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**SATELLITE
TECH** EDITION

EIDEL

**EMPOWERING A
NEW ERA OF SPACE
AND SATELLITE
TECHNOLOGY**

Truls O. Andersen,
CEO

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By Jonathan Allred

Over five decades ago, two rivaling nations—superpowers of the time—initiated and indulged in a space race that rekindled humanity’s fascination for the skies and beyond. And over the years, several nation-states would follow suit. Much has changed since then as humanity continues to be mystified by the endless possibilities and opportunities space quests offer.

While the notions of mars colonization and space exploration are moving past the realms of science fiction and manifesting as distant realities, satellite-based technologies are finding game-changing scopes across multiple industry verticals. Practically, every other novelty grants its introducer a first-mover advantage.

And this has paved the way for an increasing number of private player participation in today’s space and satellite initiatives. Billionaires, visionary entrepreneurs, and forward-thinking startups are jumping in on the “space wagon,” in their capacities. After all, their small steps promise to culminate as giant leaps for humankind’s foray into space. The entailing technology and business opportunities stretch across the expanse of space itself. And in time, each bit of innovation would, in cohesion, serve as the launchpad to further propel space explorations. From a space strategy and monetisation standpoint, the key is to develop an arsenal of tools, solutions, capabilities and approaches that can be repurposed to solve multi-faceted problems that may arise along the way of any novel space/satellite project.



Swiftly and nimbly realising this notion in its entirety is Norway-based Eidsvoll Electronics (EIDEL.) EIDEL combines its knowledge of encryption and security solutions with an established pedigree in the defence space and expertise around telemetry and data acquisition to develop tomorrow’s space solutions.

A Minimalistic Approach for Space Technology Maximization

Unlike most of today’s space technology companies, EIDEL does not resort to building ultra-sophisticated infrastructures or sourcing in billions as investments to develop space/satellite technologies. “We collaborate closely with academia and research institutes, which has allowed us to be ever-so-nimble and agile with respect to the projects we undertake,” Truls O. Andersen, CEO, EIDEL.

EIDEL looks into the R&D of universities and their scope in space technology applications. Then, they work closely with the students, scholars and researchers to bring out the R&D initiatives as commercial products. EIDEL’s multi-Needle Langmuir Probe (m-NLP) for space weather is exemplary fruition of such a collaboration. m-NLP can inform about the charging status of the satellite with high accuracy and speed to protect the electronics in circuits from overcharging and getting destroyed. The development of the m-NLP probe was based upon a PhD from the University of Oslo and the General Support Technology Program of the European Space Agency. As Andersen recalls, the opportunity of m-NLP was identified with the help of the Norwegian Space Agency, and the project was upgraded to a full space-grade version in 2018. “The experience and knowledge we gained through the m-NLP project kicked off our effort to establish us as a permanent

supplier of space solutions and services,” prides Andersen.

Developed for both new space and space-grade applications, the NanoSatellite Crypto Unit (NCU) is one of EIDEL’s innovations. It enables secure communication for ground-space, space-space, and space-ground communication. The other products that EIDEL has innovated include a secure ownership module which draws much inspiration from their knowledge in defence space. It ensures that any command given to the satellite is from a trusted system, thereby prevents anyone from hijacking the satellite in question. Apart from encrypting the whole satellite data link (uplink and downlink), the solution can also encrypt different packages within the data link.

EIDEL not only develops capabilities for the emerging small satellite markets but also brings out its solutions so that they can be enhanced to a ‘full space grade version’, as Andersen mentions. This reduces risk and development costs by having products ready for both levels of space technology. EIDEL also develops services that enable non-space related businesses to take advantage of space and satellite technologies’ opportunities. For example, the company’s EDDAS (EIDEL Distributed Data Acquisition System) is a data acquisition system used across space, defence, and security verticals.

Fueled by a vision to spur the growth of more space tech innovators in Norway, EIDEL has broadened its services portfolio to include satellite and instrument AIT. This consists of a complete value chain focusing on the notion of ‘responsive space,’ which would be achieved with partners like Andøya Space (NO, satellite launch site provider) and Isar Aerospace (DE, launch vehicle provider). EIDEL is also looking to support Andøya Space’s establishment of small

satellite launch site at Andøya in northern Norway with telemetry systems and security solutions. EIDEL also see the establishment of a small satellite launch would kick off many activities in the country and the region. The company, thereby, positions itself in the build-up of the regional space industry.

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Legacy Propelled by an Innovative Mindset

EIDEL was one of the very first companies in Norway to use IC in its product offerings. This is a testament to its legacy that extends back to 1966 when it was founded in the living room table of its founder Erik Olsson, who was always eager to solve new challenges. As such, the company’s product portfolio—going beyond the domains of space, defence and security—even included, quite interestingly, an automatic chicken shit remover. The company truly realises the wisdom within the adage, ‘necessity is the mother of invention,’ quoted by the great inventor Thomas Alva Edison. And much like how Edison marvelled the world with varied inventions, EIDEL strategically maximises the use of all available resources at hand, most nimbly, in bringing out space technology innovations.

A primary aspect that EIDEL upholds to sustain its innovation model is its work culture that is pillared by ideals of curiosity, synergy and empowerment. “Curiosity pertains to how we can stretch our technology further, and how we can mingle multiple technologies to create newer solutions. In this regard, our employees need to be curious about new technologies, and how they can extend their knowledge base to address tomorrow’s challenges,” says Andersen.

Given that EIDEL heavily involves various scholars and researchers on a project-by-project basis, they must ensure synergy between projects, people, technology, and solutions to seamlessly and successfully run multiple industry verticals.

Empowerment forms the de facto working framework for EIDEL. Each individual working within the company remains empowered within their area of decision making. Even if their decisions may turn out to be wrong, EIDEL gives them the decision-making authority in entirety and expects them to be wholly responsible for their decisions. “That is how we grow and welcome new employees into our way of working, and how we managed to develop diverse products quickly,” prides Anderson.

Broadening the Space Technology Footprint

With an inborn impetus for innovation and a rare and well-balanced combination of technical acumen and positively opportunistic work culture, EIDEL is opening its own Pandora’s box in space/satellite tech. A miniaturised sun sensor and a floating potential probe to monitor satellite charging levels—to prevent its circuitry and electronics from being damaged by overcharging—are among the newer rollouts from EIDEL.

Drawing knowledge from their expertise in defence and industry technology frontiers, the company has also recently developed the EIDEL Remote Interface Unit (ERIU) that serves as a unified interface sitting between a satellite’s OBC and the multiple sensors it houses. Sensor interfacing has always been challenging for OBC providers and those who develop new sensors. EIDEL’s interface unit serves OBCs as a standard processing unit for power distribution and memory capacity. Sensor developers, on the other hand, do not have to spend time worrying about interfacing standards. Further, EIDEL has repurposed their data acquisition and encryption expertise to enable the interface unit to facilitate secure remote integration testing of sensors. With many such innovations in the pipeline, its objective is to identify different units that will fit into any satellite, growing its potential market presence.

Working on a few space/satellite innovations at a time,’ EIDEL expects their space activity to grow for the next 12-18 months. This entails the company establishing new partnerships to increasing its presence in the market. “We will continue to be strong with solutions regarding encryption and secure solutions and continue to extend our portfolio based upon our knowledge and competence. We also expect the organisation to grow, and we will continuously recruit new staff,” concludes Andersen. With a vision to mark Norway’s role and presence in the space arena, EIDEL is a beacon of inspiration for innovative companies and countries looking to embrace the new paradigm of mankind’s quest for space. [Ad](#)

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*The annual listing of 10 companies that are at the forefront of
providing Satellite Tech solutions and transforming businesses*