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Exploring the New Space Sector: Market Analysis and Strategic Outreach for EREMS

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Abstract

EREMS was founded in 1979 by engineers Gérard Petit and Claude Wintgens. The company specializes in the development of satellite instrumentation, such as battery systems, electric propulsion systems, power distribution units, data handling units, and more. Today, EREMS operates in the heart of the Aerospace Valley in Toulouse, a prominent aerospace engineering and research cluster.

Recognizing the profound changes occurring in the European aerospace sector, EREMS is constantly seeking to adapt and innovate. As part of this evolution and to introduce me to the New Space concept, EREMS assigned me the task of conducting a market study on embedded instrumentation for small CubeSat satellites. Additionally, I was responsible for updating product sheets on their existing onboard systems and creating a satellite component map.

Internship Environment

Company Description

EREMS is a privately held SME specializing in embedded satellite instrumentation, particularly for CubeSats. A CubeSat is a class of small satellite, often based on 10x10x10 cm units (U), with a weight limit of 2 kg per unit. CubeSats can be built from multiple units, ranging from 2U to 24U configurations.

The company's facility is located in Flourens, near Toulouse. EREMS employs approximately 170 people, with 65% being engineers and 25% technicians, responsible for design, verification, integration, and testing.

Values

EREMS maintains its independent and human-scale structure. It was built on core values such as expertise, rigorous attention to detail, transparency, and the comprehensive mastery of equipment creation, which includes overseeing the entire value chain with excellence.

Market

EREMS primarily competes in tenders from space agencies, such as CNES and ESA, but has also diversified by collaborating with large corporations like Ariane, Thales Alenia Space, and Airbus Defence and Space. For complex projects, the company often subcontracts specialized technical aspects.

The Company and Its Activities

EREMS produces a wide range of payload equipment for SmallSats (car-sized satellites) and New Space applications, particularly CubeSats (often as small as a shoebox). The company primarily engages in competitive bidding processes, shaping its activities as a SME. EREMS is unique in handling every stage of product development, from design to commercialization. With over 170 employees, nearly three-quarters are engineers, enabling the company to maintain high adaptability. EREMS also occasionally develops technology to meet client-specific needs.

In the space sector, and especially within New Space, roles are less compartmentalized, allowing clients to act as suppliers or even competitors. EREMS' main competitor is Steel Electronic, another French SME specializing in satellite electronics with a similar geographic focus and market.

Most suppliers are companies within the Toulouse area, such as COMAT (aerospace equipment), Hemeria (high-tech systems for aerospace), and MecanoID (mechanical and thermal subsystems for space).

The primary clients of EREMS include governmental agencies (e.g., CNES, ESA) and large corporations (e.g., Ariane, Thales Alenia Space), which prefer to subcontract specialized aspects of major projects. EREMS has no plans to expand its workforce or diversify its expertise. To respond effectively to the New Space market, the company prioritizes agility and specialized focus over growth, which could compromise its SME status and require adherence to stricter regulations. Instead, its objective is to keep pace with New Space's rapid, demanding advancements.

My Internship Responsibilities

My internship involved four main tasks:

1. **Product Sheet Creation**
2. **Market Study**
3. **Competitor Database Development**
4. **Satellite Component Mapping**

The product sheets I developed covered equipment currently in development at EREMS and soon to be marketed. These commercial documents were designed for SatSearch, a platform for listing space products globally. I conducted meetings with project managers to gather information on each product, enhancing my understanding of project management and satellite technologies. Using InDesign, I formatted these sheets, gaining valuable experience with this industry-standard software.

For the market study, I categorized all existing EREMS products still relevant in the market. Building on my previous task, I analyzed technical documents on these components, classifying them into major categories (sensor electronics, remote units, controllers, motor drivers, mass storage, power, and electric propulsion). Extensive research allowed me to identify equivalent products from other European companies, noting their specifications (e.g., size, weight, power requirements, durability). This work provided insights into competitors' strategic decisions and highlighted New Space sectors already in development that EREMS might consider expanding into.

My work on the competitor database was an extension of the market study. As I cataloged competitor products, I also studied their providers' profiles and positioning relative to EREMS. This involved analyzing LinkedIn profiles to identify strategic personnel, facilitating potential contact for EREMS' networking needs.

My final task focused on examining interactions between EREMS equipment, which involved organizing the product sheets around a detailed satellite structure map. This allowed me to understand satellite architecture more comprehensively.

Summary of Deliverables In total, I produced six product sheets on InDesign, a seven-page Excel document for the market study, a contact database Excel, and a visual layout of a satellite's exploded view to analyze its structure.

Conclusion

This internship provided me with valuable exposure to the New Space sector, allowing me to grasp the guiding vision behind this transformative space technology movement. With Toulouse as a leading hub for the French space industry, I had the opportunity to connect with numerous key players and gain insights into a variety of activities and projects taking place in the region.

These connections also led to the creation of an article on the potential emergence of a "European SpaceX," written in my role with Envol Junior Étude - a junior enterprise aimed at helping students from my school engage in professional work and ease their career entry. Following this internship, I was appointed as the space sector ambassador for ENAC.