News

No. 96

gmv INNOVATING SOLUTIONS

Interoperability: a cornerstone of smart mobility

INTERVIEW
Sara Hernández Olmo
Secretary-General for Sustainable Mobility
Ministry of Transport and Sustainable Mobility of Spain

INTELLIGENT SOLUTIONS FOR THE MOBILITY OF THE FUTURE

GMV is a leader in the design, development, implementation, and deployment of intelligent transportation systems (ITS), providing integrated, turnkey operational solutions that range from proprietary hardware and software to integration with third-party systems. We also offer comprehensive support throughout the entire lifecycle of each system, from initial deployment to maintenance and obsolescence management.

With over 25 years of experience, GMV has carried out projects in more than 35 countries on 5 continents, with its solutions installed on more than 35,000 buses and 5,000 trains. We have earned the trust of clients in cities such as Kuala Lumpur, Los Angeles, Sydney, Madrid, and Barcelona. GMV performs in house development of hardware and software products based on scalable, interoperable technologies, to offer flexible solutions that can be adapted to the specific needs of each client.

marketing.transport@gmv.com
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Letter from the president

GMV operates on many fronts. One of the most visible at street level is the improvement of regional and metropolitan public transportation. In recent years, we have strengthened our position as a leading technology partner in the digitization of public transport, having been selected to develop and deploy new central management systems across several of Spain's autonomous regions. These systems aim to transform a complex network, made up of multiple independent operators and diverse modes of transport, into a single, coherent service. They integrate real-time data on location, punctuality, occupancy, and incidents, coordinate connections and transfers, and feed traveler information channels with reliable, up-to-date content. At the same time, they equip authorities and operators with advanced tools to plan and scale service, optimize resources, and measure performance through quality indicators. In short, they turn scattered data into actionable decisions, enabling travelers to complete their journeys on time, seamlessly combining metro, bus, or train smoothly and with confidence. We complement this vision with contactless EMV payment systems, like the one we implemented last year at the Madrid Regional Transportation Consortium, making access to public transport as simple as tapping a card or a smartphone.

Innovation, with impact and rigor, defines how we work across all areas of GMV. In 2025, we continued to accelerate. We are surpassing the mark of €500 million in annual revenue, thanks to the efforts of close to 4,000 professionals worldwide. But the real milestone is what this scale makes possible: taking on more ambitious programs, increasing investment in R&D, and providing even stronger, more innovative support for our clients' most critical operations.

Mónica Martínez

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Editorship-Coordination
Marta Jimeno, Marta del Pozo, Inma Zamora.

Area Heads
Luis Mariano González, Mariella Graziano, Carlos González, Juan Ramón Martín Piedelobo, Miguel Ángel Molina, José Prieto, Javier Zubieta.

Writing
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Article
Antonio Blanco Cedron.

Art, design and layout
Paloma Casero, Verónica Arribas.

MORE INFORMATION
marketing@gmv.com
+34 91 807 21 00

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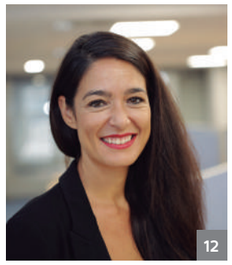
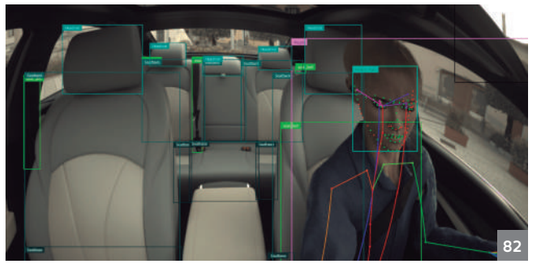




Interoperability: a cornerstone of smart mobility

For decades, public transportation developed as a constellation of independent systems. Each operator, each city, and each manufacturer built its own technological ecosystem: control centers that didn't communicate with each other, isolated validation systems, closed data networks, and applications that spoke different languages.

It was a digital Tower of Babel: locally efficient, but unable to offer a holistic view of the system. Data were trapped in silos, making it impossible to coordinate fleets, analyze actual demand, or plan services from an integrated perspective.

Today, cities are larger, their residents are more digital, and sustainability is more pressing than ever. Mobility needs have gone from being local to becoming part of an integrated and interconnected ecosystem. It's not just about moving vehicles, but also about linking people and data efficiently and safely while taking care of the environment.

Mobility must function as a living, connected ecosystem, where all parties—vehicles, infrastructure, operators and users—interact and communicate transparently and openly. To do so, it needs a unifying code: interoperability.

A SHARED LANGUAGE

Interoperability enables different systems—such as ticketing, computer-aided dispatch, traveler information, or means of payment—to communicate regardless of manufacturer, age, or the technology itself, making real and efficient cooperation possible.

Thanks to this integration, passengers can use their tickets to board any bus, regardless of who the operator is. Similarly, a control center can coordinate fleets from different providers and a regional authority can integrate all mobility services under a single platform. This connectivity breaks down barriers between systems and creates a collaborative environment where each stakeholder contributes to a holistic vision of public transportation.

This environment also allows public institutions and managers to make decisions based on unified indicators, anticipate peaks in demand, and offer passengers more intuitive and personalized mobility experiences.

THE REGULATORY PRINCIPLE

The principle of interoperability is based on two fundamental regulatory frameworks. The first is ISO 24014-1:2021. This international standard defines the architecture of interoperable fare management in public transportation. It establishes roles, data flows, and functional relationships that enable both technical and commercial interoperability. This standard lays the foundation for MaaS (Mobility as

a Service) models, where the user accesses all modes of transportation from a single integrated platform.

The second is the ITxPT (Information Technology for Public Transport) framework, developed by the International Association of Public Transport (UITP) and the European Committee for Standardization (CEN), which transfers the concept of interoperability to the technical field. ITxPT defines how vehicles, control centers, and onboard systems should communicate using open interfaces, modular architectures, and plug & play certifications, so that any component can be seamlessly integrated into a common operating ecosystem.

The following communication protocols then bring these regulatory frameworks to life: SIRI / CEN TS 15531 (real-time information), GTFS / GTFS-RT / NeTEx / Transmodel (master data, topology, and planning) and RTIG T030-1.3 (CAD/AVL-vehicle exchange).

Together, they make up the shared language of intelligent transportation, replacing chaos with a connected and coherent system. The gradual adoption of these standards not only improves operational efficiency, but also provides agile, scalable, user-centered solutions.

THE JOURNEY OF A PIECE OF DATA

To understand the true value of interoperability, let's look at the daily journey of a single piece of data. When a bus starts service, the onboard systems record its GNSS position, speed, and validation events, while the driver interacts with the vehicle interface and the communication systems interact with the control center.

Once generated, this piece of data is integrated into a continuous flow that exemplifies the system's interoperability. On board, the system gathers information from different subsystems, connected through open protocols based on MQTT (Message Queuing Telemetry Transport), and transmits it via RTIG, guaranteeing open, secure, and real-time communication.

In the cloud, the information is standardized and distributed among the different operating, ticketing, and passenger information modules through open and documented APIs. In the control center, operators view network status in real time, manage incidents, and optimize resources thanks to consolidated and consistent information. And finally, at the bus stop or on the mobile app, users can check when their bus is coming thanks to the data provided in the SIRI (Service Interface for Real Time Information) and GTFS-RT (General Transit Feed Specification - Realtime) formats, which are accessible and universal.

In just seconds, a single piece of data has passed through multiple technologies, levels, and manufacturers without losing its meaning or breaking the value chain. This is true interoperability: when each element of the system understands the message, adapts it to its language, and turns it into a tangible service.

This seamless flow enables data-driven decision making, facilitates process automation, and lays the foundation for predictive mobility, where systems are constantly learning, anticipating, and improving.

FUNCTIONAL AND BUSINESS INTEROPERABILITY

Beyond the technical aspects, interoperability must also be reflected in processes and management, integrating operation, ticketing, passenger information, video surveillance, and efficient driving all in a single environment. This ensures that all modules share a common database and a consistent information model.

This organizational interoperability must also be reflected in the management of roles, settlements, and compensations among operators. Unifying master data facilitates integration with MaaS platforms and new forms of collaborative mobility, both now and in the future. This means that interoperability turns operational complexity into a coherent and collaborative system where technology adapts to the service, not the other way around.

This functional approach also enhances multimodal planning, energy management, and advanced analytics for decision making, contributing to more efficient, cost-effective, and sustainable transportation. It also fosters an integrated vision of mobility, where players at different administrative levels share information and align strategies based on shared goals.

MULTI-LEVEL AND MULTI-MANUFACTURER INTEROPERABILITY

In public transportation, interoperability is measured not only by the ability to share data, but also by the ability to integrate technologies, equipment, and solutions from different suppliers into a single operating ecosystem.

In this regard, a cutting-edge platform for public transportation management must act as a true integration hub

that can communicate, coordinate, and manage a wide range of systems under a single data model. These solutions make it possible to centralize third-party data on fleets, ticketing, passenger information, and surveillance cameras, transforming them to achieve an operational, comprehensive vision.

The result is a truly open and modular environment where equipment and applications from multiple sources communicate seamlessly using standards such as REST APIs, SIRI, NeTEx, GTFS, RTIG, and Transmodel models.

This technological openness also facilitates maintenance, updating, and scalability processes, eliminating proprietary dependencies, reducing technology renewal costs, and guaranteeing the long-term scalability of public transport systems. It also strengthens technological sovereignty, allowing systems to evolve without restrictions imposed by specific suppliers.

Interoperability also helps create collaborative innovation environments where different manufacturers can develop complementary, certifiable, and easily integrable components, accelerating the technological progress of the sector.

INTEROPERABILITY AND SUSTAINABILITY

When systems understand each other, it's also a win for the planet. Interoperability reduces technological overlap, optimizes the use of resources, and promotes intermodal transportation, all of which makes public transportation more attractive, reliable, and efficient and also supports the Sustainable Development Goals (SDGs).

Interoperability supports SDG 9 by fostering resilient, digital, and open infrastructure that can adapt to innovation and endure over time. It supports SDG 11 by strengthening public transportation as the backbone of sustainable and connected urban mobility. And it reinforces SDG 13 by promoting climate action through decarbonization of the sector and reduction of its carbon footprint.

Interoperability also supports energy efficiency and a fair digital transition, two of the cornerstones of the new Sustainable Mobility Act, aligning technological development with environmental responsibility.

An interoperable ecosystem makes it possible to leverage data to improve fleet energy management, plan more sustainable routes, and reduce empty runs. The result? Cleaner, more efficient, people-centered transportation.

INTELLIGENT TRANSPORTATION

Today, when a passenger checks their cell phone to see when their bus is coming or pays with a bank card, they're activating thousands of processes that cooperate in harmony. Every message, every coordinate, and every validation runs through an ecosystem of standards, APIs, and interoperable architectures that ensure the accurate and secure flow of information.

Thanks to interoperability, this connected system is now at the heart of public transportation. And GMV has been an architect, engineer, and translator in this process, turning disjointed systems into a global digital mobility system. Thanks to this approach, interoperability is no longer a theoretical promise but a tangible reality: an open ecosystem where all systems, regardless of their origin, speak the same technological language and cooperate for a shared purpose: to offer more efficient and sustainable mobility.

Interoperability is now a key part of daily travel on thousands of vehicles around the world. Today's mobility is not based on isolated systems; rather, it depends on their ability to understand each other, integrate with each other, and evolve.

Sara Hernández Olmo

Secretary-General for Sustainable Mobility
Ministry of Transport and Sustainable Mobility of Spain

Sara Hernández Olmo is a civil engineer and holds a PhD in transportation from the Technical University of Madrid.

With 15 years of experience, she is an expert in strategic regional planning and business consulting within the transportation, logistics, and mobility sector. She specializes in sustainable transportation policies, planning services and functional design for transportation and intermodal logistics infrastructure, market analysis, business plans, operational models, and feasibility and structuring studies.

Throughout her professional career, she has worked in consulting and professional advisory at Deloitte and as a researcher at TRANSyT, a leading research center for transportation and regional projects.

She has published numerous articles in scientific journals and presented at industry conferences on mobility, and she is also a professor in the Technical University of Madrid's Department of Transportation and various courses, seminars, and master's degrees programs.

With your extensive experience in the field of transportation and strategic planning, what do you consider to be the main challenges and opportunities facing sustainable mobility and public transportation today?

Our main goal is to address society's real needs. We see mobility as the result of social dynamics and habits, shaped by economic, geographic, and city models.

In this regard, we're working to transform the current mobility model and reduce dependence on private vehicles, a factor that has contributed to transportation poverty in many regions.

The roadmap, both in Europe and in Spain, aims to strengthen a sustainable, accessible, available, affordable, and high-quality public transportation system, capable of guaranteeing social inclusion and equitable access to essential services such as employment, education, and healthcare.

Then you have the structural complexity of the sector, which is cross-cutting and inherent to multiple public policies, and which is currently facing a double transformation: the demanding environmental agenda and the technological and digital revolution. Both of these transformations require coherent and solid regulations that can organize the new mobility models and bring them together in a single model for regions and cities.

Finally, demographic challenges also affect mobility. Large urban hubs have problems with congestion and overcrowding, while in more rural areas there is a clear need to scale and plan an adequate supply of public transportation or on-demand transportation services. Overcoming these regional inequalities will be key to moving towards a truly inclusive, sustainable, and efficient mobility model.

Digitalization is redefining the way we get around. What's the role of technology and automation in the national sustainable mobility strategy?

Technology is currently both a creator and an accelerator of opportunities, with a double impact. It transforms our management and operation model, allowing us to improve the service quality and optimize the transportation system to make it more reliable and efficient. At the same time, it also supports the development of new mobility models in the same ecosystem. In this more sustainable, connected space, adapted to today's needs, traditional barriers are blurring and new technological players are breaking onto the scene, all of which underscores the importance of prioritizing individuals in decision-making processes.

In an increasingly complex, fragmented, and unpredictable context, data-based governance is the best way to guarantee that public decisions effectively address the needs of individuals and the local community.

That's why digitalization has become one of the cornerstones of our strategy, enabling us to visualize, anticipate, measure, evaluate, and redesign mobility. It helps us transform information into useful knowledge for more accurate and realistic decision-making.

In this regard, the Integrated Mobility Data Space (EDIM) is a major step forward in our commitment to smart data governance. This public digital platform will centralize, standardize, and share data on the mobility of people and goods in Spain, integrating public institutions, transportation operators, and infrastructure managers, among other stakeholders, in order to develop evidence-based public policies and promote interoperability between transportation modes and services.

Automation and artificial intelligence will also contribute to safety by anticipating incidents, optimizing routes and resources, and ensuring the sustainability of the transport system.

Interoperability is a key factor when it comes to achieving truly integrated mobility. What's your opinion of its current stage of development? And what factors do you consider decisive in making it a reality?

As I was saying, mobility is inherent to social and local needs, but approaches to mobility management are still very much segmented by jurisdiction and mode of transportation.

> "Digitalization has become one of the cornerstones of our strategy, enabling us to visualize, anticipate, measure, evaluate, and redesign mobility"

In this 21st-century context, interoperability has become a decisive factor in guaranteeing the continuity of the transportation system, and of mobility itself by extension, because it's the bridge that connects all modes and regions.

In order for it to succeed, there must be close institutional, business, and technological cooperation. And to move in this direction, systems must speak the same language, using open standards, connected platforms, and mutual recognition mechanisms between operators. But interoperability is about more than technology; it also requires shared governance based on common standards, transparency, and a comprehensive vision.

This is a gradual process, but it is absolutely essential if we are to build a simpler, more streamlined, and more attractive public transportation system that comprehensively addresses the needs of individuals and local communities. In this regard, the Single Ticket program and EDIM play a key role in guaranteeing this interoperability and eliminating mental barriers for users, while respecting regional government authorities and powers.

Finally, it's also important to consider the adequate planning and layout of multimodal infrastructure, including hubs, interchanges, and stations, in order to facilitate efficient transfers between modes of transport,

minimize frictions in modal choice, and ultimately reinforce the cohesion of the transportation system.

One of the most ambitious projects you're spearheading at the Ministry is the development of a single ticket system. What progress has been made with this initiative, and what impact do you expect it to have on user experience and system efficiency? What steps do you consider necessary for the single ticket to become fully operational?
The Single Ticket is one of the most transformative projects in the field of mobility. It will simplify daily commutes, offering a single interoperable travel experience across different regions and modes of transport and making it possible to access all the public transportation services in the system.

It's not about creating a new ticket, but about establishing a system of mutual recognition for existing tickets. That means you can plan and take a multimodal trip using a single means of payment or app, and at the same price throughout Spain.

The project is being developed with full respect for regional and local government powers, and is based on institutional cooperation and transparent economic compensation mechanisms.

Its impact goes beyond operational efficiency; it's going to have a cultural effect as well. It makes public transport simpler, more reliable, and more attractive for millions of users, thus encouraging a real shift in mobility habits towards more sustainable and integrated options.

> "Public-private partnerships are essential when it comes to innovation and scaling solutions, making sure that the mobility transformation is effective and focused on people's needs"

System integration requires efficient coordination between companies and public institutions. What's being done to promote public-private partnerships with the goal of moving towards a truly connected and interoperable mobility ecosystem?
Sustainable mobility can only be built through a solid and effective partnership between operators, technology companies, public institutions, and individuals.

In relation to existing instruments in the field of urban logistics, we're working with the sector to prepare a Guide of Recommendations for Urban Freight Distribution, compiling best practices and success stories and standardizing bylaws, Sustainable Urban Mobility Plans (SUMPs), and Low-Emission Zones, all while fully respecting local government powers.

The passage of the Sustainable Mobility Act has activated new stable instruments in governance, infrastructure planning, transport services, financing, and innovation, in order to guarantee mobility as a right and accelerate the transition to a more sustainable system.

Through this legislation, the Ministry of Transportation and Mobility is implementing the General System of Sustainable Mobility, a framework of shared governance made up of the Regional Forum, a space for inter-institutional cooperation, and the Higher Council for Sustainable Mobility, which will also include the participation of civil society and the private sector.

Public-private partnerships are essential when it comes to innovation and scaling solutions, making sure that the mobility transformation is effective and focused on people's needs. That's where the Mobility Sandbox comes in. The Mobility Act created this regulatory innovation instrument to offer a controlled environment for testing real projects. It adjusts the regulations according to the evidence and facilitates safe experimentation with new solutions.

Technological progress has traditionally outpaced regulatory developments. The goal of the Sandbox is to change this dynamic. Rather than lagging behind innovation, regulations will support the process, learn from it and make it possible.

EDIM allows us to centralize, standardize, and share mobility data, making sure they are available for transport operators, infrastructure managers, and public institutions.

Ultimately, the key to moving towards a truly connected and interoperable mobility ecosystem lies in building trust among all stakeholders through clear rules, shared data, and common goals, ensuring that public-private partnerships are effective and sustainable in the long term.

The new Sustainable Mobility Act will be a turning point. What kind of projects are planned for after this new regulatory framework takes effect, and what impact will they have on the modernization of the system?
The new Sustainable Mobility Act is a turning point for Spain, providing the stable, long-term framework the country needed to modernize transportation, strengthen the ecological transition, and continue the policies the Ministry has been working on for some time.

This legislation provides mobility policies with legal certainty, financial stability, and a consistent approach while allowing for comprehensive planning and investment coordination among public institutions.

In terms of the projects we plan to develop within the framework of the Act, one of the highlights is the Strategy against Transportation Poverty, aimed at social cohesion and guaranteeing equitable access to essential services.

As for innovation, the EDIM will strengthen data governance and enable evidence-based decisions, and of course there's the Mobility Sandbox, aimed at regulatory innovation through controlled experimentation with new mobility models.

We're also developing freight-related initiatives with the goal of increasing the competitiveness and efficiency of the transportation sector. These initiatives include the deployment of rail motorways, secure parking lots for professional road freight transportation vehicles, electrification in ports and airports, and the ex-ante and ex-post evaluation of infrastructure.

The Work Commuting Plan promoting sustainable mobility in the work environment. And finally, there's the State Fund for Contributions to Sustainable Mobility (FECMO) a stable funding mechanism for urban and metropolitan public transportation.

This legislation also reinforces multilevel coordination through the Regional Forum, the Higher Council for Sustainable Mobility, and the Guidance Document for Sustainable Mobility (DOMOS), ensuring that policies are developed in an integrated and coherent manner throughout the country.

Together, these projects are expected to offer more accessible, sustainable, and efficient public transportation services, promoting a modern, connected and inclusive mobility system that's aligned with the goals of furthering the ecological transition and improving people's quality of life.

Finally, looking to the future: how do you envision mobility a decade from now? What role should technology companies and public-private partnerships play in such an interconnected and sustainable ecosystem?
Ten years from now, I envision a geographically interconnected mobility model that offers a more integrated, efficient, and sustainable travel experience.

This transformation must be supported by a multimodal and on-demand model where public transportation, micro-mobility, and shared services are coordinated through digital solutions that allow for unified planning and payment under Mobility as a Service-type frameworks.

This progress must be supported by the development of smart, connected infrastructure, such as advanced traffic management systems and traffic lights integrated with renewable energy grids, not to mention a transition to cleaner and more resilient mobility models.

We also have to embrace partial automation in specific areas: selected corridors, shuttle services, and last-mile operations which, always under safety guarantees, will be integrated with the public transportation network to improve reach and efficiency.

In this context, data will play an essential role both in optimizing the operation of transportation systems and enabling new business models and improving service quality, always under strong governance and rights protection frameworks.

However, the future of mobility is about more than technological innovation; it must also be shaped by a firm commitment to sustainability and equity. Public policies must continue to prioritize public transportation and guarantee affordable access to mobility throughout the country, making sure that new solutions don't lead to social or geographic inequalities. In this regard, the government plays a key role in ensuring that the transition to cutting-edge mobility will benefit all people and regions equally.

Technology companies and public-private partnerships play a key role in to building this innovative and efficient mobility model.

Innovation in mobility requires controlled spaces for experimentation. That's why regulatory sandboxes and test corridors will be valuable tools for testing new technologies, operating models, and services prior to large-scale deployment, while ensuring legal certainty and user protection.

Deploying the mobility of the future also depends on adequate energy infrastructure, such as smart charging systems integrated into the grid and capable of managing demand efficiently. It will also be essential to move towards open and interoperable data standards that facilitate coordination between operators and improve planning.

Finally, we must design of public-private partnership (PPP) models that explicitly incorporate social clauses and environmental KPIs, aligning private investment with sustainability goals and the public interest.

AERONAUTICS

GMV Delivers First C-model Units of the Eurodrone Ground Flight Control Computer

These units, already validated during the Critical Design Review, represent the first fully representative version of the final productl

In 2025, GMV began delivering the first C-model prototype units of the Ground Flight Control Computer (GFCC) for Eurodrone, Europe´s future medium-altitude, long-endurance remotely piloted aircraft system.

Eurodrone is a European collaborative defense initiative to develop a Medium Altitude Long Endurance (MALE) Remotely Piloted Aircraft System (RPAS). Led by Airbus Defence and Space and managed by OCCAR, the program involves Germany, France, Italy and Spain. Designed for safe integration into non-segregated civil airspace, the Eurodrone offers multi-mission capabilities including intelligence, surveillance, reconnaissance and future maritime operations.

GMV plays a key role in the program as the developer of the Ground Flight Control Computer (GFCC) HW platform, a DAL-A safety-critical system. This computer manages all flight commands from the designated UAS operator and provides real-time system information to ensure mission accuracy.

The C-model is the first fully representative version of the final product, being aligned with the technical baseline agreed with the customer during the successful Critical Design Review (CDR) at the end of 2024.

During the CDR, the detailed equipment-level design underwent a comprehensive evaluation and received formal approval, establishing the baseline for the subsequent implementation, integration, and verification phases. This baseline defines the system's final external mechanical and electrical setup, as well as its system-level functional features and internal architecture. The latter relies heavily on commercial off-the-shelf (COTS) components that comply with widely adopted defense industry standards. The CDR was a major milestone, as it validated the maturity of the equipment-level design and confirmed readiness for industrialization through delivery of the C-model equipment.

Implementation, qualification, and certification activities for the system are scheduled for completion in 2029, paving the way for serial production to begin. While the scope and criticality of this development present significant technical and programmatic challenges, they also provide GMV with an excellent opportunity to further strengthen its position as a leading supplier of mission-critical systems for unmanned aerial platforms.

SPACE

European Space Agency opens new cycle for Europe's space industry

The company is ready to take on this new phase with determination, and with a commitment to maintaining its position as a key player in the development of Europe's space capabilitiesa

The Ministerial Conference of the European Space Agency (ESA), held on November 26th and 27th in Bremen, Germany, concluded with an unprecedented financial commitment: more than €22 billion dedicated to strengthening Europe's strategic autonomy in space, as a way of promoting technological innovation and solidifying European leadership in the fields of exploration, security, and satellite applications.

This is the largest allocation ever approved by the EU Member States, and it represents a milestone that is defining ESA's framework of activities for the upcoming years, and providing decisive support for critical programs.

In addition, this political and budgetary endorsement achieved in Bremen is opening a new cycle of growth for the European space industry, and for GMV in particular. These results include strengthening of the areas where the company already has a key role, such as space security, satellite navigation, operations, critical technologies, and advanced services, while also solidifying opportunities to participate in new strategic programs.

This new framework will make it possible for GMV to further strengthen its areas of expertise, expand its contributions to iconic programs, and prepare to confront the challenges of an increasingly demanding space environment.

Miguel Romay

GMV's General Manager of Satellite Navigation

ESA's recent Ministerial Conference has created a real turning point for the navigation programs, with achievement of some outstanding results that are strengthening the level of trust in the work we have all been performing. The overall contribution to this area has been multiplied by a factor of 2.6, which is a qualitative leap forward that will open the door to a decade filled with exciting opportunities and challenges.

Thanks to this budgetary increase, GMV will be in a position to lead a complete low Earth orbit positioning, navigation, and timing (LEO PNT) mission, which is expected to become a cornerstone project that will define the future of satellite navigation in Europe. In addition to this mission, the other programs receiving approval included NAVISP, GENESIS, NovaMoon, Opstar, and the 0/A/B1 phases of future demonstrators. These represent a set of initiatives that are solid, diverse, and strategically aligned with our own capabilities and ambitions.

Many of the EU Member States have also made relevant and essential commitments: Spain and Portugal have tripled their contribution, while Germany's contribution has increased by almost 7 times, and Poland's by 14 times, while the United Kingdom's contribution will remain stable. These levels of support will enormously expand GMV's horizons.

This is truly an extraordinary moment for the company, and an opportunity for us to encourage, lead, and demonstrate once again that GMV is an essential part of the future of space navigation.

Enrique Fraga

GMV's General Manager of EST Space Systems

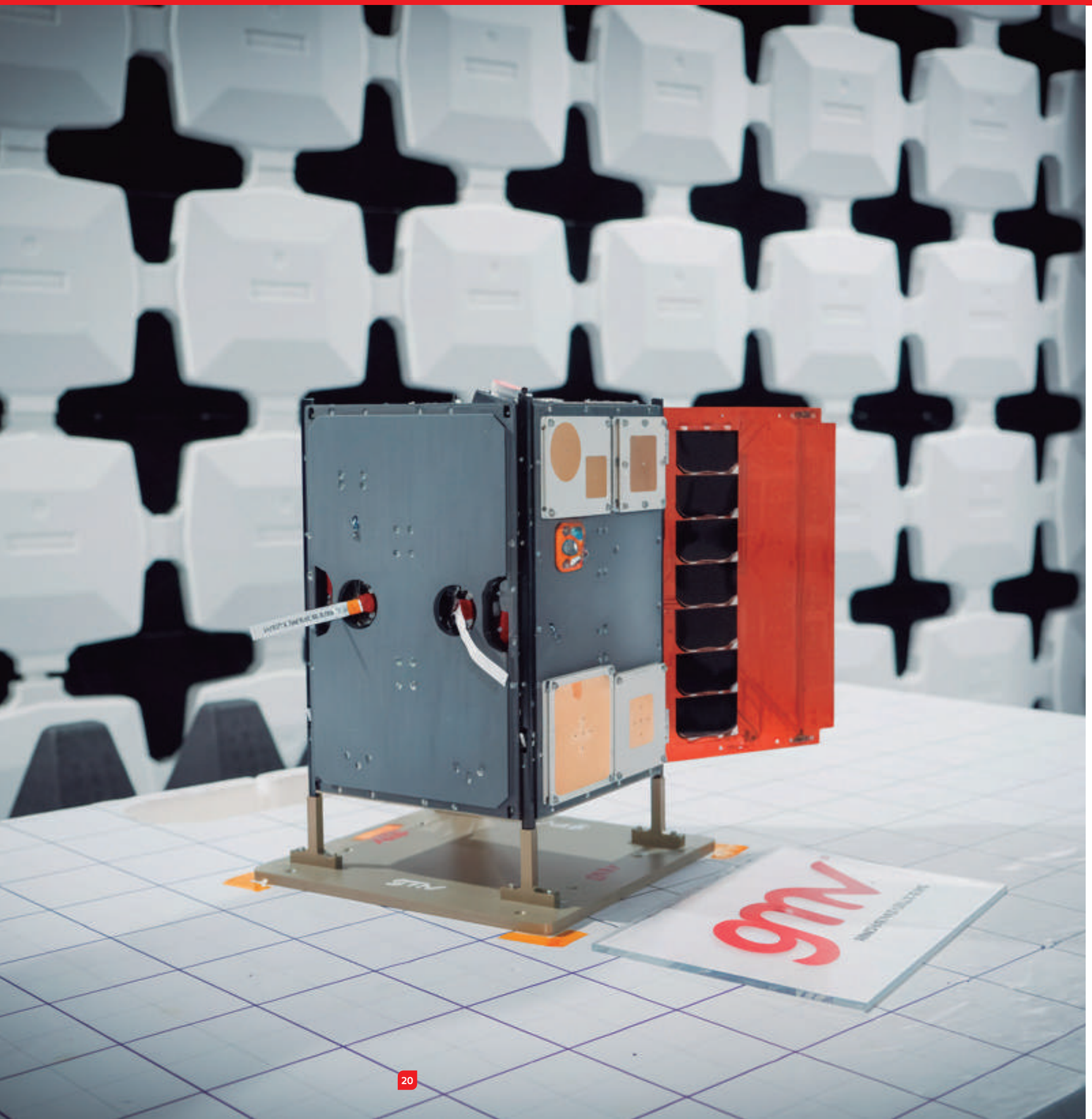
ESA's recent Ministerial Conference represents a strategic turning point for the areas where GMV has already been making a contribution to Europe's space systems. The priorities adopted in Bremen are solidifying a framework that is fully aligned with our own capabilities, and with the types of technological evolution we have been promoting.

Spain has risen to the fourth position in terms of contributions, with very significant increases also seen for countries like Germany and Poland. All of this is establishing a scenario that is especially favorable for allowing GMV to strengthen its participation, and expand its scope within the European ecosystem. This backing has opened up a realistic outlook on growth and consolidation of the industry's position in the set of ESA programs as a whole.

The approval of programs such as CREAM-IOD, CAT-IOD, and RAMSES, along with new opportunities within Space Safety and in the Earth observation program, promotion of the future framework for the European Resilience from Space (ERS) program, and development of the low Earth orbit (LEO) segment for IRIS², will drive advancements for GMV in operations, ground segments, space security, Earth observation, and guidance, navigation, and control (GNC) systems, robotics systems as well as leadership opportunities for missions that require critical technological capabilities.

There can be no doubt that we are now entering into an especially promising phase. The Ministerial Conference has established a stable, ambitious, and impact-oriented environment that will allow GMV to take on new challenges, expand our industrial responsibilities, and strengthen our contribution to Europe's future in space.

SPACE



Celeste is Ready To Fly!

Celeste IOD-1 has undergone full assembly and integration, as well as rigorous environmental and systems testing

In 2024, the European Space Agency (ESA) selected GMV to lead the development of one of the two parallel end-to-end Celeste In-Orbit Demonstrators for Positioning, Navigation, and Timing in Low Earth Orbit (LEO-PNT) system. The constellation's first satellite, Celeste IOD-1, has been jointly developed by GMV and Alén Space. This 12U CubeSat will pave the way for the start of the Celeste IOD mission. Celeste IOD-1 will fly into space aboard a Rocket Lab Electron, taking off from New Zealand in early 2026.

Over the past few months, Celeste IOD-1 has undergone full assembly and integration, as well as rigorous environmental and systems testing. This has demonstrated the spacecraft and operations procedures' readiness to guide the mission through critical phases such as launch and early orbit, and experimentation.

In December 2025, GMV conducted a successful flight readiness key point with ESA. A ESA delegation visited GMV's facilities, including the clean room where the fully assembled Celeste IOD-1 satellite is located. This gave ESA a close-up, firsthand look at the spacecraft in its final form. The delegation also toured the Celeste Mission Operations Room, the control center from which Celeste IOD-1 will be operated once in orbit. The visit demonstrated the readiness of the spacecraft and the operational infrastructure behind the mission.

During the key point, the navigation performance capabilities of Celeste's first satellite were also reviewed to verify fulfillment of the Celeste IOD mission's core objectives. With a fully defined launch plan that includes transportation logistics and integration with Rocket Lab's Electron vehicle, Celeste IOD-1 is now firmly on track for launch in early 2026.

Having successfully passed this key point, Celeste IOD-1 is officially ready to fly. This achievement brings GMV a step closer to orbit and underscores the momentum driving the Celeste programme forward.

The next time we see Celeste IOD-1, it will be on its way into space, marking the beginning of Europe's LEO-PNT future.

GMV attends training session to demonstrate the results of the MMARIO project

■ GMV leads the MMARIO (Message and Measurement Authentication Receiver for Initial Operations) project, an R&D activity funded by the European Commission to develop a Galileo Signal Authentication Service (SAS) receiver, an assistance server, and a test platform for initial operations.

As part of the project, GMV hosted a dedicated training session at its premises for colleagues from the European Commission, EUSPA, and JRC. The aim of the session was to present the main features of the elements developed within the framework of the project, including the SAS server, the SAS receiver and the test platform. During the session, it was also explained how to use the test bench and how to make the most of its capabilities and functionalities.

The training combined theoretical sessions with live demonstrations. The practical exercises prompted numerous questions regarding the capabilities of the future SAS service, the functions of the test bench, the associated data flows and the ways in which the test bench could support early demonstrations of the new service. Particularly enriching was observing how participants tested complex scenarios and situations for the system. Their feedback was highly valuable, as it helped to highlight both the project's strengths and areas with potential for improvement.

Beyond the technical aspects, the session helped to strengthen collaboration and trust among all the parties involved. Bringing together representatives from the European Commission, EUSPA and the JRC in this training session created the necessary foundation to align expectations and consolidate the test bench.

The sessions concluded with a brief recap of the main takeaways and the next steps. Overall, the training represented an important milestone for the project and a positive step toward a shared operational vision.

The comprehensive presentation of MMARIO and the participants' direct interaction with the system made it possible to confirm the project's level of maturity, while the demonstrations highlighted the robustness of the developments and their alignment with the operational needs of future users.

GMV encourages young talent at the SG [Spain] 2025 event in Bilbao

On November 14th and 15th, GMV participated in the event known as SG [Spain] 2025, organized by the Space Generation Advisory Council and held in the city of Bilbao. This event brought together young professionals, students, and experts from the space industry, under the theme of "Exploring Space, Protecting Earth". The aim of this event was to provide an inspirational forum for sharing ideas, innovations, and reflections on the subject of a sustainable future for space.

Miguel Ángel Molina Cobos, Chairman of GMV's Space Council, contributed his views and experience to the discussion panel sessions, where he interacted with the attendees and encouraged the next generation of industry professionals. During his presentation, he emphasized the importance of promoting emerging talent and taking on the challenges of sustainability and security in space.

As a sponsor of the event, GMV helped support a dynamic program that combined keynote addresses, motivational talks, roundtable discussions, and practical workshops led by the sponsoring entities. The program also included exclusive visits to companies working in the Basque Country space ecosystem, as well as a variety of networking activities, ranging from exhibition spaces and an informal "Space Drinks" gathering, to a gala dinner to close out the event.

The key role of the G2STB test bench is solidified for the transition to G2G

■ With the acceptance of its second major version, the Galileo 2nd Generation System Testbed (G2STB) has reached an important inflection point. What began as an experimentation platform for G2 has become a fully-fledged operational asset for ESA, used daily to monitor the G1 constellation and to shape tomorrow's G2 services.

Installed at ESA's European Space Research and Technology Centre (ESTEC) in Noordwijk (the Netherlands) and operated by a specialized GMV team, the G2STB serves as a representative testbed of the Galileo ground segment. With the acceptance of the second version and the migration of the G1G System tools, the G2STB is now ready to support Satellite Compatibility Testing (SCTC) with representative data, the definition of future test campaigns for the new G2G services, as well as the incorporation of new timing capabilities: the operation of a new GESS station connected via a fiber-optic link, and the consolidation of bit-grabber-type recording capabilities at ESTEC.

In addition to the feature brought by the V2, new activities further extend the G2STB role. A dedicated Satellite Laser Ranging (SLR) campaign, coordinated from ESTEC, will combine SLR and GNSS observations using new G2 ODTS algorithms to assess the benefits of SLR for real-time orbit and clock determination and prediction. Within this framework, the G2STB will act as the ESTEC-based data combination centre for the campaign. Three dedicated campaigns are foreseen, spaced in time so as to cover a wide range of environmental and operational conditions and to assess the quality and generation rates achievable with real stations.

In parallel, the Galileo Experimental Sensor Station (GESS) network is being upgraded with G1 Quasi-Pilot (QP) capable receivers. These enable early monitoring and independent assessment of the new signal's characteristics as it is gradually introduced on G1 satellites.

From the end of 2025, the G2STB will also take responsibility for the monthly OS and PRS performance status reports, providing ESA System Engineering with a consolidated view of system behaviour and key performance indicators.

GMV enters Space category in CCN's CPSTIC catalog

■ On September 30, 2025, Spain's National Cryptologic Center (CCN) awarded GMV's GNSS Cryptographic Module the "High" level ENS qualification under the "Space" category and within the "cryptographic products for access to GNSS services" family. This marks the first qualified product in the SPACE category of the CPSTIC catalog.

CPSTIC is the National Cryptologic Center's Catalog of Information and Communication Technology Security Products and Services. This Catalog of ICT Security Products and Services managed by the National Cryptologic Center (CCN). The purpose of the CPSTIC is to provide public bodies with a reference set of ICT security products and services whose security functionalities have been duly certified in line with their intended use.

With this milestone, GMV strengthens its position as a pioneering company in the certification and qualification of cybersecurity products for the space domain, both domestically and across Europe. The GNSS Cryptographic Module has achieved the first substantial-level certification under the European EUCC framework, becoming the first ICT security product qualified in the SPACE category.

The qualification and inclusion of the module in the CPSTIC catalog provide additional assurance beyond certification. The CCN guarantees that the module meets the organization's requirements, that it includes a secure-use procedure, that it is suitable for use at the highest security levels within the National Security Framework (ENS), and that its built-in security features make it appropriate for use by public administrations.

GMV successfully completes milestone for design of the GCS 4.1 ground segment for the Galileo Second Generation

GMV has achieved a new milestone within the Galileo programme by successfully reaching the design milestone for version 4.1 of the second-generation (G2G) Ground Control Segment (GCS). This achievement is the result of an intensive period of collaboration with the European Space Agency (ESA) and the system operator, carried out through numerous workshops and technical meetings held during August and September.

This milestone marks a turning point in the evolution of the second-generation ground control segment, as it has enabled key design decisions to be taken for the future of the system. Notable among these are the definition of the architecture for inter-satellite links (ISL), as well as the encrypted communication protocols between ground stations and control centres—both essential elements to ensure the security and efficiency of operations.

In addition, the foundations have been laid for an operational concept that will enable the integrated operation of both Galileo generations and the progressive migration towards the new operational platform, while ensuring service continuity at all times.

Version 4.1 of the GCS also incorporates new graphical user interfaces that enhance the user experience, along with a higher level of automatio, key aspects for optimising the management of the full Galileo constellation.

This new design will also make it possible to prioritise certain critical functionalities for the programme, as it feeds into the project development backlog currently being implemented within a lean-agile process framework inspired by the SAFe methodology.

Operational validation of the GCS 3.1 full version successfully completed at Galileo ground control center in Italy

GMV has completed a new milestone within the Galileo First Generation (G1G) programme with the completion of the first phase of the operational validation of version 3.1 of the Ground Control Segment (GCS) within the validation chain of the system control centre located in Italy (GCC-I). Lasting three months, the campaign was carried out by the Galileo operator under the supervision of EUSPA, with continuous support from GMV personnel to ensure the proper execution of the tests, as well as the resolution of all detected incidents and anomalies.

Completed on 21 November, this validation represents a key step forward in the evolution of the control system and paves the way for the next phase of deployment and validation. This next stage includes the installation of the Key Management Facility (KMF) and the deployment of the new version 3.1 on the validation platform of the German control centre (GCC-D). The process will be carried out incrementally over the coming months, ensuring operational continuity at all times and in coordination with Galileo launches 14 and 15, with the objective of completing the deployment in the second half of 2026.

The new GCS 3.1 version represents a decisive step in the modernisation of the system, as it addresses the technological obsolescence of the Italian control centre, introduces a complete renewal of the KMF, and incorporates significant improvements in cybersecurity, operability and performance, along with additional functionalities requested by the operators.

This success reinforces GMV's commitment to the evolution of Galileo's ground segment and consolidates its role as a key technological partner in the development and maintenance of the European satellite navigation system.

GMV promotes standardization of EGNSS use in strategic sectors

The ENTICE framework contract (EUSPA Engineering Support to SBAS Standardisation Activities), developed by a consortium led by GMV and funded by the European Union Agency for the Space Programme (EUSPA), has officially kicked off with the signing of its first specific contract. This milestone marks the start of an ambitious standardisation programme for European Global Navigation Satellite Systems (EGNSS) across multiple strategic sectors, with the aim of ensuring a homogeneous adoption of their use throughout Europe.

With a planned duration of one year, this initial contract includes key activities for the evolution of standards governing the use of European satellite navigation services. These include the standardisation of Galileo's Open Service Navigation Message Authentication (OSNMA), as well as future SBAS (Satellite-Based Augmentation System) and ARAIM (Advanced Receiver Autonomous Integrity Monitoring) authentication services in civil aviation. Work will also be carried out on the introduction of GNSS into railway and maritime standards, as well as on the evolution of the standard for Galileo time synchronisation receivers.

The initiative builds on GMV's extensive experience in GNSS standardisation, consolidated through previous EUSPA projects such as GESTA (GSA Engineering Support to SBAS DFMC Standardisation Activities), aimed at the harmonisation and evolution of SBAS systems. ENTICE therefore strengthens GMV's role as a European benchmark in GNSS systems engineering and in the definition of technical frameworks that ensure the interoperability and security of navigation services.

The consortium led by GMV includes internationally renowned partners such as Honeywell, Airbus, the German Aerospace Center (DLR) and the French National School of Civil Aviation (ENAC), combining industrial capabilities with the expert knowledge required to address the regulatory challenges posed by the next generation of EGNSS services. Their work will be essential to ensure that future European navigation and authentication services are efficiently, reliably and securely integrated into the sectors that most depend on satellite navigation.

The importance of robust PNT for Spain's armed forces

El día 17 de diciembre tuvo lugar en la UniOn 17 December, the event entitled "The importance of robust PNT in the Spanish Armed Forces" was held at the Polytechnic University of Madrid (UPM). Its aim was to analyse the challenges and advances in robust positioning, navigation and timing (PNT) systems, which are crucial to ensuring secure and continuous operations in degraded electronic warfare environments or those subject to jamming and spoofing.

The programme addressed key technological solutions such as the use of encrypted signals—including Galileo's PRS service—robust GNSS receivers, inertial sensors and anti-jamming antennas (CRPA), all of which are essential to ensuring the accuracy and reliability of navigation and time synchronisation in critical missions.

Manuel Toledo, Director of GMV's Satellite Navigation Systems User Segment and PRS Business Unit, took part as a speaker in the session entitled "The Spanish industry in space development for robust navigation, advanced positioning and PNT". During his presentation, he shared GMV's experience in the development of secure satellite-based navigation and timing solutions, contributing to the discussion on the future robust positioning needs of the Armed Forces.

Galileo adds two new satellites with launch supported by GMV's technology

■ Europe has given fresh momentum to its Galileo navigation system following the successful launch on December 17th of two new satellites aboard an Ariane 6 rocket. This launch, the fourteenth of the program (L14), is one of the final three planned launches of Galileo first-generation (G1G) satellites. The new satellites will strengthen the global positioning, navigation, and timing services provided by the system.

The launch comes at a critical time for the constellation, which faces the need to replace some of its oldest satellites. With millions of worldwide users routinely relying upon Galileo services, this milestone ensures Europe's ability to operate its own radio navigation system, which is essential for strategic sectors such as intelligent transportation, logistics, precision agriculture, defense, public safety, communication network operations, and energy generation and transmission.

GMV plays an essential role as the lead developer and operator of the Galileo ground control segment, which is the infrastructure that keeps the constellation operational 24 hours a day. From the centers in Oberpfaffenhofen, Germany, and Fucino, Italy, the solutions developed by GMV make it possible to monitor the health and position of each satellite, plan and execute orbital maneuvers, ensure signal integrity, and manage critical operations for a system that is already an integral part of the daily activities of more than 4 billion users around the world. Once again, the company's contribution has been a key aspect of managing operations after separation from the launch vehicle, and for ensuring correct insertion of the new satellites into the constellation.

This launch now paves the way for the L15 and L16 missions, which will complete the system's first generation prior to the transition to the Galileo second-generation satellites (G2G), which are currently under development. These new satellites will bring advanced capabilities, greater accuracy, and enhanced resilience against interferences and cyber threats, further strengthening Galileo's role as an essential part of Europe's strategic infrastructure.

STAGER project's GNSS interference detection and geolocalization system validated at Jammertest 2025

■ On September 15th, the world's largest open-field GNSS robustness testing campaign took place in Andøya, Norway. This intensive five-day gathering, known as Jammertest 2025, gave researchers, regulators, and leading companies working in the field of GNSS an opportunity to test the resilience of their GNSS systems against more than 250 signal jamming and spoofing attacks, in a real environment that overcomes the limitations of laboratory testing.

From antennas and receivers to more complex systems such as vehicles, drones and even commercial aircraft, a wide range of systems were subjected to advanced spoofing and jamming attacks. While spoofing consists of transmitting false GNSS signals with the aim of deceiving receivers and causing position or timing errors, jamming is based on the transmission of high levels of noise that saturate GNSS receivers and render them inoperable. In this context, the objective of STAGER (Sophisticated GNSS Threats protection) was not only to assess the capability to detect and geolocate interfering sources, but also to demonstrate progress in quantifying the impact of such threats in critical and increasingly vulnerable environments, such as aviation.

The GMV team presented two complementary solutions. Firstly, the solution known as SILENT (Spoofing Identification and Localization for Enhanced Navigation and Timing), a network of GNSS monitoring hubs on the ground, which capture signals and perform an initial processing step to detect potential spoofing. Secondly, the tool known as VAULT (Vulnerability Assessment and Understanding the Impact of Localized GNSS Threats), that compiles data from the SILENT solution and applies artificial intelligence (AI) to detect jamming and spoofing, while also producing more precise geolocalization data for the interference source, by aggregating data from multiple SILENT sources.

GMV develops key capabilities for the future EGNOS system

■ GMV has been awarded the DFAS-TB contract (EGNOS System Test-Bed: Dual Frequency Augmentation System Test Bed, HE-ESA-009), one of three parallel projects launched by the European Space Agency (ESA) to develop the Algorithmic Functions (AFs) of a testbed for the SBAS DFMC (Dual Frequency Multi-Constellation) system.

The project, which began in September 2025 and is expected to last two years, is part of the evolution of the European EGNOS system towards its V3 version, as well as future developments. This new testbed will enable the update and adjustment of the algorithms, including extended RIMS processing, GEO ranging, and additional services, that ensure the accuracy and integrity of satellite navigation signals.

SBAS (Satellite-Based Augmentation Systems) complement GNSS constellations (such as GPS or Galileo) through geostationary satellites and ground stations that correct signal errors and provide reliability alerts. In parallel, the ARAIM technique (Advanced Receiver Autonomous Integrity Monitoring) expands this concept from the user's own receiver, combining multiple constellations and frequencies to enhance signal integrity and availability. Both concepts are being combined in the evolution of EGNOS and in the development of systems such as DFAS-TB, which aim to increase the availability and safety of satellite navigation services in Europe.

For the initial phase of the DFAS-TB project, GMV will use its ***magicSBAS®*** solution, which enables a rapid and functional deployment of the testbed for the generation and validation of SBAS messages.

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GMV strengthens its European leadership position in navigation with NAVISP program

■ GMV has further solidified its position as one of Europe's key technological partners for positioning, navigation, and timing (PNT) systems, thanks to the awarding of nine projects as part of the European Space Agency's Navigation Innovation and Support Programme (NAVISP). This program has been conceived as a way of promoting the next generation of navigation technologies, and it combines developments based on global navigation satellite systems (GNSS) with hybrid systems that integrate artificial intelligence, advanced sensors, and alternative signals that allow operation even in GNSS-denied environments.

GMV has a major role in three of the program's elements: Innovation (EL1), Competitiveness (EL2), and Support for National Strategies (EL3), where it is contributing its experience with robust navigation, sensor fusion, detection and mitigation of interferences, artificial intelligence applied to positioning, navigation, and timing (PNT), and the next generation of GNSS receivers.

Specifically, GMV is leading or participating in the following projects:

EL1 – INNOVATION

- **BEACON:** Design of a compact, low-cost controlled reception pattern antenna (CRPA) for navigation using C band signals from low Earth orbit (LEO) satellites, with incorporation of advanced beamforming and interference mitigation techniques.
- **PASQUALE:** Development of a hybrid navigation system that integrates a quantum accelerometer with inertial sensors and satellite positioning, oriented towards applications that require extreme levels of resilience and precision.

EL2 – COMPETITIVENESS

- **DRESS:** Development of a next-generation receiver for satellite-based augmentation system (SBAS) reference stations, with multi-constellation and multi-frequency capabilities.
- **ENIGMA:** Application of artificial intelligence for optimizing high-precision satellite positioning algorithms, with improvements to modeling of the ionosphere and interference detection.
- **FreeGNSS:** Focused on finding a solution that will allow Internet of Things (IoT) devices to communicate with 5G/NTN satellites with no use of GNSS receivers, as a way of reducing costs and consumption for the users' equipment.
- **SUGO:** Development of flexible signal generation equipment on the ground, for second-generation SBAS systems.
- **SOOPKaN:** The purpose of this project is to develop an alternative PNT solution that is independent from GNSS, based on the arrival angle of signals of opportunity.

EL3 – SUPPORT FOR NATIONAL STRATEGIES

- **BLACKOUT:** establish a dedicated and accessible real-world maritime test range to demonstrate and evaluate resilient and alternative PNT solutions in GNSS-challenged environments.
- **UPDATE2:** Development of a digital twin that will allow performance evaluation, simulation, and prediction for the United Kingdom's national positioning, navigation, and timing (PNT) ecosystem, improving the response capabilities for disturbances or crises.

The various innovations taking place as part of the NAVISP program will make it possible to increase the levels of precision, robustness, and integrity for European positioning systems, while also facilitating implementation of critical services in areas like autonomous mobility, advanced air traffic management, operations using drones, robotics, critical infrastructure protection, and emergency response.

The new contracts awarded are a further demonstration of the trust that ESA continues to show in GMV's ability to take on high-impact technological challenges and develop solutions that can anticipate the needs of European and global markets. With its participation in the NAVISP program, GMV is positioned at the heart of European innovation in the area of position, navigation, and timing to help strengthen Europe's strategic autonomy, while further solidifying the company's technological leadership in an area that has become essential for competitiveness, security, and economic development.

GMV advances resilient satellite navigation with new BEACON beamforming capability

■ GMV, through its subsidiaries in the UK and Portugal, in partnership with Loughborough University, has been awarded a contract under the European Space Agency's NAVISP programme to develop BEACON, an advanced beamforming antenna and receiver system designed to improve the resilience of C-band radionavigation signals from Low Earth Orbit (LEO) satellites. The initiative represents a significant step forward in strengthening the UK and Europe's next-generation Positioning, Navigation and Timing (PNT) capabilities.

Combining beamforming, null-steering and angle-of-arrival estimation, BEACON will enhance signal integrity and provide stronger protection against interference and spoofing. These techniques are essential for ensuring reliable navigation performance in dense, obstructed and interference-heavy environments, where conventional antennas often struggle. By delivering these capabilities for C-band, BEACON adds a critical component to the emerging end-to-end LEO-based PNT chain.

The BEACON project will design and showcase a Controlled Radiation Pattern Antenna tailored for C-band, a frequency pivotal to the future of LEO navigation and increasingly prominent in ESA's FutureNAV programme and Celeste mission, as well as emerging commercial systems. Building on GMV's leadership in ESA's LEO-PNT LEGION initiative, BEACON will demonstrate the strength of a fully integrated solution comprising GMV's XRC software-defined receiver combined with a compact antenna array engineered by Loughborough University. This pairing will deliver precise beam steering and robust protection against interference and spoofing.

GMV's team in Portugal will provide support to UK team primarily on the use and adaptation of the XRC software receiver and the enhancement of its beamforming functionality.

GMV to develop next-generation SBAS signal generator under ESA contract

GMV has signed a new contract with the European Space Agency (ESA) for the SUGO (SBAS Uplink Station Signal Generator) project, a strategic initiative under ESA's NAVISP (Navigation Innovation and Support Programme).

SBAS systems enhance the accuracy, reliability, and integrity of Global Navigation Satellite System (GNSS) signals, delivering real-time corrections essential for safety-critical applications such as aviation, maritime navigation, and autonomous systems. At the core of these infrastructures are the uplink stations, which generate and transmit navigation signals to geostationary satellites that, in turn, broadcast them to users worldwide.

The SUGO project addresses an urgent technological gap: the market lacks modern signal generators capable of supporting next-generation SBAS architectures, including dual-frequency and multi-constellation solutions. By developing a European-made SBAS signal generator, GMV will help ensure Europe's autonomy in this critical technology while meeting the demands of future SBAS infrastructures around the world.

The system will deliver a prototype capable of generating advanced SBAS signals will incorporate built-in test and health-monitoring functions, real-time synchronization, and the extended reliability required for long-term operational use.

Drawing on GMV's extensive experience in SBAS, including leading roles in EGNOS and SouthPAN, as well as its work on GNSS signal generation for Galileo Second Generation, the SUGO project brings together GMV's technological expertise into a core infrastructure component that will support the modernization and long-term sustainability of global SBAS systems.

With the support of the Portuguese delegation, this contract strengthens GMV's collaboration with ESA and highlights the importance of NAVISP as a key driver of European innovation, fostering industrial development, technological independence, and competitiveness in the global space sector.

GMV leads new ESA contract in the framework of Galileo Second Generation

GMV has signed a contract with the European Space Agency (ESA) for the ACHILLES (Advanced Technologies Breadboarding for Low-Complexity Sensor Stations) project, an innovative initiative that will support the development of new technologies for the Galileo Sensor Stations (GSS) of Galileo Second Generation, Europe's flagship satellite navigation program.

The outcome of the ACHILLES project will be a new generation of GSS that is more compact, robust and efficient, capable of delivering high precision and robustness under the most demanding conditions. To this end, the industrial consortium will explore advanced technologies such as spatially diverse and dual-polarised antenna technologies, customised RF chains, multi-antenna beamforming techniques, and distributed cloud computing architectures.

The contract strengthens GMV's position as a leading technology provider in satellite navigation. The project is led by GMV and involves several companies within the GMV group.

From Spain, GMV is developing the Remote Radio Head (RRH), which will enable high-performance signal reception and flexible RF processing capabilities, forming a key element of the new GSS architecture. GMV Portugal, meanwhile, is responsible for developing the Remote Processing Unit (RPU), a core component that integrates distributed cloud-based processing to perform centralized signal processing, ensuring reliable, accurate, and robust positioning and signal monitoring.

Two key partners — Fraunhofer IIS (Germany) and Université Côte d'Azur (France) — will contribute their proven expertise in advanced antenna engineering, focusing respectively on phased-array technology and Luneburg lens-based multibeam systems. These innovative antenna solutions will be essential to meeting the performance, robustness, and flexibility requirements of the next-generation Galileo ground infrastructure.

This contract strengthens GMV's collaboration with ESA and underscores the role of investment in space technology as a driver of innovation, industrial growth, and skilled employment, as well as its contribution to Europe's technological autonomy and competitiveness.

SPACE

Spanish Air and Space Force receives space surveillance system developed by GMV

This system is part of the evolution of the Space Surveillance Operations Center (COVE) created in 2019, which is now supervised by the Spanish Space Command (MESPA), to ensure space security and knowledge of the space environmentl

On October 31st, the Spanish Space Command performed the official acceptance ceremony for a Space Situational Awareness and Control System (CCSE), at its headquarters at the Torrejón Air Base near Madrid. This is a key tool for surveillance, control, and management of activities in the space environment, developed by the multinational technology firm GMV for the Spanish Ministry of Defense.

Presiding over the event was General Francisco Braco Carbó, Chief of Staff of the Spanish Air and Space Force, and the formal acceptance certificate for the system was signed by Admiral Aniceto Rosique Nieto of the Spanish Ministry of Defense's Directorate General of Weapons and Material (DiGAM) and Divisional General Isaac Manuel Crespo Zaragoza, Chief of the Space Command.

Following the remarks made by Admiral Aniceto Rosique Nieto on behalf of the DiGAM, and by Jesús B. Serrano, CEO of GMV, those in attendance were able to observe an operational demonstration of the new CCSE system at the Space Surveillance Operations Center (COVE), including its ability to present a comprehensive view of the space situation and ensure the safety and security of the country's space assets.

The CCSE system is part of the evolution of the Space Surveillance Operations Center (COVE) created in 2019, which is now supervised by the Spanish Space Command (MESPA), to serve the national interest by ensuring security and situational awareness for the space environment. Its Initial Operational Capability (IOC) was demonstrated in 2021, and since then, the center has participated in international exercises with technological support from GMV, such as the Global Sentinel exercise organized by the United States Space Command.

Some highlights of the system's main functionalities include orbital calculation and propagation, generation and maintenance of a catalog of space objects, prediction of atmospheric reentries, planning for observation campaigns, calculation of overflights, degradation analysis for global navigation satellite system (GNSS) signals, and space weather data processing. An especially noteworthy aspect of the system is its ability to process data from space surveillance sensors, as in the case of the Spanish S3TSR radar system located at the Morón Air Base near the Spanish city of Seville.

The software for the CCSE system is based on ***Ecosstm***. This is a commercial off-the-shelf (COTS) solution developed by GMV, which is already in use in other military and civilian operational systems.

GMV and the Real Betis pro soccer team install unique satellite tracking infrastructure near the city of Seville

On October 29th, GMV and the Real Betis pro soccer team's Forever Green sustainability platform inaugurated a new satellite surveillance, tracking, and collision prediction station at the Rafael Gordillo Sports Complex near the Spanish city of Seville. Developed entirely by GMV, this infrastructure will now be providing key data for Europe's space monitoring system.

Installation of this infrastructure is the result of a groundbreaking collaboration that brings together GMV's technological leadership and Forever Green's capacity for raising environmental awareness and encouraging action, with the shared aim of promoting responsible use of space and our planet.

The inauguration ceremony began with a welcome from the President of the Real Betis soccer club, Ángel Haro, with additional remarks then made by Rafa Muela, Director of the Real Betis Balompié Foundation; Miguel Ángel Molina, Chairman of GMV's Space Council; Nicolás Martín, Director of Users, Services, and Applications for the Spanish Space Agency (AEE); and Catalina García, Andalusia's regional Minister of Sustainability and the Environment, who presented closing remarks.

With more than four decades of experience in the space industry, GMV is now playing a key role in Europe's space situational awareness (SSA) and space surveillance and tracking (SST) systems, which are essential for ensuring the safety, security, and operability of the orbital environment.

The infrastructure inaugurated is part of GMV's nationwide network of ***Focusear*** stations, and it joins those already in operation 24 hours a day, 7 days a week in Madrid, Valladolid, and Barcelona. The ***Focusear*** system has been developed entirely by GMV, and it allows automated tracking of all satellites transmitting signals to Europe from geostationary orbit (about 36,000 km above Earth) on the Ku band, which is the same band used for satellite TV and communication systems. That data is used not only by the satellite operators, but also by Europe's space surveillance systems.

Thanks to this technology, millions of people around the world will be able to enjoy reliable, uninterrupted sports broadcasts and communication services, based on satellite systems that are better protected and more sustainable.

GMV demonstrates its leadership in space cybersecurity at Security for Space Systems (3S) conference

From November 4th to 6th, GMV participated in the Security for Space Systems (3S) conference, which was organized by the European Space Agency (ESA) and held at its European Space Technology and Research Centre (ESTEC) in the town of Noordwijk in the Netherlands. The conference brought together academics, researchers, engineers, and space industry representatives to discuss the latest advances and challenges related to security applied to space systems. GMV was a gold sponsor of the event, as well as an active participant in the discussions about how to ensure the protection of future space missions. The company also had its own stand in the exhibition area, where it presented its most advanced capabilities related to security for space systems, including the company's activities carried out in the context of the CyberCUBE and Nealgalt projects.

Led by GMV, CyberCUBE is an ESA mission that is part of the Cyber Evolutions program of its Cyber Security Operations Center (C SOC). The aim of this mission is to offer cost effective and reconfigurable cyber capabilities that can demonstrate new technologies in orbit, reduce risks, and accelerate deployment of cybersecurity solutions for future space missions. GMV is managing the entire lifecycle for the mission, from definition of the requirements and design, to activities involving supply, integration, verification, validation, and launch and early orbit phase (LEOP) operations.

In turn, Nealgalt is ESA's first activity focused on characterizing the primary challenges that affect application of digital forensic engineering to the space segment. This project covers the critical phase of data collection, to ensure traceability and a robust chain of custody, and it has already been validated using a FlatSat test bench that integrates flight units and commercial devices into a flexible, scalable platform.

ESA Awards GMV Six New R&D Activities Under the S3T Contract

The European Space Agency (ESA) has awarded to GMV six research and development activities under the S3T contract framework, fully funded by the Spanish Space Agency (Agencia Espacial Española, AEE), to boost innovation in Spain's national Space Surveillance and Tracking (S3T) system.

The adjudicated activities are:

- **FAINTRACK** – Focuses on the use of 2-meter aperture class telescopes to track faint debris in MEO and GEO, enhancing observation capabilities for very faint objects.
- **S3TAVIA** – Develops methods for operational risk assessment on aviation posed by re-entering space objects.
- **LUCAS** – A feasibility study for providing collision avoidance services in the cislunar environment, extending the scope of S3T towards lunar missions.
- **THEDECA** – Aims to calibrate thermospheric density models to improve orbital prediction accuracy.
- **S3TZERODEB** – Proposes an evolution of S3T services in line with the Zero Debris Charter by developing sustainability-oriented services such as mission compliance assessments to the Zero Debris guidelines.
- PRION – Improves ionospheric corrections to radar measurements using advanced tomographic models, enhancing the precision of S3T data.

The first four activities (FAINTRACK, S3TAVIA, LUCAS, and THEDECA) are currently underway, while S3TZERODEB and PRION are scheduled to start on the last quarter of the year.

These activities fall under different innovation layers outlined in the S3T R&D roadmap—data acquisition, cataloguing, services, and knowledge improvement—and aim to improve performance, introduce new capabilities, and reinforce Spanish leadership in space sustainability.

These contracts are fully funded by the Spanish Space Agency (AEE) in the frame of the Spanish Space Surveillance and Tracking (S3T) Programme, managed technically by ESA on behalf of AEE

The EU entrusts GMV with the operation and maintenance of the space surveillance sensor planning system

GMV has been awarded the contract by the Spanish Space Agency (AEE) for the operation and maintenance of the Coordinated Sensor Planning Service (COPLA) of the EU Space Surveillance and Tracking (EU SST) network. The contract, linked to tender 2024/00000051, represents a critical milestone in Europe's strategic capabilities to protect space assets and ensure orbital safety.

Under this new contract, GMV will manage and enhance COPLA, the core system responsible for generating, coordinating, and distributing observation plans to the European network of sensors. The service supports real-time planning, sensor calibration, and dynamic tasking, including the integration of hybrid tracking strategies and the incorporation of emerging sensor technologies such as passive RF.

GMV's proposal highlights advanced technical solutions like real-time updates triggered by sensor status changes or collision warnings, predictive meteorological modelling for optimal observation, and scalability to handle the growing EUSST sensor base.

With a multidisciplinary team of seasoned professionals, GMV is committed to delivering an operationally robust and technically superior solution.

This contract consolidates GMV's leadership in the space surveillance domain and reinforces its role in shaping the future of space safety across Europe.

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

Europe strengthens its leadership position for quantum sensors in space

The CARIOQA project, which is a pioneering European quantum pathfinder mission, has officially entered its Phase B. This represents a significant milestone towards the deployment of quantum sensors in space.

With funding from the Horizon Europe program, CARIOQA has been designed to demonstrate the ability to perform quantum detection in orbit. The mission will pave the way for further advances in gravimetric mapping from space, which will allow more accurate monitoring of the water cycle, seismic activity, and climate dynamics on Earth. Future missions will be able to take advantage of this technology to improve resource management and strengthen forecasting capabilities for natural disasters. Over the long term, the project will also open up new opportunities for fundamental physics, including verification of the of weak equivalence principle. This will put Europe at the cutting edge of scientific exploration for quantum applications in space.

The CARIOQA consortium includes the French space agency CNES, German aerospace center DLR, and Greek research center FORTH/PRAXI, along with the companies Thales Alenia Space, Exail, Leonardo, GMV, and GAC, plus other leading research institutions, with the aim of developing this first European mission focused on quantum gravimetry in space.

After successful completion of Phase A, during which the mission architecture and feasibility of the key technologies were confirmed, this phase will make further progress on design of the system and will prepare the quantum payload and the platform's technologies for their use in space. Over the next two years, the consortium will also be working to achieve technological maturity level 6 for all critical components, which will confirm their suitability for integration into future space missions.

As it did during Phase A, GMV will be playing an essential role during Phase B of the CARIOQA project as leader of the mission analysis, taking advantage of the company's extensive experience in orbital mechanics and systems engineering. GMV is responsible for defining the satellite's orbital configuration, and for characterizing the phases of the mission in terms of the propulsion needs, radiation and illumination conditions, visibility for the ground segment, and schedule of operations. This is an essential contribution for ensuring the mission's operational feasibility, and for integrating the technologies for the payload and platform. GMV's participation is also ensuring the solidity of the mission scenario, which will allow for accurate assessments to back up the work performed by other members of the consortium, while also making a decisive contribution to the mission's overall success.

GMV promotes university talent and scientific outreach at M.A.R.S.^{3}

From October 8th to 10th, GMV participated in the 2nd edition of the Madrid Astronomy, Rocketry & Space Student Symposium (M.A.R.S.^{3}) as a gold sponsor. This event was organized by the Astronomical Association for Aeronautics (AAA) and held at the School of Advanced Aeronautical and Space Engineering at the Technical University of Madrid (ETSIAE–UPM). It gave the company an opportunity to demonstrate its commitment to the promotion of young talent and collaborations between universities and the space industry.

During the three days of the event, the issues discussed included those related to space exploration, technological innovation, Earth observation, and the development of NewSpace. All of this is helping to establish M.A.R.S.^{3} as a leading forum for sharing of knowledge and encouraging entry into scientific and technological careers.

GMV had a notable presence in the symposium's technical program. On October 8th, Juan Antonio Béjar, GMV's Head of the Guidance, Navigation, and Control System Project for the Proba 3 Mission, gave a presentation entitled "Proba 3: artificial solar eclipses and the challenge of formation flying", in which he explained the progress being made on this pioneering European Space Agency (ESA) mission.

The participation continued on 10 October with the intervention of Mariella Graziano, who delivered the lecture "Space sustainability and resilience: a global perspective", focused on the main challenges and opportunities to ensure a sustainable future in space, and also took part in the "Space Law" roundtable, where she contributed the company's perspective on legal frameworks and space governance.

GMV advances high-speed lunar navigation with new phase of FASTNAV

Building on the success of its groundbreaking FASTNAV (multi-range navigation for fast Moon rovers) solution, GMV has been awarded a follow-on contract under the European Space Agency's General Support Technology Program (GSTP), supported by the UK Space Agency (UKSA), to further develop its autonomous navigation system for high-speed lunar rovers.

The new project phase aims to enhance and consolidate the FASTNAV system, pushing its Technology Readiness Level (TRL) to 5 over the next 16 months. This development will result in a fully integrated autonomous navigation Breadboard, capable of supporting lunar rovers travelling at speeds exceeding 1.0 m/s—an order of magnitude faster than existing autonomous planetary navigation solutions.

The autonomous navigation software will undergo substantial upgrades based on the results of FASTNAV's successful 2024 test campaigns. These enhancements will incorporate new AI-assisted onboard processing techniques to improve terrain awareness and ensure robust, high-speed autonomous navigation in challenging lunar environments.

As part of the maturation process, the project will culminate in a new series of advanced field trials to demonstrate the improved system's performance under realistic conditions.

FASTNAV is designed to enable future lunar rovers to cover more than 20 kilometres within a single lunar day, significantly increasing the scientific yield and efficiency of robotic exploration missions. GMV's FASTNAV solution blends classical computer vision with cutting-edge artificial intelligence to provide real-time, reliable navigation, a capability with promising potential not only in space but also in terrestrial domains such as mining, rescue operations, and critical infrastructure inspection.

Four major aerospace forums converge in Turin, Italy, to encourage dialogue in the space industry

From December 1st to 4th, GMV participated in a unique gathering that brought together four events simultaneously: the 28th AIDAA Conference, the 10th CEAS Aerospace Europe Conference, the 9th Global Moon Village Workshop & Symposium, and the 10th Aerospace & Defense Meeting. These four events were held jointly at the Lingotto Congress Center in Turin, Italy, and GMV participated in a variety of activities, with the aim of promoting the sharing of knowledge and expanding the company's involvement in the strategic discussions that will help define the future of the space industry in Europe and internationally. These events also gave GMV a good opportunity to demonstrate its commitment to the younger generations, and to the sustainable and peaceful use of space.

GMV's presence was led by Mariella Graziano, Manager of Flight Segment Strategy and Business Development for Space Systems EST, who took part in high-level activities as part of the 9th Global Moon Village Workshop & Symposium and the 10th CEAS Aerospace Europe Conference. Some highlights included her participation in the roundtable discussion organized by the association Women in Aerospace Europe, entitled "Women Trailblazers: Entrepreneurship in an Evolving Aerospace Ecosystem". The focus in this case was on analyzing the role played by female leadership and entrepreneurship in evolution of the aerospace ecosystem. During this session she shared the stage with some international leaders from the space field, including Emeritus Professor Amalia Ercoli Finzi, Italy's first female aerospace engineer, who is widely recognized for her efforts to expand visibility and opportunities for young talent, with a particular emphasis on women.

In addition, as part of the 9th Global Moon Village Workshop & Symposium, Ms. Graziano participated in the panel discussion entitled "Enabling Technologies for Lunar Exploration", which addressed the key technologies that will allow progress towards sustainable lunar exploration and future development of infrastructure on the Moon's surface. In this case, her participation helped to further solidify GMV's position as a leading tech firm in the field of space exploration in general, and lunar exploration in particular.

Poland's first spacecraft capable of rendezvous takes shape

Led by PIAP Space, the RAVEN project is moving into its next phase and is emerging as one of the most ambitious undertakings in the history of Poland's space sector. RAVEN is an In-Space Transportation Vehicle (ISTV) designed to carry out rendezvous, capture, transport, and servicing maneuvers on satellites in orbit. Its first demonstration mission, RAVEN DEMO I, is planned for 2029 and will validate key technologies such as orbit changes, phasing, close-approach operations, and controlled deorbiting.

The project reflects dynamic changes in the global space industry, where the need for Rendezvous and Proximity Operations (RPO), from satellite refueling and component replacement to debris removal, collaborative scientific missions, and orbital assembly, together with inspection, servicing, and deorbiting, is becoming critical to ensuring orbital safety. RPO technologies are inherently dual-use: while they support peaceful activities such as satellite servicing and scientific collaboration, they can also be applied to defense and security objectives in space, reinforcing the importance of responsible development and use. RAVEN is positioned to this technological and operational gap, strengthening Poland's role as a leader in European space logistics.

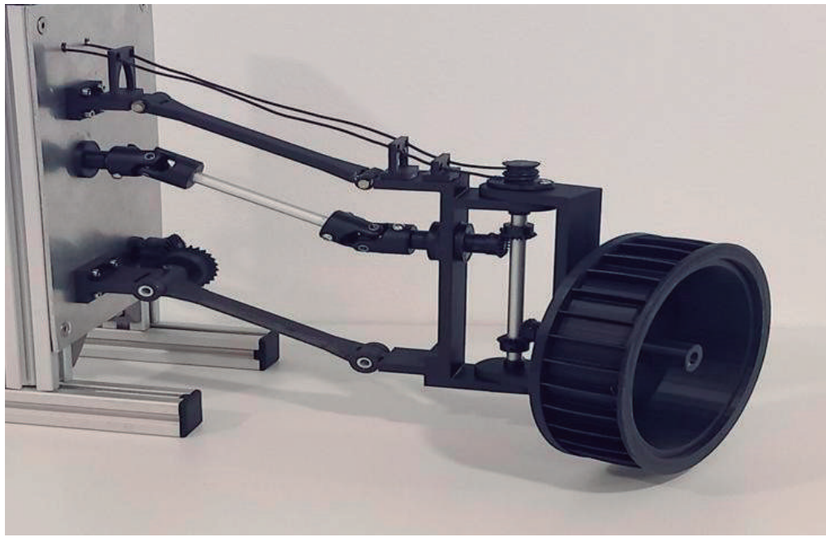
A cornerstone of the project is the GNC system, under GMV's responsibility, which ensures the spacecraft's precision and stability during its most demanding maneuvers, especially those involving RPO. GMV's recognized expertise in GNC for Rendezvous and Proximity Operations will play a decisive role in the mission's success.

Throughout the mission, the spacecraft will autonomously conduct orbit changes, phasing maneuvers, complex approaches, and flybys near a target satellite, as well as controlled deorbiting.

GMV is redefining planetary rover design with DISTANT

GMV is contributing to disruptive progress in planetary exploration with the development of DISTANT (Distant Transmission and Steering Systems), a groundbreaking approach to rover mobility in extreme environments. This innovative concept, developed under a contract with the European Space Agency (ESA) in collaboration with PIAP Space, Spacive, and the Brno University of Technology (VUT), is introducing an entirely new architecture that relocates all traction, suspension, and steering actuators away from wheel-mounted positions and into a protected warm box within the rover's body.

Relocating these critical systems represents a paradigm shift in the design of planetary surface exploration vehicles, by significantly improving their ability to operate under the extreme conditions found on the surface of the Moon or Mars. DISTANT is designed to withstand thermal cycling at temperatures ranging from 180°C to +120°C, while also protecting internal components against dust contamination and reducing long-term mechanical wear. This solution makes it possible to travel distances of up to 50 kilometers with no loss of performance, to ensure stable operation during long-duration missions.



The system maintains full control over the rover's locomotion through the use of a double wishbone suspension system, cardan joints, and a capstan drive steering mechanism. Its modular architecture also simplifies maintenance tasks, improves thermal management, and facilitates adaptation to missions with differing profiles.

The project is currently in the 1:3 scale prototype phase, with validation testing scheduled for the first quarter of 2026.

This phase will represent an important step forward towards developing a new generation of rovers designed to overcome the challenges of lunar and Martian exploration.

With DISTANT, GMV continues to demonstrate its commitment to developing advanced space technologies to help shape the future of planetary exploration, in line with the objectives of sustainability, resilience, and efficiency.

GMV showcases its space capabilities at Space Tech Expo Europe 2025

GMV participated in Space Tech Expo Europe 2025, held in Bremen, Germany, from November 19 to 20. The event is one of the most important gatherings in the European space sector, bringing together over 10,000 professionals and 800 exhibitors across five halls. It served as a key showcase for the latest innovations in satellites, communications, artificial intelligence, propulsion, and sustainability.

GMV had its own booth, where it presented its technology portfolio covering the entire lifecycle of space missions. This included advanced solutions in artificial intelligence, navigation, avionics, cybersecurity, communications, and in-orbit servicing. The company's offering stood out for its contribution to Europe's autonomous, efficient, sustainable and safety space ecosystem.

GMV demonstrated how its developments enhance security, resilience, and space sovereignty, spanning the flight, ground, and user segments. In addition, the company took part in networking activities and B2B meetings, fostering new partnerships with key industry players.

GMV analyzes the role of sustainability for space technologies

From October 14th to 17th, GMV participated in the 15th European Aerospace Science Network (EASN) International Conference, which took place at the School of Advanced Aeronautical and Space Engineering at the Technical University of Madrid (ETSIAE-UPM). Held this year under the theme of "Innovation in Aviation & Space Towards Sustainability Today and Tomorrow", this has become one of Europe's premier aerospace events, bringing together experts, researchers, and representatives of institutions and industry to discuss the latest advances in the fields of aviation and space.

The four-day event offered a forum for the sharing of knowledge, focused on the challenges and opportunities now existing in these fields in relation to sustainability, technological innovation, and transition towards models that are more efficient and environmentally friendly.

On October 16th, Antonio Tabasco, GMV's Head of the Teledetection and Geospatial Services Division for Space Systems EST, participated in a panel discussion entitled "Sustainability in Space Technologies, Applications & Systems". During his presentation, he explained how space technologies are making a contribution to strengthening resilience and sustainability in multiple fields, and he emphasized the importance of advanced Earth observation solutions, monitoring systems, and geospatial applications for supporting decision-making and improving environmental management.

Sentinel-1D satellite now on course to expand the capabilities of Copernicus

■ The Sentinel-1D satellite is part of Europe's Copernicus program, and on November 4th, it was successfully launched on board a European Ariane 6 launcher from the spaceport in Kourou, French Guiana. GMV has been playing a key role in this mission for various phases and subsystems.

The Copernicus program includes six satellite families, with the Sentinel-1 family providing radar images that are used for land and maritime monitoring and emergency services. This new satellite will replace Sentinel-1A, which has been in operation since 2014, and will join Sentinel-1C to operate as a pair in polar orbit. The main characteristic of the Sentinel-1 satellites is their instrument, known as C-SAR, which is a synthetic aperture radar system that allows the satellites to operate regardless of the existing illumination levels and weather conditions, to ensure that a consistent, long-term data archive can be obtained. The improvements provided by this new satellite pair, compared to their predecessors (1A and 1B), are greater precision for the radar images captured, and addition of an automatic identification system (AIS) that records data related to maritime vessels in real time.

GMV has been responsible for developing the satellite's control center, which is located at the European Space Agency (ESA) Operations Center (ESOC) in Germany. This is where the satellite's launch and early orbit phase (LEOP) and commissioning phase are being monitored, and this center will continue to monitor the rest of the mission. It is also worth noting that GMV is also responsible for the control centers for the other satellites that make up the Copernicus constellation.

The team from GMV oversees the mission planning system and development of the orbital control system, as well as the operational satellite simulator that is used for validation of the mission's flight control procedures and for operator training.

As part of the critical operational services, GMV is providing 24/7 service, which also includes management of emergency operations to ensure a rapid response to any natural disasters that occur. For this purpose, the center's infrastructure houses the mission planning component for the Sentinel-1 satellites, and it also performs monitoring, operation, and maintenance services. In addition, GMV is responsible for the maintenance and evolution of all the simulators, control centers, and auxiliary software systems that support the in-flight operations of the Copernicus satellites. Finally, the company is providing the precise orbit determination (POD) service on a regular and continuous basis. This service is necessary for processing and using the data generated by the onboard instruments.

Sentinel-6B, in orbit to measure the pulse of the oceans

■ On the 17th, the Earth observation satellite Sentinel-6B of the Copernicus program was launched from California (USA) aboard a SpaceX Falcon 9 rocket. This satellite is part of a pair of Sentinels dedicated to measuring global sea levels and monitoring the oceans, as part of the international effort to track and mitigate the effects of climate change.

GMV is responsible for the development and integration of the control center at ESA's European Space Operations Centre (ESOC), supporting mission monitoring during the launch and early orbit phase. Additionally, GMV has contributed to the development of the orbital control system and provided support for the operations required during the satellite's launch.

Within the framework of this mission, GMV has also developed and deployed the orbital control system and the mission planning system needed for the commissioning phase and has developed the control center used to take over routine mission operations, deployed at the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT).

GMV's involvement is completed with the provision of the Precise Orbit Determination (POD) service, essential for processing and exploiting the data generated by the instruments on board the mission.

The data provided by Sentinel-6 are aimed at protecting coastal areas, infrastructure planning, early warning of natural hazards, improving weather models, and enhancing our understanding of global oceanic and climatic dynamics.

The satellite pair will provide service at least until 2030 and is the result of cooperation between the European Commission, ESA, NASA, EUMETSAT and NOAA, with the support of CNES.

GMV participates in LATSAT 2025 conference

On November 19th and 20th, GMV participated in LATSAT 2025, which is a leading Latin American conference for the satellite and connectivity industries, held this year in Bogotá, Colombia. Organized by Euroconsult, the gathering brought together institutional leaders, operators, integrators, public-sector bodies, and representatives from the space industry, to discuss the latest challenges and opportunities in the region's space and telecommunications markets.

Throughout the two-day event, LATSAT 2025 served as a key forum for encouraging international cooperation, promoting connectivity, advancing the use of Earth observation, strengthening the sustainability of space infrastructure, and emphasizing the role of industry for Latin America's socioeconomic development.

Amaya Atencia, GMV's Head of the Mission Data Systems and Products (MDS) division for Space Systems EST, participated in the panel discussion entitled "Ground segment innovation, automation, and interoperability", which included an analysis of the forces that are now driving transformation of the ground segment, from the perspectives of technological evolution, commercial progress, and models for services and operations. GMV's participation demonstrated the company's ongoing leadership position for satellite solutions, while contributing to the strategic dialogue about the future of Latin America's space ecosystem.

GEXTRECS Showcases Its Potential in Emergency Situations

The final phase of GEXTRECS (GOVSATCOM Extreme Events Crisis Management Service) is now underway. This European project, coordinated by GMV, focuses on developing a crisis management service package based on secure satellite communications (SATCOM), an essential capability in large-scale disasters and emergency contexts.

Satellite systems, capable of maintaining communication even when traditional networks fail, represent a reliable and resilient alternative in critical situations. During this final phase, GMV and the consortium partners successfully demonstrated the usability and effectiveness of the GEXTRECS solution in a real-case scenario. The Final Demonstration held on 23rd of October, showcased the system's capabilities through the simulated crisis scenario caused by a major earthquake off the coast of Porto (Portugal). This is the first demonstration carried out within the framework of the European GOVSATCOM program.

The live demonstration was conducted from Port of Vigo (Spain) and the coordination center in Voerde (Germany), with the participation of consortium partners, representatives from EUSPA, national politicians, Competent GOVSATCOM Authorities (CGA), and end-users from several countries. The event was additionally broadcast online, allowing a wide range of stakeholders to follow the demonstration remotely.

The results confirmed the reliability, integrity, and availability of the GEXTRECS SATCOM services, demonstrating how European space components can effectively support disaster response. The demonstration also highlighted the added value of integrating Copernicus and Galileo components to enhance situational awareness and improve coordination.

Following the demonstration, a Stakeholders Workshop was held, featuring an open debate to exchange perspectives and gather feedback from end-users, including crisis management and civil protection actors, representatives of the Competent GOVSATCOM Authority (CGA), and national and EU-level crisis management institutions.

GMV reinforces its leadership in secure communications with launching of SpainSat NG II satellite

Spain has taken another step forward in strengthening its defense and secure communications capabilities with successful launching of the SpainSat NG II satellite, which took place on October 24. This is the second satellite from Hisdesat's SpainSat NG program, which is being led by Airbus and Thales Alenia Space. The aim of this program is to ensure that during the coming decades, strategic communication services will be available to Spain's armed forces, governmental agencies, and international allies.

The SpainSat NG II satellite completes launching of the constellation that began in January with SpainSat NG I, providing enhanced capacity, resilience, and flexibility thanks to the use of software-defined design. This architecture makes it possible to perform in orbit reconfiguration of the satellites' performance, while ensuring secure communications over multiple bands (X, Ka y UHF). This is further solidifying Spain's position as a leading player in the field of governmental satellite telecommunications.

During this highly complex technological program, GMV has been responsible for the ground segment, which is an essential part of operating the satellites. The company's primary tasks have included development and deployment of the control systems for the satellite and its payload, optimization of payload allocation, monitoring of the satellite's performance on the various operating bands, and configuration and control of the ground stations associated with the program. These operations will be managed from the main center in Hoyo de Manzanares near Madrid, and from the redundant center located at the Maspalomas Space Station in the Canary Islands, which is part of Spain's National Institute of Aerospace Technology (INTA). This will ensure maximum security and availability for the system.

GMV has also made a contribution to developing the software used to model the active reception and transmission antennas, and to developing the ground component for this satellite's advanced geopositioning system.

The fact that this program involves software-defined satellites has presented an additional challenge, which has given GMV an opportunity

to demonstrate its technological capabilities and expertise with integration. This has also given the company a key role within this program, which is strengthening Spain's technological sovereignty and its position as a trusted partner for Europe and NATO.

For the Spanish space industry, the SpainSat program represents one of the largest investments in recent history. With a total combined budget of more than €1.4 billion, the program has received funding from Spain's central government through the country's Recovery, Transformation, and Resilience Plan, as well as from the European Space Agency (ESA), the European Commission, and additional internal sources.

GMV participates in the 26th edition of APSCC 2025 in Taipei

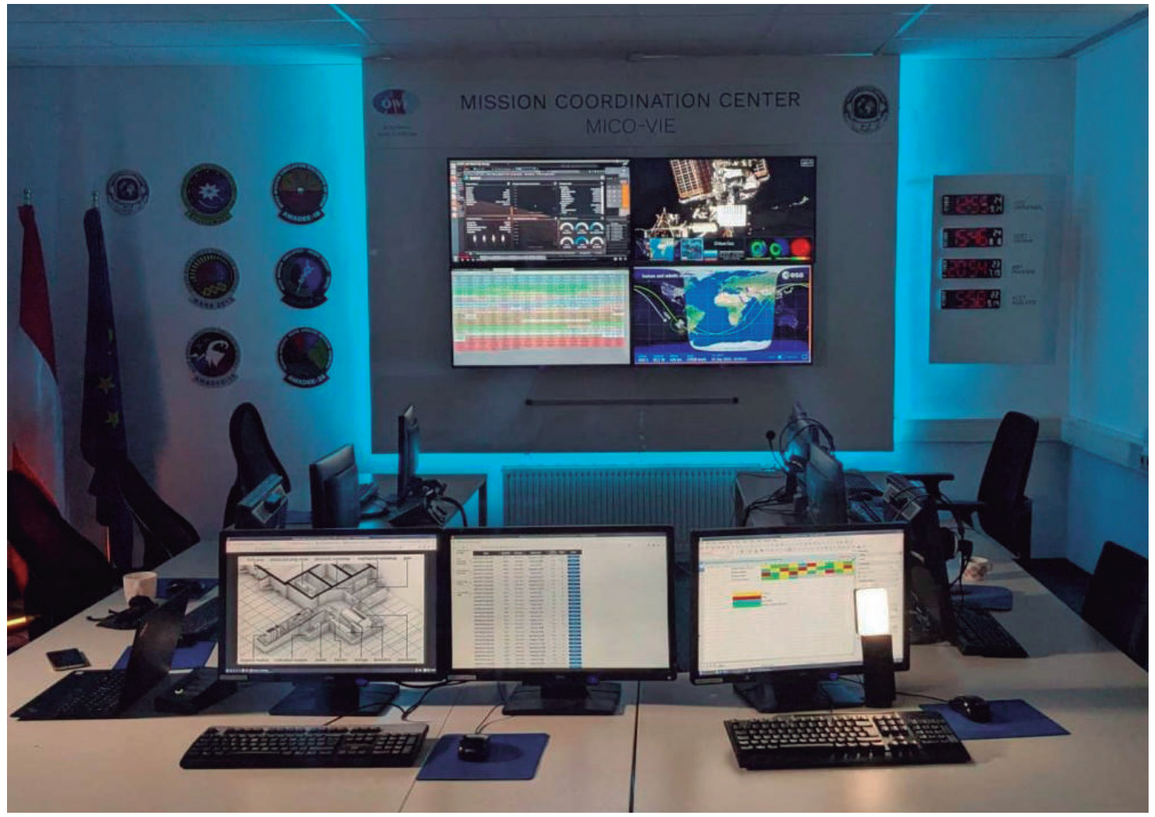
GMV took part in the 26th edition of the Asia-Pacific Satellite Communications Council (APSCC), one of the main international forums dedicated to the space sector in the Asia-Pacific region. The meeting was held from November 4 to 6, 2025, in Taipei (Taiwan).

Under the slogan "New tools and new rules: how AI and sovereignty impact the Asia-Pacific space ecosystem," the conference offered a comprehensive program of panel discussions, case studies, and interviews with executives, as well as a large technology exhibition area showcasing the latest innovations on the market, including GMV's ground segment control solution.

Representing GMV, Javier Cuesta Cabanás, director of the Commercial Ground Segment of Space Systems EST, spoke at the session entitled "Cybersecurity – Cyberthreats in Your Own Backyard." During his presentation, he addressed the cyber risks faced by operators in the ground segment control area, highlighting the threats arising from the use of legacy systems and the solutions provided by infrastructure modernization and virtualization.

GMV also had its own stand in the exhibition area, where it presented its wide range of products and services for the space sector. This meeting enabled GMV to consolidate its presence in the Asian market and reaffirm its commitment to technological innovation and international cooperation, the essential foundations of its leadership in the space sector.

GMV connects habitats across the globe in the World's Biggest Space Analog Mission



The World's Biggest Analog Mission (WBA), the largest Moon and Mars simulation campaign ever conducted, has officially begun. Coordinated by the Austrian Space Forum (OeWF), the mission brings together 17 institutions on five continents to emulate life and research in off-Earth settlements. At the heart of this global endeavor lies GMV's cutting-edge Operations Support Tools (OST), enabling communication, coordination, and planning between habitats around the world.

Installed at OeWF's Mission Coordination Center in Vienna, OST provides the operational backbone of the mission, linking analog astronauts in 16 habitats across Europe, Africa, Asia, Australia, and the Americas. The system allows seamless coordination across multiple time zones, manages simulated communication delays, and ensures efficient execution of daily activities —a vital function for such a globally distributed mission.

GMV's OST suite is a modular platform designed to support mission control centers in planning, coordinating, and executing space operations. Already in operational use at the Columbus Control Centre of the International Space Station (ISS), OST has been adapted for the WBA mission to meet the challenges of analog research on a planetary scale.

With OST linking habitats across five continents, GMV technology is demonstrating its ability to connect and coordinate operations in extreme environments, a key capability for the next generation of lunar bases and Mars missions.

By supporting analog missions that simulate human life and operations on the Moon and Mars, GMV is contributing to the preparation of future crewed missions beyond Earth orbit. The lessons learned from WBA will help shape tools and procedures for real missions, where astronauts will rely on similar systems to ensure safety, autonomy, and efficiency millions of kilometers from home.

The Spanish Air and Space Force relies on Alén Space technology for the AGASAT project

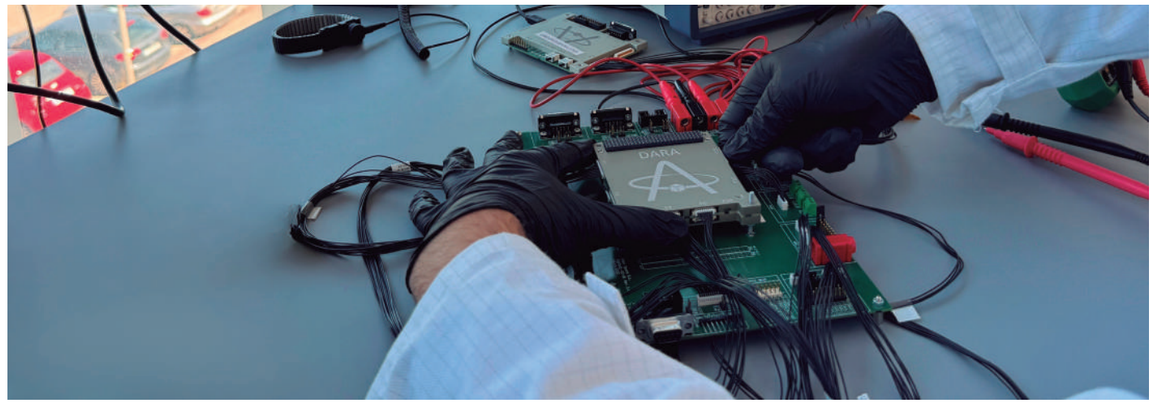
The General Air and Space Academy (AGA) has selected Alén Space technology for its AGASAT project. This initiative marks a milestone for the AGA, with the objective of placing an educational 3U CubeSat into orbit, and enabling its students to carry out their first space manoeuvres as part of a hands-on training experience. The Spanish company's DARA OBC has been selected as the satellite's on-board computer (OBC), one of the key components in any space mission. The unit has already been manufactured and delivered to the customer.

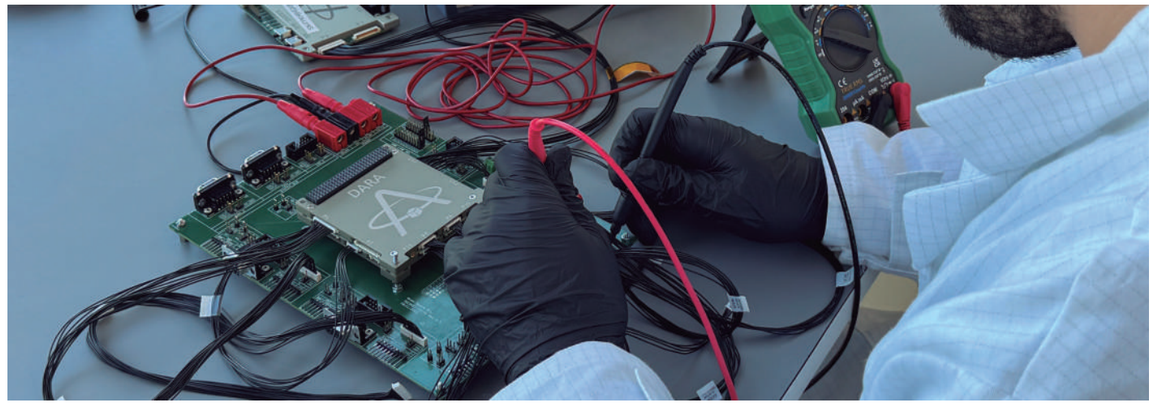
The AGASAT project has a strong educational focus and was born within the AGA, the military academy of the Spanish Air and Space Force that trains future officers at the San Javier Air Base (Murcia). The AGA team, in collaboration with the Spanish National Institute of Aerospace Technology (INTA), is responsible for the satellite design, as well as the assembly, integration, and verification phases, ensuring that students gain exposure to real aerospace engineering processes.

As part of the Academy's training programme, a dedicated classroom focused on space has been created, allowing students to take an active role in the construction and deployment of a 3U CubeSat in low Earth orbit (LEO). The launch is scheduled to take place within PLD Space's Miura 5 PARK initiative.

DARA OBC brings multiple advantages to this type of project: it enables customers to integrate their own on-board software (OBSW), offers highly configurable interfaces, and incorporates an inertial measurement unit (IMU), making it a robust and versatile system capable of adapting to diverse mission requirements.

Alén Space's participation in the AGASAT project reinforces its presence in programmes that combine innovation, education and technological development, underlining its role in strengthening an increasingly solid space ecosystem in Spain.





Alén Space opens its facilities to aerospace industry professionals

Alén Space opened the doors of its facilities in Nigrán (Pontevedra) on October 22 to welcome a group of professionals linked to the national and international aerospace industry, thanks to the collaboration of the Galician Aerospace Consortium (CAG).

Organised as the opening event of the 7th International Aerospace Congress (CIAG), the visit offered attendees a first-hand look at the technology developed by Alén Space, its most recent missions, and the dedicated team behind each of its projects.

Participants had the opportunity to tour several key areas of the facilities, from the cleanroom to the development laboratory, the operations room and the company's main offices. Acting as hosts, Isolina Pérez and Antonio Vázquez, Alén Space's Commercial Director and Head of Business Development, provided detailed insights into the company's past, present and future, highlighting the importance of innovation, quality and knowledge transfer within the continually evolving Spanish space ecosystem.

The visit also served as a valuable forum for professional exchange, in a context marked by the sector's continued growth and by Spain's strategic role in developing new space capabilities and shared initiatives.

The activity continued the following day, when Alén Space played an active role in the congress programme. On October 23, at the Hotel Pazo Los Escudos in Vigo, Antonio Vázquez took part in the panel discussion "Satellites and New Actors: Space Ecosystems in Europe and the United States", alongside Marco Tantardini, Head of Space Strategy and Business Development for Europe at Lockheed Martin, and Carlos Fernández, CEO of Telespazio Ibérica, in a debate moderated by Jennifer González, Technical Secretary of the Galician Aerospace Consortium (CAG).

The exchange of perspectives further reinforced Alén Space's role within the European space sector, underscoring its steady participation in relevant industry dialogues.

Alén Space leads an outreach event in Vigo to mark World Space Week

The event "Excellence as a Path to Space", held on October 8 at the School of Telecommunications Engineering of the University of Vigo, brought together institutional, academic, and industry representatives to reflect on Galicia's role in the space sector. The meeting, organised by Alén Space in collaboration with the Xunta de Galicia, GMV and the University of Vigo, formed part of the activities commemorating World Space Week.

The programme featured high-level contributions on the trends and evolution of the space industry, as well as the opportunities arising from cooperation between public administrations, universities and technology companies.

Participants included Isabel Martínez, Deputy Director for Aerospace Policy and Strategy at the Ministry of Science, Innovation and Universities; Margarita Ardao, Director General for Industrial Strategy and Business Land at the Xunta de Galicia; María José Montilla, from the Department of National Programmes and Industry of the Spanish Space Agency; Carlos Ulloa, Deputy Director of the School of Aeronautical and Space Engineering at the University of Vigo; Guillermo Calvo, President of UVigo SpaceLab; Guillermo Lamelas, CEO of Alén Space; and Miguel Ángel Molina, Chairman of the Space Council at GMV.

The event highlighted the importance of companies offering opportunities and helping to train new professionals, given the growing shortage of specialised engineers in the industry.

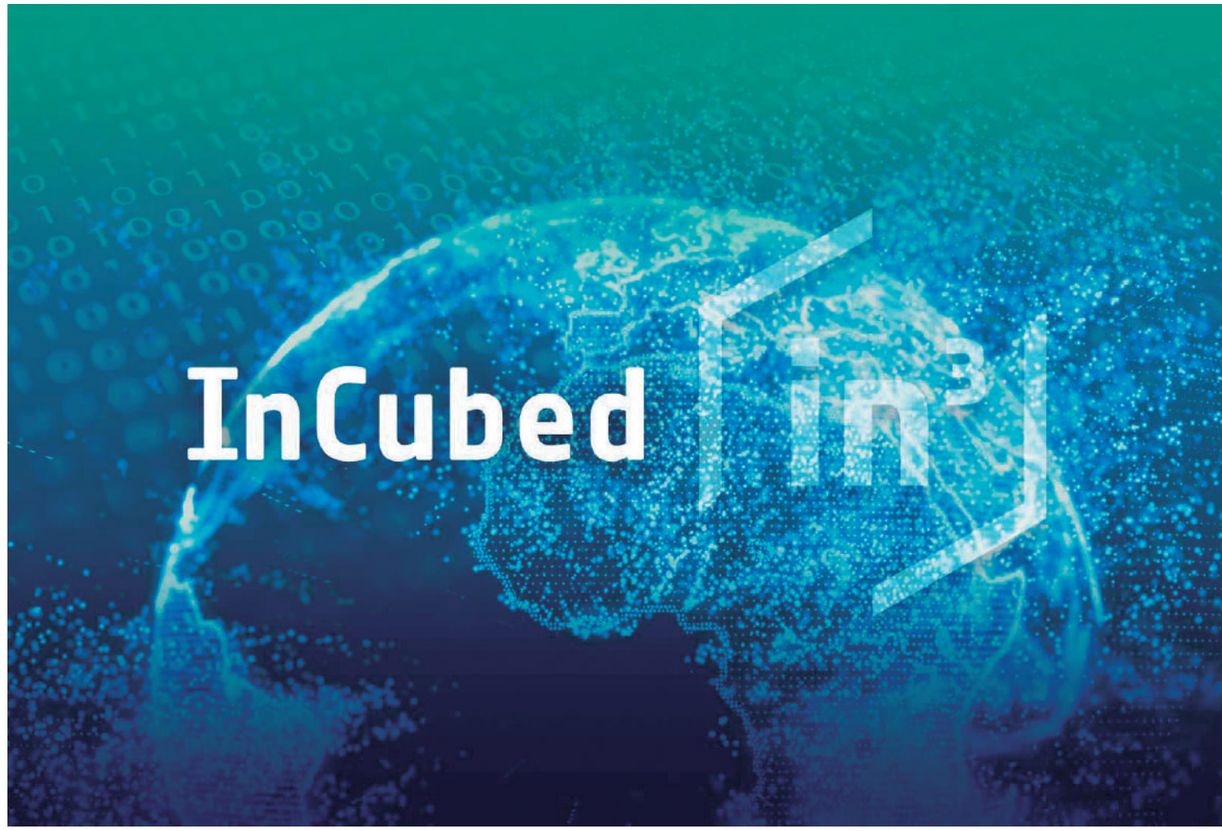
Alén Space kicks off the ESA InCubed IVSEN project

The IVSEN project (Integrated VHR Satellite for Energy Networks) recently kicked-off under the InCubed Programme managed by ESA Φ-lab Division, to deliver a next-gen EO microsatellite, optimized for scalability, assembly, weight and cost, providing timely, affordable Very High Resolution (VHR) data, an advanced satellite-based monitoring solution tailored for utilities and energy infrastructure operators.

Developed by a consortium led by SATLANTIS, together with Alén Space, DHV Technology, and GeoAI, IVSEN is developing an Earth Observation satellite optimized for energy network monitoring.

On the platform side, Alén Space is leading the development of a state-of-the-art satellite structure, building on its proven heritage while introducing significant innovations across multiple subsystems, most notably the design of a highly reliable on-board computer (OBC) to ensure greater efficiency and reliability throughout the mission.

IVSEN builds around SATLANTIS' VHR payload, the largest optical instrument in its portfolio, leveraging heritage from iSIM technology already in orbit. DHV Technology will execute the development of the power subsystem for the satellite platform within the Project, while GeoAI Analytics leads the data segment, developing the analytical framework and AI algorithms that transform Very High Resolution (VHR) satellite imagery into operational intelligence for the energy sector.



DEFENSE & SECURITY

GMV contributes to future integrated modular unmanned ground vehicle

Following the success of its predecessor, the iMUGS2 project has been launched as an initiative designed to develop the next generation of interoperable unmanned ground systems, to strengthen the European Union's defensive capabilities and strategic autonomy

In November, the European project iMUGS2 was officially approved under the European Union's European Defence Fund (EDF). GMV is one of the members of the European consortium, which comprises 29 partners from the defense industry, as well as the research and technology sectors.

Building on the success of the European iMUGS (Integrated Modular Unmanned Ground System) project, this new initiative, coordinated by Milrem Robotics, will focus on developing the next generation of interoperable unmanned ground systems. The project continues its predecessor's goal of strengthening the EU's defensive capabilities and strategic autonomy in key defense domains such as AI-driven autonomy, systems integration, communications, and command and control.

As the leader of the iMUGS C4ISR command-and-control and interoperability subproject, GMV will further develop and enhance the architecture of the tactical C2ISR component used for planning and conducting joint operations with manned and unmanned systems (MUM-T). One of the main features of the C2ISR component is its ability to exploit and disseminate sensor data from the unmanned ground vehicle, ensuring interoperability and standardized interfaces with existing C2 systems, C4I databases, and ISR networks.

The kick-off meeting was held on November 20 at the European Commission's facilities. The project's first step will be an extensive conceptual, operational, and technical development phase across multiple domains, aimed at advancing cooperation between manned and unmanned systems, autonomous functions, secure communications, and electronic protection.

With a budget envelope of €55 million, iMUGS2 represents a strong commitment by the European Union to advancing Europe's autonomy and robotic capabilities. The project will lay the groundwork for future acquisitions and capability deployments across the European defense landscape.

GMV participates in Executive Forum breakfast event with Director of INTA

On November 14th, another Executive Forum breakfast event was held in Madrid, as part of this series of gatherings designed to encourage dialogue among leaders from the public and private sectors regarding the main economic, industrial, and technological challenges that Spain is currently facing.

On this occasion, the gathering was focused on national defense and the corresponding technological and strategic challenges, and it benefited from the collaboration of GMV and participation by Lieutenant General Enrique Campo Loarte, Director of the Esteban Terradas National Aerospace Technical Institute (INTA).

During his presentation, Lt. General Campo Loarte presented a general outline of the "INTA Strategic Plan 2026 2030", which lays out a roadmap focused on strengthening the Spanish Ministry of Defense's technological capabilities, in a context of accelerated technological evolution and increasing international complexity. The plan's most notable objectives include, among others, promoting R&D for dual-use technologies, modernizing the operational capacities of the Spanish armed forces, and strengthening Spain's industrial and technological bases for defense.

GMV was represented by the Chairman of its Space Council, Miguel Ángel Molina Cobos, who gave a presentation centered on the company's vision regarding the aerospace, defense, and security industries. These are all areas where GMV has become a leading company, and his talk discussed the primary technological and strategic challenges that those industries are now facing, as well as the lines of work that are guiding GMV's activities.

GMV demonstrates its multi-domain capabilities during REPMUS 2025 and Dynamic Messenger exercises

GMV has once again taken part in NATO's Robotic Experimentation and Prototyping with Maritime Unmanned Systems (REPMUS) exercise and Dynamic Messenger exercise, demonstrating the company's position as a key player for developing and deploying multi-domain technologies and technologies for autonomous systems.

The REPMUS exercise took place from September 8th to 25th in Portugal, in the areas of Tróia and Sesimbra, with GMV contributing its robust positioning, navigation, and timing (PNT) capabilities for unmanned aircraft systems (UASs).

GMV's solution has been developed together with AERTEC as part of the AIRSENSE project, which has received funding from the European Defence Agency (EDA). The purpose of the AIRSENSE project is to develop a robust PNT system for unmanned aircraft systems, for application in GNSS-denied environments through the use of sensor fusion and artificial intelligence. The system includes jamming and spoofing detection and mitigation capabilities.

The REPMUS exercise is a periodic event organized by the Portuguese Navy, in collaboration with various Portuguese and international entities. It is considered to be one of the world's largest exercises dedicated to unmanned vehicles in the maritime domain. It has also become one of the most important events for validating prototypes, sharing knowledge, and promoting cooperation between industry and naval forces, and this year's event brought together more than 2,000 participants, representing the navies of various countries, industry, technology firms, academic institutions, and international organizations.

This year, the REPMUS exercise took place in parallel with the Dynamic Messenger exercise. GMV participated in that exercise as well, by contributing its solution for Coalition Shared Data (CSD) services, which had been installed on board the Spanish combat supply ship Cantabria and on one of the Portuguese Navy's vessels, and also on a virtual platform located on the Tróia Peninsula. All of these elements were interconnected with NATO's Maritime Component (MARCOM), to ensure effective exchanges of intelligence, surveillance, and reconnaissance (ISR) information in a coalition environment.

GMV Leads the Second Evaluation Campaign of the European CONVOY Project

From September 17 to 26, 2025, the Swedish town of Grindsjön hosted the second evaluation campaign of the CONVOY project, an initiative coordinated by GMV and funded by the European Defence Fund (EDF). The campaign took place at the facilities of FOI (Swedish Defence Research Agency), organized by the HiTDOC team, and brought together the four consortia participating in the Tech Challenge: Aidedex, Convoy, Determine, and TICHE.

The main goal of this campaign was to test the technological progress made since the first edition, held in 2024, and to continue driving the development of innovative solutions against hidden threats such as landmines or improvised explosive devices (IEDs).

During the first week, the teams worked independently on integration tasks and internal testing. This phase was crucial to verify the interoperability of the different system components and resolve technical adjustments before the official trials.

The second week focused on the official tests, following a format similar to the previous campaign but with a renewed approach. This time, the evaluations prioritized early detection and subsequent classification, as opposed to the threat-avoidance trials carried out in 2024. In addition, new scenarios and operational challenges were introduced, raising the bar for the systems under evaluation.

The data collected during the campaign will help the consortia improve their solutions in the next stages of the project. Two additional evaluation campaigns are planned over the next two years.

GMV promotes dialogue on defense innovation and strategy at breakfast event with Lieutenant General Miguel Ivorra

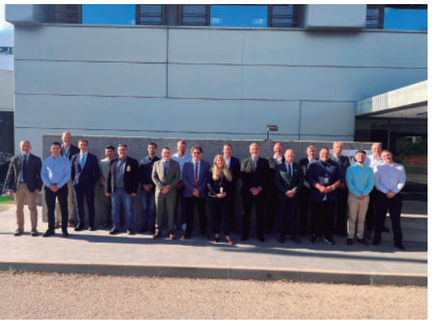
On October 7th, Executive Forum Spain held another breakfast event in Madrid, organized in collaboration with GMV and the company Hisdesat Servicios Estratégicos. This gathering featured participation by Lieutenant General Miguel Ivorra Ruiz, the Spanish Ministry of Defense's Director General of Defense Industry Strategy and Innovation, who offered a detailed perspective on the evolution and objectives of the new Directorate General he now leads, which was created about one year ago.

Manuel Pérez Cortés, GMV's General Manager of Defense and Security, welcomed the attendees by emphasizing the importance of providing spaces for reflection that can encourage cooperation between governmental agencies and industry, with regard to the subjects of innovation and technological development. The participants took advantage of the occasion to hold an enlightening and necessary dialogue about the present state of the defense industry and its future.

During his talk, Lt. General Ivorra summarized some of the main milestones achieved during the first year of his Directorate General's operation, including solidification of its structure and distribution of duties. As some of the highlights, he mentioned planning and development of the Ministry's industrial policy for defense, and cooperation with the Spanish and international defense industries. He also emphasized the importance of the actions contained in the Defense Industry Strategy, which include among others updating of the Defense Industry Register, management of more than 90 projects associated with the European Defence Fund (EDF), and support for Spain's participation in international European Union and NATO programs. He also mentioned approval of the Security and Defense Industry and Technology Plan, which has been allocated more than €10.7 billion in investment over several years, and he encouraged public-private collaboration and the internationalization of Spanish industry.

In summary, the event served as a meeting place for a discussion about the challenges related to innovation, competitiveness, and talent in the defense industry, which are all areas where GMV maintains a firm commitment to technological leadership and institutional collaboration.

GMV successfully completes acceptance testing for the MARSUR III system



■ GMV has successfully passed the acceptance tests for version 3.3.0 of the MARSUR III maritime surveillance system, which took place at the European Union Satellite Centre (SatCen). This is a milestone that strengthens the system's status as a key element for improving interoperability and exchanges of maritime information among the EU Member States, as a way of improving European coordination for maritime security and defense.

The acceptance exercise, which took place on October 15th with participation by the project's partners, confirmed the outstanding performance of the new version of the system. Some highlights of the latest improvements include addition of new hubs to the MARSUR network, which expands its operational coverage and significantly improves the participating countries' ability to exchange information in real time.

This version also introduces usability advances focused on facilitating the work of the operators, as well as a full updating of the system's components to strengthen security and eliminate critical vulnerabilities. In parallel, the participating Member States have initiated preparation of the new standard operating procedures (SOP). This work is revealing additional needs, and will give rise to new contracts focused on continuing expansion and refinement of the system's capabilities.

MARSUR is a program supported by the European Defense Agency (EDA), with the aim of interconnecting national maritime surveillance systems to create a shared environment for situational awareness. The current evolution of the system has implemented common standards for the maritime environment, which has strengthened its interoperability with NATO's systems, and with other European networks such as the Common Information Sharing Environment (CISE).

Following the success of this testing, and in a context of continual improvement, the maintenance contract has also been renewed, further demonstrating GMV's status as a trusted partner. In this way, the company is once again confirming its commitment to innovation, technical excellence, and strengthening of Europe's maritime security.

GMV demonstrates its technological capabilities at the Spanish Army's 2E+I Forum

Once again this year, GMV participated in the 2E+I (Army, Industry, and Research) Forum, which is now in its 8th edition. The event took place on October 1st and 2nd at the Army Museum in the Alcázar of Toledo, under the theme "A New Focus for Maneuvers". Organized by the Spanish Army's Logistics Support Command and the Army Museum Foundation, the forum began with speeches delivered by Spain's Secretary of State for Defense, Amparo Valcarce, and Army Chief of Staff (JEME), General Amador Enseñat y Berea.

As a demonstration of its commitment to technological innovation for defense and security, and as part of its contribution to the objectives of the "Army 35" concept, GMV presented some of its most advanced ground solutions, including the ***TALOS*** command and control (C2) system, which is a leading fire direction system interoperable with NATO and ASCA standards; the ***ISNAV*** navigators, which feature anti-spoofing technologies and compatibility with the Galileo public regulated service (PRS), to ensure reliable operation in GNSS-contested environments; the rugged LGB 11 computer, which makes it possible for combatants to perform centralized management of all electronic devices (radios, sensors, screens, cameras); the vehicle and soldier-carried battery chargers developed for the Spanish infantry system (SISCAP); and the SBT system, an advanced connectivity solution that allows digitalization of platforms in service, by integrating radios, sensors, and other equipment into IP networks.

In addition, Ricardo Sáenz Amandi, GMV's Manager of Defense and Security Programs, participated in a roundtable discussion entitled "Robotization of the battlefield", where together with other leading representatives from industry, he analyzed the challenges that joint management and operation of autonomous platforms on the battlefield can present from a technological perspective, in an environment that is electromagnetically degraded.

GMV recognized by Frontex for its digital twin solution for border surveillance

■ GMV was awarded in the "Copernicus Evolution Prize Contest – Digital Twin", a recognition presented during the event commemorating "10 Years of Copernicus at Frontex". Held in Warsaw, Poland on September 24th, this gathering brought together more than 200 experts and institutions to celebrate a decade of innovation and cooperation for integrated border management.

Organized by Frontex as part of the European Union's Copernicus program, the purpose of this competition is to encourage development of solutions based on digital twins, to strengthen border surveillance and security along the EU's external borders. GMV's proposal stood out for its robustness, scalability, and ability to integrate Earth observation data, ground sensors, and artificial intelligence.

The digital twin solution developed by GMV makes it possible to create virtual representations of border zones, to optimize planning and operational deployment for surveillance teams. The model combines historical and real-time data, analyzes terrain permeability, and simulates various operational scenarios to support strategic decision-making. Its modular architecture combines satellite imaging, environmental variables, and predictive modeling tools.

Along with two other proposals, GMV's project was selected for presentation at the Frontex Demo Day event held at the end of June, where the company validated its concept through real simulations of operational scenarios.

This award is a further reflection of GMV's collaboration with Frontex for more than 15 years, which is focused on applying advanced space technologies to enhance border security and management.

GMV strengthens interoperability for allies and partners at multinational Bold Quest 2025 exercise

■ From September 8th to October 1st, the multinational Bold Quest 2025 exercise took place in the USA, at Fort Pickett in the state of Virginia. The Bold Quest exercise is organized by the United States military every year, with the objective of improving interoperability with its allied armed forces, and it has now become one of the main international demonstrations for battlefield interoperability and joint intelligence, surveillance, and reconnaissance (JISR) systems.

The countries participating in this year's exercise included, among others, the USA, Canada, Norway, Finland, Denmark, Sweden, Switzerland, and Spain, with support from a variety of international agencies. The exercise was focused on testing and validating the interoperability of the various countries' digital command and control systems, and on verifying secure sharing of information between different security domains.

In this context, GMV provided support for NATO's Battlefield Information Collection and Exploitation System (BICES), by contributing its Coalition Shared Database ***CSD Sierra*** solution, which implements the NATO STANSAG 4559 standard. This solution is supplemented by the company's ***Sierra Tools*** product, which lets users interact with CSD data and services in order to execute the JISR processes. This is a suite that allows integration of aerial, space, ground, and maritime platforms into unified intelligence, surveillance, and reconnaissance (ISR) networks, offering advanced capabilities for generating intelligence products during allied operations, while also ensuring compliance with the international standards on interoperability.

During the exercise, ***CSD Sierra*** demonstrated successful real-time performance, along with the CSD systems provided by other suppliers. In addition, GMV implemented a variety of complementary modules for this solution that facilitate distribution of information across security domains (x domain), through integration of ***CSD Sierra*** with the ***PSTcsd gateway*** produced by Autek.

GMV also provided on-site personnel to assist with the exercise, who worked in close collaboration with the BICES team to support the intelligence fusion cell, which made use of the tools provided. This resulted in a successful demonstration of the interoperability of ***CSD Sierra***, as well as its ability to contribute to the complete Intelligence Requirements Management & Collection Management (IRM&CM) process.

GMV forges closer ties with Germany's defense and security industries

On November 12th, GMV received a visit at its headquarters from a delegation representing 12 German security and defense firms, which were selected and endorsed by Germany's Federal Ministry for Economic Affairs and Energy (Bundesministerium für Wirtschaft und Energie, or BMWi). The visit was part of the international cooperation activities being sponsored by this Ministry, and it had the aim of promoting industrial and technological cooperation in key areas such as critical infrastructure protection, secure connectivity, and digital identity.

The event kicked off with a presentation by GMV, which summarized the company's main capabilities and lines of business in the fields of defense, security, and space. In addition, it highlighted the solutions developed by GMV in the areas of multidomain command and control, cyberdefense, maritime and border surveillance, and critical infrastructure protection, along with the company's participation in major European and international programs, such as those sponsored by the European Defence Fund (EDF). The visitors also learned about how GMV is integrating interoperable solutions with NATO and EU standards, to contribute secure, scalable, and fully tested systems for multinational exercises and real operations.

Next, the German companies had an opportunity to showcase their own technological capabilities and solutions, which covered fields ranging from resilient communications and security management systems to cyberdefense and cybersecurity technologies, digital identity, and virtual reality applied to training.

The visit gave all parties involved a chance to share experiences and explore opportunities for collaborations in relation to defense, security, and dual use technologies, while strengthening the connections between GMV and German industry, with support from the BMWi.

GMV shares its experience with GNSS resilience for defense and security

On November 13th, GMV participated in the European forum entitled "Assessing Preparedness to Combat Jamming and Spoofing: Business and Regulatory Perspectives". This event was organized by the Permanent Representation of Lithuania to the European Union, and it gave experts and institutional representatives an opportunity to discuss the increasing range of challenges presented by interference with global navigation satellite systems (GNSS).

Held in Brussels, this gathering brought together experts from the public and private sectors and leaders from the maritime, aeronautics, space, and telecommunications fields, to analyze detection strategies, regulatory measures, and response mechanisms for the growing number of attacks targeting GNSS signals.

GMV was represented by Ricardo Sáenz, its Manager of Defense and Security Programs, who shared the company's perspectives regarding detection and mitigation of these types of interferences and attacks, and he emphasized the need to strengthen resilience and establish cooperation at the European level to confront this hybrid threat. He also explained the experience that GMV has gained with developing advanced technological solutions that can help protect critical aerospace, maritime, and ground segment GNSS services.

Organization of this forum reflects a need that is increasingly recognized in Europe, namely to strengthen resilience and coordination in response to the increase seen in incidents of this type. In this context, the forum served as a means of solidifying a dialogue between the public and private sectors, while also making progress towards defining joint strategies to ensure the security, integrity, and continuity of European services based on satellite navigation and positioning.

GMV and the Indra group sign agreement to explore lines of collaboration

GMV and the Indra Group have signed an agreement to work together on developing cutting-edge systems and services for Spain's armed forces. This arrangement will help strengthen the country's national sovereignty, as well as the competitiveness of Spanish industry in the European and global markets.

The signing ceremony was held on December 17 at GMV's headquarters in the city of Tres Cantos near Madrid, with the Indra Group being represented by its Executive Chairman, Ángel Escribano, and its CEO, Vicente de los Mozos. In turn, GMV was represented by its CEO, Jesús B. Serrano, and its General Manager of Defense and Security, Manuel Pérez Cortés.

The two companies have already identified several areas that will benefit from their collaboration, enabling them to combine the technologies and systems they develop. The aim is to fulfill the needs of the Spanish armed forces in relation to the Special Modernization Programs now being implemented.

The companies plan to leverage significant synergies in areas such as unmanned vehicles, command and control, electronic warfare, cyberdefense, and advanced communications, to accelerate project delivery and bring fully modernized solutions to the market.

In addition to the specific programs already identified, the two companies will be exploring other potential areas of interest where GMV and Indra can collaborate, both in Spain and internationally, based on their respective design, engineering, and production capabilities.

Ángel Escribano, Executive Chairman of the Indra Group, explained that the two companies "will be collaborating even more closely and strengthening the ability of the entire Spanish innovation ecosystem to respond to the needs of our armed forces, while also taking on a leadership role in the major programs being launched in Europe. GMV has already become a key part of this industry."

According to GMV's General Manager of Defense and Security, Manuel Pérez Cortés, "we are taking another step forward towards working cohesively, so we can deliver systems to our armed forces that are more interoperable, efficient, and advanced. This is taking place at a time when we are dealing with increasingly complex programs, which require a more effective ability to combine our capabilities, technologies, and areas of specialization."

GMV's contributions will be a significant factor for the success of some of the Special Modernization Programs, and the two companies will be identifying closed packages that have relevance in terms of responsibilities and content, while taking advantage of GMV's role as a key partner.

FMBTech consortium meets for second General Assembly in Warsaw

The Technologies for Existing and Future Main Battle Tanks (FMBTech) project, has reached a significant milestone with the successful celebration of its second General Assembly, held on 3 November in Warsaw. One year after its official launch, the consortium gathered alongside representatives from the European Commission's DG DEFIS and the French and Polish Ministries of Defence to review progress and align on the next phase of work.

Funded by the European Commission under the European Defence Fund (EDF, 2023 edition) and coordinated by Thales SIX GTS France, the project aims to enhance the performance, survivability and operational readiness of existing and future Main Battle Tanks through advanced, modular technologies tailored to the demands of modern hybrid warfare. It is being developed by a consortium of 26 companies from 13 European Union Member States and Norway. GMV contributes to this ambition by leading work in PNT (Positioning, Navigation and Timing) and MUM-T (Manned Unmanned Teaming) technologies, supporting the definition of a future system-of-systems architecture, and applying artificial intelligence to decision-support functions.

Hosted by Obrum at the Warsaw School of Economics, the meeting served as a strategic checkpoint at the transition between Phase 1 (completed in April) and the ongoing Phase 2. Over the past year, the consortium has delivered a solid foundation for the project, including several key deliverables now accepted by the European Commission. These outputs strengthened the Concept of Operations and refined the operational use cases that will guide the future evolution of Main Battle Tank (MBT) technologies, with a particular focus on improving how information is delivered to crews for faster and more ethically sound decision-making.

GENIUS launches its activities

In early December, the General Assembly and Architecture Workshop of the GENIUS GENIUS (next GEneration of IA and combat cloud systems for NeutralIzation of Unexploded threatS)) project took place at the Royal Military Academy of Belgium. Coordinated by GMV, this initiative brings together a multidisciplinary consortium of 18 entities that, over a period of 36 months, will work on the development of solutions aimed at increasing the probability of threat detection in complex and high-risk environments, providing reliable and adaptable threat management systems suited to the realities of modern warfare, and reducing false alarms to improve operational confidence and efficiency.

The meeting marked the start of the project's design and development activities, following the completion of the initial roadmap definition phase, which addresses the main technical challenges as well as the ethical and security compliance framework.

GMV leads the design of the command and control (C2) system, integrating unmanned platforms, sensors, effectors, and dismounted soldier systems. In addition, GMV contributes to the design of the C2 architecture to ensure interoperability and is responsible for the demonstrator used in testing activities.

GENIUS kicked off in December 2024 and is a project funded by the European Defence Fund (EDF) of the European Commission. It is one of the eight strategic projects for which GMV was selected in the latest EDF call, consolidating its position as a key player in the defence and security sector.

Co-funded by the European Union

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GMV drives European defense forward through its participation in the NINJA2 project

On November 3rd and 4th, the kickoff meeting (KOM) for NINJA2 (Non-Interferable Non-Jammable Accurate Ammunition), a European Union project funded through the European Defence Fund (EDF), was held at GMV's headquarters in Tres Cantos, Madrid. During the meeting, the consortium partners presented the roadmap and the main objectives of this initiative, which aims to strengthen the accuracy and resilience of weapons systems in environments with interference or attempts at signal spoofing.

Specifically, NINJA2 will address the challenges faced by global navigation satellite systems (GNSS) in contested environments, where traditional guided munitions may be affected by jamming or signal spoofing. The project will develop a modular, affordable, precise and intelligent ammunition system that enhances the accuracy and resilience of modern weapons systems, including the modernization of existing ones. Its approach is based on the development of shared components and standardized interfaces that enable rapid integration, upgrading and customization across different platforms and types of ammunition.

The NINJA2 consortium is made up of 17 partners from 8 European countries. GMV plays a key role, leading the navigation studies and design tasks, as well as taking an active part in the system definition activities.

Through its participation in this initiative, GMV reinforces its commitment to technological innovation, European strategic autonomy and the development of advanced defense capabilities that support Europe's security and resilience.

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GMV shares its experience with unmanned systems at Naval Combat Cloud Workshop

On October 23rd and 24th, GMV participated in the 1st Naval Combat Cloud Workshop, an event organized by Navantia and the Spanish Navy, and held at the Center for Naval System Excellence (COEX) in San Fernando near the Spanish city of Cádiz. The purpose of this gathering was to analyze the latest technological and operational advances linked to the future naval combat cloud (NCC).

NCC represents a paradigm shift for maritime defense, because it redefines the way in which naval combat capacities are designed, developed, and employed. This new approach promotes operations that are more connected, intelligent, and collaborative, in line with the need to respond to current and future challenges.

The forum brought together representatives from the Spanish Navy, Spanish Ministry of Defense, universities, technology centers, and companies in the defense industry, to discuss the main technological challenges in the area of maritime defense, and including everything from new communications networks and artificial intelligence to cybersecurity, sensor integration, and unmanned vehicles.

GMV participated in the roundtable discussion dedicated to unmanned surface vehicles and naval platforms. Francisco Jesús Pérez Aguilera, GMV's Manager of SCIS Systems for Defense and Security, gave a presentation on the company's experience with its IRIS system. This is a solution that allows management, coordination, and integration of unmanned vehicles during naval operations, and which is now ready for use as an additional node within the future NCC.

GMV shares its views on the use of disruptive technologies in defense At CATEC Trends 2025

On November 13th, the CATEC Trends 2025 event took place as the 3rd edition of this annual workshop, organized by the Center for Advanced Aerospace Technologies (CATEC). Once again, the event was attended by more than 100 executives and experts from the defense and aeronautics industries in Spain. Under the theme "Technology as a foundation for European and Spanish sovereignty", the gathering was focused on the role of innovation as a driver of enhanced technological and industrial capabilities in the field of defense.

GMV was represented at the event by its General Manager for Defense, Manuel Pérez Cortés, who along with representatives from other leading companies, participated in a roundtable discussion entitled "Incorporating disruptive civilian technologies into defense and their impact on the industry". During his presentation, he emphasized GMV's commitment to the application of cutting-edge technological solutions developed for civilian uses into defense programs, such as those involving artificial intelligence, resilient navigation, autonomous systems, cyberdefense, quantum computing, and advanced electronic systems.

He also stressed the importance of strengthening public-private collaboration and encouraging technology transfer as drivers of European sovereignty, and of ensuring strategic autonomy for critical technologies. Finally, he explained the need to strengthen cooperation among the various actors in the defense ecosystem, and to accelerate innovation as an essential element for keeping the industry competitive.

With its participation at CATEC Trends 2025, GMV has again demonstrated its commitment to promoting a more innovative and resilient defense industry, with a focus on European technological sovereignty in an increasingly complex geopolitical environment.

GMV participates in Circle of Technologies Foundation's 21st Biennial Workshops

On November 18th and 19th, GMV participated in the 21st Biennial Workshops of the Circle of Technologies Foundation (Fundación Círculo de Tecnologías), which took place in Madrid at the headquarters of Spain's Ministry for Digital Transformation and Public Services. Under the theme "Toward strategic autonomy for Europe: technologies in a new global scenario", the gathering brought together representatives from governmental institutions, the Spanish armed forces, the defense industry, and the research community, to analyze the technological challenges that will have an impact on the future of defense in Europe.

As a gold-level sponsor, GMV once again had an important role at the forum. The company actively participated in the first session, which was dedicated to command and control systems, a key element of strategic autonomy and operational superiority. The session was coordinated by Manuel Pérez Cortés, GMV's General Manager for Defense and Security and also a member of the Coordination Committee for the workshops.

During the panel discussion, Ricardo Sáenz Amandi, GMV's Manager of Defense and Security Programs, explained the company's vision regarding the decisive role of digitalization, interoperability, and real-time collaborative environments, for managing operations that are becoming increasingly complex. He emphasized the need for command and control systems that can perform full operational integration of unmanned systems and advanced capacities supported by artificial intelligence, which are necessary in order to accelerate decision-making and multiply operational efficiency in multi-domain scenarios, while also allowing secure and resilient interconnection of sensors, operators, and platforms.

In addition to its technical participation, GMV made a contribution to the more general discussions held at the workshops, which were focused on issues such as the need to strengthen Europe's technological base, secure critical supply chains, and encourage public-private collaborations to promote dual-use capabilities and disruptive technologies.

GMV and its EUCCIS system strengthen Europe's response capacity during MILEX 25 exercises

The reliability and operational value of the European Union Command and Control Information System (EUCCIS), developed by GMV, was proven once again during the second phase of the MILEX 25 military exercises, which took place from November 3rd to December 5th. On this occasion, the Force Headquarters (FHQ) was established at a military base in a European Union (EU) country, while the EU Military Planning and Conduct Capability (MPCC) in Brussels maintained its role as the Operational Headquarters (OHQ).

In this distributed scenario, the EUCCIS system facilitated secure exchanges of information between the two command levels, as well as creation of a Common Operational Picture (COP), which is an essential element for coordinating operations. A new feature had also been added to the system to allow collaborative editing of planning documents by the two headquarters, notably improving operational efficiency and the user experience.

This second phase was the culmination of a series of exercises that began in the spring, when the first iteration of MILEX 25 took place from March 25th to April 10th, with its focus on validation of procedures and tools. These two phases have been used to evaluate and strengthen the MPCC's strategic, operational, and tactical capabilities, including its ability to plan and execute operations under realistic conditions.

With its participation in MILEX 25, GMV has further demonstrated its commitment to European defense, security, and peace, through international cooperation and development of advanced technological solutions.

GMV demonstrates its C4ISR capabilities during two key NATO forums in Brussels

From November 25th to 28th, GMV participated in two of the most important gatherings on the annual NATO calendar: the Third NATO Cloud Conference and NATO Spanish Industry Day, where the company showcased its capabilities for supporting multi-domain operations.

The Third NATO Cloud Conference took place in Brussels on November 24th and 25th, and it brought together institutional leaders, technical experts, and industry representatives to discuss the types of digital innovation needed by the Alliance. GMV had its own exhibition space at this event, where it demonstrated its most advanced C4ISR solutions, including ***SAPIIEM*** and ***CSD SIERRA***. The company also showcased a variety of solutions for exchanging information between domains, with a special emphasis on their role in building agile, decentralized architectures for multi-domain command and control systems.

On November 27th, NATO Spanish Industry Day took place in Brussels at the NATO Alliance headquarters, organized by the NATO Communications and Information Agency (NCIA) and the Spanish Military Representation to the NATO and EU Military Committees. The purpose of this gathering was to introduce the technological capabilities of Spanish industry to NCIA personnel and promote the exchange of ideas to identify cooperation opportunities.At this event, José Prieto, Manager of Business Development and Institutional Relations for GMV's Defense and Security sector, participated in a session where he explained GMV's contribution to defining multi-domain systems that are prepared for the operations of the future.

Dual-use technologies: a central theme of discussion at the 19th CCN CERT ICT Security Workshops

Together with its subsidiary Autek, GMV participated at the 19th CCN-CERT ICT Security Workshops. This edition of the event, which is one of Spain's top cybersecurity gatherings, was held in November in Madrid, under the theme "A digital shield for an interconnected Spain".

Mariano Benito, GMV's Cybersecurity and Privacy Ambassador, and Luis Manuel Cuesta, Manager of Security Programs for GMV's Defense and Security sector, participated in a roundtable discussion entitled "A two-way road: the dual uses of dual-use technologies", where they explained how the company routinely applies dual-use technologies in its civilian and defense industry projects.

Both speakers stressed that dual-use technology is not just a concept, but instead, "a two-way road", where lessons learned during military projects contribute to civilian solutions, and vice-versa. To illustrate this, they presented a variety of specific cases.

One case they highlighted was the company's ***uPathway*** solution and its use for inspection of industrial facilities, where the control algorithms and machine vision system were also used in defense projects involving autonomous vehicles and unmanned platforms. They also described the data intelligence platform of Spain's National Security System, and the ***Ecosstm*** space surveillance system, where advances in data governance, threat modeling, and cybersecurity have been adapted for use with security monitoring services and fleet management. In addition, they discussed the 5G security operations center (SOC), where GMV has been exploring ways of protecting very low-latency communications that are critical for civilian services, as well as for command and control capabilities in defense.

Finally, they stressed the role of the company's technologies developed for improving privacy, such as ***uTile***, and the importance of healthcare data spaces, which allow sharing of sensitive information without exposing personal data, and which have direct applications in health research as well as in defense environments for managing classified information.

Again this year, Autek had a notable presence, with its own stand in the exhibition area. This is a GMV subsidiary that has become a leader in cross-domain solutions, and it has also been a sponsor of these workshops continuously since 2011. At this year's event, it presented its technologies for secure information sharing, which are designed to protect critical environments with maximum trustworthiness. These are essential capabilities for complex military systems, and they also have direct applications in civilian situations that require high levels of security, including everything from the space industry and protection of critical infrastructure, to governmental administration and corporate operations.

Autek successfully completes Common Criteria EAL4+ certification for its *PSTgateways*

Autek has successfully completed the Common Criteria EAL4+ certification process for its ***PSTgateways*** family of gateway products, a milestone that demonstrates the solidity and reliability of its cross-domain solutions. This certification has been published in the Official Gazette of the Spanish State (BOE), and it confirms that all shared security features that apply to devices from this family have met strict international standards on trustworthiness.

The ISO/IEC 15408 international standard, referred to as Common Criteria, has established a global framework for evaluating the security of IT products and systems. This certification can only be obtained by successfully passing an exhaustive independent assessment. In Spain, the process is supervised by the Certification Body (OC) from the National Cryptologic Center (CCN), which is part of the country's National Intelligence Center (CNI).

Although Autek had already received certifications for individual products, this new assessment has expanded the scope of these, to cover the entire ***PSTgateways*** family and all shared core security functionalities of the ***PSTgateways*** framework. The EAL4+ evaluation assurance level was selected, reinforced with the AVA VAN.5 and ALC FLR.3 components, which provide stronger guarantees against vulnerabilities and during management of the product lifecycle.

The evaluation process was initiated in 2023 and performed by the accredited Layakk Informática laboratory, with endorsement by the CCN's Certification Body.

This certification, which is becoming a more frequent requirement for the use of products at international organizations such as the European Space Agency (ESA) and European Union Agency for the Space Program (EUSPA), not only guarantees high levels of security, it also promotes improvement in the company's processes and facilitates inclusion of its products in high-security catalogs.

Autek is strengthening cybersecurity for Spain's Ministry of Defense

The Spanish Ministry of Defense has awarded a contract to Autek valued at over €4 million, to supply more than 100 of the company's secure ***PSTgateways*** and ***PSTdiode*** data diodes. The agreement was signed on December 5th, as part of the procedure entitled "Acquisition of cross-domain software/hardware security gateways for transfers of information between domains with different classifications and the associated equipment", sponsored by the Ministry's Directorate General of the Center for Information and Communications Technologies and Systems (CESTIC).

The supply will include cross-domain perimeter protection devices that are used to guarantee secure transfers of information between systems with different classification levels.

The secure ***PSTgateways*** products acquired include both general-purpose solutions for controlled exchanges of emails and electronic file transfers, as well as specific systems designed for military environments. With regard to the ***PSTdiode*** data diodes, the configuration supplied will allow active file transfers as well as a User Datagram Protocol (UDP) payload transfer service, which will strengthen protection on the most sensitive networks.

With this acquisition, the Ministry is making further progress on its ability to operate securely between information domains, following the ICT security guidelines developed by the National Cryptologic Center (CCN). The contract covers some of the cybersecurity activities outlined in Spain's National Cybersecurity Plan, which are also aligned with Component 11 of Spain's Recovery, Transformation, and Resilience Plan, focused on modernization of the Spanish central government's general administrative procedures.

CYBERSECURITY

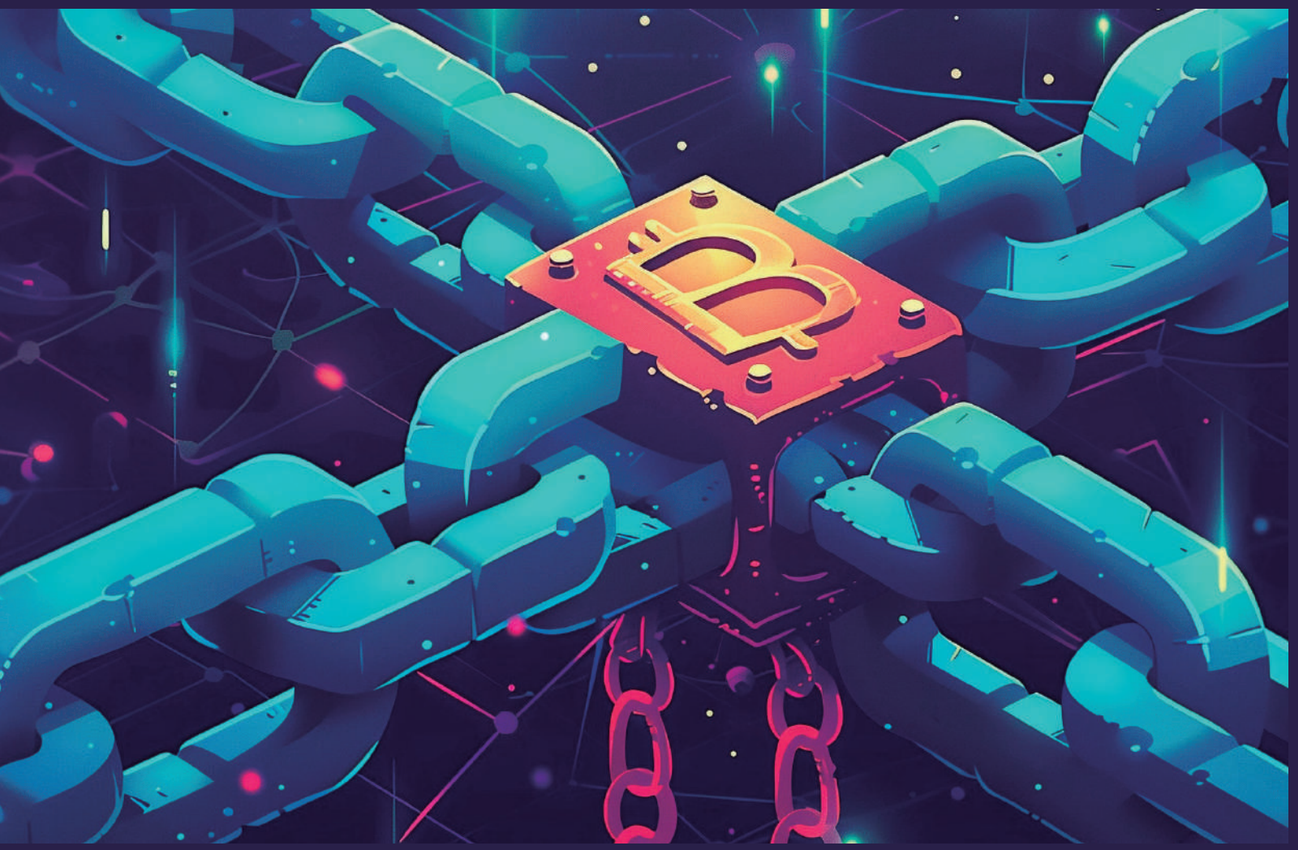
Opinion

Post-quantum cryptography: the next structural “refresh” for banking

“Post-quantum cryptography (PQC) is not just a subject for R&D; it is a requirement for business continuity and regulatory compliance”

In the tech world, there are times when a structural “refresh” of security is necessary. The Y2K crisis required one at the end of the 1990s, and another was needed later during the widespread implementation of online banking. Now a new reason has arisen, known as post-quantum cryptography (PQC). This is not just a subject for the R&D labs, it is a necessity for business continuity and regulatory compliance.

The risk has become clear: the strategy of “harvest now, decrypt later” represents a major silent threat for all organizations. State-sponsored actors and criminals are already storing encrypted data, such as SWIFT payments, KYC backgrounds, and security interest agreements, and just waiting for quantum computing to arrive so they gain access to this information. The United States has already recognized this threat in its national policy, and Europe is following the same path.



What does the banking industry need to do within the next 12 to 24 months?
There is no more time to wait. A commitment is needed now, and the priorities are clear:

- Complete a cryptographic inventory, with information classified by its lifespan and sensitivity.
- Focus on crypto-agility, so that algorithms and keys can be changed without the need to redesign systems.
- Pilot hybrid modes (classical + PQC) in TLS/mTLS and inter-DPC tunnels.
- Update PKI, HSM, and DevSecOps using the NIST 2024 standards.
- Participate in testbeds and sandboxes, to gain practical experience and train teams.

Impact on business and technology
The transition to post-quantum cryptography is not just a security challenge: it also affects all forms of technological architecture and risk management. It requires revision of data retention and certificate rotation policies, along with definition of corporate standards for algorithms, evaluation of the impacts on handshake latencies, and the ability to perform gradual deployments with crypto-agility. It also requires preparation of infrastructure elements such as PKI, ATMs, POS terminals, and applications, and suppliers will have to comply with the NIST standards. The message is straightforward: taking action now will reduce transition costs and prevent obstacles in the future.

José María Blanco, Financial Sector Manager for Secure e Solutions at GMV

Marcelino Pérez, Financial Sector Business Partner for Secure e Solutions at GMV

As in the case of migration to EMV payments, or with IPv6, the challenge seems massive. However, progress has already been made. Financial institutions in Europe have started working on PQC pilot projects, in collaboration with specialized partners like GMV that can supply systems that are already prepared, and that can help validate hybrid scenarios in critical environments. Exercises like these reduce risks, and they also shorten the required time periods and cut costs when the moment arrives for large-scale deployment.

In short, post-quantum cryptography represents the next updating of the state-of-the-art for banking. With standards already published, active national policies, and a testing ecosystem already in use, leadership means acting now: inventory, crypto-agility, and hybrid pilots. Those who get ahead of the curve will be able to reduce the costs of change, prevent supplier obstacles, and be ready for auditing and regulatory changes.

Peruvian Navy strengthens its cybersecurity with technology from GMV and MBDA France

The Peruvian Navy (Marina de Guerra del Perú or MGP) is making progress with modernization of its cybersecurity and cyberdefense capabilities, thanks to a collaboration between GMV and MBDA France. These two companies are now responsible for developing and deploying an advanced technological platform for the Navy's security operations center (SOC).

As part of this project, GMV will be supplying a state-of-the-art cyber range platform. This solution will allow simulation of actual cyberattack scenarios for training purposes, along with evaluation of the capabilities of the Navy's technical personnel. In turn, MBDA Systems will act as a strategic partner, by participating in the design and development of various cyber capabilities, and by assessing and improving the Navy's institutional cyber resilience.

The overall aim of the project is to make the Peruvian Navy's SOC a national point of reference for cybersecurity and cyberdefense. By bringing together new strategies, advanced tools, and optimized processes, the Navy will be strengthening its ability to detect, respond to, and manage cyber incidents, while also ensuring more effective and accurate decision-making in response to the growing number of digital threats.

This initiative is strengthening the Peruvian Navy's commitment to information security and critical national systems, while demonstrating the importance of international cyberdefense collaborations based on technological innovation.

At Securmática 2025 event, GMV and MasOrange present their joint focus on code security

The 35th edition of the Global Cybersecurity, Information Security, and Privacy Congress, known as Securmática, took place from October 7th to 9th, organized by SIC magazine. The theme for this edition was "We've made it this far... and we need to keep learning", and GMV and MasOrange gave a joint presentation entitled "Code security: A focus on SAST analysis, continuous integration/delivery, and vulnerability management".

This session was moderated by Gerard Pedrós, a DevSecOps Engineer at MasOrange, and by Alberto Molina, GMV's DevSecOps Project Leader and Expert Engineer for Secure e Solutions, who both shared their experience with incorporating cybersecurity into the software development lifecycle (SDLC). They explained how collaboration between their teams has made it possible to adopt a proactive and flexible approach to security by design, with a focus on anticipating risks and adapting to a constantly evolving technological environment. Under this model, cybersecurity is integrated from the initial phases of development, strengthening resilience and the ability to respond to emerging challenges.

The collaboration between GMV and MasOrange has led to creation of a solid cybersecurity model aligned with industry demands, which combines static application security testing (SAST) tools, automated continuous integration and continuous delivery (CI/CD) processes, and vulnerability management, to ensure the existence of a more secure, efficient, and sustainable development cycle.

Once again this year, GMV's participation in the Securmática event has demonstrated the company's commitment to innovation, technical excellence, and industry collaborations. These have all been essential aspects of GMV's history for more than 30 years, which includes helping major corporations and international institutions succeed with transformation towards more secure and trustworthy digital environments.

European Commission adds GMV to the EU Cybersecurity Reserve

With its integration, GMV joins the core of strategic suppliers called upon to strengthen the European Union's digital resilience against large-scale attacks

GMV has been selected by the European Commission and the European Union Agency for Cybersecurity (ENISA) to join the EU Cybersecurity Reserve. This is a key initiative under the EU Cyber Solidarity Act, to provide immediate and effective responses to cyberattacks, including large-scale, high-impact attacks targeting the EU and its Member States and their essential entities.

The EU Cyber Solidarity Act, which has been approved by the pertinent European institutions, establishes the foundations of a common framework for detecting, preparing for, and responding to critical cyber threats. One of its key aspects is creation of the EU Cybersecurity Reserve, which has a membership consisting of a small group of top cybersecurity service providers in the industry, such as GMV, selected on the basis of a rigorous accreditation process.

The EU Cybersecurity Reserve has been conceived as a mechanism for public-private collaboration, to make specialized technical and human capabilities available to public-sector entities in the European Union, whenever these capabilities are needed for managing and responding to significant cybersecurity incidents in an effective, agile, and coordinated way, or whenever cross-border cooperation is required.

As one of the limited number of members asked to join this group, GMV will continue to contribute its experience, technological specializations, and skilled professionals and technicians to cyberdefense and cybersecurity operations. In addition, GMV's contribution will be essential for achieving digital resilience in the EU, and for protecting critical infrastructure in strategic industries such as energy, transportation, healthcare, and telecommunications.

With over 30 years of experience in the field of cybersecurity, GMV will be contributing a multidisciplinary team of experts, state-of-the-art security operations centers (SOCs), and its broad range of experience with managing high-impact incidents. GMV is working closely with European organizations, governments, and other leading companies, to implement advanced threat monitoring and detection, incident response, and resilience testing services.

According to Mariano Benito, GMV's Cybersecurity & Privacy Ambassador, "being part of the EU Cybersecurity Reserve is a recognition of our decades-long track record in the cybersecurity and defense industries, and it further reinforces our commitment to digital security for Europe. GMV is ready to act whenever we are needed, by providing our technology, experience, and immediate response capabilities for critical cyber threats."

The role of data as a driver of the digital economy

On November 4th, GMV participated in the 7th Port Security Industry Conference, which was held in Madrid and organized by the Borredá Foundation, in collaboration with the Spanish Ports Company (Puertos del Estado) and the Red Seguridad and Seguritecnia magazines. The meeting brought together industry experts to analyze the main challenges related to innovation, regulatory developments, cybersecurity risk management, and public-private collaboration.

GMV was one of the event's sponsors, and the company was represented by Manuel Gómez Langley, its Business Partner for Digital Public Services and Critical Infrastructure for Secure e Solutions. He gave a presentation entitled "Smart Ports: Data as a driver of the digital economy and its protection against cyber threats"

During his talk, he explained that Smart Ports are becoming strategic hubs for the data economy, where governance and information protection are essential factors for enhancing the port system's competitiveness, sustainability, and resilience. He also stressed the importance of implementing advanced cyber protection models that can guarantee the integrity, availability, and traceability of the critical information that must be managed in port environments.

He also explained that new risks associated with the use of artificial intelligence (AI) have made it necessary for port systems to implement governance mechanisms to ensure that AI is only used in an ethical, secure, and responsible way. In this context, he emphasized the role of cybersecurity as a fundamental element of digital transformation for the maritime-port industries, especially in relation to key aspects such as Port Community Systems (PCS), Port Management Systems (PMS), and Maritime Single Windows (MSW).

By participating in the 7th edition of the Port Security Industry Conference, GMV has again demonstrated its leadership in the area of cybersecurity solutions applied to critical infrastructure, as well as its interest in assisting port systems as they evolve towards a more digital, connected, and resilient future.

V-Valley names GMV as winner of its Best Cybersecurity Business Development award

GMV has been named by V-Valley as the winner of its Best Cybersecurity Business Development 2025 award, to recognize the company's outstanding work on promoting innovative and effective solutions in the field of business and corporate cybersecurity.

The award was presented at the end of September, at an event organized by the magazine Byte TI. This recognition highlights the joint work and close collaboration taking place between GMV and its strategic partners, which has led to the achievement of outstanding results for the projects carried out over the course of the year.

In explaining its award decision, V-Valley emphasized GMV's exceptional technical capabilities when developing projects, as well as its leadership in implementing new technologies, describing these as qualities that strengthen trust between the collaborating organizations. This award also recognizes GMV's commitment to excellence, innovation, and cyber resilience, which are all values that have helped the company become a leader in this field.

Attending the ceremony on behalf of GMV was Nathalie Dahan, the company's Head of Partner Strategy & Portfolio for Secure e Solutions, who accepted the award and thanked V Valley and Byte TI magazine for the recognition. She also emphasized the team effort that GMV dedicates to ongoing reinforcement of cibersecurity and critical infrastructure protection.

Opinion

The dark side of AI agents: power without control

Many organizations are rushing to implement artificial intelligence (AI) agents, although their ability to govern them is advancing more slowly. According to a study by SailPoint, 82% of all companies are already using artificial intelligence in production, but only 44% have documented policies to define the corresponding authorities and operational limits. The results of this have become visible: 80% of all deployments are recording unintended actions, and 23% are exposing credentials recorded in logs or error messages. And these are not isolated failures. Instead, they reflect the existence of a governance model that has not kept pace with technological progress.

Unlike the more traditional chatbots, AI agents do more than just give responses: they also perform real actions. They can call up authenticated APIs, operate using tokens for high-level privileges, and override controls designed for people, such as multifactor authentication and manual approval procedures. In other words, a support agent can read and modify information with no supervision, while a DevOps agent can manage CI/CD channels with full autonomy.

This new scenario is expanding the risk perimeter and creating attack vectors that do not require any human interaction. At the Black Hat USA 2025 conference, the cybersecurity company Zenity gave a demonstration of zero-click attacks against business agents, where it only took one manipulated file to cause the agent to execute hidden instructions and extract data from the CRM systems using valid credentials.

Mitigating these risks does not mean stopping all use of these agents, but they must be treated as privileged identities. A complete management lifecycle is needed: authentication with periodic rotation, an up-to-date inventory with defined owners, a clear purpose, a deactivation date, and emergency procedures to revoke compromised credentials.

Observability also has to evolve. It is no longer sufficient just to log results: there must be tracking for the entire decision chain: which tools were used, with what parameters, and how were the actions connected together. With this kind of traceability, a baseline behavior and behavioral profiles can be defined to allow early detection of deviations, before they turn into incidents.

The most effective controls are those applied outside of the model: speed restrictions to prevent massive data leaks, network segmentation to reduce lateral movement, and approval tokens for critical operations. The barriers must be integrated into the execution layer – APIs, queues, gateways – not just the logic layer.

Finally, the operating model must be subject to risk reviews in advance, specific penetration testing, and meaningful governance metrics: average time until revocation, percentage of agents with owners, age of confidential information, and coverage of logs. In the absence of these controls, automation tends to amplify existing errors.

João Sequeira, Manager of Secure e-Solutions at GMV' in Portugal

> "New scenarios are expanding the risk perimeter and creating attack vectors that do not require any human interaction"

The pressures of competition will make the use of these agents inevitable, but their success will depend upon a disciplined approach to governance. When clear rules are in place, AI agents can offer speed and value. However, an absence of rules can generate a shadow AI that is more dangerous than any unauthorized tool.

La presión competitiva hará que los agentes sean inevitables, pero su éxito dependerá de la disciplina con la que se gobiernen. Con reglas claras, ofrecen velocidad y valor; sin ellas, generan una *shadow* AI más peligrosa que cualquier herramienta no autorizada.

GMV demonstrates its innovation and cybersecurity leadership at latest edition of ENISE

GMV was an active participant at the latest edition of the International Information Security Conference (ENISE), a major Spanish cybersecurity event. This edition was held on October 14th and 15th in the city of León, organized by Spain's National Cybersecurity Institute (INCIBE).

GMV participated in several sessions during the conference, demonstrating the company's leadership position in technological innovation and its commitment to strengthening Spain's cybersecurity ecosystem.

As part of a roundtable discussion entitled "Cyber identity at risk: are we really protected?", GMV's Cybersecurity & Privacy Ambassador, Mariano J. Benito, gave a presentation on the self-sovereign digital identity solution that GMV has developed as part of the Luis Valle R&D+i Program, for cybersecurity under INCIBE's Innovation in Public Procurement Initiative (IECPI).

In addition, Javier Zubieta, GMV's Manager of Marketing and Communications for Secure e Solutions, and also Chairman of the Cybersecurity Committee of the digital industry Association AMETIC, moderated a colloquium entitled "Perspectives on the future after the cybersecurity innovation mechanisms". This session brought together recognized experts and institutional representatives, who analyzed the results of the main cybersecurity innovation initiatives, along with the technological and strategic challenges that will arise during the next decade.

Supplier-operator collaboration and trust as industry demands

On November 12th, Miguel Hormigo, GMV's Manager of Industry for Secure e Solutions, participated in the First ICSO Breakfast 2025 event, which was organized by Spain's Industrial Cybersecurity Center (CCI) and Red Seguridad magazine. This event was focused on the role played by technology suppliers and operators in protecting industrial environments.

During the roundtable discussion, Hormigo emphasized the need to involve suppliers at all times, from the drafting of contracts until the time when a need for crisis management arises, and he stressed the importance of establishing clear exit rules for managed services. He also explained the relevance of mitigating supply chain risks, not only from the technological point of view, but also in terms of governance and shared responsibility.

The discussion addresed critical challenges such as microsegmentation, network visibility, access control in OT environments, and the insufficient maturity of some manufacturers.

The consensus was unanimous: although advanced technologies such as microsegmentation and remote access management are a key part of reducing the risk of cyberattacks, their real effectiveness depends upon a shared culture of security and the active involvement of all participants in the supply chain.

In this context, the presence of GMV as a co-sponsor and the contribution made by Miguel Hormigo helped to emphasize the urgency of structured collaboration between manufacturers and technology suppliers and operators.

Opinion

Checker ATM Security®: 20 years of innovation, teamwork, and pride

In 2025 we celebrated a very special milestone: the 20th anniversary of ***Checker ATM Security®***, one of GMV's most iconic products. Two decades after the first version was released, Checker ATM Security is still a worldwide leader for banking cybersecurity, serving as a clear example of the talent, vision, and teamwork that characterize our company.

When development of this solution began in 2005, protection for automated teller machines (ATMs) was focused almost exclusively on physical security. Fortunately, the team members at GMV knew how to anticipate new challenges, and they proposed creation of a solution that could protect the software and operating systems used by ATMs against emerging threats. That is how ***Checker ATM Security®*** came to exist, based on a clear intention: to offer effective protection that was also easy to manage, with the GMV seal of quality.

Since then, and even up until the latest version recently released, the product has remained in a state of constant evolution, to add new innovative features and updated components, as a way of responding to new types of attacks and the changing needs of our clients.

All of these advances have been the result of collaborations carried out by many people at GMV, including developers, cybersecurity specialists, support leaders, testing engineers, and technical sales advisors, among others. All of these people have contributed their knowledge, efforts, and passion, to make ***Checker ATM Security®*** a robust and trustworthy product that is recognized all over the world.

Today, more than 300,000 ATMs, in over 40 countries, are kept secure by protection with ***Checker ATM Security®***. And behind those numbers, there are countless hours of design, lines of code, tests, deployments, and support services. But above all, there are people behind those numbers: members of a committed, innovative team who are proud of what they have accomplished.

This 20-year anniversary gives us a chance to look forward as well. ***Checker ATM Security®*** continues to grow, with new versions of the produce created, and evolution towards new solutions like ***CosmicGuard***, which represents an ambitious leap from the world of ATMs to protection of satellite control centers. Checker has also evolved to protect communications between vehicles and roads, through its use with roadside units (RSUs). These ongoing developments are driven by the same spirit that inspired the initial creation of this solution: a constant pursuit of excellence and improvement.

This is why this 20-year milestone is being celebrated not just for the success of a product, but also for the hard work and dedication of everyone who has made that success possible.

Pedro Celis,
Product Manager for ***Checker ATM Security®***

«Today, more than 300,000 ATMs, in over 40 countries, are protected by this solution from GMV»

GMV participates in first practical exercise for the ResilMesh project

On November 19th and 20th, the first practical cybersecurity exercise was held for the ResilMesh project. This is an initiative funded by the European Union, with GMV participating as an industry partner.

The purpose of the ResilMesh project is to strengthen preparation and response capabilities for cyber threats by using an immersive training environment. This is based on an industrial scenario simulated on the JYVSECTEC platform, which was developed by the Jamk University of Applied Sciences in Finland.

During the exercise, the participants had to confront realistic cyberattack situations, and they did this by testing advanced detection and response tools developed as part of the project. Unlike events based on competitions, the ResilMesh exercise was oriented towards collaborative learning, by giving analysts and professionals an environment they can use to experiment, share knowledge, and enhance their ability to react to real incidents.

As a ResilMesh partner, GMV is contributing its expertise in technological solutions and cybersecurity methodologies designed to protect critical infrastructure and industrial environments.

GMV's contribution to digital defense recognized by the Minister of Mobility and Digital Transformation for the Spanish region of Castile and León

GMV's status as a national and international leader in the field of cybersecurity was recently acknowledged by a visit made to the company's Computer Emergency Response Team (CERT) in Valladolid, by the Minister of Mobility and Digital Transformation for the Spanish region of Castile and León. This CERT location is one of the three incident response centers that the company maintains in Spain and Latin America.

Since the time of its creation in 2005, the GMV-CERT has been providing managed cybersecurity services to public-sector and private-sector organizations in more than 40 countries, to protect their critical infrastructure and digital assets against an increasingly complex range of threats.

The center in Boecillo, near the Spanish city of Valladolid, is part of an international network together with the centers in Madrid and Bogotá, Colombia, where more than 130 specialized professionals do their work under the highest standards of quality, security, and service continuity.

The GMV-CERT offers a 360° managed information security service with 24/7 operations, based on a combination of reactive services (management of incidents and vulnerabilities and forensic analysis) and proactive services (auditing, penetration testing, threat intelligence, threat hunting, and advanced counterintelligence).

This work is enhanced by the use of GMV's proprietary technologies, such as ***Gestvul®***, a comprehensive vulnerability management tool, and by the center's affiliation with Spanish networks such as the National Network of SOCs, and international networks such as FIRST, which ensures global cooperation for incident response.

GMV's commitment to the Spanish region of Castile and León is reflected in its ongoing investment in infrastructure and talent in Valladolid, where advanced digital detection and defense technologies are being developed. This center is not only making an important contribution to the company's cyber threat response capabilities, it is also generating jobs with high added value, including employment for highly qualified professionals in the fields of engineering, forensic analysis, threat intelligence, and security software development.

Delinea recognizes GMV for its work in the fields of cryptography and digital identity

Delinea has named GMV as the winner of its Best Partner of the Year 2025 award, as a recognition that highlights the strong collaboration between the two companies and their joint work with one of GMV's channel partners, Ingecom Ignition Spain.

This award reflects the mutual trust and ongoing cooperation that characterize the relationship between GMV and Delinea, as well as their shared commitment to innovation and excellence in business development.

This distinction is also based on the technical excellence of GMV's team, which has been especially noteworthy in the areas of cryptography and digital identity. With almost 30 years of experience in these fields, the company develops secure, innovative, client-focused solutions that are designed to respond to the most demanding challenges related to cybersecurity and information protection.

This award further solidifies GMV's position as a leader in the field of cybersecurity, as well as its commitment to creating a more trustworthy and resilient digital environment, in collaboration with strategic partners such as Delinea and Ingecom Ignition Spain.

GMV attends Cyberwings forum for the Air Forces of the Americas

GMV was an active participant at the 5th International Cybersecurity and Cyberdefense Updating Forum for the Air Forces of the Americas, known as Cyberwings 2025. This event took place in Bogotá, Colombia from November 17th to 21st, under the theme "United in cyberspace, strong in global cyberdefense".

The purpose of this gathering was to strengthen cooperation among the Air Forces of the Americas and allied countries, and to encourage the development of new technical and operational capabilities in the fields of cybersecurity and cyberintelligence, with the aim of jointly addressing the increasing range of cyberspace challenges and threats.

GMV was represented by José María Legido, the company's International Markets Director for Secure e Solutions. He gave a presentation entitled "Specific tools for the aerospace environment", which was focused on the technological solutions that GMV has developed for the protection and defense of critical aeronautical and space systems.

During the event, GMV received a recognition from the delegation representing the Spanish Air Force, acknowledging the value of the company's contributions and sharing of knowledge in relation to the subjects of cybersecurity and defense.

GMV's participation in Cyberwings 2025 was a further demonstration of the company's commitment to strengthening cybersecurity and defense, promoting international cooperation, advancing technological innovation, and encouraging exchanges of knowledge for more robust and resilient global security.

HEALTHCARE

4th edition of HealthTech Observer, focused on the power of data in healthcare

This gathering provided an opportunity to introduce OmicSpace, a project that is bringing together clinical, genomics, and biobank information under a secure federated model, with technological leadership from GMV

Data has become the most valuable element for modern healthcare. Each clinical history, analysis, and genome contains information that is essential for understanding diseases, personalizing treatments, and anticipating risks. However, the true potential of this information can only be achieved when it is shared and combined, in a secure, interoperable, and ethical manner.

Federated biomedical data spaces are causing a paradigm shift for healthcare research and services. Thanks to these data spaces, hospitals, research centers, and governmental agencies can collaborate without the need to centralize their information. This preserves patient privacy and makes it possible to develop ways of applying artificial intelligence (AI) to healthcare.

In the context of the 4th HealthTech Observer (HTO) Workshop, an event sponsored by GMV that has become established as a leading forum for healthcare innovation, this approach was given a closer look at the La Fe Healthcare Research Institute (IIS La Fe). The gathering also provided an opportunity to introduce OmicSpace, a pioneering project sponsored by the La Fe IIS with technological leadership from GMV, with the aim of integrating clinical, genomics, and biobank information under a secure federated model.

OmicSpace applies European FAIR principles (Findable, Accessible, Interoperable, and Reusable), and it encourages collaborations among institutions so that biomedical data can be transformed into usable clinical knowledge. GMV's federated technology is based on tools such as the company's own ***uTile*** solution, and it makes it possible to train AI algorithms without moving any data away from its original source, while also guaranteeing traceability, regulatory compliance, and scientific quality.

As explained by María José Carrión, Manager of the La Fe IIS, "OmicSpace is an institutional project that arose

from the desire to transform biomedical research and improve the lives of patients and professionals alike. We're supporting research that is open, rigorous, and connected, where data is becoming a driver of innovation."

In turn, María Eugenia Gas, a researcher at the La Fe IIS and the project's coordinator, explained that "working together with GMV is allowing us to create a real model for collaboration between hospitals and research centers, while reducing regulatory obstacles and accelerating the development of a more precise and personalized form of medicine."

Application of this technology as an alliance between the public and private sectors is making OmicSpace an excellent example of how healthcare data is redefining the future of medicine in Europe, with Spain and GMV now positioned at the cutting edge of digital health.

Promoting innovation in healthcare and biomedicine with trustworthy data spaces

Through its participation in the Data Spaces Kit Program, GMV is actively participating in building Spain's ecosystem of trustworthy data spaces. This program is an initiative promoted by the Data Spaces Reference Center (CRED) and Spain's State Secretariat for Digitalization and AI (SEDIA). The aim is to establish solid infrastructure that will allow public and private organizations to exchange information, while ensuring security, integrity, and sovereignty.

GMV is acting as a technological partner for this program based on its extensive experience with the design, implementation, and operation of data spaces, in alignment with the principles of the European Union's Data Spaces Support Center (DSSC), and in conformity with the Spanish UNE 0087:2025 standard on definition and characterization of data spaces.

GMV's contributions to the program are especially focused on the healthcare and biomedicine industries, which are areas where the company has developed groundbreaking projects such as OmicSpace, which is oriented towards interoperability for omics and clinical data, and Pharma Trace Hub, a trustworthy data space created to facilitate the discovery of new medications and improve the effectiveness of treatments.

In its role as the technological integrator, GMV is contributing a set of essential capabilities:

- Semantic and technical interoperability, by applying common data models such as OMOP CDM and architectures based on the FAIR principles (Findable, Accessible, Interoperable, Reusable), to ensure data reuse and quality.
- Data governance and sovereignty, using trustworthy European frameworks such as Gaia X and IDS.
- Secure infrastructure, based on data exchange standards, access control mechanisms, and digital traceability solutions.
- Privacy Enhancing Technologies (PET), through the use of GMV's own ***uTile*** solution, which offers connectors for data spaces and allows secure federated analyses.

In this context, Pharma Trace Hub has now become established as one of Spain's most important initiatives related to pharmaceutical data spaces. Its mission is to promote collaboration among laboratories, research centers, hospitals, and public administrations, to create a secure environment that combines clinical information, clinical trial data, production records, and traceability. GMV is playing an essential role in the creation of this technological architecture, by contributing advanced interoperability, governance mechanisms, and federated analysis capabilities that allow sharing of information while still protecting confidentiality. Thanks to this approach, Pharma Trace Hub is facilitating real use cases, such as those involving the design of more efficient clinical trials, identification of biomarkers, and improvement of the pharmaceutical supply chain.

OmicSpace wins award for innovation in biomedical data

OmicSpace has been named as Best Social Project at the Comunicaciones Hoy Awards organized by the Spanish publisher Interempresas, as one of Spain's most innovative initiatives in the field of biomedical data spaces. This award reflects the value created by a groundbreaking model that brings together clinical, genomic, and biobank data with an ethical, secure, federated approach, to allow more accurate diagnostics and accelerate healthcare research.

GMV is playing an essential technological role in this project, by contributing its experience with interoperability, data governance, and deployment of secure infrastructure. These are all fundamental aspects for ensuring that hospitals, research centers, and governmental agencies can share and analyze sensitive data without compromising patient privacy or sovereignty.

In addition to recognizing the project's social value, this award from Interempresas is an acknowledgment of GMV's solid technical contribution to building a model that will transform biomedical research in the coming years.

GMV releases most advanced version of *Intraplan Radiance®*

The new version of ***Intraplan Radiance®***, which is GMV's planning and simulation software for intraoperative radiation therapy (IORT), represents a significant technological leap forward, by incorporating key improvements that optimize the user experience, accelerate the planning process, and strengthen the product's regulatory compliance in Europe.

One of the most noteworthy new developments is the addition of a demo mode, which is a feature designed to facilitate demonstrations at conferences, training sessions, and hospital facilities. This mode allows the use of sample data to experiment with the software's capabilities, without the need to use real patient information. This helps guarantee security and privacy while also making it possible to demonstrate the solution's clinical potential.

In addition, the new version of ***Intraplan Radiance®*** includes significant advances related to automation and performance, and implementation of a calculation algorithm in the graphics processing unit has allowed significant acceleration of the processing times. There are also new automated features that optimize clinical planning: automatic segmentation of organs (available in Europe for certain modalities and structures), automatic selection of the applicator diameter based on the target volume, and automatic positioning of the applicator in the center of the volume defined. In addition to standardizing key procedures, these improvements are also reducing the workload for specialists.

The updated version also incorporates a fully redesigned interface, with a more intuitive workflow that simplifies planning and improves navigation through the various stages of the process. In addition, the import/export capabilities have been strengthened for DICOM objects, to improve interoperability with other clinical systems.

This new version is arriving on the European market with the corresponding certification under Regulation (EU) 2017/745 on medical devices, granted by the international certification body SGS.

GMV recognized at the 5th Ennova Health Awards

GMV has been recognized in the Artificial Intelligence and Data Management category at the 5th edition of the Ennova Health Awards, organized by the Diario Médico–Correo Farmacéutico digital news platform. These awards have been created to acknowledge digital health initiatives that contribute value to the healthcare system, optimize data management, and improve quality of life for patients.

GMV's award was granted for the company's development of a simulator based on artificial intelligence (AI), which has been designed to predict the evolution of diffuse interstitial lung diseases (ILDs), as part of a challenge proposed by Spain's Center for Technological Development and Innovation (CDTI). The project has been carried out in collaboration with the La Paz University Hospital and the Complutense University of Madrid, as a way of combining clinical knowledge, research experience, and advanced technologies.

ILDs are a complex and heterogeneous set of pathologies of the lungs, where interpreting radiological images continues to be a challenge. According to the World Health Organization (WHO), 80% of medical decisions are based on radiological evidence, which highlights the importance of medical imaging for diagnosis and monitoring of these illnesses. However, the diversity of patterns and their variable progression make it more difficult to accurately evaluate these diseases, even for experienced specialists.

In this context, artificial intelligence (AI), and especially deep learning, have now emerged as important tools. The simulator developed by GMV uses advanced analysis of computed tomography (CT) scans to accurately identify the patterns associated with ILDs, determine which pattern is predominant, and classify the illness as either fibrotic or non-fibrotic, producing a significant improvement in terms of diagnostic capabilities.

However, the solution does more than just assist with identification. It also allows evolution of the illness to be anticipated, giving healthcare professionals a predictive tool that facilitates early, personalized adjustment of the corresponding treatments. Thanks to this proactive approach, the simulator is making a contribution to improved clinical monitoring and more effective decision-making, which is enhancing the care that can be provided for patients with ILDs.

ITS

GMV completes full deployment of ITS technology for Westchester County, New York

GMV has successfully completed the installation of its Intelligent Transportation System (ITS) for Westchester County's Bee-Line bus network, marking a major milestone in the modernization of public transport technology in the New York metropolitan area. With all 325 buses now fully equipped and the central systems operational, this achievement consolidates GMV's presence in the United States and represents the first implementation of the combined ***ITS Suite*** and ***GMV Hub*** in the country—a key step that opens the door to future deployments in the North American market.

The project, awarded in 2023 and launched in May 2024, has been delivered through a sequence of carefully executed phases. Following an initial analysis and design stage, Factory Acceptance Tests (FAT) were successfully held in Spain in December 2024, confirming system readiness. Site Acceptance Tests (SAT) in Westchester took place in February 2025, followed by a Mini-Fleet pilot phase that ran from March to June 2025. Vehicle installations began in July and were completed by early Dec, a key target date set by the client. Completing the work ahead of schedule is a testament to GMV's thorough preparation and the strong collaboration maintained throughout the project.

At the heart of the system lies GMV's ***ITS Suite***, a comprehensive CAD/AVL platform (Computer-Aided Dispatch/ Automatic Vehicle Location) designed and developed by GMV. This suite provides real-time fleet monitoring, incident management, passenger information, and video surveillance (CCTV), forming the operational backbone of the new Bee-Line control environment. Complementing this platform, GMV integrated additional management tools—such as Customer Complaints Module, Planning & Scheduling (integration in progress) and Yard Management systems—from specialized partners, seamlessly connecting them to the ***ITS Suite*** to create a unified and data-driven ecosystem.

Each Bee-Line vehicle is now equipped with the ***GMV Hub (EP 200)***, a single, multifunctional on-board computer that consolidates GPS positioning, passenger counting, video recording, operator interface, and other ITS subsystems in one rugged, reliable device. This unified hardware approach simplifies maintenance, improves reliability, and ensures consistent data across the fleet.

Built upon open international standards and modern APIs, GMV's solution has enabled rapid and clean integration with existing third-party systems, both on-board and at the control center. The project's success has been driven by close cooperation between GMV, Westchester County's Department of Public Works and Transportation, and Liberty Lines Transit, the county's main operating partner.

The Westchester County ITS deployment stands as a model of efficiency, innovation, and collaboration, reinforcing GMV's role as a trusted technology partner and setting a strong precedent for future ITS projects across the United States.

GMV analyzes mobility challenges at an informative breakfast with the secretary general for Sustainable Mobility

■ Miguel Ángel Martínez Olagüe, General Manager of Intelligent Transportation Systems at GMV, took part in November in an informative breakfast organized by Executive Forum, with the collaboration of GMV and CONFEBÚS. The event brought together institutional representatives and industry stakeholders to analyze the scope of the new Sustainable Mobility law and to discuss the technological challenges that will shape the future of transportation in Spain.

During the forum, Sara Hernández, secretary general for Sustainable Mobility at the Ministry of Transport and Sustainable Mobility, presented the new Sustainable Mobility law and outlined its main challenges. Hernández highlighted the value of the legislation in moving toward a mobility model that is "more equitable, inclusive, efficient, and digital," and emphasized the need to guarantee the right to mobility as a cornerstone of equal opportunity. She also stressed the importance of supporting the sector throughout its technological and digital transformation.

In this context, Miguel Ángel Martínez Olagüe focused on the decisive role of innovation, noting that Spain is making strong progress toward more sustainable, digital, and interoperable mobility. He pointed out that this transformation "is already a reality" and is being driven by cloud-based technologies that enable more flexible, scalable systems focused on citizen-oriented services. The GMV executive's remarks reinforced the company's position as a key player in the modernization of transportation and as a technological partner for public authorities and operators.

From account-based ticketing (ABT) to intelligent fleet management, GMV continues its strong commitment to solutions designed to support cities and regions in their transition toward more connected and efficient transportation.

GMV drives railway innovation at "AusRAIL PLUS 2025"

Melbourne hosted a new edition of "AusRAIL PLUS" in November, the leading railway event in the Asia-Pacific region, organized by the Australasian Railway Association (ARA).

The event brought together industry professionals, operators, manufacturers, and experts to review progress in sustainability, digitalization, innovation, and safety in the rail sector.

GMV took part in the exhibition area with its own stand within the Spain Pavilion, organized by ICEX. At this space, the company showcased its latest intelligent transportation system solutions, designed to optimize rail operations, enhance the user experience, and enable efficient service management.

The program featured technical conferences, specialized presentations, infrastructure visits, and networking activities, reinforcing the event's role as a key platform for knowledge exchange and for strengthening international collaboration within the sector.

GMV deploys new systems to help modernize public transportation in Cyprus

■ A major modernization process has been completed for the public transportation system in Cyprus, as part of an ongoing collaboration between GMV and the country's Ministry of Transportation and Public Works. The aim has been to give the system new advanced features and technologies, to improve efficiency and the user experience.

One of the most notable milestones has been modernization of the fare system through introduction of the account-based ticketing (ABT) model. The new system is based on user accounts that store information about transportation card holders and their balances, while the card itself is only used to identify the passenger. This represents significant progress compared to traditional systems, where that information is stored on the card.

This approach simplifies and speeds up onboard transactions on the vehicles, while also allowing application of more complex and flexible fare rules. The new system also makes it possible to recalculate fares after a passenger's travel has been completed, by automatically selecting the most advantageous fare option based on their actual use of the transportation system.

The ABT system was fully implemented for all transportation operators at the end of 2025, and it is now available for all transportation users who want to migrate to this new type of fare policy, but with no need to eliminate the previous fare system. This means that each user can choose the model that is most beneficial for them.

Two new complementary systems have also been deployed on top of this basic technological foundation. The first is focused on monitoring and control of school transportation, with a combination of vehicle geopositioning and tracking features and electronic validation of student card holders. In addition, this system includes a mobile app that drivers can install on their phones, which lets them scan an identification tag on a vehicle to confirm that it is authorized for student transportation services.

This tool facilitates real-time monitoring from the control center, and validation of student transportation cards based on the ABT system. In addition, the system stores historical data that can be used to improve oversight of the service, and it can generate reports designed to support decision-making.

A pilot version of this school system went into operation in January 2025, and it became fully operational on all of the country's school transportation lines in September 2025, just in time for the start of the new academic year. With this entry into service, the new fleet management system and ABT system now covers almost 1,500 buses in Cyprus, which includes a roughly equal number of regular and school transportation services.

The second complementary system deployed allows payments using debit and credit cards on buses in the city of Famagusta, based on the Mass Transit Transaction (MTT) model. Instead of applying a fixed fare for each journey, the system records the validations performed with each card throughout the day, then calculates the best total fare for the user. This model, which has been inspired by the Pay As You Go (PAYG) approach, allows benefits to be applied for cumulative use, along with daily limits and integrated fares, in a manner comparable to ABT systems. This means that passengers can use public transportation without having to determine the applicable fares in advance.

With deployment of these new systems, GMV is continuing to solidify its position as a technological leader for modernizing public transportation in Cyprus, while strengthening its 10 year collaboration with the country's Ministry of Transportation. This project represents a decisive step forward towards a more efficient, flexible, and user-centered mobility ecosystem, and it reflects the trust placed in GMV as a strategic partner for developing the intelligent transportation solutions of the future.

GMV showcases its railway solutions at Rail Live 2025

■ GMV once again took part in Rail Live, held from November 26 to 28 at IFEMA (Madrid). The event brought together international experts to discuss the future of rail transport, addressing topics such as digital transformation, energy sustainability, cybersecurity, smart infrastructure, urban mobility, and major railway projects.

With its own stand at the event, GMV showcased its ***SAE-R®*** Automatic Vehicle Location System (AVLS) for the rail environment. This solution enables operators to monitor service compliance in real time, optimize resources, and access business intelligence and alarm management tools.

In addition, the company presented its advanced ticketing systems, including access control in stations and vehicles, platform validation, and ticket vending machines, specifically tailored for tram systems and commuter rail networks.

Rail Live 2025 also featured spaces dedicated to talent and innovation, fostering collaboration between industry and academia, along with networking activities and technical visits.

GMV's vision for the future of connected transportation takes center stage at ExpoBus Iberia 2025

■ Pontevedra (Galicia) hosted the 4th Passenger Road Transport Trade Fair, ExpoBus Iberia 2025, in November. Considered the second-largest national trade fair in the sector, the event attracted nearly 3,000 visitors, confirming its continued growth and international projection.

The fair featured 142 exhibiting companies from 23 countries, represented by 69 direct exhibitors from six nations. Over the course of three days, industry professionals explored the latest developments in vehicles, equipment, services, and technological solutions.

GMV took part with its own stand, where it showcased its latest Intelligent Transportation Systems (ITS) solutions aimed at improving the efficiency, sustainability, and digitalization of road transport. The company's presence reinforced its commitment to innovation and to the technological transformation of the sector.

GMV strengthens its public transportation leadership in Madrid by adapting its *TV100* solution for people with reduced mobility

■ The Madrid Regional Transportation Consortium (CRTM) recently informed its affiliated operators that they must provide fare validators that are accessible for people with reduced mobility (PRM). It is also imposing significant penalties for each bus lacking these devices, along with the potential for a stricter inspection regime. Because of this, bus operators are looking for a reliable solution to implement in relation to the consortium's new concession map. Fortunately, GMV is in a strong strategic position to fill this need, by offering its ***TV100*** validator, a robust solution already in use in the CRTM ecosystem.

The CRTM is already applying penalties for buses from the CRTM fleet that lack validators specifically adapted to the current accessibility regulations, which include the need to provide onboard validation options for users boarding buses through the accessible areas at the rear doors. This context has created a situation well suited for deployment of more accessible validators for PRM, not only as a response to the regulatory framework, but also as an investment in the future that can be applied to future concession procedures.

The solution offered by GMV is based on the company's ***TV100*** validator. These devices have already been installed during earlier EMV payment card projects, and they are fully compatible with the rules from the CRTM's intelligent transportation system (ITS) annex. The ***TV100*** validator features a 7" touch screen, a built in speaker, RFID validation for transportation cards, a Transit mode for contactless EMV card payments, integration into the driver's cabin and the computer-aided dispatch / automatic vehicle location (CAD/AVL) and intelligent ticketing systems, and compliance with public transportation card validation requirements.

Deployment of these validators has been planned in two phases: a first phase to provide basic functionality that meets the regulatory requirements, and a second phase for full validation and integration into the CRTM's onboard ecosystem. In turn, this is allowing logistical planning structured as two modalities: immediate delivery with available stock, and standard production (6 months). This dual approach is giving operators the ability to act quickly in response to these regulatory needs.

This use case involving validators for people with reduced mobility is a good example of the principles of GMV's business development process: leadership in terms of cost and quality by use of a ready-made product with no need for additional development; a proactive focus on a strategic market like Madrid; close collaboration with the operators involved; strict compliance with the regulations in force; and a clear product development strategy using solutions that are already certified and available.

By offering solutions like the ***TV100*** validator, GMV continues to demonstrate its commitment to public transportation accessibility, innovation, and regulatory compliance, as well as its dedication to ongoing investment in the mobility of the future.

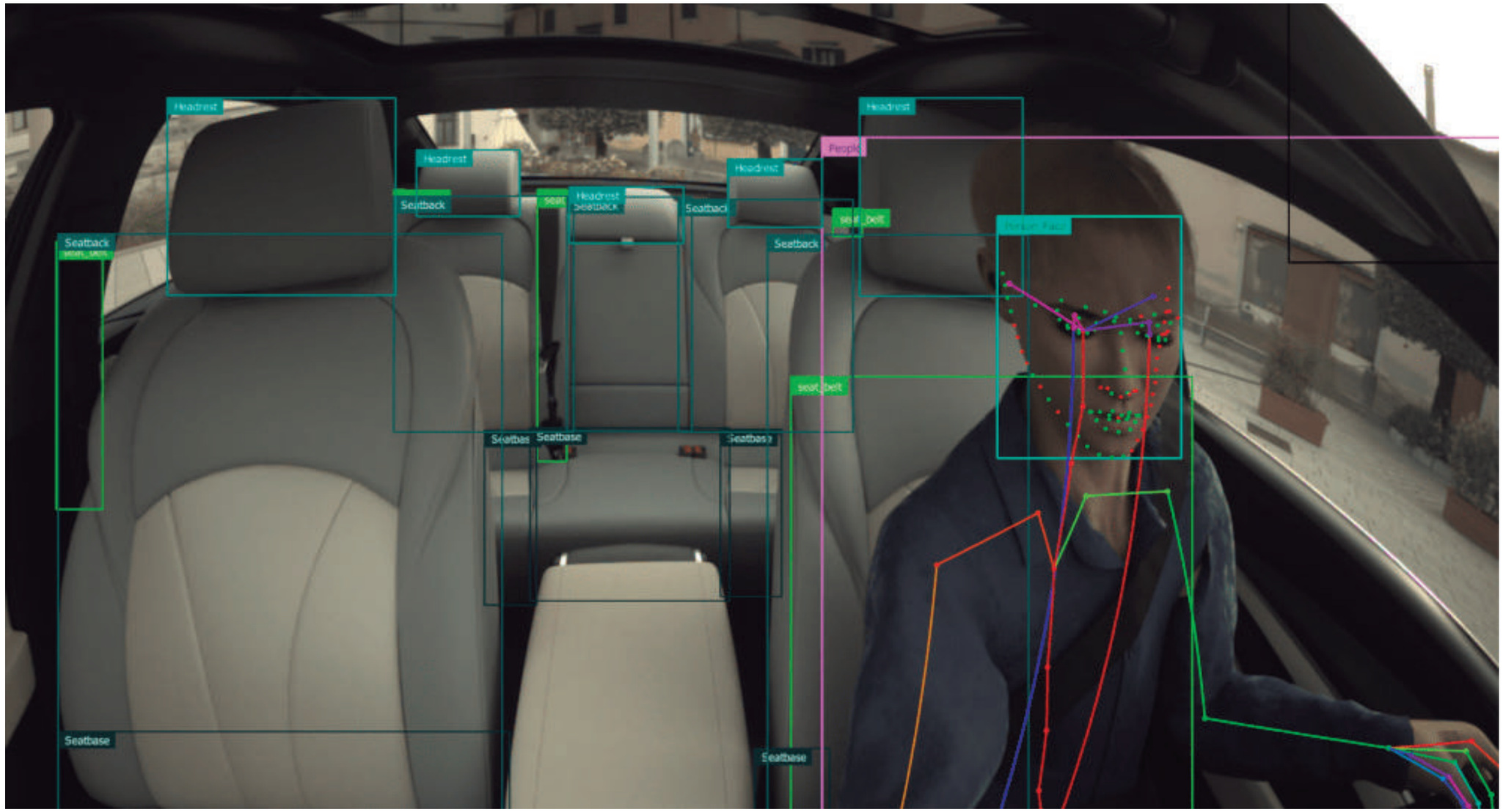
GMV will facilitate mobility during Cyprus's 2026 Presidency of the Council of the European Union

■ As Cyprus prepares to assume the Presidency of the Council of the European Union for the first half of 2026, GMV will be sponsoring the availability of public transportation cards for personnel traveling to the island nation to participate in the upcoming institutional activities.

This purpose of this initiative is to promote sustainable mobility for those attending meetings of the Council of the European Union. GMV will also be in charge of support services and follow up for the implementation and use of these cards.

This collaboration is further strengthening the collaborative relationship between GMV and the Ministry of Transportation in Cyprus, while also demonstrating the company's ongoing role as a technological partner committed to innovation and sustainability in Europe.

AUTOMOTIVE & MOBILITY



GMV and Anyverse join forces to accelerate the future of automotive safety and comfort

The alliance between the two companies is advancing and solidifying the development of artificial intelligence applied to the automotive industry

GMV has signed a strategic alliance agreement with Anyverse, a pioneering supplier of high-fidelity synthetic data and simulation technology for artificial intelligence (AI) and machine vision applications. Anyverse's capacity for generating synthetic data is now being integrated into GMV's validation workflows, to accelerate development of its cabin monitoring systems, which can now benefit from significantly enhanced support based on simulation.

This alliance is a reflection of GMV's commitment to applying the latest generation of virtual testing tools, so that it can offer safer and more efficient automotive systems, and it also demonstrates the trust that GMV is placing in Anyverse as a reliable technological partner.

This collaboration is addressing one of the fundamental challenges for applying AI in the automotive industry: the need to ensure the system's robustness and reliability in all safety-critical situations.

With Anyverse's ability to simulate radar and RGB-IR cameras based on physical sensors, GMV is gaining access to an advanced virtual testing environment that can generate complete, high-quality synthetic data sets for use in automotive developments. This is giving GMV the ability to exhaustively test and validate its in-cabin monitoring systems (ICMS), including safety features and emerging capabilities such as improved comfort, wellbeing, and status monitoring for a vehicle's occupants. The aim is to ensure proper performance of all of these systems long before their physical testing and integration into vehicles begins.

In turn, GMV is contributing its extensive experience in automotive safety, system validation, and real-world use cases, which is helping Anyverse further refine the realism of its synthetic data platform and its automotive applications.

For manufacturers in the auto industry, this collaboration will provide two major benefits: a pre-established basis for evaluation and a quicker time to market. GMV's in cabin monitoring systems are subject to early validation under the Euro NCAP requirements, using data generated by Anyverse's InCabin platform, which has been specifically designed to support these evaluations.

This is giving manufacturers full confidence in their ability to achieve the highest safety ratings. Automakers will also benefit from GMV's prevalidated solution, which can significantly reduce integration cycles, development costs, and implementation periods.

This joint initiative represents an important milestone for Spain's automotive technology industry, by bringing together two innovative companies that are setting new standards for safety, comfort, and interior sensor performance.

GMV receives Mobility award at 3rd Automotive and Mobility Gala Event for the Spanish region of Castile and León

In November, the 3rd Automotive and Mobility Gala Event for the Spanish region of Castile and León took place in the city of Valladolid, with attendance by nearly 400 professionals from these industries, to acknowledge the region's most outstanding innovation and mobility initiatives.

At this edition of the award ceremony, GMV was recognized in the Mobility category for its ***GMV GSharp***® solution. This is a high-precision, secure global navigation satellite system (GNSS) technology that is advancing the state-of-the-art for the autonomous driving and advanced driver-assistance systems (ADAS) of the future. On hand to accept the award was Miguel Ángel Martínez Olagüe, GMV's General Manager for Intelligent Transportation Systems.

The ceremony was organized by the FaCyL Cluster industry association, with an emphasis on the role of the Spanish region of Castile and León and its well established ecosystem of automotive innovation, collaboration, and technological development. GMV has been part of this ecosystem since the late 1990s, when it established its facilities at the Boecillo Technology Park near the city of Valladolid, where it continues to carry out significant projects focused on intelligent transportation systems, the automotive industry, and cybersecurity.

Another subject discussed at the event was the challenge of maintaining the region's leadership position both within Spain and internationally, as well as the need to continue with the transition towards more sustainable mobility under a coordinated long-term strategy.

Closing remarks at the ceremony were presented by Alfonso Fernández Mañueco, President of the regional government of Castile and León, who emphasized his administration's commitment to supporting the development of major automotive and mobility projects. He pointed out that his region has plans to invest more than €3 billion over the medium term, and that together with FaCyL and local industry, his government is working to strengthen competitiveness, attract new investors, and ensure the existence of a fair and realistic industrial transition.

This award represents another recognition of GMV's ongoing contribution to smarter, safer, and more sustainable mobility, with the company providing its talent and technology from Castile and León to the rest of the world.

GMV strengthens its leadership in autonomous mobility at Smart Green Mobility 2025 event

On October 16th, the city of Pamplona hosted the latest edition of the Smart Green Mobility event, which is northern Spain's largest gathering dedicated to sustainable, connected, and autonomous mobility. GMV had a notable presence at this event focused on innovation, where it was represented by Beatriz García Navarro, head of the TIER 1 Division of the company's Automotive business unit.

She gave a presentation entitled "Connectivity, cybersecurity, and global navigation satellite systems (GNSS): progress towards the autonomous mobility of the future", in which she analyzed the technological foundations that are allowing progress towards vehicles that are increasingly safe and autonomous. She also emphasized the key role played by connectivity, cybersecurity, and satellite navigation systems for building a reliable, interoperable ecosystem that can respond to the latest challenges for software-defined vehicles.

GMV's participation in events like this one, which brought together more than 200 representatives of institutions, business leaders, and tech firms at the city's Baluarte Event and Conference Center, clearly reflects the company's commitment to developing advanced solutions for intelligent mobility.

Organized by the NAITEC technology center and the government of the Spanish region of Navarre, this gathering once again demonstrated the importance of public-private collaboration and the strategic role of R&D, for accelerating the ecological and digital transition of the mobility industry.

GMV has key role in progress towards mobility digital corridor with latest generation of cellular V2X technologies

GMV is continuing to demonstrate its leadership in connected mobility, with its major contribution to the mobility digital corridor being developed by Globalvia through use of its Openvia technological platform. Since the beginning of this project, GMV has played a decisive role by providing advanced cooperative intelligent transportation systems (C ITS) based on 4G/5G networks, Internet of Things (IoT) infrastructure, and cooperative communications for connected and automated vehicles. The program has now entered into a key phase with deployment of the virtual roadside unit (vRSU), based on a variety of use cases (UCs) that include notification of events on the road and at toll plazas based on vehicle-to-everything (V2X) technologies.

GMV is contributing its ***V2X Smart Mobility Suite,*** which is a modular solution designed to ensure full interoperability among infrastructure elements, vehicles, and digital services. The suite includes integration of a communications stack that is compatible with IEEE WAVE and ETSI ITS G5/C V2X, plus roadside units (RSUs), onboard units (OBUs), high-performance embedded software, and applications for safety and mobility use cases. The demonstrator contains the full architecture developed by GMV, which includes the ***C ITS Hub***, onboard systems, and a mobile app designed for users.

For GMV, this represents a strategic milestone. Validation of GMV's vRSU**,** which is one of the company's most advanced technologies, represents fundamental progress towards future C ITS deployments based on 5G connectivity. This innovation allows considerable reductions in infrastructure costs, while also optimizing the system's scalability and facilitating the use of more efficient operating models for the next generation of intelligent corridors.

The collaboration with Globalvia, a leading global company for highway concessions and mobility innovation, is opening up new opportunities for GMV and for the entire intelligent mobility industry. These include potential expansion of the digital corridor to other locations, and further solidification of ***GMV's Smart Mobility Suite*** as a leading technological solution.

During the second half of 2025, validation was completed for the proof of concept (PoC) and for the various use cases considered, such as V2X based notices for events occurring on the road and at toll plazas. During this phase, GMV has played an essential role in developing and supplying the V2X stack, implementing the applications layer, designing and implementing the virtual RSU, and providing comprehensive support for the end-to-end validation.

With this advancement, GMV is further demonstrating its commitment to safer, more connected, and more efficient mobility, while also reaffirming its position as a key technological partner for the transition towards the next generation of intelligent infrastructure and cooperative services.

ICT

The PRISMA project: creating the virtual co-pilot of the future

This is a pioneering project that is redefining safety for drivers, with GMV contributing its leadership in artificial intelligence and quantum computing

The project known as PRISMA (Intelligent Perception and Response for Driving Safety Through Adaptive Monitoring) is a pioneering European R&D initiative designed to promote safer, more autonomous, and more sustainable mobility. As part of this project, GMV is contributing its leadership in artificial intelligence and quantum computing to help redefine safety for drivers.

The initiative is based on a natural evolution of the currently existing driver monitoring systems (DMS), by integrating an intelligent and adaptive virtual assistant that is able to gain a deep understanding of the condition of the driver and vehicle and the driver's surroundings. By combining advanced perception technologies, AI, and adaptive learning models, PRISMA is enhancing the ability to anticipate risk situations and issue personalized responses that can improve safety in real time.

This system will be able to understand, anticipate, and respond in a personalized way for each individual driver, vehicle, and environment. To do this, this system integrates the latest generation of various technological capabilities, including everything from artificial intelligence and machine vision for detailed perception of the environment, to the use of synthetic multimodal data that allows training of the algorithms on complex scenarios. The project architecture also incorporates embedded systems and advanced sensors, along with quantum computing techniques oriented towards optimizing models and strengthening their robustness when faced with unexpected situations.

The PRISMA project is being carried out by a multidisciplinary consortium of technological innovation leaders, including Rovimática as the coordinator, Idneo, Passion Motorbike Factory (Scoobic), Anyverse, and GMV. In particular, GMV is responsible for development of the system's cognitive abilities and application of quantum computing to increase efficiency and allow for safer decision-making.

In this way, PRISMA is laying the foundations for the mobility of the future: safer, smarter, and more reliable. The project's benefits will include reducing accidents caused by distractions, fatigue, or critical situations; optimizing energy use by electric vehicles as a contribution to sustainability; improving the technological competitiveness of Spain and the European Union in the area of autonomous mobility; and applying the principles of responsible innovation by integrating factors that involve ethics, privacy, and cybersecurity by design.

The PRISMA project has received funding from Spain's Center for Technological Development and Innovation (CDTI), with support from the Spanish Ministry of Science, Innovation and Universities as part of the Science and Innovation Missions 2024 program

GMV analyzes the impact of the convergence between AI and quantum computing

On November 12th, GMV participated in the 3rd Andalusia Artificial Intelligence Congress, which was held in the city of Granada and organized by the regional government of Andalusia and the Andalusia Digital Agency. This event brought together experts from the worlds of science, technology, and business, to analyze the latest progress and challenges associated with the development and application of artificial intelligence.

Ana María Sánchez, GMV's Head of Quantum Computing for Secure e Solutions, represented the company by participating in a roundtable discussion entitled "Echoes of a quantum future: the quantum AI revolution", where she shared some of GMV's perspectives regarding the transformative impact of the convergence between artificial intelligence and quantum computing.

She explained how the combination of these two fields is now poised to redefine our technological, economic, and social future, by making it possible to take on complex problems in ways that would be impossible for currently existing systems. She also stressed the strategic role that these technologies will be playing in areas such as energy optimization, scientific research, cybersecurity, and industrial sustainability.

GMV explores the impact of quantum computing on innovation and the economy

On November 19th, GMV participated in the National New Paradigms for Quantum Computing Congress, which was held in the Spanish city of Burgos. The event was organized by the ITCL technology center as part of the Centr@tec program, which is an initiative supported by the Castile and León Institute for Competitiveness in Business (ICECYL).

The purpose of the gathering was to analyze the current state of quantum computing, and to present practical cases of its real applications. The event brought together experts and representatives from the worlds of science, technology, and business, to discuss the disruptive potential of this emerging technology, as well as its impact on innovation and the economy.

Ana María Sánchez, GMV's Head of the Quantum Computing Section for Secure e Solutions, represented the company by participating in a roundtable discussion entitled "The current reality of the quantum ecosystem", where she shared some of GMV's perspectives regarding the challenges and opportunities of quantum computing applied to the real world.

During her presentation, Ms. Sánchez emphasized the rapid evolution of the quantum computing ecosystem, in all of its aspects (hardware, algorithms, associations, and talent development), and she explained that GMV is maintaining constant vigilance and actively updating its technologies, based on its understanding of these advances and their practical applications.

Opinion

How technology is transforming energy resilience

For Europe, digitalization of electrical grids has become a strategic priority. Given the rising demand for energy, integration of renewable energy sources, and increasing physical risks and cyber threats, the European Commission estimates that between now and 2030, there will be a need to invest €584 billion to modernize the continent's electrical system. In this context, technologies like autonomous robotics and artificial intelligence (AI), with quantum computing also on the horizon, are becoming established as essential elements for an energy system that is more robust, flexible, and sustainable.

Automation and robotics: efficiency and safety for industry

In an industry where many operations take place in critical environments, autonomous mobile robotics is emerging as a key tool for reducing risks and optimizing operational efficiency.

GMV is helping to drive this transformation with solutions like its uPathWay, which is an advanced platform that can manage and integrate different types of mobile robots for use in heterogeneous industrial environments. This technology allows automation of operation and maintenance (O&M) tasks, so these activities can be made safer by minimizing exposure for human personnel.

The ***uPathWay*** solution incorporates an artificial intelligence agent that is able to automatically detect anomalous situations, such as obstacles or gas leaks, to improve safety and reliability at industrial facilities. In addition, this type of automation helps mitigate the scarcity of qualified technical personnel, especially in remote regions, by offering a scalable solution that is aligned with the expansion seen in energy-related activities.

Artificial intelligence: detecting anomalies

AI is also contributing value in areas that are perhaps less visible, but still essential, such as detecting anomalies during industrial processes or at R&D laboratories. Advanced models are now allowing identification of deviations and anticipation of malfunctions during the early phases of development, to improve quality and operational efficiency.

Tools such as ***GMV PitIA*** reduce alert fatigue by minimizing false positives and prioritizing truly relevant signals, while also incorporating explainability capabilities that identify the underlying variables and behaviors for each anomaly, to enhance operator trust and improve decision-making.

Quantum computing on the horizon

It is beginning to look like quantum computing will represent the next major revolution for the energy sector. It has the potential to solve high-complexity problems, such as the need to simulate grids with thousands of scenarios, or to simultaneously optimize multiple dynamic variables, such as those involving weather and consumption patterns and renewable generation.

GMV is now performing research on this technology to allow planning of more dynamic, efficient, and resilient energy systems, with integration of predictability and flexibility to ensure secure and sustainable energy supplies.

Eric Polvorosa.
Marketing and Communications for GMV's Secure e-Solutions

> «Autonomous robotics, artificial intelligence, and quantum computing are becoming established as essential elements for a more robust, flexible, and sustainable energy system»

Transforming electrical grids into intelligent infrastructure is not just a form of technological evolution, because there is also a critical need to ensure access to the energy of the future.

At Advanced Manufacturing events, GMV highlights the role of AI and robotics for the factories of the future

■ GMV once again participated in Spain's top gatherings for industrial innovation with its presence at Advanced Manufacturing Barcelona and Advanced Manufacturing Madrid, which have both become important events for the automation, digitalization, and robotics ecosystem.

In Barcelona, the company HispaRob organized a roundtable discussion entitled "Robots with intelligence: challenges and opportunities for the factories of the future", which featured participation by Ángel C. Lázaro, GMV's Head of Industrial Robotics and Automation for Secure e Solutions. The discussion analyzed the impact that artificial intelligence applied to robotics is having on transformation of the production model, emphasizing the role played by AI in enhancing autonomy, flexibility, and human-machine collaboration. He stressed that the convergence between AI and robotics is redefining the manufacturing facilities of the future, especially systems that are able to learn, interpret their surroundings, and execute tasks in a more autonomous way. In this context, GMV presented ***uPathWay***, its platform for integration and coordination of mobile robots, regardless of their manufacturer, with a focus on improving efficiency, resilience, and safety.

At the event in Madrid, GMV had a joint stand with AER Automation, where the companies showcased various types of robotics and industrial automation projects. This included live demonstrations with a quadruped robot, to give the attendees a first-hand look at how ***uPathWay*** functions in complex operating environments, and the solution demonstrated its ability to coordinate heterogeneous fleets to perform autonomous tasks in industries such as energy, petrochemicals, and advanced logistics. Mr. Lázaro also participated in a roundtable discussion along with representatives from the companies ABB, Yaskawa, and KUKA, where he explained strategies for implementing technologies and presented some successful cases as evidence for the role of automation as a driver of Industry 5.0.

GMV presents the GreenBot project at SembrAI event

At the end of September, GMV participated in the 3rd International Congress on Artificial Intelligence Applied to the Agri-Food Supply Chain. This event, known as SembrAI 2025, was held in the Rectorate Building at the University of Córdoba, jointly organized by the university and the INTEC Foundation.

SembrAI has become a leading forum for discussing technological innovation in the agri-food industry, and GMV took advantage of this opportunity to give a demonstration of its ***uPathWay*** solution, which is an advanced platform for managing and integrating different types of mobile robots in a wide range of operating environments.

The company gave a presentation to demonstrate a high-precision autonomous vehicle designed for intelligent, localized weed control for woody crops such as almond, citrus, and olive trees. This vehicle was developed as part of the GreenBot project, which is an operational group funded by the regional government of Andalusia. The project is bringing together artificial intelligence, robotics, and machine vision to optimize the use of phytosanitary products, reduce costs, and mitigate the environmental impact of intensive agriculture.

GMV's participation at SembrAI 2025 is a further demonstration of the company's commitment to developing advanced technologies to promote more sustainable, efficient, and competitive agriculture, in line with the industry's objectives on digitalization and ecological transition.

The GreenBot project has received funding from the European Innovation Partnership's 2022 grant program for Operational Groups, as part of the Andalusia Rural Development Program 2014-2022, under the scope of the Order of July 7, 2020 of the Andalusia regional Ministry of Agriculture, Livestock, Fisheries and Sustainable Development (sub-measure 16.1, operations 16.1.2 and 16.1.3

IBM names GMV as Partner of the Year in the Cloud category

■ At its Ecosystem Summit 2025, IBM named GMV as its Partner of the Year in the Cloud category. Held on November 13th, this annual event brought together IBM's ecosystem of partners, to celebrate innovation and collaboration in the areas of artificial intelligence and the hybrid cloud.

This award is a recognition of GMV's commitment to digital transformation and technological innovation, as well as the noteworthy role that the company is playing in relation to developing advanced solutions in the cloud environment.

In attendance at the event to accept the award were Luis Fernando Álvarez-Gascón, GMV's General Manager for Secure e Solutions, along with José Carlos Baquero, Rubén Villoria, and Nathalie Dahan. In the words of Ms. Dahan, GMV's Head of Partner Strategy & Portfolio for Secure e Solutions, "this recognition has come at the end of a particularly productive year for the collaboration between GMV and IBM. Our partnership is allowing us to make great advances in multiple fields, with WatsonX becoming firmly established as the key technological basis for our cooperation."

With this award, GMV has strengthened its position as one of IBM's strategic partners for developing solutions based and the cloud and artificial intelligence, further solidifying an alliance that is helping to shape the future of collaborative innovation.

Scoobic MED named as winner at the Comunicaciones Hoy Awards

■ GMV has been named as a winner at the 17th edition of the Comunicaciones Hoy Awards. These awards recognize Spain's most outstanding technological projects of the year, for their contributions to digitalization, efficiency, and innovation in a variety of industries.

The award in the Industry category was given to the Scoobic MED project, which has been developed by Passion Motorbike Factory–Scoobic with GMV as a technological partner. This is a pioneering solution for last-mile logistics, which integrates advanced technologies like 5G connectivity and artificial intelligence to develop a 100% electric autonomous vehicle that is optimizing urban deliveries.

Scoobic MED is notable for its fully autonomous operation in urban environments, thanks to its integration of ***uPathWay***, a platform developed by GMV for managing, monitoring, and coordinating mobile robots and autonomous vehicles.

With this technology, the vehicle is able to perform real-time analysis of its surroundings, identify obstacles, and optimize routes, to improve efficiency and safety during deliveries. The use of 5G technology ensures low-latency, high-reliability communications, which are essential for secure operation of autonomous vehicles in urban areas, while the use of artificial intelligence algorithms facilitates more efficient and adaptive decision-making when changes occur to the vehicle's surroundings.

GMV shares its experience in deployment automation at the ROSCon Spain event

GMV participated in the 2025 edition of the ROSCon Spain event, organized by the Eurocat technology center in Catalonia. This has become the country's leading gathering for developers and other professionals from the Robot Operating System (ROS) ecosystem. The gathering took place on November 4th and 5th, and it brought together experts from across Spain to share their progress, experiences, and success stories related to developing solutions based on robotics and open-source software.

Benito Martínez, an engineer working in GMV's Robotics area for Secure e Solutions, gave a presentation entitled "Automation of ROS2 deployments using Docker: from development to production". This was part of a technical session where he also presented the experiences of GMV's team with using Docker containers to optimize the development and deployment processes for robotics systems based on ROS2.

Mr. Martínez emphasized the ways in which containerization can reduce operational complexity, improve scalability, and ensure better consistency between the development and production environments, which are all essential aspects of implementing advanced robotics solutions. He also explained the role that GMV is now playing in relation to applying DevSecOps methodologies and emerging technologies to promote efficiency, reliability, and automation for projects involving industry and autonomous robotics.

GMV attends The Future of Industry event, to analyze the trends that are shaping digital transformation

On October 8th, GMV participated in an event entitled "The future of industry: towards a people-centered approach to manufacturing", which was organized by the Tekniker research and technology center. This gathering brought together renowned industrial experts to analyze the trends that are now defining the transformation of industry.

At the event, Ángel C. Lázaro, GMV's Head of Industrial Robotics and Automation for Secure e Solutions, participated in a roundtable discussion entitled "Automation and robotics: New trends and practical applications for industrial automation and collaborative robotics". During the discussion, he shared GMV's perspectives regarding advanced robotics and intelligent automation, and how these are now driving the transition towards more efficient, flexible, and sustainable production models.
Throughout the session, the participants addressed the key role of collaborative automation, artificial intelligence, and the latest generation of robotics technologies, as drivers of a people-centered approach to industry that is able to combine productivity with safety and employee wellbeing.

Mr. Lázaro explained how the integration of intelligent robotics solutions, machine vision, and advanced analytics is contributing to process optimization, quality improvements, and promotion of more adaptable and competitive manufacturing.

This Tekniker event once again demonstrated the importance of technological collaboration and exchanges of knowledge, as essential elements for taking on the challenges of Industry 5.0, where innovation and the human factor coexist as fundamental aspects of a new production paradigm.

GMV and LuxQuanta form alliance to strengthen the future of quantum security in Europe

The agreement combines GMV's 40 years of experience in cybersecurity and space with LuxQuanta's field-proven QKD technology.

GMV, a leader in the fields of cybersecurity, space, and defense, has established a strategic alliance with LuxQuanta, a pioneering Spanish company and worldwide leader in quantum key distribution (QKD) technologies. The aim of this partnership is to accelerate real-world deployment of QKD technologies, and to strengthen European sovereignty in relation to secure quantum communications.

This collaboration is giving Spain a position at the forefront of Europe's revolution in secure quantum communications, through a combination of GMV's validated key management system (KMS) and decades of cybersecurity experience, and LuxQuanta's field-tested continuous variable QKD solutions.

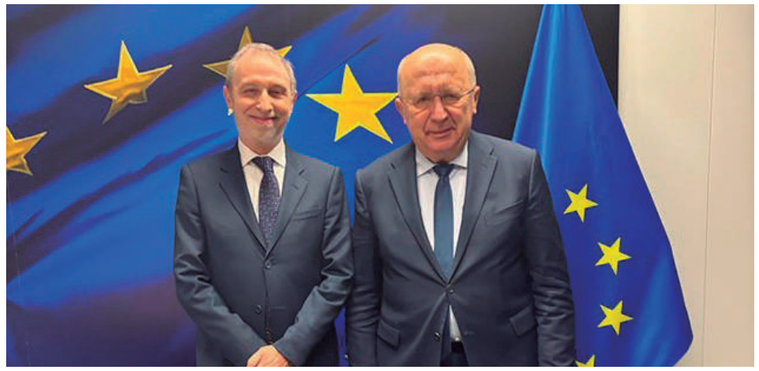
To allow QKD networks to emerge at the global scale, the path towards commercial, scalable, long-range quantum communication now depends upon the synergy between ground fiber optic networks and the space segment. The ground layer represents the backbone of Europe's quantum communication ecosystem, by allowing secure exchanges of quantum keys via national and metropolitan infrastructure. In turn, the satellite segment ensures that communications that are secure from the quantum perspective can travel beyond the ground connections, through the use of secure quantum key infrastructure based on satellite constellations, which can allow secure connections over very long distances that cannot be covered by fiber optics.

The QKD technology offered by LuxQuanta is renowned for its robustness, interoperability, cost-effective installation, and proven success in the field, and it provides the physical layer for secure generation of quantum keys via the ground infrastructure. The company's focus on continuous variability quantum key distribution (CV QKD) allows for efficient, scalable integration into existing fiber optic networks, which puts LuxQuanta at the forefront of quantum communication in Europe.

GMV is contributing its extensive experience with encryption and key management, which it has gained during its work on space missions such as Galileo, and which will ensure the reliability and operational maturity of the key distribution infrastructure. In addition, the company's experience with managing satellite constellations, combined with its 30-year track record in the field of cybersecurity, is further enhancing its role as a trusted European leader in secure communications.

By bringing together LuxQuanta's leadership in ground quantum communication and GMV's expertise in cybersecurity and space systems, this collaboration is making it possible to offer a complete, validated ground ecosystem for secure quantum communication, to act as a bridge between the fiber optic and space segments and satisfy the increasing demand for the next generation of secure networks.

Bilateral meeting between GMV and the European Union's Commissioner for Defence and Space



■ On November 18th in Brussels, Jesús B. Serrano, the CEO of GMV, had a meeting with Andrius Kubilius, the European Commissioner for Defence and Space. The aim of this meeting, which was also attended by representatives from GMV's various business areas, was to discuss the main challenges and opportunities now existing for the European Union's space and defense industries.

The attendees took advantage of this opportunity to engage in a constructive dialogue regarding the competitiveness of Europe's space and defense industries, and regarding the future of the European Union's programs and instruments related to these fields. There was an emphasis on the need for a solid Space Program that can bring together all stakeholders at the European level as well as those within the EU's Member States, and there was also agreement on the need to find mechanisms to strengthen the links between the space and defense industries, and to promote the existence of a strong, competitive, and diverse industrial ecosystem.

GMV was able to present its well-established track record as a leader in secure satellite control centers, cybersecurity, border control, multi-domain command and control (C2) systems, and resilient positioning, navigation, and timing (PNT) solutions. Mr. Serrano also explained his company's contributions to programs such as Galileo, Copernicus, GOVSATCOM, and EUSST, which have helped establish GMV's position as a strategic partner for achievement of the European Union's objectives related to space and defense. He also emphasized his company's active role as one of Europe's leading companies in terms of participation in European Defence Fund (EDF) programs.

With this meeting, GMV has again demonstrated its commitment to promoting Europe's strategic autonomy, as well as its ongoing interest in collaborating with the European Commission, the EU Member States, and its own technological partners, to help develop Europe's next generation of space and defense capabilities.

GMV demonstrates its commitment to European defense at El País newspaper's Dialogues for Security event

■ On November 3rd, Jesús B. Serrano, CEO of GMV, participated in the second edition of "Dialogues for Security: Southern Forum on Geopolitics and the Defense of Peace". This event was organized by the El País newspaper and held at The Palace Hotel in Madrid.
The meeting brought together notable representatives from the worlds of politics, industry, and academia, including Margarita Robles (Spain's Minister of Defense), José Manuel Albares (Spain's Minister of Foreign Affairs), and André Denk (Chief Executive of the European Defense Agency). The aim was to encourage discussion regarding the challenges that Europe is now facing in relation to its security and defense.

Mr. Serrano participated in a roundtable discussion dedicated to the defense industry in the European context, where he stressed the need to strengthen the competitiveness of Spanish industry and promote collaborations between the public and private sectors, to develop capabilities that will help ensure Europe's technological autonomy.

At a time when defense and security have become a main point of focus on the continent's political and social agendas, GMV's participation in this forum was a further demonstration of its commitment to promoting a strong, innovative, and collaborative European defense industry that can respond to the current global challenges.

President of GMV attends state dinner in honor of the President of Germany, hosted by Their Majesties the King and Queen of Spain

■ On November 26th, the President of GMV, Mónica Martínez Walter, attended a state dinner hosted by Their Majesties the King and Queen of Spain at the Royal Palace in Madrid. This event was held in honor of the President of the Federal Republic of Germany, Frank-Walter Steinmeier, and the First Lady, Elke Büdenbender, during their state visit to Spain.

President Steinmeier's arrival represented Germany's first state visit to Spain since 2002, and it took place with the aim of further strengthening bilateral relationships between the two countries, and as a response to the official visit that the King and Queen of Spain made to Germany in 2022. Following the official reception conducted with military honors, and the official greeting of the guests accompanied by music from the Spanish Royal Guard's musical unit, King Felipe VI and Queen Letizia presented the traditional state dinner in the Palace's Throne Room.

During the evening, the King emphasized the values that unite Spain and Germany, which are based on shared principles such as freedom, democracy, and social justice, and he also stressed the potential of Spanish companies to act as strategic partners for diversifying European supply chains.

The event was attended by top Spanish officials and members of the central government, along with representatives of Spanish institutions and prominent leaders from the worlds of business, science, and culture.

The attendance of GMV's President, who has maintained personal and professional ties with Germany throughout her career, is a further demonstration of the company's status as a trusted technological partner in Europe, with a stable presence in Germany.

GMV competes in the Ariane's Cup 2025, the sailing competition for Europe's aerospace industry

From September 27th to 30th, Lorient Bay on France's Atlantic coast was the site of the latest edition of the Ariane's Cup, the iconic sailing regatta that brings together professionals from the European aerospace industry. Organized by the association OSCAR, this event is held every year as an outstanding opportunity to promote teamwork and collaboration among companies associated with the Ariane program and other European space initiatives.

During the four-day event, a total of 61 sailboats, with crews of various nationalities, competed during unusually warm weather off the coast of Lorient, a city with deep-rooted maritime traditions. The 2025 edition was notable for the high level of participation, and for the return of this competition to a location that is particularly symbolic for the nautical and space communities. The overall victory this year went to the French national space agency, CNES.

GMV entered two boats in the competition, as a demonstration of its commitment to values that the company shares with this event: teamwork, excellence, camaraderie, and a passion for space. With more than four decades of history, the Ariane's Cup once again demonstrated its role as a major event for companies, institutions, and professionals from the European space industry.

Looking towards the future, members of the Ariane's Cup community are already hard at work on the upcoming competitions. For the year 2026, the possibility is being considered of having the event organized by CNES, the overall winner for 2025, and for 2027, many have expressed interest in seeing Martinique as the site of the event. This would be a unique opportunity to hold the regatta in an exceptional location, while continuing to strengthen links among the participating companies from the industry.

Initiatives like the Ariane's Cup reflect the same spirit of effort and excellence that GMV dedicates to its projects on an everyday basis, and each new edition of the event provides another opportunity to demonstrate that both within and outside of our own companies, we can all go further by working together.

GMV hosts visit by Madrid Technical University's Racing Team at its facilities in Tres Cantos

In November, as part of the collaboration between GMV and the Madrid Technical University's Racing Team (UPM Racing), the company hosted a visit by the team to its facilities in the city of Tres Cantos near Madrid.

During the visit, members of the team were given a first-hand look at some of GMV's most innovative projects and solutions. In the Automotive area, they were able to learn more about the technologies that GMV is developing for connected and autonomous vehicles, as well as some of the company's advances in automated driving and advanced driver-assistance systems (ADAS), software-defined vehicles (SDVs), safety-critical systems, cooperative intelligent transportation systems (C ITS), and applications based on artificial intelligence.

In the Navigation area, the team members learned about how satellite navigation technologies are being used as the basis for significant progress with autonomous driving. The day ended with a visit to the robotics laboratory, and to ***platform art***©, a facility that is unique in all of Europe.

Throughout the day the experts from GMV also had a chance to take a closer look at the latest single-seater race car prototype that the members of UPM Racing have entered in previous editions of the SAE Formula Student competition, while also learning more about their project at the university, which covers all aspects related to the design, development, and driving of this Formula 1 inspired vehicle.

GMV joins business delegation to meet with the President of Ukraine during his official visit to Spain

On November 18th, GMV was part of the delegation of Spanish defense industry companies that met with the President of Ukraine, Volodymyr Zelensky, and his delegation during their official visit to Spain.

The meeting was arranged by the Spanish Ministry of Defense, with the aim of strengthening bilateral cooperation and promoting joint development of technological and defense capabilities.

GMV was represented by its President, Mónica Martínez Walter, who give a presentation on the company's capabilities related to the fields of defense, space, and cybersecurity. During her remarks, she explained that GMV is an independent Spanish technology group, with worldwide operations in critical industries such as space, defense, border protection, and cyberdefense, with a workforce consisting of nearly 4,000 professionals.

She also pointed out that GMV's work covers the entire lifecycle for critical systems, from design and engineering through to manufacturing, integration, and logistical support. In defense, the company provides multi-domain command and control systems, navigation systems that are able to operate in degraded environments, and advanced ISR solutions that are interoperable with NATO's systems, and which have already been deployed during multinational operations.

In the space industry, GMV is a European leader in satellite navigation and space systems, serving as the prime contractor for the Galileo ground control segment, and it is also the world's leading supplier of commercial satellite control centers, with systems that are now supporting over 900 satellites, including those from the Galileo, EGNOS, and Spainsat NG constellations.

In cyberdefense, GMV's developments are protecting the European Union's critical infrastructure and missions with technologies based on artificial intelligence. In this context, Dr. Martínez Walter offered Ukraine her company's capabilities in resilient navigation, multi-domain command and control systems, and secure satellite communications via the GOVSATCOM Hub, as a way of strengthening Europe's collective security and reaffirming GMV's commitment to Ukraine's industrial recovery.

This meeting, which was also attended by Spain's Minister of Defense, Margarita Robles, along with other representatives from her Ministry and senior government officials, helped open up new opportunities for technological collaboration between the two countries, while also strengthening the position of Spanish industry as a strategic partner for modernizing and enhancing the resilience of Ukraine's own capabilities.

GMV highlights the company's role in the technological training of young people

GMV took part in October in the workshop "Empowering Talent," organized by Europa Press in Madrid. The event, which was attended by the Minister of Science, Innovation and Universities, Diana Morant, addressed the challenges facing the university system and the needs of the labor market in an environment shaped by technological transformation.

Ignacio Ramos Gorostiola, GMV's Corporate Director of People Strategy and Infrastructures, participated in the roundtable discussion "Talent, University and Business," alongside representatives from the Technical University of Madrid and Mapfre. During his remarks, he highlighted the shortage of young professionals with technological profiles and called for greater involvement of the business community in vocational education and training.

"Let's give companies the opportunity to take part in teaching," Ramos urged, offering GMV's collaboration so that company professionals can teach classes in higher-level vocational programs on a part-time basis and in coordination with educational institutions.

Participation in forums such as this once again positions GMV as an active player in talent development and in fostering collaboration between universities and companies to meet the demands of the future workforce.

Business Excellence Award

■ At a gala event held in November at the Adolfo Suárez Cultural Center in Madrid, the Municipal Council of Tres Cantos named GMV as winner of its Business Excellence Award in the Corporate Social Responsibility category.

This recognition was based on GMV's commitment to inclusion, equality, and environmental protection. Pedro Schoch, GMV's Manager of Corporate Development, Marketing, and Communication, was on hand to accept the award on behalf of the company, and he delivered some remarks to express the company's appreciation. He pointed out that the GMV Group has more than four decades of experience with innovation, technology, talent, and growth, with a strong commitment to people, the environment, and society.

The municipality's Economic Development Board organized this inaugural edition of the event, with the aim of recognizing excellence and dedication among members of the Tres Cantos business community, and the contributions they have made to the municipality's economic and social development and sustainability.

This distinction is a reflection of GMV's ongoing commitment to responsible innovation, talent development, and collaboration within the local business ecosystem, as a way of generating a lasting positive impact.

GMV participates in 7th El Economista Defense Forum

The 7th Defense Forum organized by the El Economista newspaper took place in Madrid on October 17th, at a key moment for the European defense industry, which is marked by increasing strategic challenges and the need to strengthen Europe's technological and industrial autonomy. GMV was a sponsor of this event, which brought together institutional representatives, Spanish military officials, and defense industry leaders, to analyze the role of Spanish industry in the context of Europe's current situation.

As part of this forum, the CEO of GMV, Jesús Serrano, participated in a roundtable discussion entitled "Spanish industry in the new European scenario", which was focused on the role being played by technology, public-private collaborations, and talent development as essential elements for solidifying a more autonomous and efficient defense industry in Europe.

During his presentation, Mr. Serrano emphasized his view that "the current context represents a major opportunity for Spanish technology and industry, while at the same time it gives companies great responsibility, as they are called upon to support the operational needs of our armed forces."

He also stressed the importance of increasing Spain's levels of investment in its national defense: "In recent years, Spain has invested 1% of its GDP in defense, compared to 3.4% in the United States. Increasing this to 2% will be an important step, but it will take some time. Even so, we are still far from achieving real strategic autonomy."

The discussion also covered issues such as the industry's fragmentation at the European level, and technological dependence on non EU countries. In this context, Mr. Serrano explained that the future of the industry depends upon its ability to respond to the needs of Spain's Ministry of Defense in a competitive way, based on a shared strategic perspective.

GMV shows its team spirit

■ GMV continues to achieve new goals with teamwork and a commitment to health and wellbeing.

In November, some of our GMV colleagues in Romania participated in the SkyRun 2025 challenge, a race held in Bucharest at the country's tallest building, the SkyTower, which is also the location of GMV's offices there. The company was represented by 11 participants, who put their endurance and spirit of achievement to the test in this unique challenge, where the aim is to ascend the 36 floors of this landmark building.

Just a week later, some of our GMV colleagues from the Spanish city of Valladolid took the baton and competed in the 9th edition of the Valladolid Business Race. Covering a distance of 6 kilometers through the streets of Valladolid, 24 participants from GMV showed off their energy, camaraderie, and spirit of achievement.

In December, GMV continued to demonstrate its commitment to health and wellbeing through participation in major corporate sporting events held in Madrid and Barcelona, where more than 400 of our GMV colleagues completed the 5K or 10K versions of the Company Races held simultaneously in the two cities.

In addition to the spirit of achievement demonstrated by GMV's personnel at these four events, other colleagues from Darmstadt and Munich participated in races held in those two German cities in May and July, respectively.

These are all events that continue to attract more participants from GMV every year, as part of the corporate wellbeing program and as an ongoing demonstration of the company's commitment to healthy living. At all of these events, sportsmanship, fun, and teamwork, along with a bit of adrenaline, have served as the common denominator.

And all of these challenges are united by the same spirit: we can all go further when we work as a team.

Carrera Madrid

Carrera Barcelona

Carrera Valladolid

Carrera Rumanía

PEOPLE

1


2


3


4


5


6


7


8


9


10

Each of GMV's offices around the world chose an off-site venue to hold their gathering. The goal was the same in every case: to close out the year together with colleagues from each location. The images show the events held in Madrid (1), Gilching (2), Valladolid (3), Darmstadt (4), Bogotá (5), Warsaw (6), Lisbon (7), Nottingham (8), Barcelona (9), and Seville (10).

Fourteen nights, but just one spirit

GMV celebrates its traditional end-of-the-year event around the world

Bogotá, , Valladolid, Valencia, Darmstadt, Bucharest, Seville, Nottingham, Toulouse, Barcelona, Warsaw, Lisbon, Gilching, Harwell, and Madrid. Regardless of their location or date, GMV's end-of-the-year celebration events all shared a common denominator: the opportunity for all of us to get together outside of our usual work environment and turn the "best regards" from our email messages into hugs, and our usual "how's it going?" into long personal conversations. A total of 14 of these gatherings took place, to demonstrate that although GMV's projects are very important, the people who make them possible are even more important still.

Virginia Mayo, from the Infrastructure department in Valladolid, Spain, offered a reflection that captured the spirit of these evenings: "We spend all year rushing around, solving problems, and seeing each other more on Teams than in person, and sometimes we can forget that it's our people who make it all happen." Begoña Rojo, a member of GMV's business development team for defense, added that "it's important to be able to celebrate the end of the year together, as one team." "It was a perfect chance to disconnect from our work and connect with each other", said Daniela Naipeanu, an electronic engineer at GMV Romania. "It was really great to see everyone relaxing and enjoying the moment, and we were able to have the kind of conversations that we don't get a chance to have at the office."

At all of these events, amid a mixture of laughter, anecdotes, and toasts, the professionals from GMV's various areas had an opportunity to meet up and celebrate not just the end of another year, but also the possibility of being together. "You get a chance to talk to some colleagues you feel like you barely know, and suddenly you realize that you have a connection with them, but in a human way, not just a professional way. I'm sure that all this has a positive effect on everything we'll do later when we're back at work", explained Theodore Russell, a software developer in Nottingham in the United Kingdom.

During the event held in Madrid, the group Internal Vacancy (a.k.a. the GMV Band), made up entirely of professionals from GMV, entertained themselves and their colleagues with a performance that has already become an instant classic among the company's events. "It's a shame to only perform here in Madrid. Maybe we need to go on tour, to the rest of the GMV locations", said Jose Prieto, the band's guitarist. "Music is a big part of our personal lives, and when we can share this passion with our colleagues, in such a special environment, it becomes an unforgettable experience", added Roberto López, the bass player.

The celebration held in Lisbon had a special significance. This year, GMV's Portuguese subsidiary celebrated its 20th anniversary, making their gathering particularly meaningful. At this event, Alberto de Pedro, GMV's General Manager in Portugal, addressed his colleagues by saying that "this is undoubtedly a very special moment. It's not every day that we're able to celebrate 20 years of existence, and I've been lucky enough to experience it all from day one. This is a journey that we've taken together, as an extraordinary team, and for me that is a source of great pride."

At all of the celebrations, the capturing of candid, informal photos, with small groups and individual scenes, plus all of the shared personal moments, made GMV's end-of-the-year event "a gathering of colleagues that always leaves us with good memories, and these are memories that we will all share from this time forward. This makes us feel like we're part of a real community, made up of people that we have more in common with than just an office or a project", said Zsófia Bodó, who attended the event in Gilching, Germany.

By the time the last of these 14 events had ended, it was clear that although there may have been some variations in their formats or styles, they all reflected the same spirit of celebration, and the feeling of belonging that unites everyone at GMV.

We Celebrate You: A feeling beyond the slogan

All of the celebrations shared the same slogan: "We celebrate you". GMV wanted to use this message to emphasize the contributions made by each and every person, who have made the company's 40 years of history and achievements possible.

"Putting people at the center of these events was one of the main goals. Sure, we wanted to celebrate the end of the year together, but we also wanted to take advantage of this moment to express our appreciation and gratitude to each of the 4,000 or so colleagues who make up GMV, so we could all feel proud about the important roles we have all played in our success", explained Ignacio Ramos, GMV's Corporate Manager of People and Infrastructure Strategy.

This feeling was brought to life in the graphic and audiovisual designs created for the 14 spaces, and in the messages that accompanied them, all with the aim of expressing the importance of people for GMV and its culture.

GMV in the world

SPAIN
Headquarters
Isaac Newton 11 P.T.M. Tres Cantos - 28760 Madrid
Tel.: +34 91 807 21 00 Fax: +34 91 807 21 99

Santiago Grisolía, 4 P.T.M. Tres Cantos - 28760 Madrid
Tel.: 91 807 21 00 Fax: 91 807 21 99

Juan de Herrera No. 17 P.T.Boecillo - 47151 Valladolid
Tel.: +34 983 54 65 54 Fax: +34 983 54 65 53

Andrés Laguna, n.º 9-11. P.T.B. - 47151 Boecillo, Valladolid
Tel.: 98 354 65 54 Fax: 98 354 65 53

Albert Einstein, s/n 5ª Planta, Módulo 2 Edificio Insur Cartuja - 41092 Seville
Tel.: +34 95 408 80 60 Fax.: +34 95 408 12 33

Edificio Nova Gran Via, Avda. de la Granvia 16-20, 2ª planta
Hospitalet de Llobregat, 08902 Barcelona
Tel.: +34 932 721 848 Fax: +34 932 156 187

Mas Dorca 13, Nave 5 Pol. Ind. L'Ametlla Park
L'Ametlla del Vallés - 08480 Barcelona
Tel.: +34 93 845 79 00 - +34 93 845 79 10 Fax: + 34 93 781 16 61

Edificio Sorolla Center, Nivel 1 Local 7, Av. Cortes
Valencianas, 58 - 46015 Valencia
Tel.: +34 963 323 900 Fax: +34 963 323 901

Parque Empresarial Dinamiza. Avda. Ranillas, 1D - Edificio Dinamiza 1D,
planta 3ª, oficinas B y C - 50018 Zaragoza
Tel.: +34 976 50 68 08 Fax: +34 976 74 08 09

Edificio Tecnológico Aeroespacial, Rúa das Pontes 6, Oficina 2.05
36350 Nigrán (Pontevedra, Spain)
Tel. +34 986 119 366

GERMANY
Zeppelinstraße, 16 82205 Gilching
Tel.: +49 (0) 8105 77 670 150 Fax: +49 (0) 8105 77 670 298

Europaplatz 2, 5 OG D-64293 Darmstadt
Tel.: +49 (0) 6151 3972970 Fax: +49 (0) 6151 8609415

BELGIUM
Rue Belliard, 40 Bureau no. 117 1040 Brussels
Ph.: +32 278632 25

COLOMBIA
Carrera 7 #99-21 Oficinas 1802-1803 110221 Bogotá
Ph.: +57 (1) 6467399 Fax: +57 (1) 6461101

USA
2400 Research Blvd, Ste 390 Rockville, MD 20850
Ph.: +1 (240) 252-2320 Fax: +1 (240) 252-2321

700 South Flower Street, Suite 470 Los Angeles, CA 90017
Ph.: +1 (310) 728-6997 Fax: +1 (310) 734-6831

15503 W. Hardy Road Houston, TX 77060

FRANCE
17, rue Hermès - 31520 Ramonville St. Agne. Toulouse
Ph.: +33 (0) 534314261 Fax: +33 (0) 562067963

MALAYSIA
Level 18, Equatorial Plaza Jalan Sultan Ismail. 50250 Kuala Lumpur
Ph.: (+603) 9205 8440 Fax: (+603) 9205 7788

THE NETHERLANDS
Joop Geesinkweg 901, 1114AB Amsterdam-Duivendrecht

POLAND
Ul. Hrubieszowska 2, 01-209 Warsaw
Ph.: +48 22 395 51 65 Fax: +48 22 395 51 67

PORTUGAL
Alameda dos Oceanos, 115, 1990-392 Lisbon
Ph.: +351 21 382 93 66 Fax: +351 21 386 64 93

UNITED KINGDOM
Airspeed 2, Eight Street, Harwell Science and Innovation
Campus, Didcot, Oxfordshire OX11 0RL

Enterprise Centre. Innovation Park, Triumph Road
Nottingham NG7 2TU
Ph.: +44 (0) 1156667200 Fax: +44 (0) 1159682961

ROMANIA
SkyTower, 246C Calea Floreasca, 32nd Floor, District 1, postal code 014476,
Bucharest
Ph.: +40 318 242 800 Fax: +40 318 242 801