





3 S Aerospace in Lazio

6Lazio
Companies

5 [18

Leading International

Players

22

ESABIC startups



FOREWORD

Lazio Region is facing a complex yet fascinating challenge: to make our region one of the best in Italy and in Europe in terms of growth of the knowledge and innovation economy. It is our firm belief that the future of our production system depends on the ability to bring together tradition and innovation, enhancing our strengths and supporting the development of the most advanced economic sectors. The aerospace industry is one of these, for the amount of investments it attracts, the effects it has on the construction of an innovation "ecosystem", and the global impact that the changes it produces can have on the entire production chain. In the following pages you will be able to read about the protagonists of this key asset of our region. Some of the most advanced "players" in the aerospace industry are located in Lazio; corporations with a global reach, human capital offering a competitive advantage, in the form of researchers and professionals, in public and private sectors, linking the research and business worlds, and a long tradition of scientific and industrial sectors working in this field. In its capacity as a planning and steering body, the Region has thus chosen to give tangible support to the growth of this extremely important pillar of our economy. It makes use of European funding to encourage investments, it fosters the creation of research "poles" and networks involving Universities and businesses, and it forges ties and cooperation with the main domestic and international, public and private, players. This is another thread in the set of initiatives and measures we are pursuing to build the Lazio of the future.

> President of Lazio Region Nicola Zingaretti



AEROSPACE IN LAZIO

The Lazio aerospace industry successfully competes at an international level offering products and skills at every level of its production chain: from research to planning, design, manufacturing and services. This is possible thanks to the presence of world-renowned universities and research centres, large enterprises and production units owned by international groups, as well as SMEs capable of providing components, services and technical/industrial support.

Aerospace is a key element of the Smart Specialisation Strategy (S3) of the Lazio Region. S3 provides guidelines for regional incentives and investment for the innovation and internationalisation of Lazio's production system. In 2004 the Aerospace Technology District (DTA) of Lazio was established,

the first of its kind in Italy. Since 2005, through the DTA, the Region has invested around 38 million euros, supporting around 50 Research & Development projects. In 2012 the DTA became one of the founding partners of the Italian Cluster for Aerospace Technology (CTNA), which gathers the regional industrial and technology districts, institutions, agencies, 29 large enterprises, more than 800 SMEs, 81 research centres and 28 universities. The local government of Lazio helps aerospace SMEs and companies

The local government of Lazio helps aerospace SMEs and companies also by giving them access to the European resources of the 2014-2020 ERDF Regional Operational Programme and fosters three programmes for startups, business ideas and innovations.

ESABIC (Business Incubation Centre): a partnership with ASI (Italian Space Agency) and ESA aims to work with and inspire entrepreneurs to turn space-connected business ideas into commercial startup companies through an incubation programme, supporting finance and technology transfer.

Fab Space 2.0: an EU project funded by Horizon 2020 with the University of Tor Vergata and in collaboration with the Regional Agency for Environmental Protection (ARPA Lazio), ESA and ASI. A challenge for innovative solutions of environmental monitoring - soil, water and air - with systems, products and services based on satellite and geo-information data.

Space up: 10 organizations from Germany, Italy, Belgium and Spain, funded with 2 million euros from Horizon 2020, will select 200 aerospace startups and choose the best 60. 6 "European Space Academies" in the next 3 years will offer one-to-one training, coaching, networking and matchmaking meeting with business angels and investors.

Lazio Companies



ALTER.NET



ARS ELECTRONICS

AEROSPACE RELAYS SPECIALTY



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alter.net srl, founded in Rome in 1995, is a global solution service provider oriented to business and value. Our focus is to follow our customers simplifying site assessment, hardware provisioning, site activation, on-site services and infrastructure takeover providing 24h services with customized SLA using our service platform Ne.Mo. alter.net is a value driven company, with a focus on business model that help customers to develop their own business based on a solid IT partner. In the last 20 years we have worked in 250



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ARS ELECTRONICS has recently introduced a new concept of "high reliability" RELAYS, TIMERS and SENSORS for aerospace, defense & railway applications. Our main capability is to reproduce obsolete devices and in some cases to suggest a valid alternative 100% equivalent in FIT-FORM & FUNCTION. Also, we can develop & manufacture any kind of product according to customers' specifications. ARS ELECTRONICS is proud to offer an extensive line of products which comply to MIL-PRF-6106, MIL-PRF-83726, MIL-R-5757.



BLUE LAB



CELAB

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Blue Lab designs and develops electronic emergency locator systems for avionics. transmitters and electric galley equipment. Undergoing approval as Design Organization according to EASA Part 21 J.

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CELAB is a testing laboratory operating in Military, Avionics and Aerospace. Member of RTCA and EUROCAE, working aroups for DO-160 & ED-14. CELAB is specialized in:

- Environmental Qualifications. Mechanical Simulations and Biological Tests on customer specifications
- Laboratory tests: DO160, ED14, MIL STD 810, MIL'STD 461, STANAG, ÉMC, LVD, R&TTE/RED and many more
- Notified Body for the CE marking Assessment for EMC, LVD and R&TTE/RED **Directives**



ECOBUBBLE



ELECTRON SOURCE CO



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Ecobubble is a Citizen Science project that integrates nature and technology in order to reduce local atmospheric pollutants. The team offers B2B and B2C solutions to support the Green Industry in Designing Activity and Hanging Gardens Development. A geolocation analysis is used to select the vegetation that can be better suited to intercept and absorb pollutant particles. The IT tools connected to detectors and weather stations provide an access to an environmental monitoring net.



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Electron Source Co is a quality system certified company, having more than 25 years experience, manufacturing high quality level of electromechanical relays, solid state relays, timers, voltage sensors, frequency sensors, current sensors, phase sequence sensors.

The company has the knowledge to reproduce obsolete items with the same Fit, Form & Function of the original device by reverse engineering or new redesign.



GAUSS



GEMAC ENTERPRISE NETWORK



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GAUSS is an Italian private Company carrying on the tradition of the "Scuola di Ingegneria Aerospaziale" in the field of Small Satellites. Its activities range from structural design and mission analysis to the realization and launch of complete satellites (CubeSats), their deployers, launching platforms and main subsystems (OBC, EPS, Radio, customers payloads etc.), IOD/IOV and ground segment services. The "UniSat" platform is used as a carrier and deployer for third-parties satellites in orbit.



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GEMAC ENTERPRISE NETWORK has been created to integrate specific skills coming from Aircraft instruments, Gyrostabilized platforms, Multispectral sensors and Sat links in order to develop an innovative integrated systems useful in the Antidrone, law enforcement and broadcasts markets.

The main activity of GEMAC is at present addressed to the development of:

- ThermalRadar Antidrone system
- High Precision Telecontrolled Pointing Mast





HTT HIGH TECHNOLOGY TRANSFORMERS



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GMSPAZIO operates in Aerospace, Defense, Homeland Security and ICT Markets, with high level solutions focused on 4Ds (Space/Time) Synthetic Scenarios Management to help customers manage: Complex Simulation Scenarios, Space Surveillance & Tracking and SSA issues, Border Patrol Control Activities, Missile Defense Network Modeling, Satellite Remote Sensing Projects, and UAVs Surveillance Activities, GMSPAZIO offers Products, Services, and Training to develop Integrated and Customized Information Systems, software applications and services.



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HTT is a custom design, qualify, manufacture company of Transformers, Inductors, Electric motors, Generators, Solenoids, Power Supply and Power Units, Microcoils, and RF cables for Hi Rel and VHi Rel critical requirements.

With more than 25 years heritage, HTT also offer build to print, reverse engineering and process comply with MIL PRF 27F, MIL STD 981, MIL PRF 21038, LPP HREL and testing comply with MIL STD 202 and MIL STD 810. HTT is a ISO9001 company with EN9100 in progress. HTT is involved in some of the most important Aerospace and Defense international programmes.



CONSORZIO DI RICERCA HYPATIA



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Research Consortium Hypatia manages **ARTES** FSA Business **Applications** the Programme with the support of the Italian Space Agency. The Programme accelerates businesses of professional users through space technologies, i.e. Earth Observation, Satellite Telecommunications. Satellite Navigation in sectors as agriculture, fisheries, autonomous vehicles, energy and many others. Moreover, Hypatia links business generators with the right partners and investors thank to its wide network of partners.



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Marlen Italia is an industrial group of SMEs operating in the field of precision mechanics (turned and milled parts on lathes and CNC centres) and the metallic carpentry, active in the subcontracting of components and preassembled products (mechanical assembly of the components), which specializes in aeronautical and electromedical sectors. Marlen Italia is able to guarantee a Customer products with the build quality of the specialist of each stage, along with the flexibility of a small enterprise.



M.E.RIN



MES



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Since 1994 **M.E.RIN** team designs, manufactures and tests customized flexible, crashworthy and self-sealing fuel tanks in house, in order to maintain total control of the quality and safety of each product prior to delivery. Our fuel tanks are designed for aeronautical, automotive and nautical sectors. Merin's Quality System complies with ISO 9001 and EN 9100 certification. All products can be manufactured in compliance with required standard (e.g. CS27/CS23).



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MES, established in 1958, started its activity producing precision mechanical parts and assemblies aimed mainly to the military market. It gradually expanded its activities and today with 120 employees and 10 mechanics and electronics engineers can satisfy customers demands, always in full compliance with most stringent quality requirements, in three main areas: Mechanics engineering and production, Electronics engineering and production and Optoelectronics engineering and production.



METEOTEC



MICROLAB



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Meteotec mission is the Environmental Research and the impact assessment of weather-climate on economic activities with a specific focus on the Weather Risks in the Aerospace Industry.

Big Data applied to Weather Analysis and the meteo-climatic monitoring through dedicated IoT Solutions enable Meteotec to provide the state of art solutions for the analysis and management of the Weather Risks.

IICROCLIMATIC MONITORING							
monto cantin tire into	1	2	3	4	5	6	7
AIR TEMP max [°C]	20.6	21.4	21.5	19.5	17.2	17.2	18.9
AIR TEMP med [°C]	15.8	16.3	16.3	16.5	14.2	13.2	12.9
AIR TEMP min [°C]	12	13.2	13.6	14.1	12.4	9.6	7.9
RH max [%]	-84	88	87	82	90	92	94
RH med [%]	84	75	76	75	85	87	85
RH min [%]	72	53	57	66	72	74	68
PREC TOT [mm]	0	0	21	0	14.2	9.2	0
HOURLY PREC MAX [mm]	0	0	17.6	0	6.4	2.8	0
HOUR PREC MAX			9-10		13-14	4-5	

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Microlab, established in 1981, is involved in Design/Consultancy/Manufacturing in Electronics market, in Defense/Aerospace, Telecommunications, ICT, ElectroMedicals and Energy sectors. We have designed hundreds of Products for our Customers, much of them being now our close partners. We search for business in Central and South America, Eastern Europe, Turkey, China, Taiwan, Iran, Jordan and Nigeria. We support companies to Subscription, Monitoring and Participation to UN and World Bank Tenders.



PROGETTI SPECIALI ΙΤΔΙ ΙΔΝΙ



SUPERELECTRIC



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Progetti Speciali Italiani Srl (PSI) operates mainly in the following areas:

Aerospace

Defence

Homeland Security
 The industrial turnover is about 20 MEuro with

about 200 employees.
PSI has a set of prestigious National and International Customers for which developed:
Nano/Microsatellites for Dual Use application
Small GEO TLC Satellite Phase B study
UAV system and application
Consultancy on the Ground Segment of

Large TLC constellation
Large Space Thermal Vacuum Simulators



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SUPERELECTRIC has 30 years experience in system Integration with focus in designs and development of measurement instrumentation Development of multispectral and hyperspectral systems for aircrafts, drones and Turn-Key Data Processing systems.

systemONE – UAV IMAGING SPECTROMETER: Últralight 12 VIS-NIR + 1 Thermal Channels Hyperspectral Imaging spectrometer.

T360 - THERMAL ŘAĎAR: 360° Thermal-Visible surveillance system with multiple point temperature measurement image and data fusion.





Leading International Players



LEONARDO



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Leonardo is a global high-tech player in the Aerospace, Defence and Security sectors. With headquarters in Italy and over 45,100 employees, the Company has a consolidated industrial presence in four main markets (Italy, the United Kingdom, the United States and Poland). It designs and develops products, services, and integrated solutions for governments, Armed Forces, institutions, and citizens, covering every possible operating scenario: air and land, naval and maritime, space, and cyberspace.



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Telespazio, a joint venture between Leonardo (67%) and Thales (33%), is one of Europe's leaders and one of the world's main players in satellite solutions and services, with activities ranging from the design and development of space systems to the management of launch services and in orbit satellite control; from Earth observation services, integrated communication, satellite navigation and localisation, to scientific programmes.



E-GEOS



THALES ALENIA SPACE



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e-GEOS (ASI/Telespazio), is a leading international player in the EO and Geo-Spatial Information business.

From data acquisition to the generation of reports, e-GEOS is working for multi-source big data analytics and to gain access to application platforms for defense and intelligence, maritime surveillance and all land and seas monitoring activities. e-GEOS is the global distributor for COSMO-SkyMed Constellation and has acquired leading position within European Copernicus Program.



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Thales Alenia Space, a joint venture between Thales (67%) and Leonardo (33%), is a key European player in space Telecommunications, Navigation, Earth Observation, Science & Exploration, Orbital Infrastructures & Space Transport.

The company also teams up with Telespazio to form the "Space Alliance", which offers a complete range of services and solutions. Thales Alenia Space posted consolidated revenues of about 2,6 billion euros in 2017, and has 7,980 employees in 9 countries.



ESABIC startups

The ESABIC initiative is part of the European Space Agency's Technology Transfer Programme whose goal is to facilitate the use of space technology, data, systems and know-how for non-space applications and to demonstrate the benefit of the European space programme to European citizens.

Lazio Region, as first and unique region in Italy, co-funds and supports the incubation programme for space-tech based startups, in cooperation with Italian Space Agency (ASI).

The actual startups portfolio is introduced in the next pages.

CENTRALE VALUTATIVA

centrale valutativa

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COLOMBOSKY



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Product/service:

Tethys is an innovative precision-farming tool developed by **Centrale Valutativa** to optimise the irrigation water management, guaranteeing savings of at least 20%. Tethys is a smartphone and web application based on an evapotranspiration model (SEBAL), using satellite and other data to provide farmers an advice on the proper irrigation volumes and times.



Product/service:

ColomboSky has created a novel web platform, called AquaX, which is a very accurate and complete water quality monitoring tool tailored to marine aquaculture. The service is based on a new satellite monitoring approach on a wide view of the context area for the early detection and warning of approaching water threats (harmful algae bloom, jellyfish invasion, oil spill, marine debris), reducing the risk of loss of stock and missed profit.



ERMES IT



GMATICS



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Product/service:

ERMES IT is developing a novel ionizing radiation detector, named RADFinder, that is based on an original geometry and state-of-the-art hardware components. It allows to locate radioactive sources and it offers superior capabilities compared to the current generation of detectors for radiation protection. The fields of application of the RADFinder are environmental and population radioprotection, containers and goods control, homeland security and counterterrorism.



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Product/service:

The SoCoA (Soil Consumption Alert) service intends to use Copernicus Sentinel high revisit and the free of charge satellite data policy to develop a new service to provide very timely alerts to Public Administrations about changes in their land use. The service will be offered to customers on a subscription basis, with access through the web and an easy to use application.

LATITUDO 40



PROESYS



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Product/service:

The use of information extracted from satellite acquisitions in industrial applications is still rather limited. The objective of **Latitudo 40** is to overturn this paradigm, and to capture the value of the rapidly changing and growing EO market proposing a new platform for EO data exploitation based on the concept of information as a service. The platform proposes new solutions for solving land monitoring and planning problems at lower cost with respect to the existing products.

Product/service:

ProEsys' technical expertise is focused on HW/FW design, RF radio-frequency systems including microwaves, mechanical design and high-tech industrialization processes, signal processing and FPGA algorithms development. ProEsys has its own line of IOT products based on the latest LORA and UltraWideBand technologies, designed for critical infrastructures and indoor/outdoor localization systems monitoring.

SPAZIOFUTURO



STUDIOMAPP



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Product/service:

The core business of **SpazioFuturo** is focused on development and test of aerospace products and services, specifically through the use of navigation, telecommunication and Earth Observation satellites. EMMA service (European MicroMeteorology for Aircrafts) with GABBIANO Application offers a first solution to European pilots of Ultralight and General Aviation Aircrafts continuously requesting availability of aviation weather forecast data for flight planning and real time meteo live in flight.

Product/service:

Qirate is the service to deliver accurate and reliable information regarding an urban area in a simple and visual way for supporting the decision process for home buying or accommodation booking, by providing a comprehensive analysis of the neighbourhood at street scale. Qirate rates quality of life in urban areas by merging different data sources including Earth observation data with machine learning and data mining in an innovative way to offer an all-new service.

URBYETORBIT



WISE ROBOTICS



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Product/service:

The company develops and implements high-tech monitoring and management territorial services to support geographical decision making based on EO and GIS technology, advanced data mining, and artificial intelligence techniques. **UrbyetOrbit** services empower automatically identification of territorial changes, such as precision land use, illegal constructions and efficient tax recovery.



Product/service:

"QUAKEBOTS SAT" is the solution that addresses the specific challenges in the management of seismic events. The system consists of a distributed IoT neural network, made up of intelligent Data Acquisition Units (DAUs), where every node is capable of analyzing vibrations adapting automatically its own algorithm to the specific structure's dynamic response, integrated with a GPS-GNSS sub-centimetre positioning system.



