Engineering&Testing

Technological excellence in an integrated ecosystem

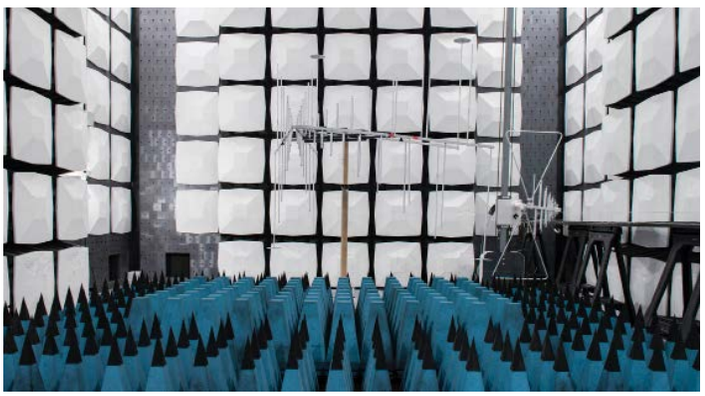
by Gianandrea Mazzola

With the inauguration of the new R&D center, Eletech marks a significant evolution for the Elemaster Group: an innovation hub dedicated to the design, testing and industrialization of advanced electronic solutions for high-technology markets such as medical, rail, energy, industrial and aerospace

A division of the Elemaster Group established in 2000, Eletech specializes in advanced electronic design and plays a strategic role in product development and validation. Alongside Elemaster Germany, it now contributes to the International Design Centers, the Group's R&D division, enhancing its engineering activities thanks to the new site in Osnago (Lecco). The relocation from the original Lomagna facility represents a key milestone, strengthening the Group's capabilities in advanced electronic design and product engineering. Within the new site, ELEVO has been launched: the new innovation Path of the Elemaster Group, which includes also the ELEVO Hub designed to support universities, research centers, startups and established companies in bringing their ideas to production. ELEVO Hub provides industrialization, prototyping and certification services across multiple domains, with dedicated spaces for partner companies and direct access to Eletech's in-house expertise. Another strategic objective of the new facility is to attract and retain talent in an increasingly competitive job market, especially in the engineering sector. Investing in spaces that promote collaboration, training and employee motivation is fundamental to Eletech's strategy, which considers its people the key to competitive advantage.

> **“This new site represents a strategic evolution for the entire Elemaster Group, as it reinforces our role in advanced electronic design and product engineering”**

Marco Ferrari, CEO of Eletech, the Head of the International Design Centres, R&D division od the Elemaster Group



The new R&D centre also includes an anechoic chamber for electromagnetic compatibility testing

An integrated approach and a new facility for technological excellence

Today, Eletech occupies a central role within the Elemaster Group for product design, engineering and validation. Its distinctive approach is founded on full integration among hardware design, mechanical engineering, firmware/software development, validation and industrialization, with consistent emphasis on reliability, scalability and time-to-market. Added value also stems from its multidisciplinary environment and cross-sectoral nature: Eletech teams work on projects across a range of markets, fostering positive cross-pollination of experiences and solutions. Synergy with other Elemaster Group locations also enables Eletech to support clients throughout the entire product lifecycle, from concept design to production, offering services such as rapid prototyping, supply chain management, process engineering, design-to-cost and design sustaining. The new facility is more than a relocation; it is a tangible response to the need to scale up the Elemaster Group’s R&D activities.

«Expanding the site,» states Marco Ferrari, CEO of Eletech, «represents a strategic evolution for the entire Elemaster Group, as it reinforces our leadership in advanced electronic design and product engineering».

Designed to accommodate up to 150 professionals, with spaces optimized for collaboration, the site currently hosts around 100 specialized engineers working across offices and laboratories for testing, trials and certifications, marking a significant increase in operational capacity and project-development potential. The architecture of the new facility reflects the Group’s operational philosophy, predicated on integrating all phases of the development process. Alongside Elemaster Germany, Eletech forms part of Elemaster’s International Design Center, truly constituting the Group’s innovation core.

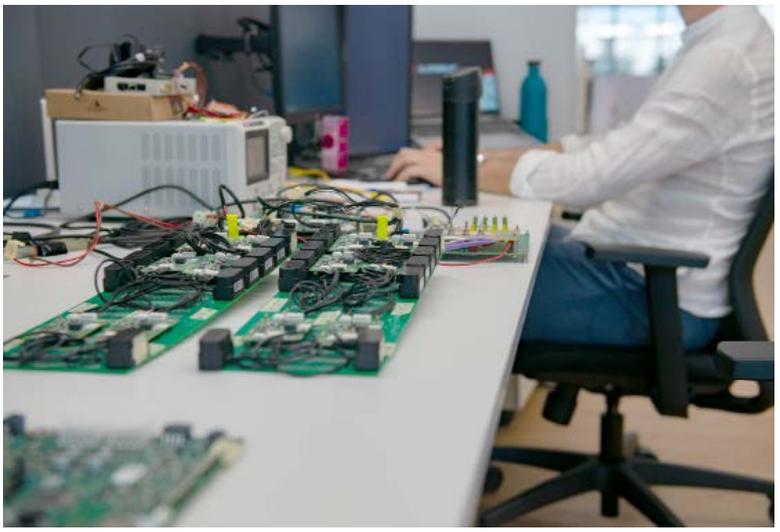
«The synergy between Eletech and Elemaster is absolute,» Ferrari emphasizes, «and typically projects developed within the Design Center are transferred into production at Elemaster, advantageous for clients who benefit from working with two units within the same corporate family for both design and manufacturing».

SPECIALIZED LABS AND ADVANCED PROJECTS

The new Eletech facility includes technology specifically designed for research projects of high scientific and technical relevance. A dedicated laboratory has recently been commissioned for the SKAO (Square Kilometre Array Observatory) project, the world’s largest radio telescope, run by an international observatory involving over 150 global research institutions. Italy is among the principal participating countries in this initiative, which represents one of the century’s most significant scientific endeavors. Involvement in the SKAO project highlights Eletech’s advanced electronic design capabilities for extreme scientific applications. The scientific objective of the project is to explore the deepest reaches of the universe, including phenomena like the Big Bang, requiring electronic solutions that impose extremely high demands on sensitivity, stability and reliability. Participation in projects of this complexity serves as a crucial proving ground for the organization’s technical expertise and accelerates the development of innovative technologies applicable in industrial contexts as well. The labs at the new site are structured to support R&D activities in multiple technological areas. The facility includes zones for rapid prototyping, electronic component characterization, reliability testing and electromagnetic compatibility (EMC) checks. This configuration enables the management of complex projects with direct control over all critical development phases.

A specialized laboratory dedicated to the SKAO (Square Kilometre Array Observatory) project, the world’s largest radio telescope, has recently been set up at Eletech

Eletest platform: developed by Elemaster Test Engineering Team to carry out functional tests



New Eletech Headquarters: engineering offices

Climatic room for Enviromental Tests (cold, dry heat, damp heat, humidity test, temperature changes)

Innovative methodologies in electronic design

Eletech's methodological approach stands out in the electronics design landscape due to its full interdisciplinary integration.

«Our approach – Ferrari explains – is built on full integration across hardware design, mechanical engineering, firmware/software, validation and industrialization, with continuous focus on reliability, scalability and time-to-market». This methodology allows complex projects to be managed while maintaining high quality standards at every development stage. A distinguishing feature of Eletech's approach is its multidisciplinary team environment: engineers work concurrently in sectors, such as medical, rail, industrial, energy and aerospace, enabling constant cross-contamination of skills. This operational model allows solutions developed within one sector to be transferred to others, enriching the organization's overall technical and methodological competencies. The laboratories in the new facility are equipped with advanced capabilities for product validation and certification. Services include third party certification activities supported by shielded test chambers, including an anechoic chamber, ensuring compliance testing to the most stringent standards. This infrastructure enables full in house validation, reducing development timelines and ensuring optimal quality control.

Innovation ecosystem in 4 operational macro-zones

The Innovation Hub Center is organized into four macro-zones covering the entire product lifecycle. The first zone, Original Design Manufacturing (ODM), encompasses all R&D activities, led by Eletech. The second zone focuses on industrialization, handling product manufacturing and assembly. The third covers post sales management, including services such as ecodesign, value engineering and product lifecycle extension options. The fourth zone is the Elevo Innovation Hub itself, a physical space dedicated to startups and established firms, designed to support their journey to market.

«Elevo represents the innovation pathway of the Elemaster Group – declares Ferrari – positioned as an ecosystem capable of guiding selected startups and structured clients from idea development to industrialization».

The program's graphical symbol, a tree composed of circuit tracks, represents growth, nurturing and transformation of ideas into tangible solutions.

«The service is open to everyone – Ferrari stresses – from university students to business managers, and is based on technical support from the Elemaster

ELEMASTER IN BRIEF

Elemaster is a multinational Italian company specializing in mechatronics, with over 50 years of experience in designing and manufacturing advanced electronic solutions; 1,800 employees worldwide and €450 million in annual turnover. Founded in Italy, Elemaster has expanded globally, establishing commercial offices and production centers in Europe (Italy, Germany, France, Belgium, Romania), the United States (Georgia), Africa (Tunisia), India (Chennai) and China (Shanghai). It operates in the ODM (Original Design Manufacturing) and EMS (Electronic Manufacturing Services) sectors, managing the full product lifecycle: from concept to finished product. The Group offers comprehensive services including SMT/THT assembly, parametric and functional testing, conformal coating and potting, PCB production and custom wiring harnesses. It internally coordinates every phase of the supply chain, from procurement to global logistics to after sales service. Thanks to its International Design Centers (in Italy and Germany), including the new R&D laboratory and the Elevo innovation program, Elemaster supports customers in developing bespoke electronic solutions, with attention to quality, sustainability and obsolescence management. With facilities and partners worldwide, it also operates a rapid prototyping and avionics production division at the Montevecchia (LC) campus, fully AS/EN 9100 certified, which includes a 100 sqm ISO 7 clean room. Elemaster distinguishes itself through technological integration, productive flexibility and a "one stop shop" approach, becoming a global reference for high performance electronics.

Eletech's new Headquarters in Osnago (LC)

engineering team». A fundamental aspect of the Elevo approach is that project intellectual property remains with the client: Elemaster positions itself as a B2B provider, offering services even when manufacturing products under its own brand. This philosophy ensures maximum transparency in commercial relationships and supports the development of long-term strategic partnerships.

Technological investments and emerging competencies

Looking ahead to future market needs, Eletech's development strategy is based on targeted investments in emerging technologies and specialist competencies that will define the evolution of industrial electronics.

«We are investing on multiple fronts – Ferrari explains – to proactively meet the technological challenges of the sectors in which we operate».

The company is expanding its internal capabilities in motor control and power electronics, essential for designing inverters and motor drivers, hydrogen fuel cell energy production systems, and high reliability medical devices, competencies that are strategically important for the rapidly expanding power & energy markets.

«An internal initiative has also been launched – Ferrari adds – dedicated to developing procedures for Ecodesign, Circular Design and Sustainability, integrating environmental sustainability criteria into design processes to reduce life cycle environmental impact and enhance material recoverability, anticipating regulatory and market demands driven by ecological transition».

AI and cybersecurity looking ahead

Among the most strategic development areas is Edge AI, which applies artificial intelligence directly on device without relying on cloud computing.

«Through on site data analysis from sensors – Ferrari notes – Edge AI enables early anomaly detection, failure prediction and dynamic optimization of operational parameters». Complementing this is the structured investment in cybersecurity, increasingly critical in the development of connected embedded systems, with an internal training program aimed at certification under IEC 62443 4 1, which defines software development lifecycle security requirements.

«Our goal – Ferrari concludes – Is to be not only solution providers, but the unique technological partner, true one stop shop, capable of guiding clients through the entire electronic product lifecycle, supporting their transition to smarter, more secure and sustainable architectures».

This strategic vision, supported by targeted technological investments and the expanded infrastructure of the new site, further positions Eletech as a benchmark in industrial electronic innovation, consolidating the integration between R&D and industrialization that characterizes the Elemaster Group's approach.

Development plan

The Elemaster Group's R&D division is in continuous growth with numerous strategic initiatives planned for the near future. Among the target objectives: strengthening the engineering service offering through acquisition of specialist firms and synergies with universities and startups via the new Elevo Innovation Hub. In terms of Solutions, M&A operations are under evaluation to deliver increasingly comprehensive offerings, providing ready to use modules, components and systems, either directly marketable or integrable within complex projects. Regarding testing systems, acquisitions are under assessment to further increase competitiveness, reduce time to market and support development of Eletech's proprietary test platform, ELETEST 4.0. Finally, opening a new Eletech site in southern Italy, aimed at expanding market reach and establishing an autonomous engineering center, will further extend the development area of the Group's International Design Centers.