buffets, coffee breaks etc.) is available only when guests are staying at the Centre and/or during conferences.

### Logistics and maintenance

#### Security and surveillance

This service has been contracted to a security firm, which provides round the clock surveillance of the Alghero centre, access control, patrolling and inspection of premises, and participates in the emergency plan.

#### Visitor reception

The service includes gate check and announcement of guests and visitors. For groups and delegations, a guided tour of the Park can be booked in advance.

#### Use of shared areas and facilities

This service addresses the use of common spaces. The conditions, methods and timing of its delivery are set out in a specific set of regulations.
Ordinary and extraordinary maintenance
This service provides all extraordinary maintenance of buildings, infrastructure, utilities and landscaped areas. It includes ordinary maintenance of common spaces and facilities, infrastructure and utilities (e.g. water and sewer system, HVAC system, burglar and fire alarm systems).
The maintenance service also provides immediate response to risk events (e.g. fire outbreak, obstacles on the road, etc.).
The service also includes ordinary and extraordinary maintenance of all outdoor spaces (roads, yards and squares, footpaths, etc.).

Cleaning
This service includes regular cleaning of all spaces, including the squares and yards outside all buildings.

Water, purification and urban solid waste
This service concerns water consumption, purification plant operation, disposal of urban solid waste and of special/hazardous waste.

Electricity
This service covers lighting of common areas and streets, as well as power supply for the operation of all infrastructure and utilities.

Data and phone network
Ordinary and extraordinary maintenance of phone and data line cabling and equipment is provided. The tenancy package also includes management and technical assistance service for telephone access points, allocation of the phone lines available, connection of the businesses' local networks to the campus backbone and IP address assignment.

Personal services
Info desk
The info desk provides information on the local area: entertainment, eating out, accommodation, transport etc.

Events
This service is available for the organisation of social and cultural events, exhibitions and miscellaneous events etc.

4. Tenancy fees

Pula Centre
The tenancy fee at the Pula centre is of Euro 8.00 + VAT per m2 for both office spaces (furnished or unfurnished) and laboratory spaces (with benches). The fee includes power and water supply.
The tenancy agreement contains a clause on the possible adjustment of the tenancy fee in the event of changes to the services offered in the tenancy package.

Macchiareddu Centre
The tenancy fee at the Macchiareddu centre is Euro 8.00 + VAT per m2 for office spaces.
Please note that the tenancy fee per m2 at the Macchiareddu centre, unlike the fee charged at Pula, includes, in addition to electricity and water bills, urban solid waste disposal costs, cleaning and security services costs.
The tenancy agreement contains a clause on the possible adjustment of the tenancy fee in the event of changes to the services offered in the tenancy package.

Torregrande – Oristano Centre
The tenancy fee for public and private research organisations wishing to establish a base in this centre will be communicated shortly.

Tramariglio – Alghero Centre
The monthly tenancy fee – inclusive of the services covered by the tenancy package – in the Tramariglio centre is Euro 8.00 + VAT per m2 for office premises; Euro 6.00 + VAT per m2 for store rooms and equipment rooms; Euro 12.00 + VAT per m2 for lab space.
Please note that the tenancy fee per m2 at the Tramariglio centre, unlike the fee charged at Pula, includes, in addition to electricity and water bills, urban solid waste disposal costs and cleaning costs.
The tenancy agreement contains a clause on the possible adjustment of the tenancy fee in the event of changes to the services offered in the tenancy package.