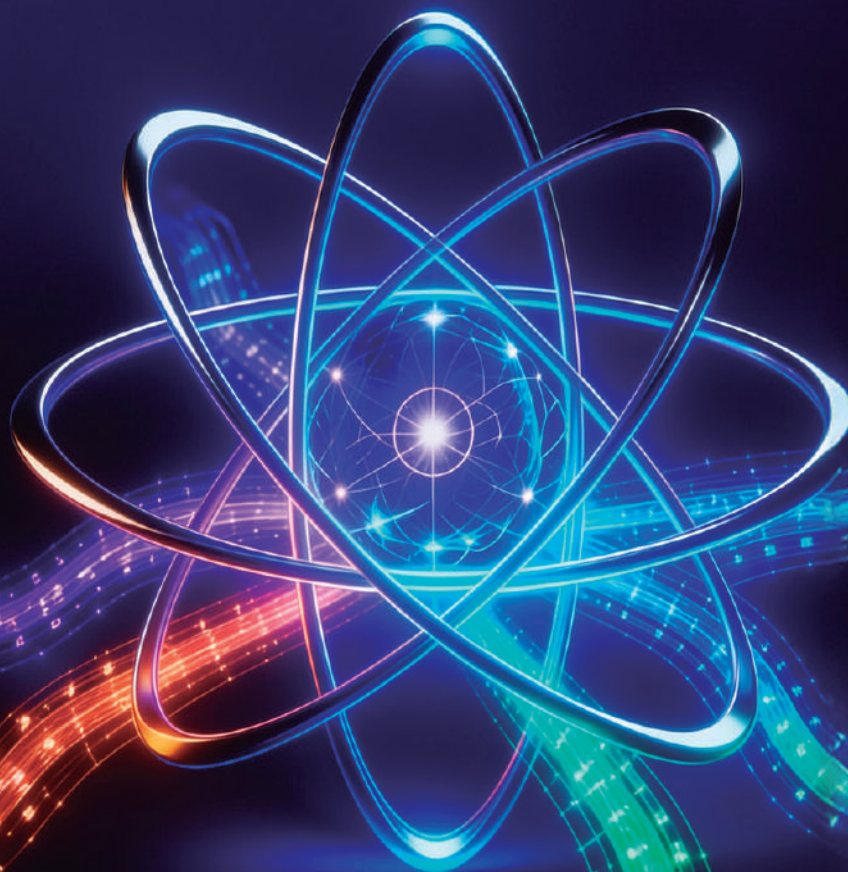


The Quantum Era: From Research to Applications That Will Transform Industry



INTERVIEW
Enrique Sánchez Bautista
Director of the Brussels Office of
the European Union's Quantum
Flagship

OPINION
**Quantum technologies: Spain's
next industrial frontier**
Francisco Hortigüela
President of AMETIC

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Letter from the president

Every time we use a cell phone, browse the internet, check the GPS, or get an MRI scan, we are using technologies that would not exist without quantum physics. The transistors that power our phones, computers, and data centers, the lasers that transmit information through fiber optics, and the atomic clocks that give the Galileo system its extraordinary precision all originate from discoveries made roughly a century ago.

Today, however, we are entering a new phase. This new revolution is about directly harnessing phenomena such as superposition and entanglement to process and protect information in ways conventional technologies cannot. It opens the door to possibilities that until recently felt out of reach: accelerating the design of drugs and new materials, improving the planning of routes, fleets, and supply chains, or developing sensors with unprecedented precision. At the same time, it requires us to prepare for the impact that future quantum

computing will have on much of today’s encryption systems.

It’s still hard to say how far this revolution will go, but major breakthroughs require time, vision, and perseverance. At GMV, we entered this field at an early stage, anticipating its importance for strategic sectors. Today, we advance the development of quantum algorithms for applications in energy, space, and finance. We have contributed to the integration of Spain’s first quantum computer into MareNostrum 5, one of the most powerful supercomputers on the continent. We drive solutions for future European quantum communication networks. And we help organizations and critical infrastructure safely navigate the transition to post-quantum cryptography. These initiatives reflect a shared ambition: to turn scientific excellence into technological capabilities that strengthen Europe’s competitiveness, security, and strategic autonomy.

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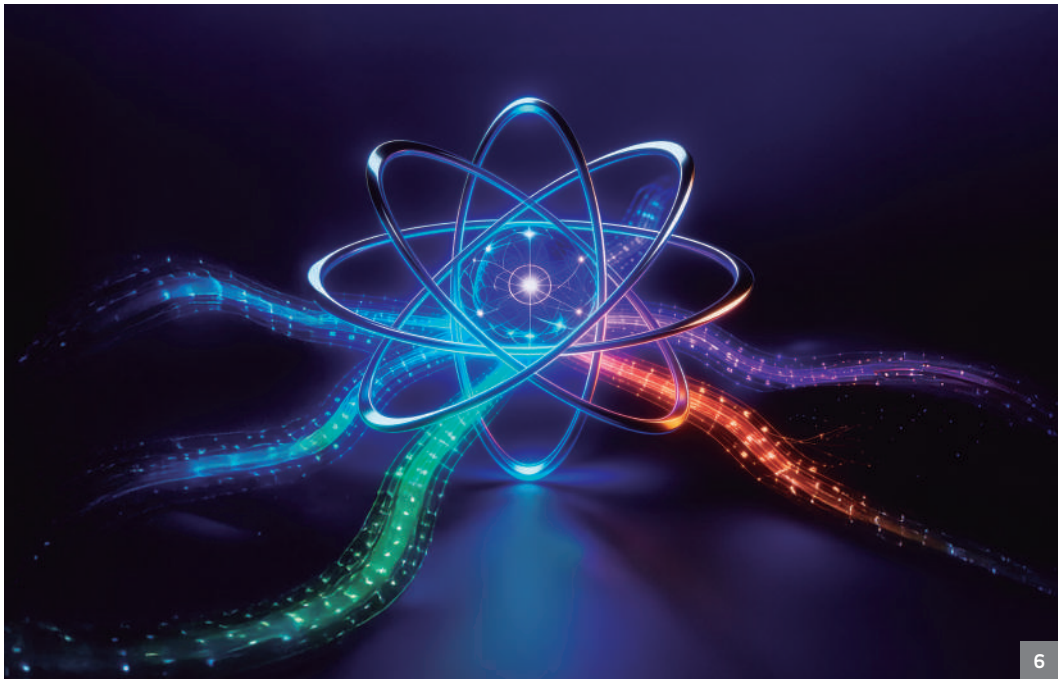
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The Quantum Era: From Research to Applications That Will Transform Industry

The race in quantum technologies is no longer a distant prospect but has become one of the key strategic priorities for the coming decade. What, until just a few years ago, was being developed almost exclusively in academic settings and specialized laboratories is now beginning to take shape in the form of infrastructure, industrial projects, and new digital capabilities with a real-world impact. Quantum computing, quantum communications, advanced sensing, and post-quantum cryptography are evolving at different paces, but they share a common goal: to redefine how we protect information, process data, and build the next generation of digital infrastructure.

Interest continues to grow. Governments, research centers, and major technology companies are competing to lead an ecosystem that is rapidly moving from basic research toward concrete applications. In just a few years, the debate has shifted from questioning whether these technologies would be viable to when they will begin to transform entire sectors.

Europe has recognized this development as a strategic issue.

Initiatives such as Quantum Flagship, EuroHPC, and EuroQCI reflect a commitment to strengthening European technological sovereignty and reducing dependence on critical capabilities developed outside the continent. The goal goes beyond scientific advancement: it is about ensuring resilient digital infrastructures, protecting sensitive communications, and guaranteeing that Europe plays a leading role in a global technological revolution.

The progress can already be seen. Early experimental developments have given way to more stable platforms, pilot quantum communication networks, hybrid supercomputing environments, and new cryptographic protection strategies against future threats. The potential impact extends to sectors such as industry, healthcare, defense, space, and critical infrastructure.

Along with these opportunities comes an unavoidable challenge: cybersecurity. The future ability of certain quantum computers to compromise current cryptographic algorithms is driving a global shift toward new security standards. Post-quantum cryptography has evolved from a theoretical exercise into a priority for organizations that need to ensure the confidentiality of their data for decades to come.

It is precisely in this context that companies with expertise in critical systems integration, advanced

software, aerospace, defense, and cybersecurity are called upon to play a key role. This is the context in which GMV operates. For years, the company has been developing capabilities in applied quantum computing, quantum communications, and preparing for the impact these technologies will have on cybersecurity.

More than just technology: new capabilities

The term "quantum technologies" encompasses a wide range of developments, each with different applications and levels of maturity. Quantum computing is probably best known for its potential to tackle optimization, simulation, and modeling problems that are difficult to solve using conventional computing. However, the most likely scenario does not involve replacing current systems, but rather complementing them with hybrid architectures that integrate supercomputing, artificial intelligence, and quantum capabilities.

At the same time, quantum communications are paving the way for a new generation of networks capable of protecting sensitive information with unprecedented levels of security. Technologies such as quantum key distribution (QKD) make it possible to strengthen the security of communications in particularly sensitive areas, ranging from defense and space to government and critical infrastructure.

There is also post-quantum cryptography, which aims to protect current systems against future quantum attacks capable of compromising the algorithms that underpin the Internet and digital communications today. The threat known as "harvest now, decrypt later"—intercepting encrypted information today in order to decrypt it in the future—has accelerated the need to plan for a transition to quantum-resistant systems.



Understanding this diversity is important for distinguishing between expectations and reality. Not all of these technologies evolve at the same pace or are focused the same goals. The challenge lies in identifying which are beginning to generate tangible value and which will shape the future of the industry, communications, and cybersecurity.

Europe: From Scientific Excellence to Technological Sovereignty

The significance of these technologies also stems from a geopolitical context in which the United States, China, and

Europe are competing for leadership in capabilities that will be decisive for the economy, defense, and security.

In Europe, the strategy is a combination of investment in research, the deployment of infrastructure, and the development of a domestic industrial ecosystem. Initiatives such as EuroHPC, which aims to advance European supercomputing, and EuroQCI, which is focused on building out continental infrastructure for secure quantum communications, are examples of this strategy. The challenge lies in transforming scientific excellence into industrial capacity, standards, talent, and real-world applications.

Spain is also strengthening its position in this area. The creation of associations such as Spanish Quantum Alliance (SQuA), which GMV is a member of, reflects the desire to build a more coordinated national ecosystem capable of connecting business, research, and applied innovation, and to make a more significant contribution to the European strategy.

The intensity of this race is also reflected in the public and private investment announcements made in recent years. Competition is no longer limited to the laboratory. It also hinges on the ability to market, integrate, and scale these technologies within one's own ecosystems.

From research to development

Quantum computing is beginning to move beyond the purely experimental phase and into more tangible territory: the sphere of real-world applications. The goal is no longer to envision quantum computers replacing current systems, but rather to identify the specific problems where they can offer advantages alongside supercomputing and artificial intelligence.

GMV has been working consistently with this technology since 2021. Over the years, the company has contributed to the state of the art and developed a clear understanding of the actual capabilities this technology offers

today: what can already be done effectively, what still depends on hardware advancements, and what intermediate approaches can deliver value right now.

One area where this trend is most evident is in optimization and advanced simulation. Quantum computing is being explored to improve route planning, resource management, and the modeling of materials and molecules. Its potential lies in its ability to tackle problems whose complexity is growing exponentially, especially when combined with supercomputing and artificial intelligence in hybrid environments.

Potential applications span a wide range of sectors. In the field of healthcare, quantum simulations could accelerate the development of new drugs. In the energy, finance, logistics, space, and defense sectors, these technologies are beginning to be used to solve complex problems involving optimization, simulation, and prediction.

This is the context in which CUCO operates—one of the most prominent projects in Spain's quantum ecosystem, funded by the CDTI and led by GMV. The initiative has made it possible to develop and validate quantum and quantum-inspired algorithms for use in strategic sectors. The use cases explored include models for identifying solar power plants in satellite images, predicting wind conditions, valuing financial derivatives, and designing new catalysts.

In addition to this line of work, there is Q-MIND project, which focuses on the convergence of quantum computing, artificial intelligence, and advanced information processing. This type of initiative reflects one of the sector's clearest trends: quantum computing is emerging as a complementary capability within hybrid workflows involving simulation, analysis, and optimization.

The experience GMV has gained has also enabled it to strengthen relationships with key players in the

quantum ecosystem, including quantum hardware providers such as IBM and D Wave, specialized platforms such as QCentroid, and quantum emulation environments such as OVH Cloud. At a time when access to actual quantum hardware remains a key differentiator, centralizing and coordinating internal efforts is particularly important for accelerating the transition from technological exploration to concrete applications.

This vision is also reflected in GMV's involvement in the integration of a quantum computer into MareNostrum 5, where it has provided classical systems and network infrastructure, as well as remote access services and user support, within a fully European technological environment.

All of this has made it possible to take a realistic view of the current state of technology. Some approaches, such as optimization systems based on annealers (quantum computers specialized in solving optimization problems), are beginning to yield promising results for certain problems. Other areas, such as quantum machine learning, hold enormous potential. However, they still depend on significant advances in available hardware. Alongside these, quantum-inspired approaches, such as tensor networks, represent another valuable tool for tackling complex problems using advanced classical computing.

This approach is already being translated into specific internal initiatives. GMV is collaborating with various teams to assess the extent to which certain current limitations can be addressed through new quantum or quantum-inspired approaches. The goal is to identify problems where these capabilities can provide real benefits and generate tangible value.

Quantum communications: protecting critical information

Advances in quantum technologies are not limited to computational power. Quantum communications have become one of the

areas with the greatest strategic potential, especially in sectors where information security is critical.

In this field, QKD (Quantum Key Distribution) is emerging as one of the most mature technologies. Its goal is to enable information exchanges that can detect any attempt at interception. This is the context for QuKee, GMV’s initiative aimed at strengthening communications security through quantum technologies.

This vision is underpinned by the strategic partnership between GMV and LuxQuanta, which is focused on accelerating the deployment of QKD capabilities in Europe. The partnership combines GMV’s expertise in cybersecurity, key management, and space systems with the technology developed by LuxQuanta for terrestrial fiber-optic networks. The goal is to move toward an integrated ecosystem of secure quantum communications aligned with European initiatives such as EuroQCI.

Quantum technologies not only offer benefits on Earth, but are also transforming space. Some have been around for decades, albeit they have not been in the spotlight: a good example is the atomic clocks installed on navigation satellites (GNSS, such as Galileo), which are based on the principles of quantum physics and allow us to determine positions on our planet with great precision.

Other advances are already a reality. Lasers, classic examples of quantum technology, are beginning to play a key role in space communications thanks to optical links between satellites—known as intersatellite links—and ground tracking stations. These solutions speed up the transmission

of information and ensure more secure and efficient communications. GMV is participating in this technological revolution by contributing to leading European projects such as HyDRON, which aims to demonstrate an optical communication network between satellites and the ground; and EDRS, which aims to establish a high-speed laser communication network with relay capabilities between satellites and ground stations.

The new generation of space-based quantum technologies goes even further and is based on phenomena inherent to quantum physics, such as entanglement, superposition, and the tunneling effect. Notable projects in this field include Eagle-1 (from a low Earth orbit of approximately

700 km above Earth), Caramuel (a geostationary orbit approximately 36,000 km from Earth), and SAGA, the European Commission’s EuroQCI (European Quantum Communication Infrastructure) constellation, in which GMV is also participating and which focus on quantum key distribution (QKD).

New possibilities are also emerging in the areas of navigation and synchronization. The QUANTICO project combines quantum measurement techniques with quantum key distribution to design systems that are more resistant to interference. GMV has already developed a prototype capable of achieving accuracies of up to 6 cm without relying on traditional Global Navigation Satellite System.

Finally, it is worth mentioning the CARIOQA project, which will explore ultra-precise measurements from space using quantum sensors. The goal: deploy a quantum accelerometer in orbit capable of detecting and analyzing minute variations in Earth’s gravitational field.

Prepare for post-quantum security today

Although large-scale practical quantum computing still faces significant technical challenges, its development already poses a direct challenge to cybersecurity. Some of the cryptographic systems that currently protect our communications,

transactions, and data could be compromised in the future due to the capabilities of the most advanced quantum computers.

The transition to post-quantum cryptography is no longer viewed as a matter solely for research, but rather as a requirement for long-term resilience and protection for organizations that handle sensitive information or critical infrastructure.

In this context, a new generation of algorithms is emerging, designed to withstand future quantum attacks. The evolution of international standards confirms that this transition is no longer a theoretical issue, but a real necessity for public and private organizations.

The challenge isn’t just about replacing algorithms. This entails reviewing architectures, adapting systems, ensuring crypto-resilience, and planning for an orderly transition in sectors where trust, availability, and data protection are essential.

Preparing for a change in scale

In the coming years, we will see the emergence of the first hybrid applications combining quantum computing with High-Performance Computing and artificial intelligence, the gradual rollout of secure quantum communications, and an acceleration of the transition to post-quantum cryptography. Everything points to a scenario in which various quantum technologies will gain ground at an uneven but steady pace in industrial and strategic sectors.

The question is no longer whether these capabilities will have an impact, but which organizations will be prepared to turn them into useful, secure, and operational solutions. For Europe, this means turning scientific excellence into technological sovereignty. For GMV, this means continuing to contribute to that transition from a clear standpoint: combining technological vision, integration capabilities, and a focus on applications that deliver real value.

It also means something else: opening this conversation up to the entire company. Identifying early on the issues that could benefit from these technologies will be a key component of competitive advantage in the coming years. Because in the quantum age, the difference will not be made solely by those who master. The technology, but by those who can identify, before anyone else, where they can make a real impact.

Opinion

Quantum technologies: Spain's next industrial frontier

Francisco Hortigüela
President of AMETIC

(Multisectoral Association of Information Technology, Communications, and Electronics Companies of Spain)

“ The quantum race has ceased to be a future promise and has become a strategic driver of competitiveness, technological sovereignty, and industrial innovation ”



Few technologies today generate as much excitement—and at the same time as much skepticism—as quantum technologies. However, the debate is no longer confined to the scientific or academic sphere. Their applications in cybersecurity, telecommunications, healthcare, logistics, and defense are now beginning to reach the market and reshape global technological competition.

The United Nations' designation of 2025 as the International Year of Quantum Science and Technology reflects precisely this new phase. The quantum race is no longer just a promise for the future. It has become a strategic driver of competitiveness, technological sovereignty, and industrial innovation.

In this context, Spain has made significant progress in recent years. Although still far behind the major tech powers, our country has begun to build its own quantum ecosystem, supported by universities, research centers, startups, large companies, and government agencies.

Spain's participation in European initiatives such as the “Quantum Flagship” and the “Quantum Industry Consortium (QuIC)” demonstrates that Spain is already involved in the forums where standards, technological priorities, and governance models for Europe's digital future are being defined.

Technological progress, moreover, is accelerating at a particularly rapid pace. In just a few years, we have gone from experimental prototypes to systems with hundreds of qubits accessible via

the cloud. At the same time, quantum communications, post-quantum cryptography, quantum sensors, and artificial intelligence inspired by quantum principles are beginning to open up new industrial opportunities.

Spain has marked this process with significant milestones, such as the installation of the first quantum computer manufactured entirely in Europe in our country. This development also underscores the need for Europe to build up its own capabilities in critical technologies.

The big challenge now is no longer demonstrating the potential of quantum technology, but bringing it to market. In other words, transforming scientific knowledge into scalable and competitive solutions for sectors such as energy, automotive, healthcare, finance, and advanced manufacturing.

To achieve this, it will be essential to take action on several strategic fronts. The first is stable and sustained funding, capable of supporting high-risk technology projects and attracting private investment specializing in deep tech. The second is talent. Spain needs to strengthen training in quantum skills and develop highly qualified professionals.

The third lever is innovative public procurement. Tech companies need a market, not just subsidies. The driving force of government agencies can accelerate the adoption of quantum solutions and facilitate the transition from the laboratory to industry.

In addition, it will be essential to strengthen the protection of industrial property and promote the development of patents, as well as to improve the connection between the

quantum ecosystem and specialized investment funds. Similarly, Spain must strengthen its presence in technology missions and international partnerships, in a field with a clear geopolitical dimension.

The window of opportunity for Spain and Europe is real, but it is also limited in time. The major powers are ramping up multibillion-dollar investments, and whoever takes the lead in these capabilities will largely determine digital competitiveness and security in the coming decades.

Spain has the scientific capabilities, talent, and digital industry needed to establish itself in this new era. The challenge now is to act with strategic vision, coordination, and industrial ambition. Because, in the field of quantum technologies, falling behind is not an option.



Enrique Sánchez Bautista

Director of the Brussels Office of the European Union's Quantum Flagship

Enrique Sánchez Bautista earned his Ph.D. in Experimental Quantum Physics in 2015 at the Institute of Photonic Sciences (ICFO) in Barcelona. In 2016, he completed his studies in European Diplomacy at the Spanish Diplomatic Academy, and after completing the Leadership in Public Administration program at IESE Business School and another program in Leadership in Political Management, he joined the European Commission in 2017, working in the Directorate for EU Space Programs, where he later served as Policy Officer at the European Physical Society.

In 2019, he was appointed director of the EU Quantum Flagship office in Brussels, a role in which he has helped drive major initiatives, including the creation of the European Quantum Communication Infrastructure (EuroQCI), the European Quantum Computing and Simulation Infrastructure (EuroQCS-HPC), and the European Quantum Chips Initiative. In 2020, he co-led and coordinated the creation of the European Quantum Industry Consortium (QuIC), for which he received the 2021 AMETIC Award for Business Excellence in Quantum Technologies.

Throughout his career, Enrique has served as a bridge between the scientific community and policymakers, contributing strategic vision and coordination skills to strengthen European leadership in quantum technologies. In this context, he contributed to the signing of the European Declaration on Quantum Technologies in 2023, which laid the groundwork for the European Quantum Technologies Strategy (Quantum Europe Strategy). Since then, he has been coordinating the High-level Board responsible for implementing that strategy.

He has been closely involved with the Quantum Flagship since its inception. What is this initiative, and what are its goals in advancing quantum technologies and coordinating the European ecosystem?

The Quantum Flagship is a research initiative launched by the European Commission in 2018 with the aim of accelerating development of quantum technologies in Europe and strengthening the continent's position in a strategic field to be competitive in the future. The initiative is structured around several key areas, including quantum computing, quantum communications, simulation, metrology, sensor technology, and basic research.

Beyond funding research projects, the Quantum Flagship has played a key role in coordinating the European quantum ecosystem. It has helped bring together researchers, companies, technology centers, public administrations, and investors around a common vision, fostering collaboration among the various Member States and facilitating the transfer of scientific advances into applications with industrial and economic impact.

This initiative has given rise to some of the leading European strategic projects in this field, such as the European Quantum Communication Infrastructure (EuroQCI), the European Quantum Computing and Simulation Infrastructure (EuroQCS), and the European Quantum Industry Consortium (QuIC). In addition, the work carried out under the Quantum Flagship has helped lay the groundwork for more recent initiatives, such as the European Quantum Technology Strategy (Quantum Europe Strategy), which aims to consolidate Europe's scientific leadership and translate it into long-term industrial, technological, and strategic capabilities.

In just a few years, quantum computing has gone from being a predominantly academic field to becoming a strategic priority for

governments and industry. Where do you think Europe currently stands in this global technology race?

The turning point came in 2016, when China launched the first quantum communications satellite and demonstrated that it had made rapid progress in this field. That served as a wake-up call for Europe and other regions. However, it is worth noting that Europe has an exceptional scientific tradition in quantum physics and technologies and continues to hold a very strong position in research.

Today, the situation varies depending on the technology we analyze. In some areas, such as systems based on neutral atoms, Europe is practically on par with the United States. In other areas, such as superconductors, we have fallen behind by a few years due to various technological, industrial, and export control factors. Even so, since 2018, with the launch of the Quantum Flagship, Europe has made significant progress.

Where I do see a competitive disadvantage is in financing, especially in private investment. While in the United States large companies can allocate hundreds of millions of euros a year to quantum development, in Europe we continue to face difficulties in helping our startups grow, become scalable companies, and compete on a level playing field. Therefore, rather than a problem of talent or technological capacity, Europe's greatest challenge is in transforming its scientific excellence into industrial and business leadership.

Europe has a world-class scientific ecosystem in the field of quantum technologies. What challenges do you consider most important in transforming that scientific leadership into industrial capabilities and real-world applications?

Beyond funding, I believe that Europe's main challenges are the fragmentation and regulatory complexity that result from being a union of 27 countries with different

“Europe has a strong scientific foundation in quantum technologies; the key challenge is not talent, but turning that scientific excellence into industrial and commercial leadership.”

priorities and paces. This makes it more difficult to make decisions and implement strategic initiatives compared to powers such as the United States or China, where policies can be rolled out more quickly and decisively.

Another major challenge is the ability to retain talent and attract private investment. Europe has an excellent scientific foundation and a robust welfare system, but it competes with a U.S. ecosystem that offers greater financial resources, higher salaries, and a much more developed culture of private investment. This makes it more likely that some European talent will end up pursuing their careers outside the continent.

Even so, I believe that Europe has managed to offset some of these difficulties through very effective coordination among the member states. Initiatives such as the Quantum Flagship have helped create a shared vision and bring together the European quantum ecosystem—something that even other countries and regions view as a model to follow.

Looking ahead, one of the key objectives must be to consolidate leading industrial players capable of competing on a global scale. Europe is home to numerous startups and innovative small businesses. However, it must support their growth and consolidation to create major technology leaders capable of accelerating the market launch of quantum applications and competing on equal footing with major international players.



Which sectors do you think will be the first to benefit from quantum computing in a tangible way? Are we any closer to disruptive applications in fields such as cybersecurity, healthcare, mobility, and space?

I believe that the first sectors to benefit tangibly from quantum computing will be finance and cybersecurity. In the financial sector, there are already companies that are beginning to derive economic value from combining quantum computing with artificial intelligence, particularly when it comes to complex analysis and optimization problems.

In cybersecurity, the impact is already evident. The advent of quantum

computers capable of compromising current cryptographic systems is driving the adoption of technologies such as quantum key distribution and quantum random number generators. That is why I believe this will be one of the areas where we will see the most immediate practical applications.

I also see enormous potential in the field of healthcare, especially for the development of personalized medicine and the design of new drugs tailored to each patient's characteristics. Although these applications still require significant advances in computing power, they represent one of the most transformative long-term opportunities.

In the field of mobility, the most relevant applications are related to route optimization and solving complex logistical problems—an area in which organizations are already actively working.

Finally, in the space sector, computing and quantum technologies will play a significant role both in securing communications through advanced encryption systems and in the development of high-precision quantum sensors for Earth observation, navigation, and monitoring.

In an increasingly competitive geopolitical landscape, how can Europe ensure its technological sovereignty in critical areas such as quantum computing and high-performance computing?

I believe that the computing paradigm will change much more than artificial intelligence has on its own. This is why technological sovereignty poses different challenges in quantum computing and high-performance computing. Today, Europe depends on critical technologies from abroad, especially in fields such as artificial intelligence, where components like advanced chips are essential. In quantum computing, however, we are still at a stage where we can build our own capabilities before this technology becomes a structural component of the economy.

To ensure that sovereignty, I believe it is essential to promote the development and acquisition of European technologies, especially in strategic components. We cannot afford to rely entirely on external suppliers for a technology that will have a profound impact on security, computing power, and the development of artificial intelligence in the future.

The European Union is already implementing measures to protect and strengthen these capabilities, restricting participation in certain programs to European institutions when sensitive technologies are involved. The goal is to ensure that knowledge, industrial capabilities, and strategic assets remain under European control.

In addition, we are working on the future Quantum Act, Europe's first legislation on quantum technologies, which will establish technological sovereignty as one of its fundamental pillars. The priority is to strengthen the development of quantum technologies within Europe, boost investment, improve coordination among Member States, and strengthen our companies so they can compete globally while maintaining their technological independence.

I also believe that public procurement can play a decisive role in the development of the European quantum ecosystem. In many cases, current public procurement models prioritize price over innovation, which makes it difficult to incorporate innovative solutions into large-scale public procurement. If we want to accelerate the adoption of these

technologies and foster the growth of European companies capable of competing on a global scale, public policies will also need to incentivize innovation and facilitate large-scale technology deployment projects featuring innovative solutions.

Ultimately, Europe must strengthen its industrial capacity, protect its strategic technologies, and ensure that the knowledge generated on the continent translates into genuine technological autonomy. It will be vital for Europe to combine investment, appropriate regulation, and effective adoption of these technologies to maintain a competitive position in the coming years.

Finally, looking ahead to 2035, how do you envision the impact of quantum technologies on everyday life and on Europe's competitiveness?

Looking ahead to 2035, I hope that quantum technologies will have evolved from being tools reserved for laboratories and research centers to becoming a technological infrastructure integrated across multiple sectors. We probably won't see quantum computers in every company, but we will see quantum services accessible via the cloud

that help solve complex problems in fields such as manufacturing, energy, logistics, healthcare, and finance.

I also hope that quantum technologies will play a key role in cybersecurity, secure communications, and advanced sensor systems. In many cases, its impact will be invisible to the public, but it will be evident in more efficient services, safer infrastructure, and a greater capacity for innovation.

From a European perspective, I am moderately optimistic. Europe has significant strengths and, in areas such as quantum communications, it can aspire to be among the world leaders. In addition, the upcoming Quantum Act legislation and the investment programs planned for the coming years may help build a stronger and more competitive industrial ecosystem.

My focus is for us to reach 2035 with globally leading companies, our own technological capabilities, and a strong position in those areas where Europe already has a competitive advantage. If we are able to maintain our investment efforts and coordination among countries, Europe can play a leading role in this new technological revolution.



“Quantum computing will transform industries such as finance, cybersecurity, healthcare, mobility and space, enabling applications that are still difficult to envision today”



GMV contributes to development of combat training system driving Spanish defence autonomy

By providing critical navigation and mission technologies for the future training system, the company will contribute to the programme that will transform advanced training for Spanish Air and Space Force fighter pilots

On April 28, Airbus convened the Spanish companies tasked with developing the new Integrated Combat Training System (ITS-C) for the Spanish Air and Space Force. The contract was awarded in December 2025, and the program will replace the current F-5 fleet and feature 60% national industrial participation.

The ITS-C program, built on a joint development agreement between Airbus, as prime contractor, and Turkish Aerospace (TA), manufacturer of the HÜRJET training aircraft, will cover the entire advanced combat pilot training process for Spain, from the domestic adaptation of the 30-aircraft fleet, designated SAETA II, to the delivery of a comprehensive suite of operations and maintenance services.

In addition to converting and integrating new equipment into the aircraft,

Airbus will lead the redesign of the Fighter and Attack School Training Center at Talavera la Real Air Base in Extremadura. The center will include state-of-the-art simulators developed in partnership with Indra, and will provide logistics support for operations and maintenance of both the aircraft and synthetic training systems to ensure maximum fleet availability.

The program will unfold in two phases. Between 2028 and 2030, an initial batch of 21 aircraft will be received and a ground-based training system will be developed and built. Between 2031 and 2035, all 30 aircraft in the fleet will be converted and the simulators upgraded to match the new configuration.

Alongside other defence sector companies, GMV will participate in the SAETA II contract through the

GENESIS team (Global Enhanced Navigation Equipment with SBAS and Inertial System), integrating key technologies for avionics and mission systems. GENESIS will be a critical platform component, providing a navigation solution with high levels of reliability, integrity, and availability. This will be achieved through the integration of civil navigation sensors, as well as advanced GNSS-inertial hybridization and multisensor fusion algorithms developed by GMV. GENESIS will also feature advanced resilient navigation capabilities, incorporating a European Galileo PRS receiver, a military GPS M-code receiver, and a next-generation CRPA antenna. Further, the system will detect and mitigate jamming and spoofing attempts, strengthening resilience against threats in complex electromagnetic environments.

GMV will also participate in the contract as lead developer of the ETMC (Embedded Training and Mission Computer), a key component in the domestic adaptation of the SAETA II fleet and in bolstering Spanish technological sovereignty. This unit will combine, on one hand, high-performance processing capabilities based on latest-generation processors and, on the other, a real-time domain. Collectively, the ETMC will establish GMV as a significant player in the development of sovereign, resilient, high-performance mission computers, reinforcing its position in mission systems for advanced aerospace platforms.

In connection with its participation in the project, GMV was present at the signing ceremony on April 28 and took part in the roundtable “Development of the National Industrial Base”, where Ricardo Sáenz, the company’s Director of Defence and Security Programs, spoke.

GMV’s participation in this program alongside Airbus, Turkish Aerospace, and other industry partners will directly impact the sovereignty and independence of Spain’s defence sector.

A new chapter for DEMETER: taking EUROCONTROL’s navigation planning tool to the cloud

■ GMV has been awarded a new contract by EUROCONTROL to migrate DEMETER to the cloud and support the tool’s maintenance and evolution over the next five years. The project was officially launched alongside the EUROCONTROL team, opening a new chapter in the long-standing collaboration between the two organizations.

DEMETER, or Distance Measuring Equipment Tracer, is EUROCONTROL’s dedicated software tool for assessing aircraft positioning performance based on signals from ground-based distance measuring equipment (DME) stations, a method known as DME/DME positioning. The tool also supports the planning and optimization of the underlying navigation infrastructure.

It assesses positioning performance both en route and around airports,

enabling the design of precise aircraft departure, arrival, and cruise paths under performance-based navigation (PBN), in line with EUROCONTROL guidelines and International Civil Aviation Organization (ICAO) standards. In doing so, it has become a common workbench for airspace planners, procedure designers, nav aids engineers, and flight inspectors involved in PBN implementation and ground navigation infrastructure optimization.

At a time of increasing GNSS vulnerability – from jamming and spoofing to space weather events – DEMETER’s relevance continues to grow. The tool is a cornerstone of PBN deployment and is increasingly being used for resilient navigation operational network (RON) planning, where DME/DME remains a dependable ground-based backup to satellite-based positioning.

Today, more than 65 organizations worldwide rely on DEMETER, including air navigation service providers across most member states of the European Civil Aviation Conference (ECAC), flight inspection providers, procedure design organizations, research institutes, and universities. The tool has also been used in SESAR projects for ECAC-wide navigation infrastructure assessments.

Migrating DEMETER to the cloud is the natural next step in better serving this growing community. The move will improve scalability and accessibility, while accelerating the delivery of new features to users. Over the next five years, GMV looks forward to continuing its support for EUROCONTROL and the wider aviation community throughout this important transition.

SATNUS successfully completed the fourth flight demonstration campaign under Pillar 3 of the Next Generation Weapon System NGWS/FCAS

■ During the third and fourth week of March, SATNUS successfully completed the fourth flight demonstration campaign under Pillar 3 of the Next Generation Weapon System/ Future Combat Air System (NGWS/FCAS) program at the INTA-CEDEA facilities. The campaign consisted of nine flights aimed at verifying the Manned-Unmanned Teaming (MUT) software led by SATNUS and developed in collaboration with the international partners Airbus GmbH and MBDA, integrated into the Next Generation Autonomy Computer (NGAC), where

Remote Carriers were represented by both real and simulated Man-Unmanned-Teaming & Common Systems Demonstrator (MCSD) platforms.

During the campaign, several MUT functionalities were demonstrated, including formation flight, evasive maneuvers, collaborative navigation (including operations in denied environments), mission re-planning, formation break-up, and visual platform detection for relative distance calculation, among others. The flights involved up to

three real Remote Carriers in operation and two simulated ones.

The campaign concluded with flights #29, #30, and #31 in the presence of the Combined Project Team (CPT) and the National Program Offices of the three partner nations (France, Germany and Spain). SATNUS engineering teams carried out highly specialized work to achieve this milestone, meeting all defined objectives while combining the expertise of the three companies (GMV, Sener, and TecnoBit-Grupo Oesia) and their international partners.

The Spanish Army evaluates the integration of Seeker with the Talos system and Dual-EIMOS

■ GMV, Rheinmetall and Aurea Avionics participated in a series of operational trials with the Paratrooper Brigade (BRIPAC) on 10 April at the “Príncipe” Base in Paracuellos del Jarama (Madrid).

The objective of these trials was to evaluate the integration of the Seeker UAV system into an already operational architecture based on GMV’s Talos artillery command and control system and Rheinmetall’s Dual-EIMOS mounted mortar system. Dual-EIMOS has been developed by Rheinmetall’s subsidiary Rheinmetall Excal Munitions.

Seeker is a tactical, rapidly deployable unmanned aerial vehicle (UAV), developed by Aurea Avionics and supplied by GMV, providing intelligence, surveillance and reconnaissance capabilities. The system is one of the most effective unmanned aerial systems on the market, with an endurance of 120 minutes, a range of 15 km and a weight of 3.6 kg. This system enhances the operational capabilities of the Armed Forces by providing critical real-time information to support decision-making and ensure tactical superiority on the battlefield.

The activities were carried out within the framework of collaboration between the three companies, resulting in a joint solution that enables the integration of ISR sensors with fire support systems, while ensuring interoperability between platforms.

During the trials, different functionalities related to the integration were evaluated, including the definition of observation areas for the Seeker system, coordination with fire missions, the acquisition of georeferenced imagery; and the tracking of the DUAL-EIMOS system, all of these enabled through the exchange of information with the **Talos** system. The trials were conducted under representative operational conditions, allowing BRIPAC operators to interact directly with the system and assess its performance in a real environment.

The integration of Seeker within the **Talos**-Dual-EIMOS ecosystem represents progress in the connection between sensors, effectors and command and control systems, by facilitating more agile information exchange and more effective coordination between system elements.



These activities consolidate the collaboration between GMV, Rheinmetall and Aurea Avionics in the development of advanced solutions in the field of defence.

GMV showcases its capabilities at the ILA Berlin Air Show

ILA Berlin Air Show, one of the leading international events in the aerospace and defence sectors, was held in Berlin, Germany, from June 10 to 14. The event brought together key players from the industry, government agencies, the armed forces, and research centers to showcase the latest technological innovations that will shape the future of aviation, space, and defence.

GMV took part in the event through a twofold presence. In addition to exhibiting

at its own stand in the aerospace and defence area, the company also participated as a co-exhibitor alongside the aerospace company BDLI, showcasing its technological capabilities for the space sector and reinforcing its commitment to innovation in this field.

Throughout the trade show, the company showcased its capabilities and developments in the major aerospace programs in which it participates, such as Eurodrone, SIRTAP, A400M, and SAETA

II, among others. GMV also showcased its multi-domain command and control capabilities, particularly in air and space components.

Through its participation in the ILA Berlin Air Show, GMV reinforced its position as a leading technology partner for key strategic defence, aeronautics, and space programs, showcasing the scope of its technological developments in sectors increasingly focused on the integration of capabilities, autonomy, and digitization.

Quantum PNT: the next big leap toward resilient navigation

GMV is actively exploring the integration of quantum technologies into positioning, navigation, and timing (PNT) systems and sees significant potential for these innovative technologies to enhance its PNT resilience, accuracy, and integrity



ositioning, navigation, and timing (PNT) capabilities are essential for modern society and critical infrastructures. Today, global navigation satellite systems (GNSS)

form the backbone of worldwide PNT services. However, their reliance on relatively weak and openly accessible signals makes them vulnerable to interference, jamming, and spoofing. This is driving

the search for more resilient and autonomous alternatives.

Quantum PNT is emerging as a transformative paradigm in response to these needs. By leveraging the quantum

properties of matter and light, it enables new approaches to navigation and time transfer. Examples include ultra-sensitive accelerometers, gyroscopes, and magnetometers, as well as quantum metrology techniques based on entangled photon pairs.

But what does “quantum” mean when used in sensing and metrology devices? Matter and light are inherently quantum in nature, meaning that all sensing devices fundamentally operate within the quantum realm. Nevertheless, the term is generally reserved for systems whose behavior can only be accurately explained through the theoretical framework of quantum mechanics rather than classical physics. Such systems may involve cold atoms, superconducting

materials, nitrogen-vacancy centers in diamond (i.e., crystal defects within a diamond lattice), and entangled photons.

Quantum metrology and sensors offer several advantages for PNT. Quantum sensors can achieve exceptional sensitivity, potentially improving current performance levels by one to two orders of magnitude, and are ultimately limited only by the laws of physics. Meanwhile, quantum communication techniques can inherently protect against eavesdropping and spoofing. These characteristics position quantum technologies as potential game changers for next-generation PNT systems. Despite significant progress, many quantum technologies remain at low technology readiness levels (TRLs) and still face important size, weight, and power (SWaP) constraints. The key challenge, therefore, lies not only in technological maturation but also in industrialization and operational deployment.

GMV is actively exploring the integration of quantum technologies into PNT systems and sees significant potential for these innovative technologies to enhance PNT resilience, accuracy, and integrity.

The QUANTICO project carried out by GMV for the European Space Agency (ESA) developed a prototype free-space quantum metrology system. It includes a transmitter that generates quantum pseudorandom noise (PRN) using light polarization and a receiver optimized for photon detection. Correlations and quantum bit error rates (QBER) are computed from the detected photon counts.

In PASQUALE, also under contract with ESA, GMV is integrating a

quantum inertial measurement unit (IMU) based on cold atom interferometry into a conventional navigation system. The project aims to demonstrate the technology’s performance during maritime field trials and achieve a TRL of 5 or 6.

In QAPTCHA, carried out for Innovate UK, the aim is to design and demonstrate an industrially scalable hybrid sensor combining classical and quantum accelerometers for train positioning. Within this project, GMV is leading the final demonstration on an operational train to assess the performance of the hybrid accelerometer and evaluate its ability to capture train dynamics relative to traditional sensing technologies.

As part of the ESA’s MOQUA project, GMV is modeling quantum accelerometers and gyroscopes, based on ultracold atom interferometry, in realistic simulated navigation contexts. A new sensor fusion approach has been developed, enabling rigorous evaluation of the navigation performance benefits offered by quantum sensors and a critical assessment of their integration into conventional navigation systems.

Other potential use cases include quantum-based autonomous orbit determination to reduce spacecraft dependence on GNSS, and quantum time transfer to improve spacecraft synchronization beyond conventional GNSS timing.

GMV aims to play a leading role in the evolution of quantum PNT by bridging the gap between emerging quantum technologies and operational navigation systems, contributing to the next generation of resilient, accurate, and autonomous PNT capabilities for terrestrial and space applications.



GMV to support European Commission in developing advanced GNSS interference monitoring technologies



■ GMV has been awarded a contract by the European Commission to develop and validate advanced methods for characterization of interferences affecting global navigation satellite systems (GNSS), including Galileo. The project aims to deliver a demonstrator capable of quantifying improvements in Europe's ability to characterize sources of

interference that may compromise critical positioning, navigation, and timing (PNT) services.

The work will focus on evaluating the fusion of terrestrial sensors and satellites in low Earth orbit (LEO) to monitor GNSS frequency bands from ground, air, and space.

In addition to the data collected from multiple satellites, the study will evaluate the use of observations from smartphones, aircraft automatic dependent surveillance-broadcast (ADS-B) transponders, continuously operating reference stations (CORS), and other data sources. Integrating these complementary data sources will help increase the system reliability and availability, reduce false alarms, improve accuracy, and provide precise estimates of both the affected areas and the operational impact of interference events.

The project will assess the key performance indicators (KPI) and operational feasibility of the system through simulations and experimental validation activities. At the end of the 18-month project, the goal is to lay the foundations for a possible future European GNSS interference monitoring capability based on the fusion of spaceborne, airborne, and ground-based assets.

GMV showcases its capabilities in space, defence and resilient navigation at AED Days

GMV participated in AED Days 2026, an international event held from 27 to 29 May in the Oeiras and Cascais area (Portugal), bringing together key players from the aeronautics, space and defence sectors. This year's edition expanded its programme with conferences and a large exhibition area aimed at fostering business opportunities and direct engagement between companies and institutions.

The third edition of AED Days also introduced new thematic initiatives, including the Defence Industry Forum, dedicated exclusively to the defence sector; Space² Dialogues, promoted by

the Portuguese Space Agency to discuss the challenges and opportunities facing the space industry; and the AeroFuture Forum, focused on sustainable aviation, advanced air mobility and airports.

Within the Space² exhibition area, GMV showcased some of its most innovative solutions in the fields of resilient navigation, earth observation, and space systems, while also taking part in numerous B2B meetings. Highlights included the PfA mock-up developed as part of the Celeste IOD in-orbit demonstration mission, the srX10i interference detection system, and ASGAR, GMV's maritime receiver

supporting OSNMA. The company also presented an interactive simulator of the LUS-222 aircraft, demonstrating Portuguese technology for mission systems, flight planning and support for aeronautical operations.

GMV also contributed to the conference programme through Andrés Juez, Head of European GNSS, who was invited to take part in the panel discussion "The next space frontier: opportunities, readiness and growth", where he shared his perspective on the challenges and opportunities that will shape the next phase of growth in the space industry.

GMV's Celeste IOD-1 satellite successfully transmits first navigation signal

■ At 10:38 CET on April 8, the Celeste IOD-1 satellite, developed by GMV and Alén Space under the European Space Agency's (ESA) Celeste In-Orbit Demonstrator (IOD) program, successfully transmitted its navigation signal for the first time.

The reception of the signal from the Celeste IOD-1 satellite, confirmed by ESA teams at ESTEC, marks a key milestone for the program as it confirms the satellite's successful commissioning in orbit. The signal was also received at GMV's monitoring station in Lisbon.

The first two IOD satellites of the Celeste program (IOD-1 and IOD-2) —built by GMV and Thales Alenia Space, respectively— were launched on March 28. Separation from the launch vehicle took place approximately one hour later, marking the start of the initial operations phase (LEOP) and commissioning, carried out by GMV for the IOD-1 satellite from the mission control center in Tres Cantos (Madrid).

Celeste is ESA's strategic program to demonstrate the benefits of an additional low Earth orbit (LEO) navigation layer that complements Galileo and EGNOS, with the goal of improving the accuracy, resilience, and security of positioning, navigation, and timing (PNT) services in Europe. The in-orbit demonstrator (IOD) represents the program's first phase and will validate key LEO-PNT technologies in flight ahead of potential future operational deployment.

The Celeste IOD phase is being carried out in parallel by two European consortia, one of them led by GMV as the primer contractor for ESA. It involves the development of a total of eleven satellites plus one in-orbit spare. GMV is responsible for the complete end to end mission, including system definition and design, the development of the space, ground, and user segments, as well as the operations of six of the demonstrator satellites.



GMV strengthens its presence in the Polish space ecosystem at the Space Sector Forum

GMV participated in the Space Sector Forum, one of the leading events in Poland's space industry, held on June 24 at the Poznań International Fair. The forum brought together representatives from industry, government agencies, research centers, universities, and space agencies to discuss the sector's main challenges and opportunities.

During the event, GMV had an exhibition space where it showcased some of its solutions for the space sector, including **Sextans GMV**, a software-defined GNSS receiver that provides accurate positioning, velocity, and timing information for a wide range of space applications.

During the forum, the winners of the Polish Space Fellowship Program were also announced. This internship program, in which GMV participates as a partner company, aims to drive recruitment of new talent in the space sector. As a result of this initiative, one of the selected students will complete a five-month internship at GMV's headquarters in Poland.

The fifth edition of the Space Sector Forum focused its program on issues such as dual-use technologies, European space cooperation, security and defense, the development of industrial capabilities, technological innovation, and opportunities related to European Space Agency (ESA) programs. With more than 400 participants and 40 exhibitors, the event has established itself as one of the leading gatherings in the Polish space ecosystem.

GMV is taking the first operational steps toward the launch of Galileo Second Generation



■ GMV has successfully completed the deployment of the System Compatibility Test Campaign (SCTC) chain for the Ground Control Segment (GCS) of Galileo Second Generation (G2) at the Galileo Control Center in Germany (GCC-D).

The GCS is one of the key components of Galileo's ground infrastructure, responsible for monitoring and controlling the satellite constellation. The SCTC is the system compatibility testing campaign, a critical phase for validating the integration and operational readiness of the various components prior to the G2 satellites entering service.

The achievement of this milestone, which was completed as scheduled in May, represents a decisive step forward in the preparation of future validation campaigns for Galileo Second Generation.

The deployment of the G2 SCTC chain at the control center in Germany entailed a significant technical and operational effort, involving the coordination

of integration, configuration, and preparation activities both at the German control center and among the various teams involved in the project.

This achievement is the result of work that began in 2023 under a contract with the European Space Agency (ESA), during which GMV led the progressive development of the G2 GCS through successive deliveries and system validation milestones.

With the chain now deployed at GCC-D, the system is ready to support the first SCTC campaign for the Galileo Second Generation satellites, scheduled for late July. From that date onward, GMV will continue to optimize the system and prepare for upcoming test campaigns in anticipation of the future launch of Galileo G2.

GMV participates in the "Congreso del Espacio 2026" and calls for a more sovereign and competitive European space sector

On 19 and 20 May, GMV participated in the Congreso del Espacio 2026 at Madrid's Mutua Madrileña Auditorium. The event, organized by the Spanish Association of Defense, Security, Aeronautics and Space Technology Companies (TEDAE) with the support of the Spanish Space Agency (AEE), brought together leading institutional and industrial representatives from the national and European space ecosystem.

With the theme "One Country, One Space" and over 400 participants, the conference served as a forum for analyzing the strategic, technological, and industrial challenges that will shape the future of the space sector in Europe. It addressed key issues such as strategic autonomy, security and defense, key technological capabilities,

space exploration, and the major programs that will define the coming decade.

On 19 May, GMV was represented by Enrique Fraga, general manager of EST Space Systems, in the round-table discussion on "Challenges and opportunities for the industry in a context of transformation and growth," featuring representatives from the sector's leading companies. In his remarks, he stressed the need for Europe to move towards its own space model based on strategic sovereignty, industrial collaboration, specialization, and technological competitiveness.

GMV was also represented at the event by Jesús B. Serrano, GMV's general manager, and Jorge Potti, GMV's corporate director of Strategy,

as well as a large group of company professionals, who followed the various sessions closely and contributed to the exchange of ideas and the strengthening of relationships with representatives of the European space ecosystem.

The event was also attended and supported by leading national and international authorities, including Spanish Prime Minister Pedro Sánchez, who underlined Spain's commitment to cementing its position as a European leader in the space sector; Diana Morant, minister of Science, Innovation, and Universities; Jordi Hereu, minister of Industry and Tourism; ESA Director General Josef Aschbacher; and representatives of the European Commission, EUSPA, and the Spanish Space Agency.

GMV strengthens its role in EGNOS with a new contract for the evolution of the CPFPS

■ GMV has signed a new contract for the specification, design, development, and qualification of two versions (V244 and V245) of the CPFPS (Central Processing Facility Processing Set) of the European Geostationary Navigation Overlay System (EGNOS), funded by the European Union, with Thales Alenia Space France as prime contractor.

The CPFPS developed by GMV is a key component of the Central Processing Facility (CPF) or the EGNOS sytem. The CPFPS is responsible for processing satellite navigation signals and generating the corrections and integrity messages that improve the accuracy and reliability of GPS positioning. These enhancements are essential for the system's Safety of Life (SoL) service, primarily intended

for performing precision approaches at European airports.

The new contract is part of the EGNOS V2 Life Extension Plan (LIFEX), which aims to keep the system operational until the entry into service of EGNOS V3. This first phase, known as LIFEX1, includes, among other actions, the introduction of algorithmic improvements in system processing and management in accordance with new EGNOS station network.

With over 25 years of experience in EGNOS, GMV continues to play a leading role in its evolution. The company is responsible for the design, development, validation, and maintenance of several of its core elements, including the CPFPS itself, the EDAS (EGNOS Data Access Service), the EURONOTAM (European

Notice to Airmen Service), the ASQF (Application Specific Qualification Facility), and the ATPAIV (Automated Test and Performance Analysis and Integrity Validation) tool.

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GMV advances secure timing and synchronization solutions through Galileo PRS technology



■ GMV is leading the PRESENTIS (Public Regulated Service Network Time Solution) project, an initiative funded by the European Union under the Horizon Europe programme and focused on leveraging the robustness of the Galileo Public Regulated Service (PRS) to address the most demanding positioning, navigation, and timing (PNT) needs of authorized governmental users.

Secure and resilient timing capabilities are becoming increasingly important for critical infrastructures and operational environments where continuity and protection against interference are essential.

The project targets operational environments where the specific features of PRS—such as service continuity, access control, and resilience against jamming and spoofing—provide

clear advantages compared to open GNSS services.

PRESENTIS focuses on two complementary use cases developed in parallel: PRS-based network time synchronization for civilian applications, and PRS-based sensor and data integration combining position and time. Addressing both scenarios simultaneously strengthens the technical outcomes and broadens the range of potential applications.

The primary objective of PRESENTIS is to merge and exploit the robustness of PRS for the most demanding timing and synchronization scenarios. GMV and its industrial consortium bring extensive experience in high-capacity timing solutions, with previous work carried out for the European Space Agency (ESA), large scientific infrastructures,

and in collaboration with leading international timing laboratories.

A key element of the project is GMV's fully operational PRS receiver, developed jointly with CIPHERBIT. Using this receiver as a trusted time source will enhance GMV's **WANTime**® product, a high-capacity network timing and synchronization solution, providing PRS-based protection, maximum availability, and continuity for critical timing applications.

In parallel, GMV will evolve its PRS server-based navigation solution to assess its suitability as a time source for **WANTime**®. This approach centralizes key management on a secure server, enabling PRS-based timing for devices without local encryption keys and expanding the range of deployable use cases.

PASQUALE project kicks off to explore the use of quantum IMUs for navigation

■ The PASQUALE (Precise and Stable Navigation with Quantum Accelerometer) project, led by GMV, has officially started under the European Space Agency's (ESA) Navigation Innovation and Support Programme (NAVISP). The project aims to advance next-generation Positioning, Navigation and Timing (PNT) technologies by integrating quantum inertial sensing with conventional navigation systems.

With the increasing reliance on satellite navigation in numerous critical applications, it is becoming increasingly important to ensure robust and reliable positioning capabilities in environments where GNSS signals are degraded, disrupted, or unavailable. PASQUALE addresses this challenge by exploring the integration of quantum inertial technology into traditional navigation systems with the aim of improving accuracy, stability, and resilience.

At the heart of the project is the development of a navigation system combining conventional inertial sensors, GNSS technologies and a quantum

inertial measurement unit (IMU) based on cold-atom interferometry. This innovative approach seeks to overcome some of the limitations of current inertial navigation systems by reducing long-term drift and enhancing navigation performance during GNSS outages or interference events.

Over the course of the 24-month project, GMV and the project partners will carry out the design, prototyping, integration and validation of the quantum sensor within a complete navigation solution. The work programme also encompasses modelling and simulation activities, system integration tasks and maritime field trials aimed at assessing the performance of the PASQUALE navigation system under representative operational conditions.

By increasing the technology readiness level of quantum-enhanced navigation solutions, PASQUALE is expected to contribute to the development of highly resilient PNT systems capable of supporting future applications in areas such as autonomous mobility, robotics,

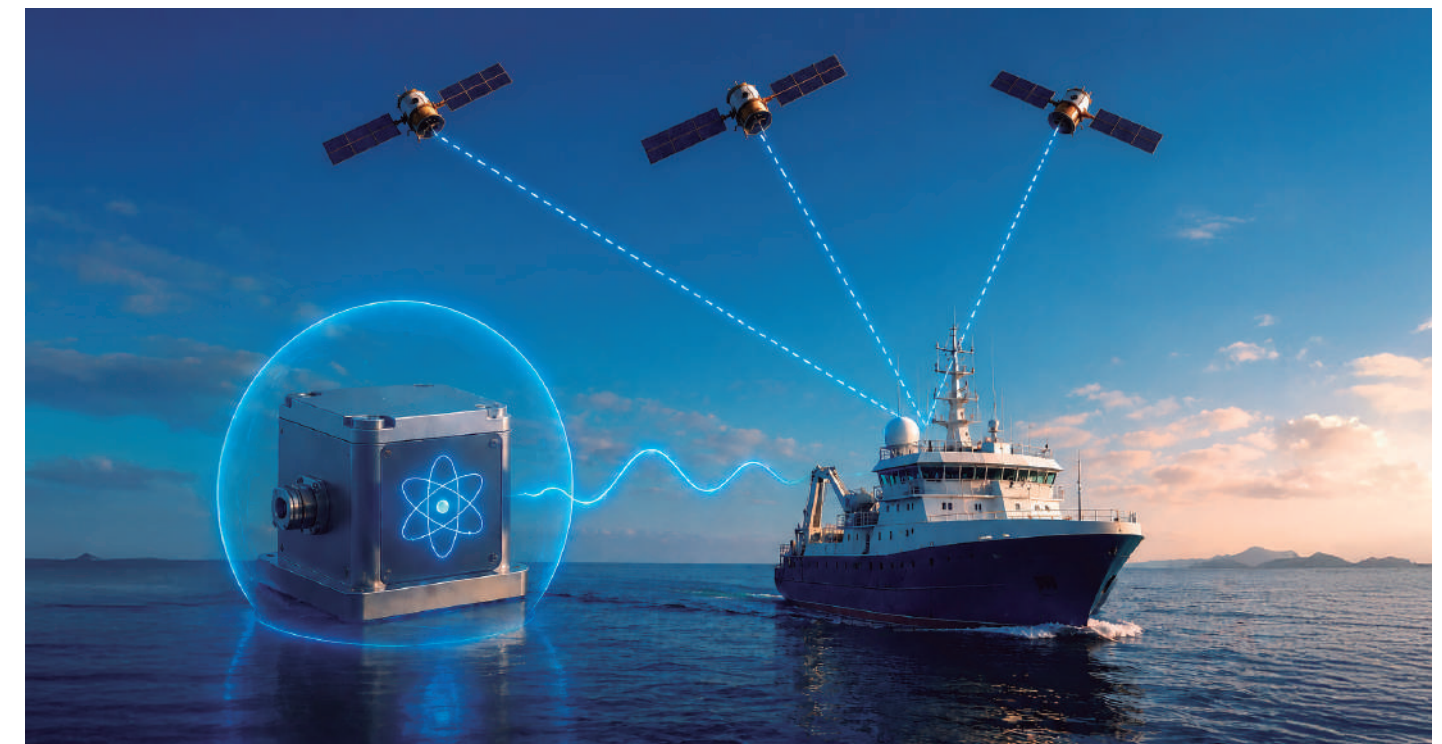
critical infrastructure protection, defence and security, and other sectors where reliable navigation is essential.

PASQUALE is one of the projects awarded to GMV under NAVISP Element 1 (Innovation), which supports the development of disruptive navigation technologies with the potential to shape future PNT systems.

The launch of PASQUALE further strengthens GMV's role in ESA's NAVISP programme, where the company currently leads or participates in nine projects spanning navigation innovation, competitiveness and national PNT strategies.



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Opinion

Enhancing position, navigation, and timing (PNT) through innovative GNSS complementing signals

Global navigation satellite systems (GNSS) provide reliable PNT services with remarkable performance worldwide. These services are critical to many sectors, including aviation, maritime, rail, and road transportation, as well as critical infrastructure such as energy, finance, and telecommunications. Nevertheless,

these systems also pose a number of challenges that must be addressed. GNSS performance can be degraded—or even denied entirely—in harsh environments such as urban areas or indoor settings, while the systems themselves are vulnerable to cyberattacks. Given the importance of PNT services for modern societies, together with rising geopolitical

tensions, overcoming these limitations is essential to delivering robust, reliable, and high-performance services in all environments and operating conditions.

A recent trend in the PNT sector is the hybridization of signals from Low Earth Orbit (LEO) satellites and 5G technologies to complement

GNSS, helping to mitigate some of its limitations while also harnessing synergies between navigation and communication capabilities.

The GERMINAL project, funded by the European Union Agency for the Space Programme (EUSPA) and led by GMV in partnership with the Universitat Autònoma de Barcelona (UAB) and the Instituto Madrileño de Estudios Avanzados (IMDEA), aims to design, develop, and test a hybrid terminal integrating both navigation and communication capabilities, including the processing of various innovative signals. The new hybrid terminal represents the next generation of GMV solutions. By leveraging some or all of the integrated technologies, it can deliver PNT services to users operating in a wide variety of challenging environments and scenarios.

In particular, the hybrid terminal is capable of processing innovative signals from 5G Terrestrial Networks (TN) and Non-Terrestrial Networks (NTN), LEO-PNT and LEO Signals of Opportunity (SoP), as well as Galileo and GPS, incorporating the innovative Galileo Quasi-Pilot (QP) signal. The hybridization of these signals can

“Integration of GNSS, LEO, and 5G signals paves the way for a new generation of PNT services that are more robust, reliable, and available even in complex environments”



Marcelo Meneses
GERMINAL Project Manager
GMV Satellite Navigation Systems



Javier Fidalgo
Head of GNSS Consultancy
GMV Satellite Navigation Systems

significantly improve performance in urban environments, enable PNT solutions in GNSS-denied environments, and provide an additional layer of robustness against cyber threats. Processing the Galileo QP signal can also significantly reduce Time to First Fix (TTFF). In addition, the synergies between navigation and communication capabilities could open the door to innovative use cases.

Two terminal units of the will be developed during the project, culminating

in a final demonstration involving key stakeholders. Market and strategic activities will also be carried out to bring the product as close as possible to commercialization.

Overall, the GERMINAL project positions GMV within the emerging market for next-generation PNT terminals capable of leveraging multi-system capabilities to tackle the challenges currently facing the PNT community.

The Latin American and Caribbean Space Agency visits GMV



■ On 13 May, GMV welcomed a delegation from the Latin American and Caribbean Space Agency (ALCE), led by its secretary general, Óscar Fredy González Rivera, to the company's headquarters in Madrid. The meeting focused on sharing knowledge and capabilities and analyzing possible opportunities for collaboration in the space sector. The delegation was accompanied by Jorge Sánchez Cataño, head of International Cooperation and

Education at the Mexican Embassy in Spain, and Carlos García Sacristán, head of International Relations at the Spanish Space Agency (AEE).

During the visit, ALCE representatives had the opportunity to get a first-hand look at some of GMV's key technological capabilities and space projects. The visit included a corporate presentation by Miguel Ángel Molina, GMV's deputy general manager for EST

Space Systems, and a presentation by Enrique Fraga, general manager of Space Systems at GMV, on the company's work in the space sector. Additionally, there was a presentation on the capabilities of Alén Space, a GMV group company specializing in microsatellite development.

The agenda also included a presentation on ALCE as an institution, followed by an exchange of views on possible avenues for future collaboration, especially in strategic areas linked to space, technological innovation, and the development of regional capabilities within ALCE's sphere of activity.

The visit concluded with a tour of various GMV facilities, including the Multimission Room, the Navigation Laboratory and the Space Robotics and Avionics laboratories. During the tour, the delegation was able to learn about various technologies and developments in relation to cutting-edge satellite navigation services, space robotics systems, and solutions for small satellites.

GMV participates in the latest edition of BSDA in Bucharest

The tenth edition of Black Sea Defense, Aerospace & Security (BSDA), the international fair that takes place every two years in Bucharest, Romania, was held from 13 to 15 May. Industry experts, companies, military delegations, and government officials came together to learn about the latest technological and operational capabilities, foster international cooperation, and analyze the main strategic challenges in the defense, security, and aerospace fields.

The event featured exhibitions, talks, workshops, and live demonstrations to promote technological exchange and the development of business opportunities.

Miguel Ángel Molina, GMV's deputy general manager for EST Space Systems, participated in a round-table discussion on space and cybersecurity alongside representatives of other companies and institutions in the sector.

GMV also had a stand in the exhibition area, where it presented aerospace-specific solutions, such as the Celeste IOD-1, ASSIST, and HERA-IPU demonstration models; GNSS receivers—including PRS and ASGARD—together with GNSS interference monitoring solutions; as well as GMVISION image processing units and OBC (On-Board Computer) technologies for micro-launchers.

In addition, the company showcased its capabilities in mission readiness, avionics, space systems, the satellite ground segment, and navigation, including resilient PNT (Positioning, Navigation, and Timing) and PRS Galileo (Public Regulated Service) solutions.

Organizations participating in BSDA 2026 were able to reinforce their commitment to the development of cutting-edge technological capabilities for the defense, security, and space sectors, as well as to foster collaboration in strategic markets in the face of the sector's current challenges.

Remembering Professor Vidal Ashkenazi OBE, founder of NSL and one of the driving forces behind Galileo

■ Professor Vidal Ashkenazi OBE, one of the pioneering figures in satellite geodesy and global navigation, passed away on 29 April at the age of 92. His remarkable scientific legacy, international vision and entrepreneurial spirit helped shape the modern GNSS landscape and left a lasting mark on the European space sector.

Widely regarded as one of the fathers of the Galileo program, Professor Ashkenazi dedicated his life to advancing satellite navigation technologies and promoting Europe's strategic independence in this critical domain. His work laid the foundations for many of the coordinate reference systems and positioning technologies that continue to underpin satellite navigation and mapping systems worldwide today.

Born in Istanbul in 1933, Vidal Ashkenazi's academic journey took him from Israel to Ghana, Oxford and ultimately the University of Nottingham, where he became the UK's first Professor of Engineering Surveying. During more than three decades at Nottingham, he established the Institute of Engineering Surveying and Space Geodesy (IESSG), transforming it into a world-renowned Centre of Excellence in surveying, geodesy and navigation research.

Following his retirement from academia in 1998, Professor Ashkenazi founded Nottingham Scientific Limited (NSL), with the vision of bringing cutting-edge university research into operational and commercial applications. Under his guidance, NSL became a highly respected company in the field of GNSS research and development, contributing to key European navigation initiatives and helping to develop some of the earliest algorithms for Galileo. A particularly meaningful chapter in his legacy began in 2020, when NSL

joined GMV. This integration ensured the continuity and expansion of the company he had built, enabling its capabilities and expertise to grow within one of Europe's leading technology groups. Even at the age of 87, Professor Ashkenazi remained closely connected to the company and deeply interested in its future.

The incorporation of NSL into GMV reflected a shared commitment to technological excellence, innovation and customer focus, values that Professor Ashkenazi championed throughout his entire career. His vision continues to live on through GMV United Kingdom's work across satellite navigation, space systems, Earth observation and emerging technologies.

Professor Ashkenazi's many achievements were recognised

internationally. In 2017, he was appointed Officer of the Order of the British Empire (OBE) for his outstanding services to science. Over the course of his career, he published more than 300 scientific papers and received numerous distinctions for his contributions to engineering, navigation and geodesy.

Beyond his scientific accomplishments, those who worked alongside him remember a deeply supportive mentor, an inspiring leader and a tireless advocate for innovation and education. His influence extended far beyond the institutions and companies he helped build; it lives on in the many professionals, researchers and organisations shaped by his guidance.

Rest in peace, Professor Ashkenazi. Your legacy will remain forever part of the history of GMV.





GMV will develop Satellite Control System for CAMILA

The project, developed in collaboration with the European Space Agency (ESA), will strengthen Poland's national Earth observation capabilities and increase its independence in accessing geospatial data

The CAMILA Earth Observation program, the largest satellite initiative in Polish history, is moving into its next phase. Developed in collaboration with the European Space Agency (ESA), the program will deploy a constellation of four observation satellites to strengthen Poland's national Earth observation capabilities and increase its independence in access to geospatial data.

CAMILA, which stands for Country Awareness Mission in Land Analysis, was established under an agreement between Poland's Ministry of Development and Technology and the European Space Agency. The system will consist of two main segments: a space segment comprising four Earth observation satellites and a ground segment responsible for mission control and management. Its objective is to provide high-resolution geospatial information to public administrations,

emergency management services, and organizations responsible for spatial planning and environmental protection.

GMV is responsible for the design, development, and implementation of the flight operations segment (FOS), the software system that will enable operators to control the CAMILA satellite constellation from the ground.

In mid-May, the project successfully completed the flight operation system requirements review (FOS RR), one of the key milestones before the start of software development activities. Developed and implemented by GMV's team in Poland, the FOS is a key component of the ground segment, enabling operators to control individual satellites and manage the constellation as a whole.

The FOS system will be integrated with ground infrastructure, antennas, and data processing software. GMV's solutions will enable partial automation of satellite operations, thereby increasing operational efficiency and mission safety.

The Flight Operations Segment software developed by GMV comprises several key elements covering the main functions required for space mission operations. These include **hifly**®, the Mission Control Software; **FocuSuite**®, the Flight Dynamics System; **flexplan**®, the Mission Planning System; and **Focusoc**, the Collision Avoidance System. Together, these components provide the capabilities required to manage mission operations end-to-end, from satellite planning and control to orbital analysis and collision risk mitigation.

GMV's participation in the consortium behind the CAMILA mission represents an important step in the company's growth in Poland and strengthens its position as a provider of ground segment solutions for Earth observation satellites.

GMV joins the Robot Framework Foundation to drive the development of open-source automation



■ GMV has formally joined the Robot Framework Foundation as a collaborating member, reinforcing its commitment to promoting open technologies and developing cutting-edge solutions in the field of software test automation.

By joining this international foundation, GMV is entering a global ecosystem of organizations promoting the evolution of Robot Framework, a widely used tool for test and process automation, renowned for its

Flexibility and collaboration-oriented approach.

The Robot Framework Foundation is the organization in charge of coordinating the development, sustainability, and governance of this open-source technology, encouraging companies and experts to participate as they contribute to its continuous improvement. As a collaborating member, GMV will be part of the community, remain aligned with its initiatives, and gain access to knowledge sharing, thus helping to further the ecosystem’s progress.

This membership reinforces GMV’s commitment to software quality and test automation as cornerstones of critical sectors such as space, defense, and transportation, where system reliability and efficiency are essential. It also facilitates the company’s access to best practices, trends, and emerging developments in automation, making it better able to offer its clients the most innovative solutions.

GMV makes strong showing at latest Space Engineering Conference

GMV made a strong showing at the 6th Space Engineering Conference, organized by the Space Committee of the Spanish Engineering Institute (IIE) from June 23 to 25, further reinforcing its position as one of the leading players in Spain’s space industry.

The company also took part as a platinum sponsor of the event, which brought together representatives from across the space community to discuss the key technological, industrial, and operational challenges that will shape the sector’s future.

During the conference, GMV experts took part in several of the event’s most prominent sessions. Miguel Ángel Molina,

GMV’s Space Systems EST General Manager, participated in the opening panel discussion, “Critical technologies for the future,” which explored the strategic capabilities set to drive the development of the space industry in the years ahead. Fernando Gandía Abellán, Head of the Robotics and Onboard Autonomy Division within EST Space Systems at GMV, took part in a panel discussion on the technological challenges of lunar exploration. Meanwhile, María Antonia Ramos, Head of Policy and Business Development for Space Traffic Management within EST Space Systems at GMV, joined the “Space surveillance and traffic management” panel, which focused on the challenges associated with the safe and sustainable use of Earth’s

orbital environment. In addition, Alberto Águeda, Director of Space Surveillance and Traffic Management at EST Space Systems, delivered a presentation on space sustainability and security.

GMV’s technical contribution to the conference was particularly noteworthy, with close to twenty technical paper presentations and co-presentations. These papers covered key areas including Earth observation, ground operations and ground segments, satellite navigation, space surveillance and tracking, secure communications, artificial intelligence applied to satellite data processing, and the promotion of systems engineering in educational and organizational settings.

GMV to expand operational capabilities of the GOVSATCOM Hub



■ The European Union Agency for the Space Programme (EUSPA) has contracted GMV to expand the operational services of the GOVSATCOM Hub project, with the goal of providing continuous 24/7 support and will ensure service continuity at all times, particularly in emergency situations, where the ability to timely respond is critical for EU Member States.

GOVSATCOM Hub serves as the operational core of the European Union’s GOVSATCOM program, designed to deliver secure, encrypted communications services under European sovereignty to governments and EU institutions. The infrastructure enables the efficient pooling and sharing of satellite communications capabilities contributed by various Member States, ensuring reliable communications for critical governmental operations.

The expansion awarded to GMV reinforces the Hub’s strategic role within the European space architecture and responds to the growing need for resilient, permanently available services in scenarios such as crisis management, border and maritime surveillance, critical infrastructure protection, and support for operations in remote environments and polar regions.

GMV leads GOVSATCOM Hub at the head of a European industrial consortium that includes Indra and Hisdesat, alongside other European companies that have actively contributed to the development of the system. The project combines GMV’s expertise in space systems and cybersecurity, Indra’s technological capabilities in communications and command-and-control systems, and Hisdesat’s operational track record in secure governmental communications.

The primary contract for the design, development, and deployment of the GOVSATCOM Hub was awarded by EUSPA to GMV in 2024, with a total budget envelope of €107 million. GOVSATCOM currently integrates satellite capabilities contributed by various Member States, with a total of eight satellites operated by five countries and anticipates the progressive incorporation of additional capabilities.

GOVSATCOM is part of the European Union Space Programme, alongside Galileo, Copernicus, EGNOS, and SSA. The system is positioned as a key element in strengthening Europe’s strategic autonomy in the field of secure communications and in advancing toward greater autonomous operational capability and interoperability in security and defense matters.



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The views expressed in this press release are solely the responsibility of the author and do not necessarily reflect the views of the European Commission and the European Union Space Programme Agency (EUSPA).

GMV embraces space innovation through its participation in ESAW 2026

The tenth edition of the “European Mission Operations Ground Segment Software & Architecture Workshop” (ESAW), an event organized by the European Space Operations Centre (ESOC) with the support of the Operations Directorate of the European Space Agency (ESA), was held in Darmstadt, Germany on 15 and 16 April to present the latest trends in Earth exploration and define the future of software and architecture for mission operations.

This year’s theme was “Platforms for exploring Earth and beyond – Towards a smart and resilient ground segment” and brought together more than 250 participants and 40 speakers from companies, institutions, and space agencies, who had the opportunity to exchange ideas and continue driving innovation in the space sector.

GMV played a key role in the event with numerous papers, presentations, and technical sessions, sharing its work and perspectives with the rest of the space community. Representing the company, GMV’s experts from different sectors addressed a wide range of topics, such as the evolution of ground-segment platforms and the challenges they face in dual-use missions; data archiving and AI ecosystems; real-time mission planning, scheduling, and operations; AI assistants, predictive operations, and smart engineering; and constellation automation and orchestration, among others.

ESAW concluded after two days in which attendees had the opportunity to share their experience and research, contributing to the development of the space sector through collaboration among the various stakeholders in the ecosystem.

The European Commission's Joint Research Centre visits GMV for Copernicus EMS Annual Review



■ On April 14-15, GMV welcomed the European Commission's Joint Research Centre (JRC) and key consortium partners to its Lisbon facilities for the Copernicus Emergency Management Service – Rapid Mapping (EMS-RM) Annual Review Meeting (Year 3). The event marked an important milestone in the evolution of one of the European Union's flagship crisis management programs.

The Copernicus EMS-RM service provides fast, reliable geospatial information in response to natural and man-made

disasters such as wildfires, floods, and earthquakes. By delivering actionable mapping products within hours of activation, the service plays a critical role in supporting emergency responders and decision-makers under time-critical conditions.

As the European Commission's science and knowledge service, the JRC provides independent expertise to ensure that the system continues to evolve in line with EU policy needs and societal challenges.

The meeting brought together representatives from the JRC and the consortium led by e-GEOS, including GMV and other European partners, to review the progress achieved over the past year, assess operational performance, and define priorities for the next phase of the program.

Over the two-day meeting, participants took part in technical sessions

covering both variable and fixed service components, fostering in-depth discussions on performance, innovation, and future improvements. The agenda also included a visit to GMV's facilities, during which attendees learned more about the company's Earth observation capabilities and its long-standing contribution to the Copernicus program since its inception.

GMV plays a key role in both rapid mapping and risk and recovery components, and has established itself as a trusted partner in the delivery of geospatial intelligence across the full disaster management cycle.

The event highlighted the strength of collaboration between industry, research, and European institutions, reaffirming a shared commitment to cutting-edge solutions that enhance Europe's resilience to emergencies.

GMV highlights the strategic role of the ground segment for space technology sovereignty at "ADM Sevilla"

GMV took part in "ADM Sevilla 2026", one of the leading events for the aerospace and defence sectors in Spain and Southern Europe, held at FIBES Sevilla from 19 to 21 May.

Luis Mariano González Casillas, GMV's director of Earth Observation Strategy, participated in the round-table discussion on "The Space Sector and Technological Sovereignty," focusing on the strategic challenges of space and Europe's technological autonomy. The session, moderated by José María Pérez, head of National Industry Programs at the Spanish Space Agency (AEE), brought together representatives of some of the leading companies in

the space and defense sector, who agreed on the need to strengthen European strategic capabilities in an international environment marked by growing technological and geopolitical competition.

In his remarks, González Casillas defended the strategic nature of the ground segment as a key element in guaranteeing European and national space sovereignty. He also stressed that having in-house capabilities in this area is essential in order to ensure the operational autonomy of space missions, guaranteeing continuous mission control and preserving the security, integrity, and

traceability of data generated during operations.

González Casillas also noted the need to promote sovereign technologies that allow Europe to maintain independence in critical space infrastructure management, reinforcing resilience and the ability to take on complex scenarios.

The participants agreed on three cornerstones for advancing space technological sovereignty: the strengthening of strategic industrial capabilities, sustained political and institutional momentum, and the development of programs and missions with their own technological autonomy.

GMV develops automated flood mapping service



■ GMV is kick-starting the Floodgate project, an automated suit of services designed to improve the way public authorities monitor and respond to flood events. Built from the ground up, the solution will combine satellite Earth observation data together with hydrometeorological and geospatial information to deliver timely, reliable flood intelligence. The services are intended to support municipalities and civil protection authorities in both emergency response and long-term risk management, at a time when climate-driven flooding is becoming increasingly frequent and severe.

Floodgate will integrate data from multiple satellite sources, including radar and optical imagery, enabling accurate flood detection even under challenging conditions such as cloud cover. The system will process these

inputs using automated algorithms to generate flood extent maps enriched with information on population, infrastructure, and land use. This will allow users to identify affected areas, assess potential impacts, and prioritize response actions. The platform will be designed to support near-real-time operations, enabling rapid decision-making as events unfold while also supporting retrospective analysis for planning and mitigation purposes.

A key feature of Floodgate is its integration within the ESRI ecosystem. Floodgate services will be developed and delivered through ESRI solutions, allowing users to access outputs directly within familiar geographic information systems such as ArcGIS Online. This approach reduces barriers to adoption, as many public authorities

already rely on this technology for spatial planning and emergency management. It also ensures that the services' outputs can be seamlessly integrated into existing workflows without requiring significant additional training or infrastructure.

The project will be developed in collaboration with the Portuguese National Laboratory for Civil Engineering (LNEC), which will contribute with its expertise in hydrology and flood risk assessment. Initial validation will be carried out with Portuguese municipalities, providing real-world testing conditions and direct user feedback. Floodgate is expected to evolve into a scalable operational suite of services supporting more effective flood preparedness, response, and long-term resilience planning.

GMV showcases latest space solutions at SATELLITE

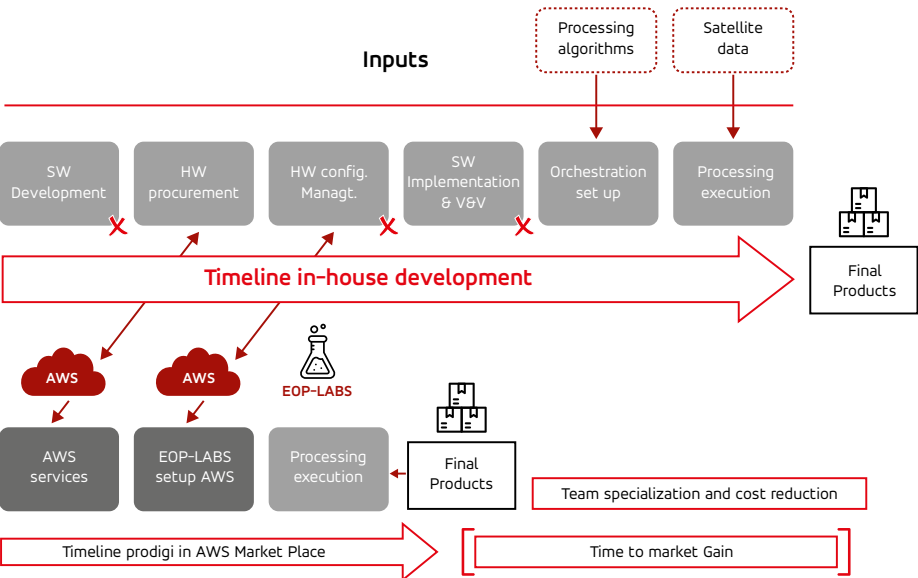
SATELLITE, one of the space sector's most consolidated events, took place March 23–26. For over 40 years, this conference has brought together companies, government and military officials, and end customers to foster collaboration throughout the space ecosystem and help shape the industry's future.

Held in Washington, D.C., the SATELLITE conference and exhibition reaffirmed its status as a premier industry gathering. Attendees from more than 110 countries connected with professionals from a variety of industries, explored new business opportunities, and discovered the latest technological innovations. The event also served as a platform for sharing knowledge and identifying the key challenges facing the space industry today.

Beyond its role as a sponsor, GMV once again participated with a stand highlighting its ability to turn complexity into real operational capabilities, with a particular emphasis on ground segment solutions. The company showcased advanced solutions in control systems, operations centers, and data processing and exploitation. These critical components ensure safe, efficient, and scalable space operations by incorporating advanced approaches to cybersecurity and the protection of critical systems.

In an ever-evolving environment, GMV reinforced its position as a key technology partner, driving the transition from concept to operation and ensuring the reliable, secure performance of systems throughout their entire lifecycle.

GMV brings Earth Observation data processing to AWS Marketplace



■ GMV has launched its first as-a-service data processing framework for Earth observation satellite constellations as part of EOP-LABS, an ESA InCubed-funded project.

GMV Prodigy® delivers a powerful and sophisticated payload data ground segment (PDGS) solution through a simplified, autonomous cloud-based approach. Available through Amazon Web Services (AWS) Marketplace, customers can procure, deploy, and operate the system independently, avoiding the lengthy procurement and integration processes typically associated with hardware and software infrastructures.

The solution's cloud-native architecture enables seamless scalability through the flexible use of AWS services. Simple configuration changes allow the platform to automatically allocate and activate the resources required for each mission scenario, significantly reducing operational complexity and deployment effort.

Thanks to its flexible and robust processor integration capabilities, together with its ability to define and implement processing chains, **GMV Prodigy**® can support fully

operational processing chains and the research and development of new Earth observation processors and applications. This versatility makes it suitable for a broad range of mission profiles and innovation activities.

GMV Prodigy® is already being used by the Mohammed Bin Rashid Space Centre (UAE) to orchestrate and deliver final products for the MBZ mission, as well as in AIR4HEALTH, a public health service initiative. In the latter case, the framework demonstrates how scientific developments can rapidly evolve from early-stage concepts to fully operational, robust services that benefit both citizens and public health management institutions.

More broadly, GMV's service helps democratize Earth observation, enabling new sectors to explore space-based products and services that have traditionally seemed beyond their reach.

For GMV, this also represents a significant milestone, as **GMV Prodigy**® is the company's first solution made available through AWS Marketplace, paving the way for future cloud-based offerings.

Fighting the invasive tide: GMV leads satellite-powered solution for Cascais coastline

■ A brown macroalgae native to the Asian Pacific is quietly advancing along the Portuguese coast, and its consequences are anything but invisible. *Rugulopteryx okamuræ*—first detected in the Mediterranean in 2002 and now spreading rapidly across Atlantic coastlines—has already generated substantial clean-up costs, disrupted tourism, complicated fishing activities, and degraded marine habitats in several European regions. In Cascais, a municipality that welcomes millions of beach visitors every year, the phenomenon is becoming an increasing concern and is expected to intensify in the coming years.

Cascais Municipality has turned to space technology and artificial intelligence to get ahead of the

problem. Specifically, it is funding the newly launched Earth Observation for the Mapping and Monitoring of *Rugulopteryx okamuræ* (EO4RO) project, which will run over the next 12 months. The initiative is led by GMV in Portugal in consortium with Plymouth Marine Laboratory, an internationally recognized scientific center specializing in oceanography and marine remote sensing.

The core ambition of EO4RO is to shift coastal management from a reactive to a predictive paradigm. Today, authorities typically respond only after the algae has already reached the shore. EO4RO aims to reverse that logic by combining satellite imagery, oceanographic and meteorological data, and AI-driven algorithms to map algae distribution in near real time,

simulate drift through ocean currents and wind patterns, forecast coastal accumulation events, and trigger early alerts for both authorities and the public. This is the same technological framework already used in critical domains such as oil spill forecasting and large-scale environmental monitoring.

GMV brings decades of experience in Earth observation and geospatial analysis to the project. Combined with Plymouth Marine Laboratory's scientific expertise in ocean data, this positions the consortium strongly to deliver a solution that bridges space technology and real community needs. Should the results prove positive, Cascais could become a European benchmark for smart coastal management.



GMV further solidifies its position in the international space industry at the Space Symposium event

The 41st edition of the Space Symposium took place from April 13th to 16th in Colorado, USA, once again bringing together members of the international space community. This year's event was attended by military and governmental officials, as well as by experts from business and industry, who met with the aim of promoting the space industry, sharing strategic information, forging alliances, and exploring new opportunities. The Space Symposium has become established as a key gathering place for defining new trends, and for encouraging the development of collaboration agreements for critical space missions.

During the event, GMV was represented at the Spanish Pavilion through Spain's foreign trade institute (ICEX). It also had a stand that it shared with the GMV company Alén Space, to showcase their latest solutions related to areas such as space mission control and efficient operations, satellite navigation, space sustainability, space surveillance, and space situational awareness.

This year's gathering took place in a context marked by rapid changes in the space industry, where space is increasingly seen as a strategic dual-use domain with a convergence of military and civilian interests. Given these circumstances, and the existence of a geopolitical scenario defined by accelerated development of dual-use technologies, there is clearly a need for close collaborations among all parties involved, to ensure that innovation will have a real, sustainable impact.

GMV contributes to successful AVIOLANCIO maiden flight through its integrated avionics solution

■ GMV contributed significantly to the successful AVIOLANCIO flight test campaign carried out from Houston at the end of April, by supplying the complete avionics system for the microlauncher demonstrator.

The AVIOLANCIO program, led by the Italian National Research Council (Consiglio Nazionale delle Ricerche – CNR), aimed to develop an air launched microlauncher deployable from a fighter aircraft to improve access to space for small platforms.

In this program, GMV was responsible for the development, integration, and validation of the launcher's avionics system, a core element for achieving the mission objectives. The avionics solution included an onboard computer and data handling system capable of acquiring measurements from sensors distributed along the launcher; a complete S band telemetry system comprising a transmitter and two antennas; the power subsystem, consisting of batteries and a Power Control and Distribution Unit; GNC sensors such as an Inertial Measurement Unit (IMU) and the **Sextans GMV®** software based

GNSS receiver; a Starlink antenna for data transmission; as well as the complete onboard software and the Guidance, Navigation and Control (GNC) functions. Together, these elements ensured reliable vehicle monitoring and control throughout the flight using CNR's real-time data monitoring software (Aetherlink).

During the launch campaign, GMV supported the full integration of the avionics into the rocket flight model and the verification of the launcher's status while mounted under the wing of an Alphajet aircraft. GMV also provided support to CNR and the team during ground operations through detailed analysis of telemetry data.

The avionics system demonstrated robust and nominal performance, enabling the successful verification of the mission profile and objectives. This achievement represents an important milestone in the development of innovative air launched access to space technologies and confirms GMV's role in supporting European research and technological advancement in the space domain.



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ACTIVA project successfully completed: advancing autonomous collision avoidance in space

■ On April 21, the Advanced Control Techniques for Increased On-board Autonomy (ACTIVA) project reached a major milestone with its successful final review and presentation at the European Space Agency's European Space Research and Technology Centre (ESTEC), marking the completion of this ambitious endeavor.

As space becomes increasingly crowded – particularly in low Earth orbit (LEO), where thousands of satellites and debris objects coexist – the need for more efficient and scalable avoidance solutions is becoming critical. ACTIVA was launched to address this challenge by transferring key decision-making capabilities from ground control to the spacecraft itself.

Led by GMV Portugal in collaboration with GMV Spain, GMV Romania, and Politecnico di Milano, and building on previous results from the Collision Risk Estimation and Automated Mitigation (CREAM-02) initiative, the project successfully designed and validated an advanced onboard collision avoidance system to

TRL3. This system enables satellites to autonomously assess collision risks and execute avoidance maneuvers while accounting for mission constraints such as fuel consumption, pointing requirements, and propulsion limitations.

One of ACTIVA's key innovations is its modular system architecture, which integrates collision avoidance functions directly into the satellite's attitude and orbit control system. This allows spacecraft to react more quickly and efficiently to potential threats, thus reducing reliance on ground operations. The project also introduced new concepts such as "virtual thrusters" to optimize how satellites plan and execute maneuvers, even in the event of thruster failures.

The system was validated through an extensive simulation campaign that demonstrated robust performance across a wide range of realistic collision scenarios and mission conditions. These results, benchmarked against ground-based systems, confirm the



potential of onboard autonomy to enhance mission safety while improving operational efficiency.

ACTIVA represents an important step toward the next generation of autonomous spacecraft operations, supporting safer and more sustainable use of space. Future work will focus on bringing these capabilities closer to flight readiness through further optimization of the code for onboard implementation and deployment on representative flight hardware.

GMV joins ISSFD 2026, a leading international symposium on space flight dynamics

GMV took part in the 30th International Symposium on Space Flight Dynamics (ISSFD), held from June 1 to 5 at the La Cité Congress Center in Toulouse, France. Organized this year by the French Space Agency (Centre National d'Études Spatiales, CNES), the symposium brought together specialists, space agencies, operations centers, companies, and members of the international scientific community involved in the field of space flight dynamics.

Widely regarded as one of the sector's premier technical gatherings, ISSFD covers

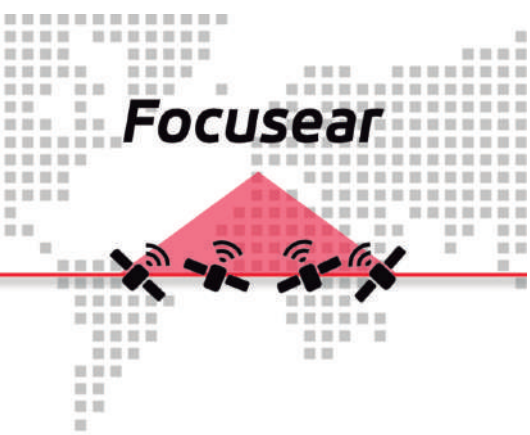
key disciplines including orbital dynamics, trajectory design, autonomous navigation, attitude control, flight operations, space risk mitigation, and systems for guidance, navigation, and control (GNC). The focus this year was on lunar exploration programs, planetary defense, and asteroid exploration.

As part of the symposium's institutional program, Jaime Fernández Sánchez, Head of the Institutional Flight Dynamics Unit within GMV's EST Space Systems Division, represented the company during the event's welcome session.

In his remarks, he highlighted GMV's growth over its 42-year history, from a one-person startup to a multinational company with nearly 4,000 employees, as well as its emergence as one of the world's leading providers of flight dynamics systems.

GMV was also present in the exhibition area, where it showcased its capabilities and advanced solutions in flight dynamics, navigation, and space operations, further strengthening its position as a trusted technology partner for the international space industry.

GMV expands its *Focusear* network with low-orbit surveillance capabilities



■ GMV has been awarded the French National Center for Space Studies’ (CNES) FOCUSEAR-MEGA project as part of the European Union’s (EU) Space Surveillance and Tracking (SST) program, through the Financial Support to Third Parties: Innovative Commercial Sensors, cascade grant EUSST2023-26.

This contract will allow for the deployment of a network of passive radio frequency (RF) passive sensors for satellite surveillance in low-Earth

orbit (LEO) megaconstellations. The new network will consist of four stations that will perform Doppler measurements with an accuracy of hundreds of millimeters per second and a latency of fifteen minutes, improving object cataloging capabilities and maneuver detection. It is estimated that this new network will be able to monitor more than 9,000 satellites, including satellites in the Starlink and OneWeb constellations, among others.

Focusear, developed entirely by GMV, is a groundbreaking passive sensor system that has proven to be an effective, reliable, and cost-efficient solution for continuous tracking of active satellites, even in the presence of frequent maneuvers. The system currently has four stations in Tres Cantos (Madrid) Boecillo (Valladolid), Barcelona, and Seville, which provide over 2,800 tracks per day in geostationary orbit. FOCUSEAR MEGA will expand

coverage to LEO orbit, currently the most congested orbit.

Following the success of previous projects, this project cements GMV as a European leader in advanced space surveillance technologies, strengthening its partnership with CNES and its strategic role within the EU’s SST initiative.

Through this project, GMV is continuing to spearhead Europe’s technological autonomy in space surveillance and tracking, actively contributing to a safer and more sustainable space environment.



This project has received funding from European Union programmes under contract EUSST2023-2026GA. Views and opinions expressed in this article are solely those of the author and do not necessarily reflect those of the European Union or CNES, which are not responsible for any use that may be made of the information contained herein.

GMV contributes to discussions on the future of European space regulation

GMV participated in EU Space Days 2026, one of the European Union’s leading events for space policy, business and innovation, held on 26 and 27 May in Nicosia, Cyprus. Organized by the European Commission (DG DEFIS) under the Cypriot Presidency of the Council of the European Union, the meeting brought together representatives of government institutions, policymakers, space industry leaders, companies, investors, and experts to discuss the future of the European space ecosystem.

This year’s edition focused on strategic issues for the sector,

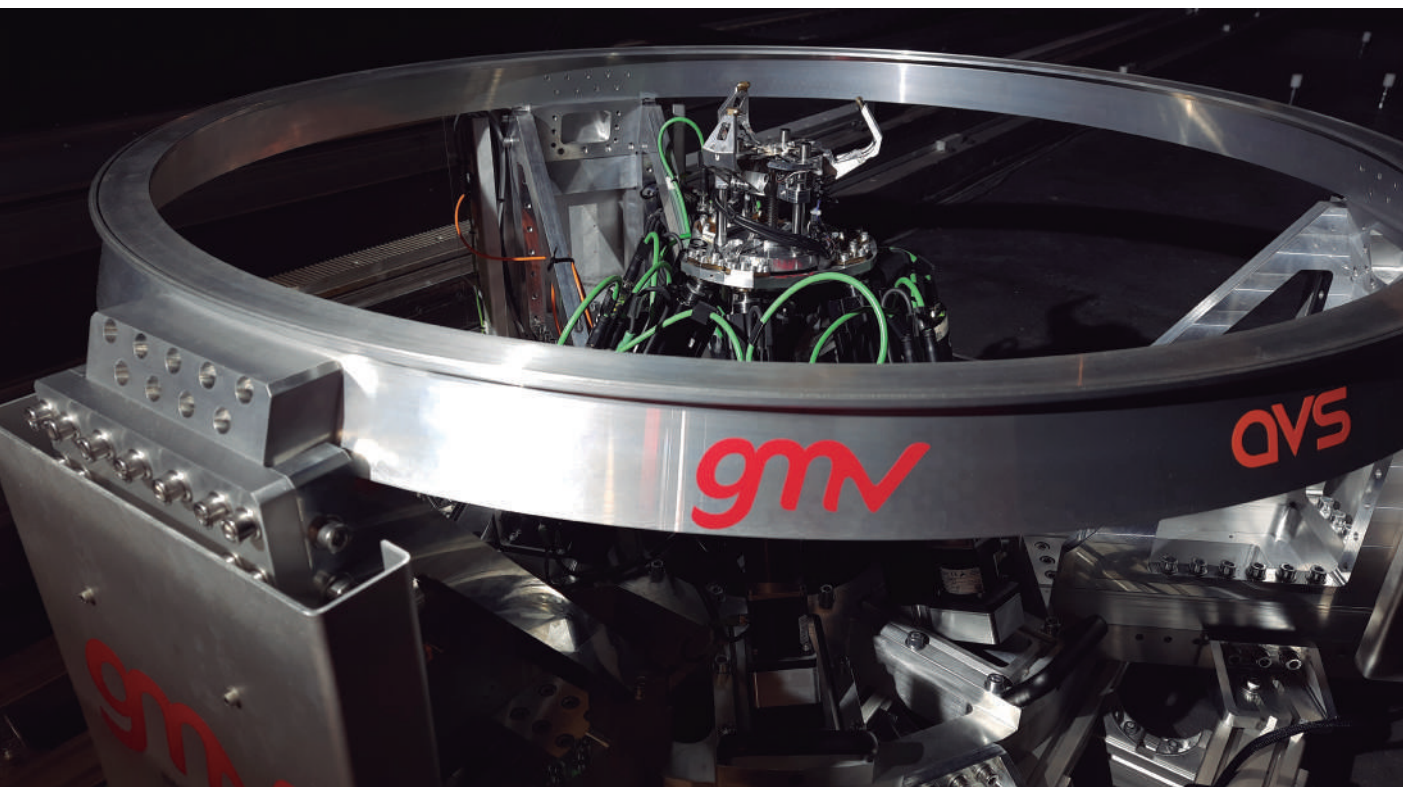
such as competitiveness, resilience, sustainability, and Europe’s strategic autonomy in the space domain, at a key time for the evolution of European space policies and capabilities.

María Antonia Ramos, head of policy and business development for Space Traffic Management at GMV, participated in the “EU Space Act: Strengthening Safety, Resilience and Sustainability in Space” session, held on the event’s main stage on 26 May. The conversation addressed the role of the future EU Space Act in the regulation and promotion of European space activities, with special attention

to safety, orbital sustainability, and the development of a competitive and responsible space sector.

In her remarks during the panel discussion, which included representatives from the European Commission and the GSOA European Regional Group, Ramos shared GMV’s expertise and vision in the field of space traffic management. She conveyed the company’s perspective on the challenges associated with the safe and sustainable use of space, as well as the need to promote regulatory frameworks that favor the growth of the sector and the protection of the orbital environment.

GMV to join ESA’s ERASE mission for active space debris removal



■ GMV is one of five companies selected for Phase 0 of ERASE (European Active Removal of Space Elements), a strategic European Space Agency (ESA) mission focused on the active removal of large objects from Low Earth Orbit (LEO). This milestone places the company at the heart of one of Europe’s most ambitious initiatives to ensure the sustainability of our orbital environment.

ESA has awarded five contracts in this initial phase. In addition to GMV, the recipients are OHB SE, The Exploration Company, Leonardo, and Airbus Defence and Space. The aim is to assess mission concepts and system architectures for the removal of inactive satellites and other large pieces of space debris. As part of ESA’s “Space Safety” program, these actions contribute to the goal of establishing “Zero Debris” by 2030.

The ERASE mission will tackle one of the space sector’s most pressing challenges: the accumulation of

non-operational objects in orbit, which increases the risk of collisions and threatens critical infrastructure. Specific targets include the removal of large satellites such as MetOp and Sentinel-1. Despite having initiated deorbiting maneuvers, these satellites remain in orbits where reentry could take up to 25 years—well beyond the current standard implemented since they launched.

GMV will serve as prime contractor, spearheading all the key activities such as the mission design and associated systems engineering; mission analysis, guidance, navigation, and control (GNC); and the development of robotic solutions. The company will assess various operational scenarios, including both cooperative and non-cooperative approaches, which are essential for addressing the wide variety of objects currently in orbit.

One of the distinguishing features of GMV’s proposal is the use of the CAT (Capture Bay for Active Debris

Removal) system, an advanced robotic capture technology designed to safely dock with defunct satellites. Developed over several projects and set for in-orbit demonstration as part of ESA’s CAT-IOD mission, the system incorporates motion-compensation mechanisms, stabilization of non-cooperative targets, and force-transfer capabilities to facilitate their controlled removal. In this specific area, GMV works in collaboration with AVS.

Phase 0 of the ERASE mission will make it possible to study technical, technological, and programmatic solutions aimed at establishing recurring space debris removal capabilities, laying the groundwork for future operational services in this field. The initiative builds on more than a decade of European developments under programs such as ESA Space Safety’s Clean Space efforts and strengthens collaboration among industry, the European Commission, and organizations such as EUMETSAT.

MANPATTERN project kicks off to enhance the safety of satellite operations

■ GMV is leading the newly launched Manoeuvre Pattern Inference for Safe Operations (MANPATTERN) project, an initiative of the European Space Agency (ESA) conducted in consortium partnership with the University of Strathclyde (UoS). The project will develop and validate flight dynamics methods that reduce missed risks and false alarms when satellites maneuver without sharing their plans.

The rapid growth in maneuverable satellites is making it increasingly difficult to maintain accurate space object catalogs and screen for close approaches. When a satellite performs maneuvers unknown to other operators, conjunction analysis based on maneuver-free propagation can generate false positives or miss high-risk events altogether.

MANPATTERN addresses this operational gap by targeting three interconnected

functions: maneuver pattern inference and prediction; state and maneuver estimation with data association; and maneuver-informed conjunction risk assessment.

As a key technical development, the prototype software will be built on GODOT, ESA's astrodynamics library for space mission analysis and operations. It will also extend the Robust Orbit Determination and Data Association (RODDAS) library, developed under a previous ESA contract executed by GMV.

The project will also develop a maneuver-informed collision risk assessment capability that translates predicted maneuver timing and magnitude, together with their associated uncertainties, into orbital uncertainty and collision probability metrics.

Performance assessment will draw on selected real observation data and

representative simulated scenarios, evaluating robustness across different orbital regimes and propulsion types, including impulsive and low-thrust maneuvers. The validation campaign will compare inferred patterns with historical records and quantify the operational impact of incorporating maneuver pattern data into conjunction risk assessment.

As prime contractor, GMV is spearheading the project. Its responsibilities include project management, software engineering, data preparation, integration, and performance assessment. UoS will lead the initial literature review, method analysis, and pre-prototyping and benchmarking, and will support the transition of selected approaches into the prototype.

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MANPATTERN is funded by ESA and is being executed under the General Support Technology Programme (GSTP).



GMV develops a system for detecting interference in satellite communications



■ GMV is developing a new radio frequency (RF) spectrum monitoring system capable of detecting interference and analyzing its source in the primary frequency bands currently used by communications satellites. The project is co-funded by the European Space Agency (ESA) through its ARTES program.

The initiative comes at a particularly significant moment for the space sector. The number of satellites in orbit has grown continuously in recent years, driven primarily by the deployment of large commercial constellations. This growth is placing increasing pressure on the radio frequency spectrum, a finite and essential resource for satellite communications. In this context, the ability to identify interference, prevent incidents, and optimize frequency use is critical to ensuring the continuity and reliability of space-based services.

The solution developed by GMV will enable monitoring of the frequency bands that are more widely used in

satellite communications, and will be compatible with different types of sensors, both satellite-borne and ground-based. The system will also integrate additional data sources, such as meteorological data, orbital catalogs, and authorized frequency registries, with the aim of improving the detection and characterization of anomalous signals.

As part of the project, a use case will be developed focused on the detection and localization of interference in both low Earth orbit and geostationary orbit, using advanced analysis techniques applied to real and simulated RF data. The platform will be able to distinguish legitimate emissions from potential interfering signals that could compromise the security or availability of space communications.

In addition to its monitoring capabilities, the system will incorporate analysis and simulation tools to support decision-making by satellite operators, regulatory bodies, and governmental entities.

The project builds on GMV's prior experience in space environment surveillance and management, specifically on technologies developed for **Focusear**, the company's passive RF antenna network used for orbital determination, and for **Ecosstm**®, its software suite for space environment surveillance and awareness services.

The initiative is being developed in collaboration with the Polytechnic University of Madrid, which will contribute advanced research and algorithm development capabilities, and Hisdesat, which will provide the operational perspective of a satellite operator and prospective end user of the solution.

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The opinions and views expressed in this article are solely those of the author and do not necessarily reflect those of the European Space Agency, which accepts no responsibility for any use that may be made of the information contained therein.

GMV completes ESA project defining Zero Debris thresholds for future missions



■ GMV has successfully completed its participation in the ESA-funded project “ZD-THRESHOLDS – Space System Impact Analysis of Zero Debris Orbital Clearance and Vulnerability Thresholds for Future Missions”, a strategic initiative aimed at strengthening Europe’s capacity to maintain a safe, clean, and sustainable orbital environment.

The project was carried out within a consortium led by Thales, with GMV contributing with its extensive expertise in Space Situational Awareness (SSA), Space Surveillance and Tracking (SST), and Space Traffic Management (STM) to support the European Space Agency’s long-term Zero Debris objectives.

Funded under ESA’s Discovery & Preparation element of the Discovery, Preparation and Technology Development (DPTD) activities, the project provides analytical foundations to support future mission concepts, system design decisions, and the evolution of European space sustainability policies.

The primary objective of ZD-THRESHOLDS was to analyze, quantify, and assess the impact of Space Debris Mitigation (SDM) requirements on future space missions, with a particular focus on orbital clearance and spacecraft vulnerability thresholds.

The project addressed one of the space sector’s most critical challenges today: ensuring mission sustainability while maintaining safety, operability, and resilience in increasingly congested orbital regimes.

GMV played a key role in the assessment of SDM orbital clearance requirements, analysing their applicability, limitations and impact on future mission architectures. The company also carried out advanced orbital environment simulations to identify realistic thresholds and constraints, such as maximum cumulative collision probability and maximum post-mission disposal time, and to assess the long-term evolution of active satellites and debris under different operational scenarios, while contributing to the review of current verification methods and to do recommendations for the future evolution of the SDM and Zero Debris frameworks.

GMV cements its role in the space defense industry at the NATO Space Centre of Excellence Conference

From 27 to 29 April at the Centre de Congrès Pierre Baudis in Toulouse, France, GMV participated as a sponsor in the NATO Space Centre of Excellence Conference, boosting its profile at one of the leading international space and defense forums.

Organized by the NATO Space COE, the event brought together representatives from armed forces, government agencies, space agencies, industry, and research centers to analyze the role of space as a strategic domain and advance its integration into NATO operations.

With the theme “From Awareness to Action: Embedding Space in NATO

Operations,” the 2026 edition addressed key issues such as deterrence and security in the space domain, the integration of space capabilities in multi-domain operations, and industry-defense collaboration for the development of dual-use solutions.

Over the course of three days, the program included high-level presentations, round-table discussions, and networking sessions in which military leaders and international experts discussed challenges such as interoperability, the resilience of space infrastructure, and the incorporation of commercial capabilities in the defense sector.

GMV had a stand in the exhibition area, where it showcased its capabilities in satellite navigation, space operations, SSA (Space Situational Awareness)/SDA (Space Domain Awareness), and the integration of complex systems. This space served as a meeting point for strengthening collaboration with clients, partners, and other key players in the international ecosystem.

One of the visitors to GMV’s stand was Lieutenant General Marcus Annibale, deputy chief of staff for capabilities at NATO’s Allied Command Transformation Headquarters (HQ SACT), who was briefed on GMV’s capabilities of interest to the Alliance.

GMV deploys ESA’s SST core software in British and Finnish National operation centres

■ GMV, together with consortium partners Touch4IT and Iguassu, has begun S2P/S2-SD-08, a European Space Agency (ESA) activity titled “Demonstration of the Core Software deployment and test operation in an environment operated by community members.” The project extends the Collaborative Development Platform service and will deploy the Space Surveillance and Tracking (SST) Core Software (CSW) in national environments, supported by an active user community.

The activity will maintain a shared development platform while deploying Space Surveillance and Tracking Core Software into national environments through automated, repeatable operations.

Space Surveillance and Tracking (SST) services depend on timely processing of sensor observations into operational outputs that help operators understand the space environment and respond to risks. Within the project, the consortium will demonstrate end-to-end operational use cases including sensor data ingestion, object cataloging, conjunction analysis, and re-entry prediction, linking software evolution directly to operational needs.

Central to the effort is maintaining continuity of the Collaborative Development Platform (CDP), which

serves as the backbone for community development and maintenance. GMV will continue to maintain the CDP from the preceding activity without interruption.

The project also emphasizes repeatable deployment into national environments using Infrastructure as Code (IaC) and automated verification. The CSW components, readily accessible through the CDP GitLab, will be built, tested, and deployed onto the national environments. The CSW’s automated test tool will also be deployed and executed for rapid verification.

Two national hosting environments are addressed in the initial deployment and qualification campaigns: the UK Space Agency for the United Kingdom and the Finnish Meteorological Institute (FMI) for Finland.

Alongside deployment, the consortium will collaborate with the SST User Forum (SST-UF) to define and execute operational user stories and reference scenarios, sharing operational artifacts and lessons learned throughout the community.

GMV serves as the prime contractor and formal interface to ESA, leading CDP operations, CSW maintenance, and overall coordination.



GMV participates in MILSSA 2026

From 5 to 7 May, London hosted Military Space Situational Awareness (MILSSA), one of Europe’s flagship events for space domain awareness and surveillance, with a particular emphasis on defense and security.

On the opening day of the event, Alberto Águeda, GMV’s director of Space Traffic Surveillance and Management, participated in “How do we avoid a fragmented approach to SSA?” This panel discussion with other industry experts addressed the importance of space surveillance and the coordination of space operations in a context of orbital congestion resulting from the increase in launches and deployments of new satellites.

On the second day, Alberto Agueda and Mark Dumville, GMV’s CEO in the United Kingdom, led a presentation on “End-to-end solutions for space domain awareness,” addressing issues such as passive RF operational networks; SDA domain coverage using state-of-the-art automated operating software; data curation and fusion for satellite characterization and behavioral pattern analysis; as well as applications for event and threat analysis within the Recognized Space Picture. GMV’s capabilities and expertise in this field include its **Focusoc** operations center, its **Focusear** passive RF satellite tracking system, and its **Ecosstm** surveillance, domain awareness, and space traffic management COTS (commercial orbital transportation services) software.

GMV also participated in the event with a stand in the exhibition area to present its solutions in the field of space situational awareness, including surveillance and tracking of orbiting objects, space operations, system security and resilience, and the integration of capabilities in complex environments.

GMV hosts the 5th IAA International Conference on SSA



■ From April 7 to 9, GMV hosted the 5th edition of the International Academy of Astronautics Conference on Space Situational Awareness (ICSSA) at its facilities in Tres Cantos (Madrid). The event is one of the leading international forums dedicated to the study, analysis, and governance of the space environment, with the goal of ensuring its long-term safety and sustainability.

Organized by the Department of Mechanical and Aerospace Engineering at the University of Florida, with the support of the International Academy of Astronautics (IAA) and the American Institute of Aeronautics and Astronautics (AIAA), the conference gathered around

150 experts from across the globe. Participants included representatives from space agencies, space commands, satellite operators, data and space surveillance service providers, industry, research institutions, and academia, all addressing current and future challenges in Space Situational Awareness (SSA).

Throughout the sessions, key technological and regulatory dimensions of SSA were addressed from a cross-cutting perspective. From the analysis and mitigation of orbital debris to operational challenges in an ecosystem with multiple data and service providers and a vast number

of satellite operators, the agenda reflected the growing complexity and sophistication of the space domain.

Technical sessions explored topics such as the application of artificial intelligence to object tracking in orbit, the development of advanced space surveillance systems, collision risk assessment, and emerging technologies for debris removal. New approaches to prediction and tracking were also discussed, including the use of distributed sensor networks and optimized planning strategies.

Plenary sessions underscored the global nature of the challenge. Representatives from the European Space Agency (ESA), the U.S. Office of Space Commerce (responsible for the TraCSS system), the Spanish Space Agency (representing the EU SST system), and the Space Data Association all emphasized international coordination and space traffic management as key elements to ensure the long-term sustainability of the orbital environment.

GMV and Alén take part in the 4S Symposium

From 4 to 8 May, the 4S Symposium (Small Satellites Systems and Services) was held in Sardinia, Italy. Thirty years after its first edition, which explored the emerging potential of small satellites, this event has become one of the leading international gatherings in the space sector.

The theme of this latest edition was “Swarming the Skies, Soaring Beyond: from VLEO to Deep Space,” and brought together experts from industry, space agencies, and academia with the goal of sharing breakthroughs, presenting innovations, and fostering collaboration among players in the space sector. Five days of presentations, technical sessions,

and exhibitions explored how the future of orbital operations and space security is shaping up.

GMV played an active role in the symposium's technical program, delivering two presentations focused on the development of technologies for future space missions, the in-orbit demonstration of new capabilities, and the creation of more resilient and sustainable orbital ecosystems. In addition, Mariella Graziano, GMV’s Space Systems EST Strategy and Business Development of Science, Exploration and Transportation Director, chaired one of the conference sessions, helping

to foster knowledge exchange among participants.

Alén Space, a GMV company, also took part in the 4S Symposium with two presentations on small satellite technologies and Earth observation applications, one of which was co-presented with the European Space Agency (ESA).

GMV also sponsored the event as a Silver Sponsor, together with other companies in the international small-satellite ecosystem, reflecting its commitment to the development of groundbreaking solutions in the space sector.

Alén Space develops the AIS payloads for the Spanish component of the Atlantic Constellation



■ Alén Space is participating in the development of the Spanish component of the Atlantic Constellation (ESCA), a strategic initiative promoted by the Spanish Space Agency and technically managed by the European Space Agency. The project recently announced that it has successfully passed the Critical Design Review (CDR), a key milestone marking the beginning of the production phase for the satellites and their payloads.

Alén Space is responsible for the design and manufacturing of the AIS (Automatic Identification System) payloads, aimed at deploying new maritime communications and monitoring capabilities from space. The work includes the development of the engineering model (EM) and the first

flight model (FM), as well as the serial production of eight additional flight units (including one spare), which will be integrated into the constellation satellites.

As prime contractor, Open Cosmos is leading the development of the Spanish component of the Atlantic Constellation, consisting of eight identical small satellites weighing approximately 100 kilograms each. These platforms will integrate different observation and monitoring capabilities, including VNIR, AIS, IoT and GNSS-R payloads.

Alén Space’s contribution focuses on the AIS payloads, based on its TOTEM software defined radio (SDR) technology, which includes the specific frontend for receiving AIS signals in

the VHF band and the implementation of the application required for the operation of the system.

Among the expected applications of this technology are global ship tracking across open oceans and remote areas; support for search and rescue (SAR) operations; real-time cargo monitoring; and maritime surveillance for the control of illegal fishing and the detection of illicit activities.

In addition to AIS capabilities, the constellation will enable advanced Earth observation services focused on emergency management, environmental monitoring and territorial protection, including applications related to forest fires, floods, and volcanic eruptions.



Ricardo Sáenz Amandi takes over as GMV Defence and Security General Manager

Sáenz succeeds Manuel Pérez, who will remain associated with the company as an advisor. The appointment is part of GMV's long-term strategy and responds to the growing challenges facing the sector



MV has appointed Ricardo Sáenz Amandi as Defence and Security General Manager. With

this new appointment, the company is strengthening its leadership in an area of strategic importance amid today's geopolitical climate.

Previously Defence and Security Programs Manager, Sáenz Amandi brings 30 years of in-sector experience at GMV. Throughout his career, he has played a pivotal role in overseeing the division's flagship programs and cultivating relationships with clients and institutions in Spain and internationally.

This strong professional track record has led to his appointment as Defence and Security General Manager. In this new role, he will focus on driving GMV's growth and development in the domain, bolstering the company's technological capabilities, and cementing its position as a trusted strategic partner for its clients.

"GMV has secured a leading position in the defence and security sector thanks to the talent and commitment of its staff, the trust placed in the company by its clients,

and the leadership of Manuel Pérez Cortés. I take on this new responsibility with enthusiasm and resolve. My goal is to advance the company's capabilities and leverage our position within the industry to address the current and future defence and security challenges facing our society".

Ricardo Sáenz Amandi succeeds Manuel Pérez Cortés, who is stepping down from the position after more than four decades of decisive contributions to GMV's development. However, Pérez Cortés will remain associated with the company as an advisor, continuing to share his experience and expertise to ensure continuity in the division's strategic roadmap.

This appointment is aligned with GMV's long-term strategy and comes at a time when the evolving geopolitical landscape is placing defence and security higher than ever on the strategic agenda. Against this backdrop, GMV will continue to solidify its role as a key player within the defence technology and industry ecosystem, doing its part to deliver advanced capabilities that ensure the security and defence of Spain and its allies.

GMV demonstrates its defence technology at the 3rd Tactical Experimentation Exercise



■ The third edition of the Tactical Experimentation Exercise, organized by the Spanish Army's Future Force Center in collaboration with the Legion's Second Alfonso XIII Brigade, took place from April 7 to 17 at the

Álvarez de Sotomayor Base and Maneuver and Shooting Range in Viator, Almería.

The event was once again the main practical setting for experimentation activities linked to the Army's transformation process. These activities evaluated aspects such as the usefulness, degree of integration, and maturity level of new capabilities for the evolution of the Future Force, all under real conditions.

National industry companies such as GMV participated in this third edition of the Tactical Experimentation Exercise, contributing their technologies and showcasing breakthroughs in command posts, unmanned aerial systems (UASs), first-person-view (FPV) models, loitering munitions, and unmanned ground vehicles (UGVs), among others.

GMV participated in the exercises on 13 and 14 April alongside more than

30 other Spanish companies, carrying out operational demonstrations of various cutting-edge defence and security solutions. These solutions include IRIS, its system for integrating UxV platforms' ISR capabilities within the **Talos** environment, efficiently closing out the full cycle of detection, analysis, decision-making, and action in tactical scenarios. **Talos** was also integrated with other systems deployed during the exercises, facilitating real-time sharing of critical information and contributing to improved situational awareness and interoperability among capabilities.

GMV also participated on 16 April, when His Majesty the King of Spain was able to get a first-hand look at the technological breakthroughs presented. These capabilities demonstrated the key role of national industry in accelerating military innovation and adapting the Spanish Army to current and future operational challenges.

Interoperability: key to turning autonomy into a real operational capability

From 3 to 4 June, the city of Gijón, Asturias, hosted the ENDR Conference 2026, a leading forum for the defence industry that brought together government officials, companies, and experts to analyze the technological and operational challenges that will shape the evolution of military capabilities in the coming years.

José Luis Delgado, Director of Land Programmes of GMV's Defence and Security sector, participated in the panel discussion on "Unmanned systems and their integration into real operation," which addressed topics such as the role

of interoperability and command-and-control systems in the integration of unmanned aerial, ground, and maritime platforms within a common operational framework.

Delgado explained that the challenge no longer lies solely in developing autonomous vehicles, but in integrating unmanned aerial, ground, and maritime systems into a common operational framework that enables the effective planning, task assignment, monitoring, and coordination of their operations. He agreed with the idea that the evolution of unmanned systems has shifted the

focus of the technological challenge and that, while a few years ago the main goal was to develop increasingly advanced autonomous platforms, today the priority is to ensure that these platforms can operate in a coordinated manner within a shared environment.

Delgado also highlighted the importance of command-and-control (C2) systems as the backbone of this integration, and referred to several initiatives in which GMV is participating, such as the European IMUGS-2 project and the national initiative for the Spanish Air and Space Force, SAGA-3.

GMV strengthens its position European Defence Fund

G MV has been selected to participate as a beneficiary in seven projects under the 2025 European Defence Fund (EDF) call, consolidating its role as a key player in the development of critical capabilities for Europe's security and technological autonomy. The company will contribute to key initiatives across domains such as space, air combat, cyber defence, and soldier systems, further strengthening its commitment to technological autonomy and European cooperation.

GMV will provide technological contributions to the following initiatives:

- **SPIDER 2:** A project that builds on a previous feasibility study and focuses on the development of affordable, multi-mission satellite constellations for intelligence, surveillance, and reconnaissance (ISR). The project will enhance responsiveness, reduce revisit times, and shorten system latency—key factors for space-based defence operations.
- **ASIMOV:** Also in the space domain, ASIMOV aims—through the integration of civilian and defence developments—to define, design, and validate federated architecture for on-orbit operations capable of refueling, repairing, inspecting, and protecting satellites under adverse conditions. The project will include the development of a concept of operations (CONOPS), feasibility analyses for secure on-orbit operations, and the maturation of critical technologies in this field.
- **ECC2:** A project focused on cyber defence that will develop a sovereign, federated cyber command and control (C2) solution. The platform will integrate intelligence, planning, and operations modules, supported by a unified digital environment ensuring interoperability, data federation, and multilevel security, in line with EU and NATO digital transformation strategies.
- **EICACS 2:** This project continues work initiated in previous EDF calls and aims to provide European air forces with collaborative combat capabilities enabled by interoperability standards. EICACS 2 will also contribute to shaping future NATO standards.
- **DART:** Proposes a transformative approach to managing the growing complexity of air combat systems. By combining digital twins, Model-Based Systems Engineering (MBSE), and interoperability, the project seeks to optimize the design, integration, and operation of systems of systems (SoS) in military environments.
- **ACHILE 2:** In the land systems domain, ACHILE 2 builds on previous developments to transform the next-generation soldier system into an open, modular, and interoperable architecture. The project incorporates technologies such as artificial intelligence for threat detection, augmented reality, and

exoskeletons, expanding its scope from individual soldiers to full units such as platoons.

- **EPIIC 2:** Building on the results of the project's initial phase, EPIIC 2 advances next-generation cockpit technologies by removing existing limitations and enabling pilots to focus on tactical leadership and mission-critical actions, thereby enhancing operational effectiveness and crew safety.

The European Defence Fund, the European Union's main instrument for fostering cooperation in defence research and development, demonstrates in its 2025 call the scale and ambition of Europe's investment in critical capabilities. The 57 selected projects—with Spain participating in 42 of them—cover key areas such as artificial intelligence, cyber defence, drones, and counter-drone systems, with the goal of keeping the EU at the forefront of defence technology. Overall, the call brings together 634 entities from 26 member States and channels €675 million into capability development and €332 million into research.

In this context, GMV's involvement strengthens its position within the European defence ecosystem, where it has already built a solid track record through cooperative programs such as EDF and EDIDP. With a total of 48 projects, GMV remains among the leading contributors to the program and continues to invest in the development of advanced technological solutions that support a more secure, resilient, and strategically autonomous Europe.

GMV strengthens European security with EUCCIS during MILEX 26 military exercise

■ The European Union Command and Control Information System (EUCCIS), developed by GMV, once again demonstrated its reliability and operational value during the MILEX 26 military exercise, reinforcing the EU's ability to deploy and respond rapidly to crisis situations.

MILEX 26, which brought together forces from several EU member states, was conducted in two phases during March and June 2026. The exercise was designed to assess and enhance the strategic, operational, and tactical capabilities of the EU's Military Planning and Conduct Capability (MPCC), including its capacity to plan

and execute operations in a realistic environment.

During the first phase (ALERTEX, March 2–20), the MPCC served as the Operational Headquarters (OHQ) in Brussels, while Eurocorps acted as the Force Headquarters (FHQ) in Strasbourg. During this phase, EUCCIS facilitated the collaborative drafting of planning documents and the management of requests for information (RFIs). This was made possible by new features developed by GMV to enhance the user experience and sharpen operational efficiency.

During the second phase (LIVEX, June 1–19), the FHQ was deployed to a military

base in Zaragoza as part of the EU Battlegroup 26/27. This phase focused on the execution of the exercise, with EUCCIS facilitating information exchange between the two command levels and supporting the generation of a common operational picture (COP), a key element in operational coordination.

GMV's involvement in MILEX 26 further established EUCCIS as a key tool for information sharing and operational coordination in EU exercises and missions, supporting the broader goal of contributing to security and peace across Europe.

GMV showcases key technological solutions for Europe's defence challenges at Eurosatory



■ GMV took part at Eurosatory 2026, a major event in the international defence and security calendar held in Paris, France, from June 15 to 19.

Leading companies, government institutions, armed forces, and international organizations gathered to present the latest technological innovations. GMV was present at the Spanish Pavilion, where it displayed its technological solutions for the defence, space, and security sectors.

At this year's event, GMV highlighted its multidomain command and control and JISR capabilities, developed under the DOMINIA initiative and complemented by cross-domain solutions for secure information exchange. Together, GMV's proprietary solutions provide situational awareness across land, maritime, air, space, cyber, and cognitive domains.

GMV also showcased its *Isnav* family of resilient navigation and timing reference systems. Other

featured technologies included a vehicle battery charger, SBT tactical connectivity, and solutions for dismounted soldiers, including the CBS energy management system and the *LGB 11* ultra-rugged minicomputer, engineered for demanding SWaP-C environments.

Finally, the company exhibited its simulator solution for L3Harris WESCAM MX EO/IR systems.

In addition, GMV contributed to the panel discussion "Restoring the frontline: Innovations for safer operations in heavily explosive contaminated environments." Representing the company, Begoña Rojo, European Programs and Institutional Relations Manager, outlined the progress of a GMV-led European Defence Fund project.

GMV presents its proposal for multi-domain command and control systems to NATO

■ GMV participated in the meeting of the NATO Joint Coordination Group Surface Based Air and Missile Defence (JCG SBAMD), held at NATO Headquarters in Brussels, where it presented its vision for the evolution of command and control systems for air and missile defence in multi-domain environments.

During the session, GMV outlined the challenges currently facing air-defence architectures: fragmented systems, proprietary data formats, manual coordination processes, and isolated decision chains that stand in the way of a rapid and coordinated response to complex threats in crowded environments. The company argued for the need to evolve from traditional

point defence models to multi-domain architectures based on interoperability, integration, and decision-making superiority.

The presentation focused on GMV's proposal for multi-domain operations, envisioned as an interoperable, scalable, and adaptive ecosystem capable of integrating existing sensors, platforms, and weapon systems into a shared command and control environment. GMV is calling for an "any sensor to best shooter" approach, where any sensor can feed the best available effector, regardless of the operational domain.

GMV also showcased capabilities that are already operational within its C4ISR portfolio, such as *Socrates*, IRIS and the

SAPIEM suite, highlighting its expertise in ISR interoperability, data fusion, and real-time Common Operational Picture (COP) generation. The company explained how technologies such as artificial intelligence, cloud-native architectures, data lakes, and federated systems accelerate decision cycles and improve resilience against multi-domain threats.

The presentation reinforced GMV's position as a leading European player in C4ISR technologies and multi-domain operations, as well as its commitment to the development of interoperable capabilities aligned with future NATO IAMD (Integrated Air and Missile Defence) and MDO concepts (Multi-Domain Operations).



CWIX26 drives multidomain interoperability with GMV's participation

■ CWIX26 (Coalition Warrior Interoperability Exercise), NATO's annual exercise to explore, test, and evaluate new defence interoperability technologies, was held from June 8 to 25. The 2026 edition, held in Bydgoszcz, Poland, focused on multi-domain operations, key to ensuring the resilience and effectiveness of Alliance communications.

GMV took part in the exercise planning meetings under the sponsorship of NCIA, NATO's Communications and Information Agency, by deploying the NATO-CSD capability, a solution enabling the dissemination of JISR data and processes in line with the new developments of the STANAG 4559 Edition 5 standard.

Under the sponsorship of the Armed Forces Intelligence Center (CIFAS) GMV also contributed the national **SAPIEM** capabilities, comprising **CSD SIERRA**, **SIERRA Tools** and **Atenea**, to demonstrate JISR interoperability in accordance with the STANAG 4559 Edition 4 standard. In this context, the company presented **SIERRA Tools NG** (Next Generation), a new generation of JISR clients aimed at improving the user experience and enabling the execution of processes fully interoperable, also

aligned with the progress towards Edition 5 standard.

In addition to the capabilities deployed, GMV led various demonstration objectives related to JISR processes, reinforcing the interoperability of its solutions and consolidating its position in the multinational ISR arena.

GMV's participation was also extended to the maritime environment. Together with the Navy, the European Defence Agency sponsored GMV's participation with MARSURIII, the future European information exchange network designed to connect the European Union and NATO by means of the use of widely recognized standards in the maritime field.

For its part, the European Union Military Staff (EUMS) promoted GMV's participation with the EUCCIS system, a command and control solution designed to improve the secure exchange of information between different levels of the EU command structure. During the exercise, EUCCIS focused its contribution in the DM (Data Management), MDC2 (Multi-Domain Command and Control) and FMNCS (Federated Mission Networking Capability Services) experiment areas,

advancing interoperability with NATO capabilities and reinforcing planning, coordination and situational awareness processes in multinational operations.

Autek, a GMV company, also strengthened its role as a key operator of cross-domain capabilities in CWIX26 by deploying its secure gateways in different areas of the exercise, under the sponsorship of JCISAT and CIFAS. In this edition, it led the cross-domain objective in the MIP area, driving the implementation of secure labeling of tactical data through the new version of the MIP 4.6 protocol integrated in the PSTmip gateway, which made it possible to ensure secure exchanges between classified and unclassified networks in accordance with STANAG 4774/4778 standards.

In addition, Autek collaborated with NCIA on a cross-domain scenario for the secure exchange of XML data in the FFT and Space areas, facilitating both the generation of a Common Operational Picture and the secure exchange of information for the planning and execution of operations. Finally, together with GMV, it deployed the **PSTcsd** gateway in the JISR area to synchronize data between different security domains.



Autek presents its cross-domain technology at the 6th STIC and RootedCON Conference



■ The 6th STIC and RootedCON Conference is hosted from May 27 to 29 by the National Cryptologic Center (CCN) of the National Intelligence Center (CNI), the Joint Cyberspace Command (MCCE) and RootedCON, in Spain, together with the National Intelligence Directorate (DNI) of the Dominican Republic.

The event, presented under the slogan "A digital shield against threats," was held in the city of Santo Domingo, Dominican Republic, featuring Autek Ingeniería, a GMV company, as a Gold sponsor, after more than 15 years sponsoring STIC Conferences in Spain.

Institutions, experts, operational directors, and professionals from the

defence, security, and cybersecurity sectors met at a meeting that has now established itself as the epicenter of the sector in Ibero-America. Every participating hard a shared goal: to build a true digital shield capable of preventing, detecting, and responding in coordination to threats affecting governments, critical infrastructures, businesses, and citizens.

Autek gave a presentation on "Cross-domain certified products: data diodes and secure gateways," in which it addressed cross-domain technologies, their main use cases and the company's vision as a Spanish manufacturer specializing in secure information exchange solutions with

its own cross-domain technology. It also presented its two product lines: **PSTgateways** application-level secure gateways and **PSTdiode** hardware data diodes.

Over three days, the 6th STIC and RootedCON Conference reasserted its international role as a space to exchange knowledge, generate alliances, and promote shared capacities in Ibero-America. Consequently, after six international editions, the meeting reaffirmed its vocation to consolidate itself as a stable space for cooperation between Ibero-American countries, promoting a shared culture of cybersecurity and digital resilience.

GMV receives recognition from Entrust and V-Valley for its strategic partnership in cybersecurity



■ GMV was recognized by Entrust and V-Valley España at the 5th Cybersecurity Summit 2026, a leading event for the cybersecurity ecosystem held on April 16 and 17 in La Granja de San Ildefonso in Segovia. The event brought together manufacturers, partners, and industry experts to address the primary challenges associated with the rise in digital threats, increasing regulatory complexity, and the need to

strengthen business continuity in public and private organizations.

This recognition highlights the long-standing collaboration between GMV, Entrust, and V-Valley Spain in strategic areas related to cryptography, digital identity, and the protection of critical infrastructure. The award ceremony took place during the sessions focused on innovation and cyber resilience strategies, where

the trends shaping the future of the sector were discussed.

Nathalie Dahan, Head of Partner Strategy & Portfolio at GMV’s Secure e-Solutions division, accepted the award on behalf of the company. During her remarks, she emphasized that “this recognition reflects the value of a partnership based on trust, collaboration, and a shared vision in core areas such as cryptography and identity, where GMV has spent the last 30 years establishing itself as one of the market’s leading players.”

She also emphasized the importance of continuing to strengthen the ecosystem of strategic partnerships to address current challenges in cybersecurity and operational resilience. “We thank Entrust and V-Valley Seguridad for continuing to build with us and for being part of our partner ecosystem,” she added.

GMV participated in the NIS2 Municipal Workshop

On April 29, 2026, GMV participated in Madrid in the NIS2 Municipal Conference for businesses, an event held by the ISMS Forum and the Cybersecurity Agency of the Community of Madrid that brought together representatives from public administration, businesses, and industry experts to analyze the impact of the new European Directive on Network and Information Security (NIS2).

The event addressed the main challenges and opportunities presented by this new regulatory framework, which is designed to strengthen cybersecurity as a strategic component in ensuring business continuity, organizational resilience, and the

protection of essential and critical services throughout the European Union.

In this context, Mariano J. Benito, GMV’s Cybersecurity & Privacy Ambassador, played a prominent role in the program. On the one hand, he delivered a presentation titled “From Theory to Practice: How to Start Preparing for NIS2,” in which he offered practical insights into the first steps organizations must take to successfully adapt to the new regulatory requirements. During his remarks, he identified priorities, best practices, and key considerations for effectively navigating the adaptation process.

Mariano Benito also participated in the panel discussion on Challenges and Opportunities of NIS2 in the Business Sector, where he shared his experience and insights alongside other industry experts on the challenges posed by the directive, as well as the opportunities it offers for strengthening governance, risk management, and cybersecurity culture within organizations.

The event was attended by representatives from public institutions, companies, and specialized organizations, establishing itself as a leading forum for the exchange of knowledge, experiences, and best practices in the areas of cybersecurity and regulatory compliance.

Opinion

Technological sovereignty as a core security strategy

Geopolitical instability is no longer the exception but has become the norm. International tensions, hybrid conflicts, technological competition, and the growing prominence of cyberspace as a theater of confrontation are redefining the traditional concept of security. In this context, Europe—and Spain—face a fundamental challenge: strengthening their technological autonomy to ensure their strategic capacity to make decisions and take action.

The increasingly uncertain international landscape calls for agility and efficiency, both in identifying the changes that are taking place and in responding to them. Having in-house technological capabilities enables this agility and efficiency. It is essential to master cutting-edge technologies that provide a competitive edge. We must build up our own capabilities in artificial intelligence, quantum computing,

cybersecurity, robotics, geolocation, and aerospace services, which have provided a decisive advantage in recent conflicts.

These capabilities are critically dependent on high-quality local resources. We need to invest in our professionals and in Spain's and Europe's industrial and business sectors. This is the strategy that other geopolitical actors are already implementing. It's not trade protectionism. It's a long-term vision. In the short term, the goal is to develop and acquire these strategic capabilities, bringin them to at least the current state of the art. In the medium and long term, maintaining, sustaining, and refining the capabilities acquired will set them apart. This technological autonomy requires and fosters a strong industrial base capable of driving innovation, competitiveness, productivity, and knowledge, all of which enable the desired agile response to changing needs.



Mariano J. Benito
GMV Cybersecurity & Privacy Ambassador

“Investing in our own technological capabilities, talent, and a strong industry is the foundation for strengthening Europe's technological sovereignty and responsiveness”

Experience shows the tangible benefits this strategy offers in terms of quality, competitiveness, and technological independence.

The context also calls for a supranational approach. Spain possesses significant capabilities that are greatly enhanced when combined with the European Union member states and our allies, enabling us to provide joint responses to current geopolitical challenges. These partnerships also enhance our representation in a globalized world where our population and our technological and economic capacity are significantly smaller than those of major international players. We can't do it alone, but with friends, we can.

GMV promotes digital resilience at 6th STIC Conference & RootedCON Congress in Dominican Republic



■ Representing GMV alongside Autek, Javier Zubieta, Marketing and Communications Director of Secure e-Solutions, also took part in the 6th STIC Conference and RootedCON Congress as a speaker in one of the conference's panels, sharing the company's perspective on the importance

of fostering a culture of resilience within organizations.

During his presentation, he said: "Adopting a culture of resilience will be key to helping organizations withstand the new economic and geostrategic challenges they face. This means

aligning and integrating technological, cybersecurity, organizational, and strategic capabilities across every dimension, including organization, processes, technology, and people."

GMV's participation in this international forum reinforces its commitment to advancing cybersecurity capabilities, fostering cooperation among organizations and institutions, and helping build safer and more resilient digital environments.

The STIC Conference & RootedCON Congress have cemented their status as a leading nexus for knowledge sharing, public-private collaboration, and discussions around the challenges that will shape the future of cyberspace protection.

Through initiatives such as this, GMV continues to drive cybersecurity resilience worldwide by delivering solutions and strategies that enable organizations to stay ahead of threats and quicken their responsiveness in today's increasingly complex and dynamic landscape.

GMV Receives Sophos' Enterprise Partner of the Year Award

■ GMV was honored by Sophos with the Enterprise Partner of the Year award, a recognition that highlights the strong partnership between the two companies and their shared commitment to excellence in cybersecurity.

The award was accepted by Nathalie Dahan, Head of Partner Strategy & Portfolio at GMV's Secure e-Solutions, and Manuel Llanos, Section Head of Threat Intelligence & Cybersecurity Defense at GMV's Secure e-Solutions, on behalf of the entire team.

In light of this recognition, Nathalie Dahan noted: "We are proud to receive

this recognition from Sophos. For years, we have worked together on particularly demanding projects, where your approachability, flexibility, and commitment have been vital in successfully overcoming every challenge. We thank the entire Sophos team for placing your trust in GMV. Let's keep building together."

This award reinforces GMV's position as a leading strategic partner in the field of cybersecurity and recognizes the hard work and dedication of the professionals who contribute every day to the success of this partnership.



GMV participates in the third edition of the ISMS Forum CISO White Paper

■ ISMS Forum has published the third edition of the CISO White Paper, a reference guide for cybersecurity professionals that offers a comprehensive, up-to-date, and structured overview of the role played by the Chief Information Security Officer (CISO) in today's technological, organizational, and regulatory landscape.

The publication was produced in collaboration with leading industry experts, including Mariano J. Benito, GMV's Cybersecurity & Privacy Ambassador, whose contributions offer a practical and strategic perspective based on his extensive experience in the fields of cybersecurity, risk management, and regulatory compliance.

This new edition examines how the CISO role has changed and explores key aspects such as digital risk governance, the integration of

security into business processes, the positioning of the cybersecurity officer within the corporate structure, and the challenges associated with an increasingly demanding regulatory environment. It also addresses the impact of regulatory frameworks such as the National Security Framework (ENS) and the NIS2 Directive, which are redefining the responsibilities and scope of security officers' roles.

The document also provides practical guidance for understanding the skills, responsibilities, and challenges faced by CISOs in a context marked by digital transformation, rising cyber threats, and the growing need to strengthen organizational resilience.

The third edition of the CISO White Paper highlights how cybersecurity has evolved from being purely a technological issue to becoming a fundamental component of corporate governance and strategic



management within organizations. In this context, the CISO is playing an increasingly important role as a bridge between technology, the business, and senior management.

GMV is sponsoring the first edition of AUTELSI's CISO Lunch dedicated to NIS2

GMV sponsored the first edition of CISO Lunch, an initiative launched by AUTELSI (Spanish Association of Telecommunications and Information Society Users) with the aim of creating a forum for networking and discussion among the top cybersecurity executives of the country's leading organizations.

Held in Madrid during May, the event brought together 15 leading cybersecurity professionals to address some of the most significant challenges posed by the new European regulatory frameworks and their impact on business management.

The session was led by Francisco Lázaro, CISO & DPO at Renfe and chair of the

AUTELSI Security Group. The session focused on analyzing the role that management bodies must play in light of the entry into force of the NIS2 Directive and its practical connection to the DORA Regulation.

During the discussion, participants shared their experiences and views on which cybersecurity issues boards of directors and executive committees should understand, monitor, and prioritize. The discussion also addressed how to translate regulatory requirements into a strategic vision grounded in risk management, governance, and decision-making, aligning business objectives with the need for digital protection and resilience.

Another core topic was the practical use of tools, methodologies, and reference frameworks as a common language across business, technology, and security functions, facilitating more effective communication between different levels of the organization and promoting better integration of cybersecurity into corporate strategy.

The first edition of CISO Lunch highlighted the growing need to create opportunities for dialogue between security leaders and executives in order to address new regulatory challenges and strengthen organizational resilience in an increasingly complex digital environment.

GMV at the 10th anniversary of the European Cyber Security Organisation



■ GMV participated in the celebrations for the 10th anniversary of the European Cyber Security Organisation (ECSO) on June 24 and 25 in Brussels. The event brought together representatives from companies, research centers, leading organizations, and European institutions to take stock of the association’s progress over the past decade and its contributions to the development of the EU’s cybersecurity strategies, and to

spearhead new initiatives aimed at addressing current and future cybersecurity challenges in the European Union and in its Member States and Associated Countries.

Since its creation, ECSO has established itself as the leading European platform for public-private partnerships in cybersecurity, promoting initiatives aimed at strengthening innovation,

competitiveness, and its own strategic capabilities.

As a founding member of ECSO, GMV continues to play an active role in driving strategic initiatives and decisions that contribute to the development of European cybersecurity. For ECSO’s 10th Anniversary, GMV attended several events throughout the day, notably participating in sessions dedicated to European capabilities in offensive cybersecurity with Ángel Gavin, supply chain sovereignty with José María Legido, International Markets Director at GMV Secure e-Solutions, and the management of cross-border cyber incidents with Mariano Benito, GMV’s Cybersecurity & Privacy Ambassador .

GMV’s participation in this anniversary underscores its firm commitment to strengthening the European cybersecurity ecosystem and building a safer, more resilient Europe that is better prepared to face the technological challenges of the future.

GMV drives the evolution of smart, automated SOCs at Splunk Go! Madrid

On May 21, GMV participated in Splunk Go! Madrid, where experts from Splunk and technology companies analyzed the trends that are transforming the management of security operations and digital resilience.

Ricardo Hernández Pérez, a cybersecurity project manager, spoke on behalf of GMV and participated in the panel discussion on the Security Operations Center (SOC), which was organized in collaboration with other Splunk technology partners. The discussion focused on how automation, advanced observability, and intelligent analytics are redefining managed cybersecurity services and improving

the ability to detect and respond to increasingly sophisticated threats.

GMV shared its vision for moving toward a smarter, more automated SOC focused on operational efficiency. The company highlighted how the observability and advanced analytics technologies integrated into its Managed Services Provider (MSP) and SOC service ecosystem enable faster event correlation and analysis, streamline processes, and improve the response to security incidents.

GMV also presented its end-to-end automation approach, which spans from

customer onboarding to the ongoing operation of cybersecurity services, integrating capabilities for detection, analysis, response, and continuous improvement. This model enables organizations to transition toward operations that are more agile, scalable, and tailored to a constantly evolving digital environment.

The session also included a discussion on the future of the SOC, which will be characterized by greater integration of artificial intelligence and digital agents capable of assisting analysts by automating complex tasks and supporting decision-making.

GMV Reinforces Its Commitment to Space Cybersecurity at CYSAT Europe 2026



■ GMV participated in CYSAT Europe 2026, one of Europe’s leading conferences on cybersecurity in the space sector, held on May 20 and 21 in Paris, France. Every year, the event brings together experts, government agencies, space agencies, and technology companies to address the sector’s security challenges.

In a context marked by the growing digitization of space infrastructure and the constant evolution of cyber threats, “CYSAT Europe” has established itself as a leading forum for discussing the protection of space systems throughout their entire lifecycle, from design and development to operation and maintenance.

As part of the conference’s technical program, GMV presented the talk on Cybersecurity in 5G for Space, delivered by Daniel San Miguel, Head of 5G Security Solutions at GMV’s Secure e-Solutions division, and Leticia Para, a telecommunications engineer in the company’s ground segment. During the session, both experts discussed the challenges and opportunities associated with integrating 5G technologies into

the space sector, focusing on the implications these new architectures have for protecting critical communications and services.

The speakers emphasized the need to incorporate advanced cybersecurity mechanisms that ensure the confidentiality, integrity, and availability of communications in increasingly distributed, complex, and demanding environments, where connectivity plays a critical role in mission success.

During these meetings, the GMV team presented its comprehensive cybersecurity framework for space missions, an approach that combines governance, processes, and advanced technologies with the aim of ensuring operational resilience, regulatory compliance, and mission continuity in increasingly complex and interconnected scenarios.

The company also shared some of its initiatives related to quantum technologies, a strategic field poised to play a key role in the evolution of security, communications, and advanced processing capabilities within the space ecosystem.

GMV Discusses Cybersecurity in 5G Networks at the 2nd Edition of 47CON

GMV participated in the second edition of 47CON, the cybersecurity conference held by the SUGUS association in Valladolid in mid-April, which brought together professionals, researchers, and experts to discuss the latest trends, threats, and technological advances in the field of cybersecurity.

The company kicked off the conference program with a presentation titled Honeypot 5G: Attracting Threats in Next-Generation Networks, presented by Iván García Lozano and Alejandro Bermejo Pérez, specialists at GMV.

During the session, the speakers provided a technical and strategic overview of the role of honeypots as a key tool for protecting infrastructure and services in 5G environments. In a landscape marked by the growing adoption of next-generation networks and increasingly sophisticated threats, these technologies enable proactive detection of malicious activity, analysis of attacker behavior, and gathering of valuable insights to strengthen defense mechanisms.

During the presentation, GMV specialists demonstrated a practical implementation of a honeypot designed for 5G networks, highlighting its usefulness as a test bed for generating detection rules, evaluating security solutions, and validating protection capabilities against emerging threats.

Through this participation, GMV shared its expertise in developing advanced cybersecurity technologies for next-generation communications, contributing to the exchange of knowledge and the strengthening of the security of future digital ecosystems.

Vall d'Hebron is adopting GMV technology to move toward the European Health Data Space

GMV's **uTile PET** makes it possible to share clinical knowledge without sharing data, ensuring privacy and data sovereignty at all times

Vall d'Hebron University Hospital is making progress in the development of a health data platform designed to facilitate the responsible sharing of clinical information, accelerate biomedical research, and prepare its infrastructure for the future European Health Data Space (EHDS).

The initiative entails, first, migrating the hospital's current data platform to an interoperable and governed model and, second, incorporating **uTile PET** (Privacy-Enhancing

Technologies) capabilities, the solution developed by GMV to enable secure and private computations on distributed clinical data. This technology makes it possible to analyze patient information without having to transfer the data outside of hospitals or healthcare facilities, thereby ensuring patient privacy and data sovereignty at all times.

Developed as part of the VHTeDades project and funded through the Recovery, Transformation, and Resilience Plan – NextGenerationEU, the project incorporates the technological capabilities of GMV, a company that has been collaborating with Vall d'Hebron for more than

five years on projects related to interoperability, advanced analytics, and the secure use of clinical data.

The project involves the migration of the hospital's data platform toward an interoperable and governed architecture, based on Data Fabric models and standards such as OpenEHR and OMOP. The goal is to connect clinical information from different healthcare systems and establish secure environments for sharing and reusing data for research, artificial intelligence, and personalized medicine.

Thanks to **uTile PET's** approach, research centers and pharmaceutical companies can gain valuable clinical insights—such as biomarkers, prognoses, or population-level indicators associated with treatments—without directly accessing sensitive patient data. This model facilitates new opportunities for collaboration and advanced clinical research while maintaining strict privacy safeguards and regulatory compliance.

Another of the project's key feature is the integration of artificial intelligence capabilities to generate synthetic data and process textual clinical information, facilitating the automatic structuring of medical reports and the secure reuse of clinical data. Expected use cases include value-based healthcare models, collaborative research, and federated prediction of the risk of acute heart failure.

Through this project, Vall d'Hebron and GMV are moving toward a data-driven healthcare model, where interoperability, privacy, and artificial intelligence have become key tools for improving patient care and accelerating biomedical research.



uSteer. IA to facilitate the acquisition of high-quality ultrasound images



■ Ultrasound is one of the most widely used imaging techniques in medicine because it is fast, safe, and inexpensive. However, obtaining images of diagnostic quality depends largely on the experience of the professional operating the ultrasound machine. To help overcome this obstacle, GMV has developed **uSteer**, an AI-based guidance solution that assists the user in real time during ultrasound imaging.

The solution acts as a guide, helping the operator position and move the probe to capture clear images of various organs. Through an intuitive interface and continuous analysis of the ultrasound signal, **uSteer** provides visual guidance that facilitates faster, more consistent, and more reliable scans, even when performed by staff with limited ultrasound experience.

One of the key features of this technology is its ability to integrate with ultrasound machines from different manufacturers and of various types, including both portable and conventional models. This

significantly expands its potential for deployment in various healthcare settings.

The solution is specifically designed for situations where access to specialists is limited or where rapid image acquisition is critical. Its applications include primary care, emergency care, telemedicine, rural settings, emergency and disaster response, as well as military and humanitarian scenarios.

The technology also has its origins in the space sector, where similar tools play a key role in providing medical care to astronauts during space missions, particularly in situations where there is no immediate access to specialized medical personnel.

With **uSteer**, GMV is putting artificial intelligence at the service of healthcare professionals to facilitate access to high-quality ultrasound exams, reduce inter-operator variability, and help make healthcare more accessible, efficient, and accurate.

A UIMP conference recognizes trust as the cornerstone of digital transformation in healthcare

■ On 6 and 7 July, GMV participated in Value-Based Digital Health: Precision Data and Management with Clinical Impact, a conference organized by the Menéndez Pelayo International University (UIMP) in collaboration with the Marqués de Valdecilla Research Institute (IDIVAL).

Held in Santander, the forum brought together government officials, healthcare professionals, researchers, and technology companies to discuss the role of innovation in the evolution of the healthcare system.

The program addressed strategic topics such as the European Health Data Space, artificial intelligence applied to clinical practice, personalized medicine, and data management as a key element in improving health outcomes.

Representing GMV, Inmaculada Pérez, Digital Healthcare director of GMV's Secure e-Solutions sector, participated in the panel discussion on "Building Trust Through Digital Health," where she shared the company's vision of how innovation, data, and technology can contribute to a more efficient,

interoperable, and people-centered healthcare system.

The conversation made it clear that digital transformation does not depend solely on technological development. The trust of patients and healthcare professionals, responsible data management, and collaboration among the various stakeholders in the healthcare ecosystem are essential factors for moving toward a value-based care model capable of addressing the current and future challenges facing the healthcare system.

GMV presents the final results of the SEPI-IA project

■ GMV held an event to present the results of the SEPI-IA (Evolutionary Simulation of Interstitial Lung Disease with Artificial Intelligence) project, an R&D initiative carried out together with the Complutense University of Madrid (UCM) and in collaboration with leading hospitals, aimed at transforming the diagnosis and monitoring of interstitial lung diseases through artificial intelligence.

The event, held at GMV's headquarters in Tres Cantos, brought together representatives from the CDTI, clinical specialists, and innovation teams to share the project's key achievements and discuss its potential impact on the healthcare sector.

SEPI-IA is part of a Pre-Commercial Public Procurement initiative led by the Center for the Development of Industrial Technology (CDTI) and

funded by NextGenerationEU funds. The project addresses a growing need within Spain's national health system: the need for tools that can predict the progression of diffuse interstitial lung diseases (DILDs), complex conditions where progression can vary significantly among patients.

The solution applies artificial intelligence to the automated analysis of high-resolution medical images and clinical data to generate personalized predictive models of disease progression. Thanks to this technology, the system is able to detect patterns and lesions that are invisible to the human eye, enabling more accurate diagnoses and better treatment decisions.

During the event, a demonstration of the prototype developed by GMV and UCM was presented, along with the

results obtained during the various phases of the project. La Paz University Hospital and Bellvitge University Hospital also shared their clinical assessment and discussed the tool's potential impact on healthcare practice.

The project also represents a significant step forward for the national healthcare and technology ecosystem, as it is one of the first solutions within the National Health System capable of simulating, on an individualized basis, the future progression of interstitial lung diseases over one, two, and three years.

In March 2026, the SEPI-IA prototype was transferred to Bellvitge University Hospital for clinical validation in a real-world setting, at a ceremony presided over by Diana Morant, Minister of Science, Innovation, and Universities.

GMV spotlights regulation, cybersecurity, and digital health at Health Revolution Congress 2026

From May 27 to 28, Barcelona hosted the latest Health Revolution Congress, one of Europe's landmark events for digital health. This year's theme was "Building a better future for health." The event brought together technology companies, hospitals, and international experts to examine the impact of innovation on the transformation of healthcare systems.

GMV took part alongside EpisKey Medical Consulting in the session Cybersecurity in Medical Devices: Your Software Doesn't Process Data, It

Treats Patients, focusing on the real impact that inadequate cybersecurity strategies have on patients and healthcare professionals.

Speaking on behalf of the company, Mariano J. Benito, GMV's Cybersecurity & Privacy Ambassador, addressed some of the key challenges associated with protecting medical devices and healthcare systems. During the presentation, common shortcomings in the healthcare sector were identified, such as identity management, encryption, and clinical data governance, as well as potential

approaches to strengthening the security of healthcare technologies.

GMV also highlighted the benefits of adopting cyber resilience models based on certifiable security processes and frameworks, such as ISO 27001 or the National Security Scheme (ENS).

GMV's participation helped highlight that cybersecurity is no longer an afterthought, but rather an essential requirement for ensuring the safe and reliable adoption of digital technologies in healthcare.



GMV to develop next-generation passenger information system for Barcelona Metro

Thanks to this system, passengers will receive clearer, up-to-date information about the next station, available connections, potential service disruptions, and other relevant travel alerts

GMV has been awarded a contract to develop and deploy a new cross-network passenger information system (PIS) for the Barcelona Metro, aimed at modernizing the passenger information experience. The project represents a significant step forward in the evolution of the operator's onboard systems and lays the groundwork for a common, scalable solution designed for progressive deployment across multiple train series.

The new PIS has been conceived as a unified passenger information platform capable of integrating real-time service information—such as next station, connections, and service disruptions—with corporate communications and audiovisual content. The system will deliver clear, dynamic, and context-aware information, helping to improve the passenger experience throughout the journey.

One of the project's key features is its cross-platform design. The system will be built to run on the multipurpose central processing units (CPUs) already installed on the trains, making it possible to extend deployment across different fleet series without relying on hardware-specific configurations. This approach will enable long-term use by the operator, supporting the ongoing technological evolution of the fleet through software updates and ensuring the solution remains sustainable, flexible, and scalable over time.

The project also includes the development of a central management platform from which operators can monitor system status, handle content remotely, schedule and segment the information displayed on onboard screens, and access indicators for system performance tracking. This centralized approach will provide the operator with an advanced tool

for day-to-day management and decision-making.

The solution developed by GMV will be designed to meet demanding requirements for availability, robustness, and security. To achieve this, it will incorporate monitoring, self-diagnostics, and remote update capabilities, along with autonomous operation features and mechanisms to optimize the use of available communications resources. Together, these capabilities will help ensure a reliable service aligned with the operator's technological and regulatory standards.

This contract will enable GMV to further expand its presence in the field of intelligent public transportation systems by introducing new passenger information capabilities and advancing the digitalization of the fleet's onboard systems.

GMV expands rail technology footprint in Asia-Pacific through Freightquip partnership



■ GMV continues to strengthen its international presence in the rail sector with the signing of a strategic agreement with Freightquip Pty Ltd, which has been appointed the exclusive distributor of GMV's intelligent transportation systems (ITS) portfolio in Australia and New Zealand.

Under the agreement, Freightquip will be responsible for the sales, installation, and support of GMV's full suite of onboard technologies in both countries, further expanding the company's presence in a region that offers significant growth opportunities for the rail industry.

Already deployed across metro, tram, and rail networks on five continents, GMV's ITS portfolio comprises four core solutions: **SAE-R®**, a fleet management and passenger information platform; **DV-rec**, a digital onboard video surveillance system; **PA & Intercom**, a public address and emergency communications solution; and **INFO-Pass**, an integrated visual passenger information system.

All of these systems hold international certifications and are designed to integrate with existing rail infrastructure, whether in new-build projects or fleet modernization programs.

The partnership with GMV will bring technology already proven on some of the world's most demanding rail networks to the Australian market. In addition to commercial distribution, Freightquip will provide comprehensive regional support, including system design, supply, installation, commissioning, and maintenance services. The agreement marks another step forward in GMV's international growth strategy and strengthens the position of its rail solutions in key Asia-Pacific markets.

GMV to equip new Talgo trains on Mecca-Medina high-speed rail corridor

■ Talgo has awarded GMV a contract to supply several onboard systems for 20 new high-speed trains destined for the landmark rail corridor connecting the cities of Mecca and Medina in Saudi Arabia. The contract covers the public address and emergency intercom system (**PA & Intercom**), the vehicle human-machine interface (VHMI), and the closed-circuit television (CCTV) system.

PA & Intercom, which GMV successfully supplied for both the original Saudi Arabian project and other initiatives developed in partnership with Talgo, is a digital solution featuring analog backup through a UIC train bus. The system enables crew members to make announcements to passengers and communicate with one another, while also allowing travelers to

contact onboard staff in the event of any incident or emergency. It supports multiple languages and has been designed to ensure maximum reliability in critical situations.

The VHMI, which was also successfully deployed on the previous project, serves as a technical monitoring tool for onboard personnel. Through terminals installed in each car, the system connects to the train control and monitoring system (TCMS), displaying real-time status and technical updates while enabling control commands to be issued.

Meanwhile, the CCTV system supplied under this new contract incorporates an enhanced architecture that reflects the technological advances achieved by GMV since the original project. This new version is based on more

recent developments within the company's rail solutions portfolio. While retaining core capabilities such as digital recording, communication with the control center, and real-time video display, it also offers greater integration and enhanced functionality.

As in previous projects, both the onboard equipment and the software running on it have been entirely designed and developed by GMV, ensuring a solution tailored to the highest standards of rail safety and operations.

This latest contract award further strengthens the long-standing partnership between the two organizations and reaffirms Talgo's confidence in GMV's rail solutions for one of the world's most demanding high-speed rail projects.

The Spanish ITS Congress welcomes GMV's proposals on connected and safe mobility

At a time when mobility is continuing to evolve and redefine itself, GMV participated in the 26th edition of the Spanish ITS Congress, held by the Spanish Engineering Institute from 24-26 March. The event brought together key organizations in the intelligent transportation systems (ITS) field from both the public and private sectors, further establishing itself as a leading gathering for knowledge transfer within the industry.

GMV was represented at several sessions during the three-day congress. Carlos Barredo, head of GMV's Aftermarket and Automotive R&D sections, participated in the "ITS Smart Cities II" session with the paper "Time reduction and service improvement: experiences with traffic-light priority systems" and in the "Autonomous and Connected Mobility"

session, together with Globalvia, with the paper "Proofs of concept of C-ITS use cases in Globalvia: connectivity and safety in real environments using C-V2X communications."

Meanwhile, GMV Project Manager Javier Álvarez participated in the "Ticketing in Public Transportation II EMV" session with his paper "EMV implementation in public transportation: the integrator's perspective in the case of the CRTM." GMV Project Manager Jaime Sanz then participated in the "ITS in Public Transportation I" session with the paper "Centralized mobility platforms: unifying ticketing and CAD/AVL for authorities and operators."

Carlos Busnadiago, head of GMV's Automotive Products and Processes

section, closed out the round of presentations with his participation in the "ITS in Public Transportation II" session, where he discussed "Improving onboard safety by integrating in-cabin intelligence systems with CAD/AVL platforms in public transportation."

GMV was also an event sponsor and had a stand in the exhibition area, sharing its ITS solutions and its expertise in technologies applied to a more intelligent, secure, connected, and efficient mobility model. By participating in the event, GMV reaffirmed its role within the sector at a time when the emergence of artificial intelligence and the development of data spaces are marking a turning point in transportation planning, management, and optimization.



GMV presents its smart mobility solutions at the Global Mobility Call



■ From 9 to 11 June, IFEMA Madrid hosted a new edition of Global Mobility Call, one of the leading

international events for sustainable mobility, innovation, and the transformation of transportation. Over the course of the three-day event, representatives from government agencies, businesses, and industry experts examined the key challenges facing future mobility, with digitalization, sustainability, and new technological solutions for transportation among the main themes of the gathering.

GMV had its own stand in the exhibition area, where it showcased its latest solutions for smart mobility and transportation, designed to contribute to a safer, more efficient and more sustainable mobility model. One of the highlights was **ITS Suite**, a GMV solution that incorporates a set of intelligent transportation systems applications, enabling operators and public

authorities to manage transportation services comprehensively.

Attendees had the opportunity to get a firsthand look at products such as the **GMV Hub (EP200)**, an onboard computer designed and manufactured by GMV specifically for public transportation systems, as well as its electronic fare collection systems, the **DTD200** vending machine and the **TV100** validator, which incorporate cutting-edge payment technologies such as EMV, QR, and ABT to provide a more efficient and secure user experience.

The event gave participating companies the opportunity to engage in dialogue, exchange ideas, and share experiences, as well as learn about innovative technologies designed to transform the future of mobility and transportation.

GMV shares its views on the future of mobility at Community of Madrid executive breakfast event

GMV recently sponsored an executive breakfast event organized by Executive Forum España and the Spanish Bus Transportation Federation (CONFEBUS), where one of the featured participants was Luis Miguel Torres Hernández, Director-General of Transportation and Mobility for the regional government of the Community of Madrid. The event took place on April 7th, and it brought together representatives from the public sector and industry to analyze the region's current challenges and opportunities related to mobility.

During his presentation, Mr. Torres Hernández explained that the mobility system in Madrid is one of the most advanced in Europe, with a solid system that can be used as the basis for taking on innovation-related challenges in transportation. He announced the

future Mobility Act (Ley de Movilidad) being developed for the Community of Madrid, which would be a historical first. He explained that the purpose of this legislation is to harmonize regulations, reduce administrative burdens, and integrate new forms of mobility such as autonomous vehicles and aerial systems, while also considering the need for environmental, financial, and social sustainability.

He described some of the progress being made on autonomous mobility in the region, with various pilot projects already underway, and he stressed the need for collaborations with entities such as Spain's Directorate-General of Traffic (DGT) for their ongoing development. He highlighted the importance of data and public-private collaborations, as two key factors for improving the system's

efficiency, and he used the automation of Metro Line 6 as an example. Finally, he explained that the overall goal is to ensure equal access to transportation for everyone.

This event also featured a presentation by Miguel Ángel Martínez Olagüe, General Manager of Intelligent Transportation Systems at GMV, who participated in a roundtable discussion focused on evolution of the industry and the role being played by technology in the new mobility models. Regarding autonomous mobility, he stressed that intelligent transportation systems (ITS) will increasingly become critical systems, rather than just support systems, with operations based on orchestrated, integrated interactions among vehicles, infrastructure elements, and control centers.

GMV helps to drive the real leap towards connected and cybersecure mobility in Valladolid

The project will integrate critical technologies directly into the urban infrastructure, transforming the city into an open-air living laboratory



Valladolid will be the first Spanish city to become an open-air cybersecurity laboratory thanks to the development of a Connected and Cybersecure Urban Circuit, a pioneering initiative in Europe promoted by the Junta de Castilla y León (Regional Council of Castilla y León) through the Instituto para la Competitividad Empresarial de Castilla y León (Institute for Business Competitiveness of Castilla y León: ICECYL), with GMV playing a key role.

As part of the RETECH cybersecurity program and backed by an investment of 3.5 million euros (75% financed by Next Generation funds through INCIBE and 25% by the Castilla y León regional government), the project aims to transform the city into an open-air laboratory, integrating critical technologies directly into the urban infrastructure, where technical complexity is combined with the unpredictability of real traffic.

In this environment, technologies such as V2X connectivity, advanced data analytics, and communications protection are used to improve road safety and optimize traffic management.

GMV is participating in this project by contributing its expertise in complex technological systems, especially in the field of short-range V2X communications, providing its **GMV Smart Mobility Suite**, facilitating the configuration, deployment and management of multiple C-ITS use



cases and securely connected mobility services. Added to this is GMV's vast experience in cybersecurity applied to automotive and connected mobility systems, as well as 5G network-based environments and critical environments, integrating security from the design stage and combining advanced detection and response capabilities to guarantee secure and resilient communications.

Technological leadership of the project is provided by Renault Group's R&D Center in Valladolid, within the framework of a joint venture with Orange, together with other partners including GMV. From a technical standpoint, the deployment combines 5G Stand-Alone networks with edge

computing capabilities, hybrid V2X communications (ITS-G5 and C-V2X), and critical public infrastructure that guarantees the authenticity and confidentiality of exchanges. All of this is supported by a centralized data space that enables analysis, forecasting, and decision making services.

There will be a tangible impact on the city. V2X communication units, sensors and monitoring systems have already been installed along key city roads. Beyond the visible infrastructure, what is relevant is the paradigm shift: Valladolid is going from being a user of technology to becoming a generator of applied knowledge.

GMV welcomes Serveo to its Madrid headquarters



■ On 2 June, GMV welcomed Serveo, a Spanish company specializing in infrastructure, energy, industry, transport and services, to its headquarters in Madrid. During a tour of the facilities, the Serveo delegation gained firsthand insight into GMV’s capabilities in its various fields of work, the company’s history, and some of its key achievements in Intelligent Transportation Systems and the automotive sector. Miguel Ángel Martínez Olagüe, GMV’s general manager for Intelligent Transportation Systems, led the presentation.

Serveo also had the opportunity to visit some of GMV’s mission operations facilities. Joaquín Estremera, head of the Robotics Section, presented the robotics laboratory, where robotics systems for space exploration are designed and developed. Meanwhile, Bruno Néstor Calvo, head of the Satellite Navigation Systems AIV Services division, took the visitors to the Galileo Validation Facility, a replica of an operational control centre for the European satellite navigation system. Finally, Pedro Lopez Peñalosa, Head of Navigation Ground Segment

and Operations services, showcased the control centre for the IOD-1 satellite of the Celeste mission, an initiative led by the European Space Agency (ESA) to develop robust satellite navigation services based on low Earth orbit (LEO) satellites.

The visit concluded with a meeting led by GMV’s Intelligent Transportation Systems Automotive division, during which both companies exchanged views on the state of the industry and explored possible opportunities for collaboration.

GMV addresses connected and automated driving challenges at ASEPA training course

■ Amid growing technological complexity in the automotive and mobility sectors, the Spanish Association of Automotive Professionals (ASEPA) held its 8th Vehicle Automation Specialization Course between March and May 2026. The program, supported by the University Institute for Automobile Research (INSIA), was aimed at professionals from the automotive and energy sectors, including engineers, scientists, academics, technicians, students, and members of the media.

GMV took part in the course through one of the training sessions. Together

with 19 other industry experts, Sara Gutiérrez, Director of GMV’s Automotive Business Unit, shared her expertise in areas including automotive software, precise and secure positioning solutions for advanced driver assistance systems (ADAS) and autonomous driving, and in-cabin intelligence based on computer vision and radar technologies. Her presentation explored some of the key trends shaping the future of advanced mobility.

The session focused on real-world examples of how GMV is addressing the automotive sector’s current challenges.

Topics included practical applications and innovation opportunities; technologies for connected and automated driving; tangible contributions to road safety, mobility, and road transportation; as well as vehicle certification processes and the regulatory, ethical, and legal considerations associated with automated vehicles.

By participating in the course and collaborating with ASEPA and INSIA, GMV had the opportunity to exchange knowledge and experiences with other professionals and organizations involved in the field of advanced mobility.

GMV is spearheading the Q-MIND project and showcasing its capabilities in quantum technologies

The project brings together research centres, industry, and government to accelerate the adoption of quantum technologies in strategic sectors

G MV has presented the progress of the Quantum Madrid for Innovation and New Developments (Q-MIND)() project to the Community of Madrid, a strategic initiative aimed at accelerating the practical application of quantum technologies and strengthening the region’s position as a leader in advanced digital innovation. The institutional visit was attended by Mercedes Zarzalejo, the Regional Minister of Education, Science, and Universities for the Community of Madrid, who was able to see firsthand GMV’s capabilities in quantum computing, post-quantum cybersecurity, artificial intelligence, and advanced robotics.

During the meeting, GMV presented the scope of Q-MIND, a project that integrates quantum computing capabilities, quantum communications via quantum key distribution (QKD), and post-quantum cybersecurity (PQC). The goal is to translate scientific advances into real-world applications in strategic sectors such as energy, banking, telecommunications, and defense, thereby facilitating the transition to digital environments that are prepared for the impact of quantum computing.

The councilor emphasized the importance of collaboration between government agencies, businesses, and research centers in building a competitive technology ecosystem. In this context, he noted that the Community of Madrid plans to install



the first quantum computer at a university in Madrid, namely, the Polytechnic University of Madrid.

GMV also explained the project’s technology transfer approach, which will enable the validation of solutions in real-world infrastructures such as MadQCI, the Community of Madrid’s quantum communications network. Q-MIND has a budget of over 5.3 million euros and brings together a public-private consortium comprising leading companies, universities, and research centers: BBVA, Repsol, QDynamics, QoolNet, Inspiration-Q, the Spanish National Research Council (CSIC), Tecnalia, the Complutense University of Madrid, and the Polytechnic University of Madrid.

Luis Fernando Álvarez-Gascón, CEO of GMV’s Secure e-Solutions division, emphasized that, “Q-MIND represents

a decisive step toward bringing quantum computing closer to practical application, linking research with the real-world needs of industry and public services.” He also stressed that the project builds on previous initiatives such as CUCO, the first scientific-industrial quantum computing project in Spain led by GMV.

The visit concluded with a tour of various technology areas at GMV, including the robotics lab, the Space division’s multi-mission room, and spaces dedicated to exponential technologies, where specific applications of artificial intelligence and quantum computing were demonstrated.

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Q-MIND has been co-financed by the European Union through European funds, under the European Regional Development Fund (ERDF), as part of the Community of Madrid’s program promoted by the Department of Education, Science, and Universities.

Opinion

Industrial data intelligence for better operations, security, and decision-making

The industry faces a landscape characterized by the need to improve operational efficiency while responding to an increasingly demanding regulatory and cybersecurity environment. In this context, one of the main challenges continues to be the fragmentation of industrial data across multiple information silos, which is an impediment to a unified view of processes and limits the ability to make agile and reliable decisions.

The growing adoption of regulations such as NIS2 and the Cyber Resilience Act (CRA) is driving a shift in approach: cybersecurity and resilience must be built into industrial environments from the design stage, rather than added as an additional layer after systems have been deployed. This forces organizations to move toward models in which operations, security, and data management are fully integrated.

To address this challenge, GMV proposes a strategy based on creating a “trust layer” for the industry, capable of securely and contextually connecting OT (Operational Technology) and IoT (Internet of Things) assets with corporate environments. This approach improves the definition and monitoring of key indicators, optimizes audits and regulatory compliance (particularly within frameworks such as ISO/IEC 62443), and makes it easier to interpret technical information from a business perspective.

The proposed architecture integrates cybersecurity monitoring capabilities, secure communications, data consolidation in industrial lakehouse environments, and advanced analytics through dashboards, generative agents, digital twins, and integration with SIEM/SOC platforms.

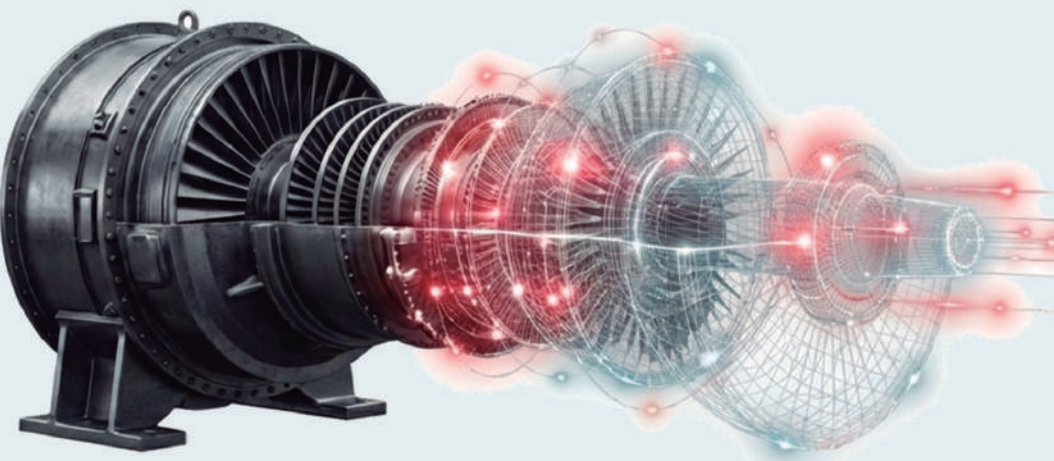


Javier Hidalgo
Cybersecurity and Infrastructure Solutions Architect
GMV Secure e-Solutions

“The implementation of regulations such as NIS2 and the Cyber Resilience Act (CRA) is driving the need to integrate cybersecurity and resilience into the design of industrial environments from the outset”

The ultimate goal is to transform raw data into actionable, context-rich insights by combining operational analysis, resilience, and executive insight.

Thanks to this approach, organizations can make informed decisions regarding maintenance, service quality, and operational continuity, while reducing their exposure to threats and improving their ability to respond to incidents.



QuKee®, GMV's approach to making quantum security operational in real-world environments

Advances in quantum computing are driving a profound transformation in the field of cybersecurity. While these technologies open up new opportunities in processing and communications, they also pose significant challenges for traditional cryptographic systems, particularly in sectors where the protection of critical information and communications is of strategic importance. In this context, quantum key distribution (QKD) technologies and post-quantum cryptography (PQC) are emerging as fundamental pillars for building future-proof infrastructures.

With this approach, GMV has developed **QuKee®**, an advanced key management solution designed to translate quantum capabilities into security services that can be used in

real-world environments. The platform enables secure, reliable, and scalable management of the entire lifecycle of cryptographic keys generated using QKD and hybrid technologies using PQC, providing a solution for scenarios where a single technology is not enough.

The solution serves as the operational layer needed to transform quantum key distribution into a robust business service that meets the highest cybersecurity standards, facilitating secure acquisition of keys, as well as storage, synchronization, delivery to applications, and complete lifecycle control. It also includes advanced auditing, monitoring, and operational control capabilities designed to ensure service continuity and resilience.

Its key features include compatibility with various QKD system vendors, APIs based on ETSI standards, quantum-resistant authentication, and granular access control mechanisms. **QuKee®** also integrates hybrid QKD + PQC profiles, allowing for the combination of different cryptographic mechanisms to strengthen protection against future threat scenarios.

With **QuKee®**, GMV is strengthening its position in quantum technologies applied to cybersecurity, contributing to the development of infrastructure capable of addressing the challenges of quantum computing and protecting critical communications in strategic sectors such as space, defence, energy, telecommunications, and public administration.



GMV showcases *uPathWay*® at Hannover Messe as part of its commitment to resilient industrial automation



■ In late April, GMV participated in Hannover Messe 2026, the leading international industrial technology trade fair, where it showcased the latest developments in *uPathWay*®. The GMV team was present at the Spanish Pavilion organized by ICEX, a space designed to promote the international reach of Spanish technology and foster European industrial collaboration.

In an edition defined by the debate on strategic autonomy and industrial resilience, GMV demonstrated how

uPathWay® enables the coordination and optimization of uniform robotic ecosystems in complex environments. The solution, designed with a hardware-agnostic approach, facilitates interoperability between robots from different manufacturers and of different types through a single management platform.

During the event, attendees were able to see the platform's various capabilities through live demonstrations, including the operation

of a quadruped robot controlled via *uPathWay*®. The opening day also featured an official visit by Jordi Hereu, Minister of Industry and Tourism, and Jordi García Brustenga, Secretary of State for Industry, who expressed interest in the applications of the technology developed by GMV.

One of the aspects most highly valued by visitors was the platform's flexibility and its modular architecture, which is based on a marketplace of features. This model allows for the integration of advanced artificial intelligence capabilities tailored to the operational needs of each environment, including visual inspection, route optimization, and predictive maintenance.

Through this participation, GMV is strengthening its international position in industrial automation and autonomous robotics, demonstrating how interoperability, scalability, and intelligent system integration are key elements in moving toward a more efficient, safe, and resilient industry.

GMV is participating in the enerTIC symposium on artificial intelligence and the transformation of the energy sector

■ In April, GMV participated in a panel discussion organized by enerTIC that focused on the challenges of the new energy equation and the role of data, artificial intelligence, and digital infrastructure in transforming the sector. The event brought together experts from technology and energy companies to discuss how to move toward more efficient, resilient, and sustainable models in a context marked by the energy transition and growing operational complexity.

Speaking on behalf of GMV was Almudena Nieto, Head of Business Development for the Energy and

Utilities sector at GMV's Secure e-Solutions division, who outlined the company's vision regarding the need to integrate advanced data analytics, automation, and artificial intelligence capabilities into the management of critical infrastructure. During her remarks, she emphasized that the digital transformation of the energy sector is no longer limited to improving efficiency, but has become a strategic factor in ensuring operational continuity, resilience, and sustainability.

GMV's presentation focused on how technologies such as artificial

intelligence, digital twins, and advanced analytics can optimize processes, anticipate issues, and improve real-time decision-making. The discussion also addressed the importance of having interoperable platforms capable of integrating information from various assets and systems to provide a unified view of the operational environment.

Another key point was the growing importance of cybersecurity and digital resilience in energy infrastructure, particularly in light of increasing threats and regulatory requirements such as NIS2.

GMV is participating in the White Paper on Robotics in Construction, a project led by HispaRob and PTEC

■ On April 15, GMV participated in the presentation event for the White Paper on Robotics in Construction, an initiative promoted by HispaRob and the Spanish Construction Technology Platform (PTEC), which brought together institutional representatives, technology companies, and industry stakeholders to discuss the role of robotics in the evolution of the construction industry.

During the meeting, participants emphasized the need to move toward more industrialized construction models capable of improving productivity, reducing construction times, and addressing the shortage of skilled labor. In this context, robotics, artificial intelligence, and the extensive use of data are emerging as key tools for promoting more efficient, safer, and more sustainable construction.

Representing GMV, Ángel C. Lázaro, Head of Robotics and Automation in the Industry Sector of GMV's Secure e-Solutions division, participated in the panel discussion on the future of robotics in construction. In his remarks, he highlighted the potential of collaborative robotics as a means of expanding human capabilities in increasingly complex construction environments. This approach allows professionals to focus on higher-value-added tasks, such as supervision, planning, and decision-making, while autonomous systems handle inspection tasks, repetitive operations, or higher-risk activities.

GMV also highlighted the role of solutions such as *uPathWay*®, the intelligent platform for the comprehensive management of heterogeneous robot fleets. This technology enables the



coordination of various operations performed by multiple autonomous systems from a single environment, facilitating interoperability, scalability, and centralized control of automated processes.

The event demonstrated that collaboration between industry, technology, and institutions will be crucial to accelerating the adoption of robotics in construction and opening up new avenues for innovation in the sector.

GMV showcases the potential of autonomous robotics and agentic AI to transform construction at IC2

GMV participated in the first International Congress on Innovation in Construction, Building, Infrastructure, and Concessions (IC2), held in June in Santander, where it presented its vision of the role of autonomous robotics and artificial intelligence in transforming the construction sector.

Ángel C. Lázaro, Head of Robotics and Automation in the Industry Sector at GMV's Secure e-Solutions, spoke at the session on the Application of Robotics in Construction with the presentation on Autonomous Robotics and Intelligent Orchestration: Toward a Safer, More Efficient, and More Connected Construction. During his presentation, he explained how the

convergence of robotics, artificial intelligence, and autonomous systems is driving new operational models based on coordinated collaboration between robots, sensors, and intelligent agents.

The presentation addressed some of the major challenges currently facing the sector, including low productivity, a shortage of skilled workers, project delays, and high accident rates. In this context, automation is emerging as a key tool for improving efficiency, enhancing safety, and facilitating data-driven decision-making.

One of the key topics was the application of agentic AI to robotics, an

approach that enables networks of intelligent agents to interpret high-level objectives and autonomously coordinate various types of platforms, such as drones, quadrupeds, and ground vehicles. These capabilities facilitate tasks such as inspections, construction monitoring, quality control, and monitoring of high-risk areas.

GMV also unveiled *uPathWay*®, its platform for managing and orchestrating heterogeneous fleets of robots and autonomous vehicles, designed to accelerate the digital transformation of construction processes and move toward more connected, efficient, and intelligent operational models.

GMV brings intelligent autonomous robotics to Advanced Factories and wins a Factories of the Future Award for *uPathWay*®



■ GMV participated in Advanced Factories 2026, Europe's leading conference on industrial innovation, held in Barcelona in May, where it demonstrated how technologies such as autonomous robotics, artificial intelligence, and quantum computing are transforming the manufacturing environments of the future.

At the stand it shared with AER Automation, GMV presented its technological solutions designed to

address some of the key challenges facing today's industry: improving operational efficiency, strengthening organizational resilience, and protecting critical infrastructure in increasingly digitized and automated environments. During the event, the team conducted live demonstrations of *uPathWay*®, the intelligent platform for managing, orchestrating, and optimizing uniform robotic fleets in complex industrial environments.

Designed with a hardware-agnostic approach, *uPathWay*® facilitates interoperability across platforms and manufacturers, reduces reliance on a single vendor, and enables the addition of new features in a modular, flexible, and scalable manner. This architecture makes the solution a particularly useful tool for environments that require centralized coordination, gradual adaptation, and a high degree of integration.

GMV's participation in the event was also recognized with a major award at the Factories of the Future Awards 2026," where *uPathWay*® received the award for "Best Industrial Equipment for the Factory of the Future." The jury highlighted the solution's technological maturity, versatility, and applicability across various sectors and use cases, such as autonomous facility monitoring, perimeter surveillance, inspection of complex assets, and autonomous material transport.

In addition, Ángel C. Lázaro, Head of Robotics and Automation for the Industry Sector at GMV's Secure e-Solutions, participated in the Industry 4.0 Congress with a presentation titled "Smart Industrial Inspection: autonomous and collaborative robotics powered by VLMS," in which he discussed the potential of visual language models and collaborative robotics applied to advanced industrial inspection.

GMV is participating in DAQUAS's webinar on autonomous robotics for the inspection of critical infrastructure

In late April, GMV participated in a webinar organized by DAQUAS, focusing on the use of autonomous robotics and smart technologies for the comprehensive inspection of critical infrastructure. The event brought together experts from the technology and industrial sectors to discuss how automation and artificial intelligence are transforming monitoring, maintenance, and security operations in complex environments.

On behalf of GMV, Rafael Uceda, Head of Autonomous Robotics Projects at GMV's Secure e-Solutions division, presented the company's capabilities in autonomous navigation and intelligent

management of mobile robots for industrial inspection tasks. During his presentation, he demonstrated how technologies such as *uPathWay*® enable the coordination of standardized fleets of ground robots and autonomous systems to operate safely and efficiently in critical facilities, reducing human exposure to hazardous environments and improving operational continuity.

The presentation placed particular emphasis on the role of autonomous robotics as a strategic tool for sectors such as energy, transportation, manufacturing, and critical infrastructure, where the need for continuous monitoring and predictive

maintenance is growing. The discussion also focused on integrating advanced capabilities in artificial intelligence, computer vision, and data analysis to optimize real-time decision-making.

One of the highlights of the webinar was the importance of having open, interoperable platforms capable of integrating different types of robots, sensors, and applications into a single operating environment. In this context, GMV emphasized the need to move toward technology ecosystems that are more resilient, scalable, and better equipped to address new operational and cybersecurity challenges.

GMV takes on the challenges of industrial AI at the German-Spanish Digital Industry Day

■ On April 30, GMV participated in the latest edition of the German-Spanish Digital Industry Day, a leading forum for the German-Spanish industrial and technological ecosystem focused on digital transformation, automation, and artificial intelligence (AI) applied to industry. The event brought together companies, institutions, and experts from both countries to discuss the technological challenges that will shape European industrial competitiveness in the coming years.

Speaking on behalf of GMV was Luis Fernando Álvarez-Gascón, General Manager of Secure e-Solutions at GMV, who discussed the impact of artificial intelligence on industrial environments and the need to promote innovation models capable of combining operational efficiency, resilience, and security. During his remarks, he emphasized that the adoption of AI-based technologies must be supported by robust architectures and reliable industrial data management to ensure sustainable and scalable results.



GMV also explained how technologies such as advanced analytics, intelligent assistants, industrial automation, and autonomous robotics are transforming strategic sectors by enhancing the ability to monitor, predict, and optimize processes. In this context, the importance of integrating cybersecurity and resilience when designing digital infrastructure was

emphasized, particularly in industrial settings and critical operations.

Another key topic was Europe's role in developing its own technological capabilities to strengthen strategic autonomy and reduce external dependencies in key areas such as artificial intelligence and industrial digitalization.

GMV connects quantum computing with real-world industrial challenges at DES 2026

■ On June 10, GMV participated in DES – Digital Enterprise Show 2026, one of Europe's leading events on digital transformation and technological innovation, where it discussed the potential of quantum technologies to solve complex challenges across various industrial sectors.

Ana María Sánchez, Head of Quantum Computing at GMV's Secure e-Solutions division, spoke at the "Quantum for Industry" session alongside representatives from Repsol, Multiverse Computing, and Tecnalia. During the panel discussion, the experts analyzed the current state of quantum computing and shared their experiences in

developing solutions tailored to real-world business use cases.

The discussion focused on applications related to process optimization, advanced simulation, and hybrid quantum-classical approaches capable of adding value in complex industrial environments. The participants agreed that, although the technology is still in its early stages of development, its evolution will drive significant progress in areas such as logistics, energy planning, industrial optimization, and secure communications.

The session also served to showcase the progress made by Q-MIND, a project

led by GMV whose goal is to accelerate the transfer of quantum computing and communications technologies from research to practical application in business and industrial settings.

With a budget of over 5.3 million euros, Q-MIND brings together a public-private consortium comprising BBVA, Repsol, QDynamics, QoolNet, Inspiration-Q, the CSIC, Tecnalia, the Complutense University of Madrid, and the Polytechnic University of Madrid. The initiative is co-funded by the European Union through the ERDF, as part of the Community of Madrid's program led by the Department of Education, Science, and Universities.

GMV examines the security and governance challenges of agent-based AI at the BIDA Observatory

■ On May 26, GMV participated in a new session of the BIDA Observatory, organized by the Spanish Association of Accounting and Business Administration (AECA) and the Independent Authority for Fiscal Responsibility (AIReF), focusing on the impact of so-called agentic artificial intelligence (agent-based AI) on organizations. Under the title *Agéntica*, the AI for agents. A New Challenge for Data Governance and AI in Business, the event brought together experts from the technology, institutional, and business sectors to discuss the challenges associated with the deployment, monitoring, and validation of these advanced systems.

José Carlos Baquero, director of the Artificial Intelligence and Big Data division at GMV's Secure e-Solutions, addressed the emerging risks associated with AI agents capable of acting autonomously in complex and dynamic environments. During his remarks, he emphasized that these systems are no longer limited to



generating recommendations; rather, they can perform tasks and make decisions, which brings with it new security and control challenges.

GMV highlighted some of the specific risks associated with these types of technologies, such as indirect prompt injection attacks, RAG knowledge base poisoning, and jailbreaks embedded in external documents. Given this situation, the company argued for the need to move away from traditional assurance models toward continuous verification

and validation (V&V) processes tailored to non-deterministic systems.

The panel discussion also examined the growing regulatory momentum surrounding artificial intelligence, highlighting the importance of the European AI Regulation and the development of new international standards for testing, evaluation, verification, and validation (TEVV) to ensure traceability, continuous risk management, and regulatory compliance.

GMV addresses the challenges of scalability and adoption of quantum technologies at Q-EXPO 2026

■ GMV participated in Q-EXPO 2026, one of the leading events for the quantum technology ecosystem, where institutional representatives, technology companies, and industry experts analyzed the progress of quantum computing and communications in relation to real-world applications in industrial and business environments.

Enrique Crespo, Quantum Technologies Solutions Leader for Secure e-Solutions at GMV, spoke on behalf of the company at a panel discussion held at the stand of the Ministry for Digital Transformation and the Civil Service, moderated by Susana de Prado Hernández, Director of the Office for Digital Spain 2030 and Internationalization at the Ministry for

Digital Transformation and the Civil Service.

The session addressed topics having to do with the evolution of the quantum ecosystem, collaboration between technology developers and industry, the maturity of use cases, and challenges associated with the transition from pilot environments to scalable solutions that can be deployed in real-world scenarios. The event also presented the Spanish branch of the European Quantum Industry Consortium (QuIC). GMV is a member of this consortium, which seeks to strengthen cooperation between the various players in Europe's quantum ecosystem.

During his remarks, GMV presented its vision on the need to promote technology transfer and accelerate the industrial adoption of these capabilities, drawing on its own initiatives and developments such as *QuKee*®, a platform that enables the centralized management of complex quantum key distribution environments, ensuring interoperability, scalability, and integration with post-quantum cryptographic infrastructures, as well as strategic projects in which it participates, such as Quantum Madrid for Innovation and New Developments (Q-MIND), an initiative led by GMV and supported by the Community of Madrid to accelerate the development and application of quantum technologies in real-world environments.

GMV has obtained ISO 42001:2024 certification, validating the governance of its artificial intelligence systems

The certification ensures transparency, quality, and responsible use of AI in both GMV's own products and the solutions developed for its clients



GMV has obtained the international ISO 42001:2024 certification for Artificial Intelligence Management, awarded by AENOR, which attests to the company's responsible management of the risks and opportunities associated with the use of AI.

This recognition covers both the development of artificial intelligence systems integrated into GMV's products and the solutions it implements for its clients, whom it supports in complying with the European Artificial Intelligence Regulation.

The certification has been granted to GMV's Secure e-Solutions division for developments such as *uQuery*®, a solution based on machine learning and

natural language processing technologies that enables the analysis of large volumes of unstructured information and the agile extraction of relevant knowledge.

ISO 42001:2024, published as a new global standard, establishes a framework for to manage artificial intelligence systems that ensures key aspects such as transparency, traceability, data quality, security, and ethical and legal compliance throughout the entire system lifecycle.

GMV has extensive experience in developing artificial intelligence solutions that make an impact in strategic sectors. In addition, the company is integrating AI capabilities into a wide range of products and

services in areas such as cybersecurity, smart transportation, robotics, and positioning systems, thereby establishing a cross-functional approach aimed at addressing the real-world challenges faced by customers and government agencies.

The assessment conducted by AENOR validates the Artificial Intelligence Management System implemented and maintained by GMV in accordance with ISO/IEC 42001, based on sound AI governance practices. This system allows for systematic management of AI risks through processes that address applicable legal and ethical requirements, as well as traceability, auditability, and continuous improvement throughout the lifecycle of AI systems.

GMV discusses Europe's role in space at Wake Up, Spain! event



■ The economic forum known as Wake Up, Spain! was held in Madrid from April 13th to 17th, organized by the El Español newspaper. This was the 6th edition of the event, which took place this year under the theme of “Growth, cohesion, and uncertainty”. The forum put a spotlight on the current geopolitical context for Europe, with the theme of “Wake Up, Europe!” also incorporated into the event.

The opening address was given by Roberta Metsola, President of the European Parliament, and the rest

of the program featured five full days of presentations, roundtable discussions, and conversations with Spanish business executives and representatives from various industries, along with Spanish and international political leaders.

The CEO of GMV, Jesús B. Serrano, represented his company during one of the strategic conversations that took place on April 15th, where he explained key aspects of the roles that Spain and Europe are now playing in industries such as space and defense.

He emphasized the importance of applying technology in all operational areas, and he said that for this reason, technology firms need to continue to attract talent, pursue innovation, and take on new challenges.

He also put a special focus on space, especially infrastructure elements developed by Europe such as the Galileo Global Navigation Satellite System (GNSS). He said that Europe now possesses some of “the best space infrastructure in the world”, thanks to cohesive collaborations between the European Union and its Member States and integration of their respective needs, interests, skills, and technologies. He also pointed out that this infrastructure has numerous applications in areas such as defense, security, and commerce, while also being used in many aspects of our everyday lives.

Jesús B. Serrano concluded his remarks with a call to increase competitiveness, which is a key factor for Europe's space industry and its positioning, and he stressed the importance of all countries working together to increase European autonomy.

Mónica Martínez takes part in the “Cercle d’Economia”

■ From June 1 to 3, the “41st Cercle d’Economia Annual Meeting” brought together business leaders, academics, and policymakers to discuss some of the most pressing economic, social, and political challenges facing Europe at the local, national, and supranational levels.

The event took place at the Palau de Congressos in Barcelona under the theme “Europe's strategic autonomy: myth or reality?” The program featured prominent political leaders such as Spanish Prime Minister Pedro Sánchez and Alberto Núñez Feijóo, leader of the Partido

Popular. Over the course of three days, participants engaged in panel discussions and debate sessions addressing key issues related to European strategic autonomy from a range of perspectives, with a focus on practical and business-oriented implications.

GMV President Mónica Martínez represented the company on the panel discussion “Applied AI, robotics, and the new European industrial model,” where she shared her views on the impact of technologies such as generative artificial intelligence (AI) and advanced robotics

on strategic sectors and the future of employment. During her remarks, she emphasized the importance of ensuring that AI remains subject to human judgment, oversight, and accountability in order to guarantee its reliability in critical systems.

Against a backdrop of accelerating technological change, industrial transformation, and geopolitical shifts, the meeting provided an opportunity to reflect on the role of innovation, talent, and advanced technologies in sharpening Europe's competitive edge.

GMV receives a delegation from the Italian government



■ On 28 April, GMV welcomed a delegation from the Italian government to its headquarters in Tres Cantos, Madrid, for a visit aimed at strengthening international collaboration and knowledge exchange. During the meeting, the members of the delegation had the chance to get a close-up look at GMV's key projects and capabilities in strategic fields such as space, security, and technological innovation.

In addition to representatives of the Italian embassy, the delegation included senior representatives from institutions involved in space policy, science diplomacy and cybersecurity, such as members of the Comitato Interministeriale per le Politiche Relative allo Spazio (COMINT); Lamberto Moruzzi, director

for Space and Science at the Ministero degli Affari Esteri e della Cooperazione Internazionale (MAECI); General Luigi Riggio, secretary of COMINT; and Lieutenant Colonel Nicola Donati Guerrieri, a member of the Joint Cybersecurity Command.

During the visit, the delegation toured GMV's facilities and saw some of the spaces where many space missions are being carried out. Pedro Lopez, NGSOS-NSGCS section chief, presented the Multimission Room, the control center for the European Space Agency's (ESA) robust navigation mission in low-Earth orbit (LEO), Celeste. Meanwhile, Bruno Néstor Calvo, head of the Satellite Navigation Systems AIV Services division, took the visitors to the Galileo Room,

a replica of the European satellite navigation system's operations center.

The tour concluded at the Space Robotics and Avionics Laboratory, a facility focusing on the development of technology for strategic sectors. The visit was presented by Mariella Graziano, the director of Strategy and Business Development for GMV Space Systems, and Mariasole Melara, the head of GMV's Avionics and Space Equipment Division (SAE).

The visit to GMV's facilities took place at a time when efforts are being made to boost European cooperation and, in particular, collaboration between Italy and Spain in areas such as space and security, where coordination between public and private stakeholders is increasingly crucial.

GMV fosters international cooperation at the Spain–UK Trade and Investment Forum



■ On March 18, Madrid hosted the Spain-UK Trade and Investment Forum, an event organized by ICEX in partnership with the British Embassy and with the support of Spain’s Ministry of Economy, Trade and Business and the UK’s Ministry of Economy and Finance. The event, where opportunities for collaboration and cooperation between Spanish and British companies served as the central focus, brought together government officials and

businesses from numerous sectors with the aim of strengthening alliances between both countries. GMV was present at the forum through the participation of Pedro J. Schoch, Director of Corporate development, Marketing and Communication department of GMV, in the roundtable discussion on advanced technologies and defense. In this session, alongside

other companies from the technology sector, Pedro J. Schoch shared GMV’s perspective on the relationship between the UK and Spain, as well as the opportunities emerging in both economies.

Artificial intelligence, healthcare technology, finance, cybersecurity, and the aerospace industry were among the sectors represented in the other roundtable discussions that comprised the day’s program. Throughout these sessions, participating companies aligned their remarks toward a common goal: the importance of reinforcing political ties and deepening and expanding trade and investment flows between Spain and the United Kingdom.

This inaugural edition of the Spain-UK Trade and Investment Forum also featured the presence of Spain’s Minister of Economy, Trade and Business, Carlos Cuerpo, and the UK’s Minister of Economy and Finance, Rachel Reeves.

Strategic autonomy at the heart of Global Security and Defense debate

■ On May 5, GMV’s CEO, Jesús B. Serrano, took part in the second edition of the Global Security and Defense forum, organized by Europa Press in Madrid.

Under the theme “Innovation and Strategic Vision,” the event brought together institutional representatives, business leaders, and industry experts to analyze the strategic, economic, and industrial implications of increasing investment in defense and security, as well as the role the Spanish industrial ecosystem can play in strengthening European security.

Europa Press Executive Chairman Asís Martín de Cabiedes opened the event,

followed by Secretary of State for Defense Amparo Valcarce, who emphasized the need to move toward greater strategic autonomy. In this regard, she highlighted the importance of strengthening national operational capabilities, consolidating the industrial and technological base, and directing investment toward critical capabilities.

Jesús B. Serrano participated in the roundtable on strategic and technological autonomy. During his remarks, he stressed the importance of equipping Europe with its own critical space infrastructures and noted

that the current context represents a unique opportunity to accelerate such programs. He also underscored the value of having a strong industrial and technological base, supported by a broad and diverse ecosystem including universities, research centers, spin-offs, startups, SMEs, mid-sized companies, and large corporations.

Throughout the event, topics such as the current geopolitical context, challenges and opportunities for the Spanish defense industry, and the role of dual-use technologies as a driver for accelerating technological development were also addressed.

GMV participates in the European workshop Space as a Common Strategic Asset organized by EISC

■ From April 12 to 14, Seville hosted the workshop Space as a Common Strategic Asset, organized by the European Interparliamentary Space Conference (EISC), a forum that brings together institutional representatives and key stakeholders from the European space ecosystem to address the sector’s main strategic challenges.

Held under the Spanish Presidency of the EISC, the event brought together representatives from space agencies, European institutions, industry and research centers, within a program structured around a series of panels focusing on the role of space as a strategic infrastructure, its governance, European autonomy, and its scientific and economic contribution.

GMV took part in this forum through the participation of its CEO, Jesús

B. Serrano, in Panel IV, dedicated to the role of the private sector as a driver for the development of critical space infrastructures, alongside representatives from leading companies in the sector.

During his intervention, Jesús B. Serrano highlighted that space has become a critical infrastructure for society, with a direct impact on areas such as security, the economy, and the functioning of institutions. In this context, he stressed that systems such as Galileo, Copernicus, and future secure communications constellations are essential to ensuring Europe’s strategic autonomy.

He also emphasized the role of the private sector as a key player in the technological development and deployment of these capabilities, while underlining the need for a

clear governance framework in which ultimate responsibility for critical infrastructures remains with public institutions. In this regard, he noted that “responsibility is public; execution can be public-private,” highlighting the importance of balancing efficiency, security, and sovereignty.

The CEO of GMV also pointed to the importance of maintaining a competitive, diverse, and technologically specialized European industrial ecosystem, where collaboration and competition act as drivers of innovation.

Finally, he underlined the key role of institutional demand as a driver of the sector, as well as the need to prioritize investments in strategic capabilities that will enable Europe to strengthen its autonomy and leadership in the space domain.

FIRST® LEGO® League and GMV promote STEM careers

■ Innovation, fun, teamwork, and a great deal of talent are the driving forces behind the FIRST® LEGO® League initiative, which once again received support from GMV this year.

On April 11, the Spanish National Grand Final of the 2025/2026 edition, called “Unearthed,” was held. After 34 tournaments across different locations in Spain, 88 teams qualified for this final, which took place at the Fórum Evolución venue in Burgos. The teams worked under the shared premise “discover the past to build the future”, with different levels of complexity adapted to their age groups: Discover (ages 4–6), Explore (ages 6–10), and Challenge (ages 9–16).

GMV presented the “Engineering Excellence Awards” to the three teams



with the most outstanding proposals, recognizing their creativity and ability to deliver solutions. In addition, GMV had its own space at the event, where it brought technology and science closer to attendees.



Promoting talent in technological fields is one of GMV’s priorities, and the company actively participates in educational initiatives aimed at students at different stages of their academic journey.

From the Classroom to the Space Industry: A Look at GMV’s TalentPRO Challenge



■ The space of the future is sustainable. That was the premise behind GMV’s “TalentPRO Challenge,” an initiative developed in collaboration with Vocento and U4IMPACT with the goal of connecting the talent of college students in STEM disciplines (Science, Technology, Engineering, and Mathematics) with

the professional environment they will soon be joining.

Following a selection process that evaluated both the candidates’ technical excellence and personal skills, the finalist students participated on June 25 in an in-person event during which they put their abilities to the test by tackling some of the space industry’s major challenges. Organized into teams of five, the participants investigated issues related to space surveillance and monitoring, the generation of space debris, and the resulting risk of collisions, among other challenges.

Once their proposals had been designed and prototyped, the teams presented them to a panel consisting

of Alberto Águeda, director of Space Traffic Monitoring and Management at GMV; María José Germán, head of the People department at GMV; Mariana Ramonell, director of Sustainability at Vocento; and José Oriuela, COO and head of Quality at U4IMPACT.

The winning proposal was “GMV Butterfly,” an artificial intelligence-based tool designed to detect collision risks in space and answer the question: “How can we prevent satellites from colliding with each other and with space debris?” In recognition of their work, in addition to the opportunity to demonstrate their skills in a professional setting, each of the five members of the winning team received a prize of 500 euros.

GMV volunteers for the environment with Reforesta



■ GMV professionals recently participated in an environmental volunteer event organized in collaboration with Reforesta in the Valdeloshielos area of Tres Cantos.

During the event, volunteers carried out various environmental restoration activities, including planting native species, improving soil quality, and

preparing the land to promote the recovery of the ecosystem and biodiversity in the area.

The initiative, part of the company’s volunteer program, offers participants the opportunity to contribute directly to an environmental conservation project led by Reforesta, an organization specializing in the

restoration of natural areas and environmental education.

In addition to helping improve the environment, the event was also a chance for employees to participate in a group activity outside the workplace, fostering teamwork and engagement with social and environmental initiatives.

GMV celebrates 20+1 years of history, achievements, and future in Portugal

■ GMV’s Portuguese subsidiary marked its 20+1 anniversary this year with a celebration built around fellowship, exchange, and pride in the road traveled.

GMV Portugal Director Alberto de Pedro welcomed attendees and officially opened the celebration. GMV General Manager Jesús B. Serrano spoke next, reviewing the company’s evolution and highlighting its achievements, present-

day challenges, and the opportunities that will shape its future.

The event showcased key milestones from more than two decades of activity in Portugal—a period marked by growth, talent, innovation, resilience, and many shared achievements. That journey also came to life through an exhibition of photographs, projects, and memorable moments capturing GMV’s evolution

in the country and the contribution of the teams and professionals who made it possible.

The celebration was a chance to recognize what has been achieved, but above all, to honor the people behind it. Because GMV’s history in Portugal is built every day on the commitment, talent, and dedication of those who help drive the company’s growth and continue shaping its future.



A team of today for the **technology** of tomorrow



The age difference between Enrique Crespo, a product manager for quantum technologies at GMV's Secure e-Solutions, and his colleague Anna Kristha Almazán, a scientist specializing in QKD systems, is roughly the same as the time span between the emergence of the World Wide Web and the present day. Over the past three decades, technology has transformed the way we work, communicate, and understand the world. However, someone with a long professional career and a researcher who has just begun hers have both decided to focus their efforts on a field whose real impact we do not yet know: quantum technologies.

Enrique Crespo explains that his entry into the field of quantum communications is not surprising, since "I have spent my entire career

working on cryptography. The thing is that, until now, quantum communications—which I first heard about in the 1990s—wasn't a commercial technology, whereas now it certainly is."

For Anna Kristha Almazán, on the other hand, it was quantum optics that piqued her curiosity, and she notes that what drew her to the field was "the possibility of combining classical and quantum processes. I realized it wasn't necessary to replace one with the other, and I discovered that problems that used to take years to solve could now be resolved in just a few minutes."

Quantum technology is paving the way for the future in sectors as diverse as healthcare, transportation, defense, and space, and companies like GMV are already contributing

their infrastructure, resources, and talent to take it even further. Enrique Crespo sees no limits to the future and says that "he would compare the importance of quantum computing to humanity with the discovery of fire. What currently seems like science fiction in the field of computing would, if it became a reality, create a whole new world." Anna Kristha Almazán notes how quickly the sector is advancing and states that "obstacles are being overcome very quickly, and tools that prevent you from moving forward because you don't have them this year will be available to you the following year." Looking ahead 5 or 10 years, some truly disruptive ideas may emerge in many areas."

Both Anna Kristha and Enrique want to witness, at GMV, the progress of this technology in the coming years,

and to that end, they are aware of the need to turn it into a profitable business. As Crespo explains, "At GMV, we have an extraordinary group of young people working in this field. We can say that, to take their capabilities to the next level, two factors must be in place: providing them with a comfortable work environment based on trust and flexibility, and closing more projects that help fund that innovation." Almazán, who is part of this group of talented young people, adds that one of the things he values most about working at GMV is "the opportunity to contribute my own ideas to the team. Here, individual initiative is encouraged." Crespo agrees with her and also wisely observed: "while realizing, at the same time, that they are part of a team." "Great things are always accomplished by great teams."

Third place at the **2026 Berlin Hackathon**

GMV quantum scientist Anna Kristha Almazán brought home a great achievement from the "Quantum Hackathon" held in Berlin last March. As part of the Beerantum team, along with three other teammates, she took third place in the overall standings and second place in the quantum optimization challenge. Almazán and her colleagues presented a solution to improve shift scheduling for drivers at Berlin's public transportation operator, BVG. The challenge was based on 150 employees, multiple bus routes, a four-week timeframe, and tens of thousands of shift segments. "The classical approach allowed us to optimize routes, but the quantum approach also gave us the opportunity to incorporate the human element." In other words, it took into account drivers' preferences and the circumstances of their lives. That's what motivated us most about the project—being able to offer a model that would improve the balance between personal and professional life, Anna Kristha Almazán explained.



Scientific profiles and multidisciplinary teams: the keys to progress



The most significant advances in quantum computing and communications are often associated with more powerful processors, more sophisticated algorithms, or more secure networks. However, behind each of these milestones lies a common element that rarely makes the headlines: the people and the environment where they unleash their full potential. The development of quantum capabilities at a company like GMV depends as much on scientific and technological excellence as it does on an environment that fosters interdisciplinary collaboration, continuous training, and the exploration of long-term ideas.

Ignacio Ramos, GMV's People Strategy and Infrastructures Corporate director, outlines the roadmap the company should follow at this stage and emphasizes that "right now, in R&D&I for quantum technology, we are primarily focused on the first 'R'—Research—in other words, producing

knowledge." To continue doing this, we need scientists. Specifically, those who are capable of advancing their learning—or, to put it another way, capable of shaping the future. And we have to provide them with the necessary resources.

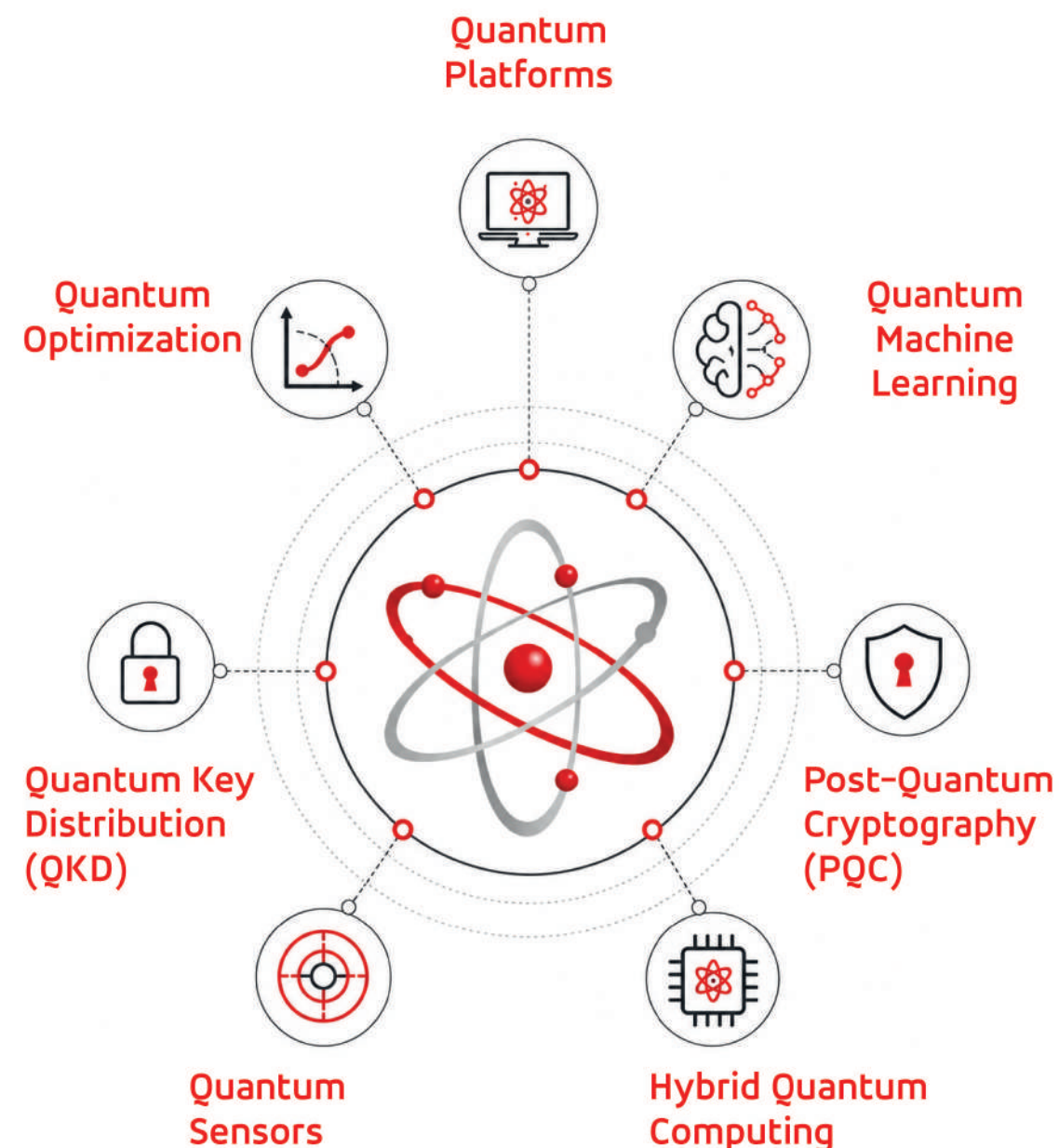
Ignacio Ramos's view aligns with Enrique Crespo's, who states that, "Right now, the talk in this industry is very technical, which is why we need people with those kinds of backgrounds so that, when they're in a meeting or at a professional forum, they can speak the same language." Furthermore, it is a way for GMV to earn the other party's respect. That's why, right now, we're looking for highly specialized people who have a Ph.D. or a specific master's degree and, of course, who have a strong interest in these subjects.

To that end, GMV has signed a new agreement with Carlos III University

to establish the GMV Chair, in which quantum computing will be one of the strategic lines of research. "At GMV, we have always had close ties with the university, and this is another step toward further strengthening those ties." We believe there is a great deal of talent at the university, and we want to continue supporting it—not only by hiring people, but also by developing projects together, says Ignacio Ramos.

Anna Kristha Almazán highlighted multidisciplinary teams as another key area that organizations should focus on strengthening. It allows us to share knowledge from a variety of perspectives, and that is something we value highly. The trust that exists at GMV is also very important—that everyone's ideas are heard, valued, and supported. "With these elements, I'm sure we'll go a long way," she says.

Quantum leadership



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