



# Annual Report

2022

GMV business group believes that behind each new need, behind every new problem, there is a challenge and a chance to innovate. Technology is not an end in itself; it is the means to make something new or to make something old better. In GMV we draw on our existing range of products and services or, if need be, we develop completely new ones to meet the particular needs of each client, providing bespoke innovation and technology. We take on our clients' challenges as our own, spurring us on to new heights of innovation.

GMV goes beyond its clients' brief, exploring their real needs with a total readiness to find solutions. This allows us to come up with the right response, often imaginative, sometimes unique and always honest.

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A portrait of Mónica Martínez, the President, smiling and sitting at a desk with a laptop. She is wearing a black blazer over a white top. The background shows a window with a view of greenery.

# 01

**Letter from the President**  
Mónica Martínez

Ever since my first day at GMV, I have been inspired by the enthusiasm showing when our professionals talk about the projects they work on. Our experts have a passion for the challenges they take on with our leading-edge technological projects, where simply applying existing technologies is not enough, but where there is a need for innovation, for developing algorithms and new tools to make possible what was so far impossible. But there is more. Our projects have a positive impact, firstly on our clients, of course. But through our clients, many of our projects also have a positive impact on society. The possibility to change things for the better in many people's lives is a powerful source of motivation that I share with the entire GMV team.

In 2022, the restrictions imposed during the pandemic were finally lifted in most parts of the world. The global economy has continued to recover, but at the same time, new problems have emerged. These include increasing levels of geopolitical destabilization, which in the European Union we are experiencing close-by with the Russian invasion of Ukraine. Together with the economic crisis generated by the pandemic, this has led to unprecedented energy costs in Europe, along with inflation levels never seen since the start of the euro.

In addition, the events of recent years have made Europeans more aware of the need to reduce our dependency on other countries, be it for energy, for the supply of medications or electronic components, or for our ability to defend our democratic values and freedoms against potential military aggressors. All of this requires technology and is leading to increasing investments in digital transformation, opening up new opportunities for companies which, like GMV, are dedicated to provide leading-edge technological solutions to other companies and organizations.

At GMV we have been able to make the most out of the opportunities we encountered in the past, proving our capabilities not only in the development of new technologies, but also in the integration of large systems, coordinating our contributions with those of multiple international subcontractors. When GMV was awarded the maintenance and upgrading contract for the Galileo ground segment in 2018, this was a challenge worthy of the most important players in the European space industry; and when that system became fully operational in 2022, the results demonstrated our ability to perform at that same level, setting the foundation for future contracts of equal or larger size and complexity.

We have continued to grow, and our growth has been especially remarkable in the space area, where our revenue has doubled during the last five years. This has prompted a significant internal reorganization of our space division into two new divisions this year, promoting many of our professionals who have amply proven their worth, in order to create an even more robust organization. With this we ensure a top-notch performance of these major space

projects which provide Europe's citizens access to the latest technologies, while also driving innovation at many other companies.

In addition to our direct participation in the development of satellite navigation systems such as Galileo in Europe and SouthPAN in Australia, GMV is applying its extraordinary know-how in the field of satellite navigation to develop customized solutions, to fit the specific requirements in areas such as industrial production, in aviation or in the automotive industry, where ultra-high precision is not enough. There is also a need for extreme reliability, to guarantee that the positions indicated do not differ from the actual positions by more than the very narrow error margins specified. Witness the market launch of BMW's first cars equipped with our precise and secure positioning solution. This is a significant step towards autonomous driving. In parallel, we continue to incorporate new technologies into our products and services for public transport designed to improve operations, to make public transport more convenient, efficient and safe. The combination of public transport and autonomous driving will certainly be part of a more sustainable mobility in the future.

We select our projects looking for significant technological challenges, but also for opportunities to address important problems that require urgent solutions. We care for our clients' cybersecurity, in an ongoing frenetic race against cybercriminals, actively collaborating with other security operation centers within Spain's National Network. To offer our services to clients worldwide 24 hours a day, we have recently put together another team of cybersecurity experts in Colombia. We are applying and developing artificial intelligence and big data technologies to help fight diseases such as cancer by accelerating clinical trials and medical research; also to improve Europe's defense capabilities, or the maritime search-and-rescue services, or to protect satellites from colliding in space. And we invest in R&D projects supporting collaborative approaches that encourage exchanges of knowledge and innovation with universities, research centers, and other companies. For example to advance quantum computing, which will have an enormous impact on artificial intelligence.

Our success is the result of teamwork involving everyone at GMV. which due to the growing size of our projects, relies increasingly on our network of providers and collaborators and the high-quality products and services they provide for us. My sincere thanks to all of them! The significant milestones we have achieved together with and for our clients pave the way for new opportunities to build a brighter future.

*Mónica Martínez*





# 02

**Letter from the CEO**  
JESÚS B. SERRANO

While the effects of the pandemic have faded, supply and demand tensions, especially in the electronic components market, continued to have a significant impact on the production and delivery of complex electronic systems this year. In February 2022, Russia invaded and occupied part of Ukraine, resulting in thousands of deaths and a refugee crisis unprecedented since World War II. The invasion has had further negative consequences, namely for energy supply chains, leading to significantly higher energy prices and rising inflation and interest rates. Although GMV is not an energy-intensive company, this has still had a substantial impact on its results.

Despite the global situation, GMV has continued to pursue its strategic development in all markets, posting significant growth and improvement across every one of its indicators. We have increased turnover by 23.5% to €311m, with an EBITDA close to €20m and a net profit of €6.6m. Our workforce has also increased by 9.2% to 2,800 employees, ensuring the outstanding execution of our newly awarded contracts, and preparing the company for the additional growth expected over the coming year.

All commercial activity indicators are at record highs, with a commercial activity figure of 2.83x sales. Order intake has risen to 1.65x sales (more than €512m) and the order backlog at the end of 2022 was 1.58x sales. The number of pending tenders also reached 1.49x order intake, thus raising very positive expectations for the coming year.

These facts and figures are important, but even more so are our strong reputation and the leadership and level of responsibility we have achieved in all four major markets in which we operate.

GMV was founded as a space company and space remains the company's major and most important market. GMV has become the sixth biggest industrial group and the leading mid-cap company in the European space sector, with over 1,500 space engineers and 100 cybersecurity engineers working in this area. We are the world's top provider of control centers for commercial satellite operators, one of the main industrial pillars of European satellite navigation space programs, leaders in advanced solutions for high accuracy positioning and safety-critical GNSS systems, and a prime contractor for ground segments. The contracts we have been awarded for the development of the Southern Positioning Augmentation Network system in Australia and New Zealand and the ground segment of Europe's most advanced satellites for defense and secure communications are clear examples of GMV's leadership in this sector.

As for intelligent transportation systems, we are implementing the strategy we launched a few years ago, which was designed to position GMV as a world leader in this market. Our significant investment has provided its first positive results, setting us apart from our competitors: our

advanced and cutting-edge new products have extraordinary advantages in terms of technology, performance, reliability, and cost-effectiveness. By the end of 2022 more than four million cars and 45,000 public transport vehicles (buses, trams, and trains) had been equipped with GMV technology. With over 950 clients worldwide, GMV contributes to the mobility of over 2.6 billion passengers per year, reducing environmental impact and improving people's quality of life.

This year's humanitarian crises and the Russian invasion of Ukraine have once again underlined the importance of equipping armed forces and security forces with the operational capabilities they need to ensure people's safety, tackle threats, and defend our democratic values. GMV continues to play a crucial role in the design, development, and implementation of operational systems in the defense and security market, applying state-of-the-art technologies to provide the most flexible, scalable, robust, and efficient command and control, intelligence, surveillance, and reconnaissance systems. GMV's key role in the European Next Generation Weapon System/Future Combat Air System and the EuroDrone contracts that we have secured are clear examples of GMV's competitiveness in this field.

Today, the extraordinary use of information and communication technologies is fostering the digitalization of society and a new economic revolution: new businesses; more flexible, scalable, automatic, reliable, and efficient business operations; and more usable, timely, and efficient services for improving people's lives. However, such a revolution entails new threats, and some criminals are seizing the opportunity to carry out illegal activities. GMV is at the heart of this revolution, working for and supporting the digitalization of organizations and contributing to the fight against cybercrime with its products, systems, and services built up with the know-how and experience acquired over the last 25 years in various markets.

Challenges are our passion. They are the foundation of the exceptional and sustainable growth the company has achieved in recent years. As Nelson Mandela once said: "After climbing a great hill, one only finds that there are many more hills to climb." In GMV we are certain that we have many more hills to climb.

I would like to express my gratitude to our clients for the trust they have placed in us, which is growing with each passing year. Talent is a key contributor to GMV's success: a very special commendation to all our employees for their enormous passion and commitment. Finally, I would like to acknowledge the valuable collaboration of our partners and suppliers, without whom we could never face the many challenges that come our way.

*Jesús B. Serrano*



# 03

## ABOUT US



# CORPORATE STRUCTURE

**Grupo Tecnológico e Industrial GMV, SA**

**GMV Innovating Solutions, SL**

**GMV Aerospace and Defence, SAU** / Aerospace and Defense markets

— Grupo Navegación por Satélite Sistemas y Servicios S.L / Galileo development and exploitation

— Sistemas de Misiles de España, SL / Defense market

— Satnus Technologies, SL / Defense market

**GMV Soluciones Globales Internet, SAU** / Telecommunications and e-business markets

**GMV Sistemas, SAU** / Transportation and Industry markets

**GMV Innovating Solutions, Inc** / Aerospace, Transportation and Telecommunications markets of USA

**GMVIS Skysoft, SA** / Aerospace, Defense, Transportation and Telecommunications markets of Portugal

**GMV Seguridad Integral, SAU** / Security market

**GMV GmbH** / Aerospace, Defense, Transportation and Telecommunications markets of Germany

**GMV Innovating Solutions, Sp.z o.o** / Aerospace, Defense, Transportation and Telecommunications markets of Poland

**GMV Innovating Solutions, SRL** / Aerospace, Defense, Transportation and Telecommunications markets of Romania

**GMV Innovating Solutions, SARL** / Aerospace, Defense, Transportation and Telecommunications markets of France

**GMV Innovating Solutions, SAS** / Aerospace, Defense, Transportation, and Telecommunications markets of Colombia

**GMV Innovating Solutions, Sdn. Bhd** / Aerospace, Defense, Transportation and Telecommunications markets of Malaysia

**GMV NSL Limited** / Aerospace, Defense, Transportation and Telecommunications markets of United Kingdom

**GMV Syncromatics Corp** / Intelligent Transport Systems market of USA

**GMV Innovating Solutions, BV** / Aerospace, Defense, Transportation and Telecommunications markets of the Netherlands

**GMV Innovating Solutions, SRL** / Aerospace, Defense, Transportation and Telecommunications markets of Belgium

**Payload Aerospace, SL** / Space market

**Almefy GmbH** / Telecommunications and e-Business markets of Germany

**Alén Space, SL** / Space market

# GOVERNING BODIES



**Mónica Martínez Walter**

President



**Javier López España**

Director



**Susana Martínez Walter**

Member of the Board



**Jesús Serrano**

Chief Executive Officer

## Sector Management



**Miguel Romay**

Satellite Navigation Systems General Manager



**Enrique Fraga**

Space Systems EST\* General Manager

\*Earth Observation, Exploration, Science, Space Safety, Telecom and Transportation



**Luis Fernando Álvarez-Gascón**

Secure e-Solutions General Manager



**Miguel Ángel Martínez Olagüe**

Intelligent Transportation Systems General Manager



**Manuel Pérez**

Defense and Homeland Security General Manager

## Corporate Management



**Javier Martínez**

Administration, Finance and Legal  
Corporate Director



**Ignacio Ramos**

People Strategy and Infrastructure  
Corporate Director



**Jorge Potti**

Strategy Corporate Director



**Pedro J. Schoch**

Corporate Development, Marketing and  
Communication Director



**Óscar Tejedor Zorita**

Security Compliance Director



**Raúl Herbosa**

Corporate Information Security Director

# HISTORIA

GMV was founded in 1984, on the entrepreneurial initiative of Dr. Juan José Martínez García. With almost 40 years of history, GMV has now become a multinational group, with a presence in 12 countries in Europe, the Americas, and Asia. GMV operates in a wide range of high-technology industries, with a growing portfolio of international clients on five continents. Even four decades later, GMV still looks to the future with the same enthusiasm and optimism as in the early years, maintaining its initial vocation of being a company dedicated to knowledge, with its most important resource always being the talent, imagination, and hard work of its personnel.

## 1984-1997: Start-up



1985

First contract with the European Space Agency's European Space Operations Centre (ESA/ESOC)



1988

ESA's space research and technology center (ESTEC) awarded GMV a contract to study the possible use of GPS in orbital approach and docking maneuvers



1989

Mission analysis support during the launch of ESA's Olympus telecommunications satellite



1991

First contract with Hispasat to support the development and manufacture of the Spanish operator's first satellite

1987

Participation in ESA's manned flight programs: the Hermes launch system and the Columbus orbital outpost



1989

Contracts with the ESOC to develop systems for satellite orbit dynamics and mission control



1990

Development of software for the precise orbit determination of GPS satellites for ESA



1991

Flight dynamics and mission control systems for ERS-1, the first Earth observation satellite launched by ESA







1992

Development of ground systems for the Helios II military satellite



1995

GMV began work on the initial studies for the European navigation system EGNOS

1993

Implementation of the first firewall in Spain (Western European Union [WEU] image processing center)



1997

Development of the Spanish Ministry of Defense node



## 1998-2008: GROWTH



1998

GMV became a key supplier for EGNOS, developing the processing center and other key system components

1999

Development and maintenance of the scientific operations system for ESA's XMM-Newton satellite



1999

C3I command and control system for the Spanish Army's Field Artillery Command

2001

Development of the computer-aided dispatch / automatic vehicle location (CAD/AVL) system for Transports Metropolitans de Barcelona (ATM)



2001

Perimeter security for the Spanish Ministry of Economy and the Bank of Spain

2002

Launch of the ENVISAT observation satellite; GMV played a significant role in the ground and return segments



2002

Eutelsat awarded GMV a contract to develop a new multi-mission, multi-platform control center to manage its entire fleet of more than 20 satellites

2003

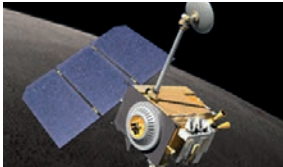
Perimeter security and internet access node for the Spanish Ministry of Finance





2004

Development of the control laws and software for the in-flight refueling system of the Airbus A-330 MRTT tanker aircraft



2006

NASA chose GMV to develop its LRO lunar rover planning system



2008

Development of NASA's Landsat mission planning system and start of work on the development of the GOES-R orbital dynamics system for the National Oceanic and Atmospheric Administration (NOA)

2004

Launch of ESA's Rosetta space probe, for which GMV provided navigation and guidance analysis and orbit control support



2005

Contract awarded for four key Galileo infrastructure systems and major involvement in the engineering and design of the overall system



2007

Control and management system for RENFE's entire fleet of commuter and medium-distance trains



## 2009 -2017: Consolidation



2009

GMV joined the team developing the navigation system for the Indian Regional Satellite Navigation System



2010

Contract awarded for passenger information and management systems for public transportation in the cities of Szczecin and Czechowice, Poland

2009

Development of the Atlante UAV flight control computer (FCC)



2010

Modernization of the ground segment for NASA's Telemetry and Data Relay Satellites (TDRS) in a project led by General Dynamics C4 Systems



2010

GMV became the world's leading independent provider of ground control systems to commercial telecommunications satellite operators





## 2010

Framework contracts with the ESA/ESOC for the development of operational on-site support systems in various areas of its ground segment and satellite operations



## 2011

ATV-2 Johannes Kepler successfully docked with the Russian segment of the International Space Station (ISS) using the flight dynamics system developed and operated by GMV



## 2013

Design of the mission operation system (MOF) for the Meteosat Third Generation (MTG) program run by Europe's meteorological satellite agency, EUMETSAT



## 2014

The Rosetta spacecraft, for which GMV played a key role in mission design, flight dynamics, and science operations planning, deployed a lander on an asteroid



## 2016

Design, development, validation, and deployment of the Mission Control and Operations (MCO) sub-segment of the ground system for the EUMETSAT Polar System Second Generation (EPS-SG) program

## 2011

GMV's ATM security product, **Checker ATM Security**, became a global benchmark in the ATM security sector



## 2011

Framework contract with France's Centre National d'Études Spatiales (CNES) for the development of space engineering activities: flight dynamics, and space object surveillance and tracking



## 2013

GMV is named as prime contractor for transition of the EUROSUR network, from the pilot project towards an operational environment



## 2013

ESA contract for the analysis of cyber-risks and establish control recommendations for space missions



## 2015

Alstom Transport selected GMV to supply the fleet-management system and in-station passenger information system for the new light rail line being built in Sydney



## 2017

GMV was actively involved in the European Commission's strategic research cluster on space robotics technology, coordinated by the PERASPERA project



# 2018-2022: Coming into its prime



2018

GMV led the industrial team tasked with servicing and upgrading the ground control segment (GCS) of Europe's satellite navigation program, Galileo, and was responsible for monitoring the Galileo constellation as a whole

2018

GMV managed and developed all cybersecurity aspects for Galileo's GCS



2019

Contract to develop advanced technologies for precise and safe positioning for a new generation of BMW Group autonomous vehicles

2019

Launch of the first six satellites of the OneWeb mega-constellation, whose GMV-developed control center would be able to service thousands of satellites



2019

GMV led one of the projects for shaping the future Galileo ground segment (Galileo Second Generation or G2G)

2020

GMV was a co-leader of the Remote Carriers Technology Pillar of the Next Generation Weapon System of the Future Combat Air System (NGWS-FCAS)



2020

Contract signed with Spanish public company Navantia for the development and supply of the SENDA navigation system for the future F-110 frigates

2021

Contract signed to supply the navigation system (ISNAV) for the VCR 8x8 Dragon wheeled combat vehicles







2021

Tasked with the guidance, navigation, and control (GNC) system on the HERA asteroid mission

2021

Launch of satellites 27 and 28 of the Galileo program, operated by the ground control segment infrastructure provided by GMV



2022

Contract for the operations & maint. of the Copernicus Sentinel's mission planning systems

2022

Contract for the development & certifi. of the Ground Flight Control Computer (DAL-A) of EuroDrone



2022

Space-to-healthcare technology transfer: early phone-app detection of pigmented skin lesions

2022

GMV prime contractor for the preliminary design & development of a prototype for future moon missions



2022

GMV major contractor for SouthPAN (Southern Positioning Augmentation Network)

2022

GMV prime for the GCS of Hisdesat SpainSat New Generation





# GMV in 2022.

## Key Figures

Total revenue

311.33 M€

EBITDA

19.98 M€

Net Earnings

6.60 M€

Employees

2,792

# GMV in the world



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# 04

## WHAT WE DO

GMV provides specialized high-tech solutions, turnkey systems, products, and services. Our business activities can cover a project's entire life cycle, including consultation and engineering services, design and development of hardware and software, integration of systems and subsystems, testing and verification, and support for operations and maintenance. These activities, provided through GMV's various subsidiaries, are focused on the following industries: space, aeronautics, defense and security, cybersecurity, intelligent transportation systems, automotive, healthcare, telecommunications, and information technologies for public administrations and major corporations.



## Summary AERONAUTICS

During 2022, GMV further consolidated its position in the aeronautics industry. For the Next-Generation Weapon System (NGWS) being developed as part of Europe's Future Combat Air System (FCAS), there was a waiting period between the end of Phase 1A (completed in 2021) and the start of Phase 1B, which was finally initiated at the end of 2022. During that year, GMV's teams worked directly with the Spanish Ministry of Defense. The research phase for this major program has been organized into various pillars, with each focused on developing technologies with a particular scope. GMV is now playing a very important role in the Remote Carriers pillar as the national co leader, while also participating in other pillars including Next-Generation Fighter, Combat Cloud, and Sensors.

During 2022, some very significant contracts were signed for developing essential equipment for the European MALE RPAS (Eurodrone) program, which will allow GMV to take a qualitative leap forward in terms of its position in the area of aeronautical systems. These contracts included, among others, those pertaining to the ground flight control computer (GFCC), a critical DAL A computer, and the time distribution server (TDS).

GMV's activities were focused on developing and providing high value-added engineering products and services to major manufacturers, especially Airbus. In fact, GMV can now say that it has worked on all of the major Airbus military aeronautics programs carried out during the last 30 years. We also performed work for air navigation service providers, as well as for national and international supervisory and control agencies. GMV has specialized in developing critical software and equipment that must comply with the strictest aeronautical standards.

Progress also remained on track for the rest of GMV's aeronautics activities during 2022, including collaborations with Airbus on its various programs, such as for supply of electronic control units (ECUs) for the onboard crane system installed on various countries' A400M aircraft, and a range of other projects taking place as part of the European Clean Sky 2 program. GMV also continued its work with various national and international providers of air traffic services, through several ongoing global navigation satellite system (GNSS) projects.

GMV also has high expectations for 2023. The FCAS/NGWS program was re initiated at the end of 2022 with launching of its Phase 1B, and full progress is again being made on the program's various pillars, including Item 0. GMV also expects to play a very significant role in developing and producing a tactical RPAS under the Spanish Ministry of Defense's SIRTAP program, along with other programs that will include some taking place in the context of the European Defence Fund (EDF).





# Milestones Aeronautics



Eurodrone ground flight control computer development: GMV was awarded the contract to design, develop, manufacture, and provide logistics support for the Eurodrone program's ground flight control computer (GFCC), to provide Airbus with a reliable safety-critical computer for guidance and control of the Eurodrone UAS.



Phase 1B of Europe's FCAS defense program has now begun: At the end of December, the technological demonstrators phase (Phase 1B) began for the Next-Generation Weapon System / Future Combat Air System (NGWS/FCAS) program. As a member of the SATNUS Technologies SL joint venture, GMV is leading all activities for the Remote Carriers technological pillar of the NGWS/FCAS program, while also participating in the New Generation Fighter (NGF), Combat Cloud, and Sensors pillars.



GMV expanded its role in collaborative air combat projects: In the first tendering process for the European Defence Fund (EDF) program, the European Commission selected GMV as a beneficiary company for seven projects, with highlights of these including the European Initiative for Collaborative Air Combat Standardisation (EICACS) and Enhanced Pilot Interfaces & Interactions for Fighter Cockpit (EPIIC) projects. Both of these projects are dedicated to taking on the enormous technological challenges associated with future air combat, including interoperability for future European combat systems.



GMV was named as an industry partner for the Atlantic Strategic Partnership for Advanced All-domain Resilient Operations (ASPAARO) initiative: GMV has become part of this initiative led by Airbus Defence and Space and the Northrop Grumman Corporation, which will propose a technical solution to NATO for new surveillance and command and control capabilities, with the aim of confronting future challenges and replacing the existing fleet for the Airborne Early Warning and Control System (AWACS).



## Summary SPACE

For GMV, 2022 was a truly outstanding year in relation to space. The company's two space-related sectors (NAV and EST) generated a total of €200 million in revenue, representing a 24% increase. In addition, at the end of 2022 there were more than 1,500 people working on space projects at GMV, giving the company a 6th place ranking in the European space industry. It is worth mentioning as well that 2022 was also a record year for GMV in terms of contracting, with space industry contracts signed for a total amount of €359 million, an 80% increase compared to the previous year.

Activities involving GMV's navigation sector were especially noteworthy, with signing of the SouthPAN contract for developing a satellite-based augmentation system (SBAS) in Australia and New Zealand. This is the largest space-related contract ever signed by a Spanish company outside of the EU. In addition, GMV continued to play an extremely important role in the Galileo program, with significant achievements in the ground station, mission control, and service center areas. In relation to flight operations, GMV continued to make significant progress on fascinating projects such as the Hera planetary defense mission, while also successfully completing the full avionics system for the Miura 1 microlauncher. GMV also continued to act as a worldwide leader in the areas of orbital dynamics, space surveillance, and operations. In the satellite communications market, GMV continues to hold the top position worldwide for control centers, with one especially noteworthy highlight being the company's signing of significant contracts with Hisdesat for developing the ground segment of Spain's SPAINSAT NG program. In the field of Earth observation, we made substantial progress in relation to the MTG and EPS SG ground segments for EUMETSAT; some important activities for the Earth Explorer and Sentinel missions; and remote sensing applications involving climate change and security.

In November of 2022, the Ministerial Council Meeting for the European Space Agency (ESA) took place in Paris. This event was a great success, with the Member States increasing their contributions to over €17 billion, representing a 17% increase compared to the previous ministerial meeting. In general, the countries where GMV is most actively involved made sufficient contributions to inspire an optimistic outlook for the future. The European Union's new secure space communications program was initiated in 2022, known as IRIS2. This will provide additional incentives in this area during the next few years, and GMV now has well-supported expectations of playing a significant role.

The company is therefore anticipating an excellent year in 2023, with the aim of continuing with our double-digit revenue growth trend. We have started off 2023 with our largest order book ever, while also expecting to complete some existing negotiation and tendering processes for very large, highly strategic projects.

For the space industry, 2023 will be a very important year, especially in Europe. In addition to the ESA and European Union projects mentioned above, there are others supported by Next Generation EU funds that will also present new opportunities. Specifically in relation to Spain, it is important to mention the recent creation of the Spanish Space Agency (*Agencia Espacial Española*), which will drive additional business in the country.



# Milestones

## Navigation Systems



GMV entered into the largest contract ever signed outside of the EU by a Spanish space company: This was a €180 million contract to develop the core elements of the SouthPAN system, which will provide satellite navigation and precise positioning services in Australia and New Zealand. This will be a critical system for the future of the Australasia region, where it will help to drive innovation and create value for companies and consumers, who will all benefit from application of this technology in a wide range of industries such as aviation, agriculture, construction, mining, maritime shipping, railroads, space, and public services.



One year of operation for the Galileo GCS V3.0: The infrastructure for version 3.0 of the Galileo ground control segment (GCS), developed under GMV's leadership for operation of the Galileo satellite constellation, completed its first full year in operation. This year GMV is continuing with the process of continual improvement, with a new (seventh) antenna coming online in Kourou, addition of new features for secure centralized monitoring, and advancement towards qualification of a new version (GCS V3.1).



GMV has played a key role in the ESA's Navigation Innovation and Support Programme (NAVISP): Through its subsidiaries in Spain and the United Kingdom, GMV has become a key participant in the three elements that comprise this program, which is focused on innovation for positioning, navigation, and timing (PNT) technologies.



The Galileo high accuracy service (HAS) became ready for entry into operation: GMV has led development of the HAS, with responsibility for providing algorithms for calculating highly precise corrections. The Galileo HAS is an open-access service that transmits high-accuracy corrections in real time using the signal generated by the Galileo satellites, as a way to improve positioning accuracy for users. This service will be providing sub decimeter accuracy for a range of applications, such as navigation, autonomous driving, geodesy, and agriculture.





# Milestones

## Space Systems



GMV has supplied key components for the MBZ SAT high-resolution imaging satellite. The Mohammed bin Rashid Space Center (MBRSC) in the United Arab Emirates has awarded GMV a contract to develop the data reception and processing system for its Earth observation satellite, known as MBZ SAT. GMV's solution, which will provide fully automated image scheduling and processing, will allow the MBRSC to significantly increase its image production capacity, to satisfy that space center's increasing user demand while also ensuring service quality and performance.



GMV will be developing the ground control center for the new Hisdesat satellites: Spain's governmental satellite operator awarded a contract to GMV for building the ground segment for the SPAINSAT NG program's two next-generation satellites. This project will include the latest innovations in satellite control center development and operation: secure communications, satellite control system, payload control system, satellite tracking and positioning, and data reception.



GMV strengthened its European leadership position for automation and coordination of collision avoidance operations: GMV has been named as prime contractor for two of the three activities included in the ESA's Space Safety program (S2P) known as Collision Risk Estimation and Automated Mitigation (CREAM). The aim is to develop technology that can be used for automated collision avoidance, to simplify the work of satellite operators, and to reduce the amount of time that passes between decision-making about avoidance maneuvers and a potential impact, thereby decreasing the number of false alarms.



GMV solidified its position as a leading European company for space safety (Space Situational Awareness (SSA) and Space Surveillance and Tracking (SST)): GMV has supplied its advanced COTS space surveillance and tracking (SST) software to the German military's space surveillance center, to become part of its central processing infrastructure. GMV is also leading SSA/SST contracts for the European Union's SST system in 5 countries (Spain, France, Germany, Poland, and Romania), as well as for the ESA (those 5 countries plus the United Kingdom and Portugal). Through its operations center, GMV has also provided commercial collision avoidance services to more than 10 operators, covering over 80 satellites.

The header features a dark red background with a network diagram of nodes and lines. In the foreground, a person's hands are visible, working on a laptop. The text 'Summary' is in a smaller font above 'DEFENSE AND SECURITY' in a larger, bold font.

## Summary DEFENSE AND SECURITY

In the area of defense and security, 2022 was a very positive year for GMV. We experienced very significant growth in this area during the year thanks to our positioning with regard to key technologies supplied to the Spanish Ministry of Defense, our participation in international agencies and organizations, and our collaborations with other governmental defense bodies, especially in relation to supplying joint intelligence, surveillance, and reconnaissance (JISR) tools.

During 2022, GMV continued its participation in the Spanish Ministry of Defense's two major production programs: the F110-class frigate and the VCR 8x8 wheeled combat vehicle. In relation to the frigate, GMV supplied the SENDA navigation and timing system, which makes use of the Galileo public regulated service (PRS) for navigation. This is one of the vessel's critical configurable systems, and the goal is for it to become a standardized system installed on other Spanish naval ships.

GMV has become a European leader with regard to the European Commission's various defense initiatives, particularly its Preparatory Action on Defence Research (PADR) and European Defence Industrial Development Programme (EDIDP). In fact, GMV has become the top European mid-cap company in terms of participation in projects of this type for the European Commission, which now include more than 20.

GMV signed two important maritime surveillance contracts during 2022: a contract with the Spanish Maritime Safety and Rescue Society (SASEMAR) for implementing its iSAR maritime search and rescue system, with real-time coordination of vessels, helicopters, planes, and drones; and a contract with the European Defence Agency (EDA) for developing its MARSUR system, to coordinate the maritime surveillance operations of European naval forces.

GMV also continued its work with international agencies such as NATO, the European Defence Agency (EDA), the European Border and Coast Guard Agency (Frontex), and the European External Action Service (EEAS). Together with the NATO Communications and Information Agency (NCIA), GMV continued its work on developing permanent coalition shared data (CSD) capacities, which will provide the mechanism for exchanges with NATO's Alliance Ground Surveillance (AGS) system.

In view of recent events, particularly the war in Ukraine, both Spain and Europe as a whole have been sending clear messages about the need to strengthen and improve their defense capabilities. This will require an increase in defense budgeting, which is something that has already occurred in 2023. For specialized high-tech companies like GMV, this presents a highly positive outlook in terms of future projects, for improving capabilities in the areas of command and control, intelligence, data processing, and navigation and guidance, among others. These are fields where GMV has been solidifying its leadership position, and it is expected that during 2023 and subsequent years, an expanded set of challenges and opportunities will emerge.





# Milestones

## Defense and Security



GMV joined the group of European companies with the most extensive participation in European Defence Fund programs: GMV was awarded 7 projects in the EDF's first tendering process, bringing its participation in EDIDP and EDF projects to a total of 19. These projects represent European Commission budget allocations of nearly €350 million, which can be added to the figure of over €200 million for projects from the two previous EDIDP processes. The projects awarded are focused on developing capabilities in relation to missile defense systems, infantry systems, avionics, command and control, navigation, and cyberdefense.



GMV became a key participant for technological innovation in a Spanish maritime search and rescue project: GMV will be playing an essential role in the Integrated Innovation Program for Maritime Search and Rescue (ISAR), an ambitious project led by Spain's Maritime Rescue and Safety Society (*Sociedad de Salvamento y Seguridad Marítima* or SASEMAR). The project will allow that public entity to solidify its status as a leading international provider of search and rescue services, while also improving maritime security and fighting pollution. For this project, GMV will be providing the plug-and-play network infrastructure, which will allow for real-time communications among vessels and aircraft out at sea and coordination centers on land.



GMV has improved Europe's maritime surveillance capabilities: GMV was awarded a contract by the European Defence Agency (EDA) to develop the new software for the 3rd phase of the MARSUR maritime surveillance program (MARSUR III). The overall aim is to improve operational use of the MARSUR system in maritime missions and operations carried out under the EU's Common Security and Defence Policy (CSDP), which is the framework that the Member States are using to develop a strategic security and defense culture in Europe, with the aim of protecting and strengthening international security.



GMV updated the SAPIIEM services after completion of the R&D phase: The Support Services for Spanish Military ISR Interoperability (SAPIIEM) is a project of the Spanish Ministry of Defense's Directorate-General of Weapons and Material (DGAM), and it has been developed for integration, within Spain, of the capacity established during NATO's MAJIC program. Upon completion of the R&D phase, the DGAM created the Joint Intelligence, Surveillance, and Reconnaissance (JISR) Interoperability Program, which will allow the capabilities offered by the SAPIIEM services to be further updated for implementation and use by the Spanish armed forces.



During 2022, GMV participated in some very important projects focused on accelerating healthcare research and improving clinical practice, by applying digital technologies such as artificial intelligence and advanced analytics. Some of the associated challenges involved creating a federated data network, along with platforms that allow precision medicine to be applied by using big data techniques, while also making a contribution to ensuring their sustainability.

Europe's push to create data spaces, such as those involving health; the ability to obtain evidence by analyzing the large quantities of data made available by digital-era technologies; and interest in carrying forward the commitment to digital transformation in healthcare following the pandemic, are all factors supporting reliance upon prevention and prediction systems, in a context of global governance that can guarantee data privacy and protection. In Spain, Next Generation EU funds are also being allocated for these purposes.

Some of the most important Spanish projects developed in this area are those known as TARTAGLIA, MedP-BigD, and ALISSE. These are all projects that have the aim of providing more efficient healthcare services while substantially reducing the associated costs. In the TARTAGLIA project, a public-private consortium led by GMV began working to accelerate clinical and biomedical research under a federated learning configuration, for training artificial intelligence (AI) models that can help diagnose, treat, and prevent diseases such as Alzheimer's, prostate cancer, diabetes, cardiometabolic disorders, and complex chronic diseases. AI is also being used to facilitate acquisition of high-quality diagnostic images through the use of ultrasound technology.

The work performed by GMV on the project known as MedP-BigD, which stands for Big Data Personalized Medicine, was focused on improving personalized care for patients with chronic diseases, cancer, and degenerative and rare illnesses; use of AI tools to support clinical decision-making; and promoting health awareness among the general public.

Finally, the project known as ALISSE is a European Space Agency (ESA) project involving health care for astronauts, with the ultimate aim of democratizing access to medical imaging in non-hospital settings with a lack of access to image acquisition specialists. The project's clinical, scientific, and technological teams all worked together to design a device that can use artificial intelligence to guide and assist the astronauts, so they could obtain diagnostic-quality images of their organs, with the goal of early-stage detection of possible illnesses.

Some of the factors that have inspired GMV to work on developing innovative services and solutions are the existence of an aging population, the prevalence of chronic diseases, expansion of digital technologies for surgical simulation and navigation, and other technologies used to investigate rare or uncommon illnesses, all as a way to help ensure that people of all ages can experience well-being and lead healthier lives. Some examples of this innovation include the big data platform that GMV developed for the HARMONY Alliance, which is being used to create Europe's first mapping of blood cancers; the platform known as Tox Hub, which laboratories that perform pharmaceutical clinical trials are using to share information as a way of speeding up research on the toxicity of new drugs; the Naviphy surgical navigation software, which has already been shown to improve the results of surgical procedures; and tools such as **uTile**, which allows for bulk exploitation of data without any need for data transfers outside of the owners' repositories.

Some of these projects will remain active in 2023, while other new ones, such as Rossia and Medea, are scheduled to begin.



# Milestones Healthcare



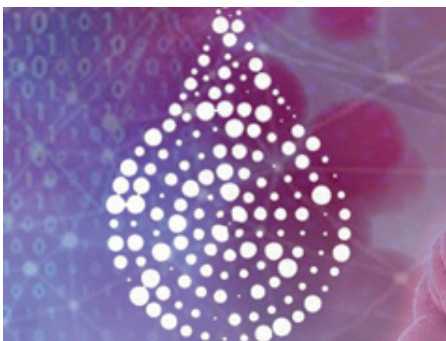
GMV promoted and coordinated the TARTAGLIA project: As part of a consortium with 15 other organizations, GMV used AI to create a federated network to accelerate clinical and healthcare research in Spain. This project is part of the R&D Missions in Artificial Intelligence program included in the country's Digital Spain 2025 agenda and National Artificial Intelligence Strategy. It received funding from the European Union using Next Generation EU funds, with a budget of over €75 million.



The M<sup>2</sup>OLIE research project is extended for another 10 years, to find new treatments for oligometastatic cancer: GMV is taking part in this initiative designed to foster collaboration between industry and clinical and technological researchers. A team consisting of physicians, engineers, computer scientists, economists, and data scientists has participated in this work in order to go beyond the limits of conventional medicine and accelerate application of personalized precision medicine in cancer treatment, with assistance from robotics and information technologies.



The Cuidat-e personalized medicine project is launched: This project is making use of GMV's technology, and its first data capture phase is initiated in Spain in the Canary Islands and region of Valencia. Led by the Canary Islands Health Service, in collaboration with the region of Valencia's Ministry of Universal Health Care and Public Health, this project's goal is to improve individualized health care for patients by applying information and communications technologies such as mobile health (mHealth), the Internet of things (IoT), big data/smart data, and artificial intelligence.



The HARMONY Alliance project reached its final phase: Consisting of the HARMONY and HARMONY PLUS projects developed as part of the European Union's Innovative Medications Initiative, this alliance identified almost 120,000 patient data sets in order to design Europe's first mapping of tumors of the hematopoietic and lymphoid tissues. The project's researchers also completed the Delphi surveys, which were carried out to compile sets of basic results for tumors of this type, for the purpose of improving the consistency of clinical trials in the future. This alliance's database is one of the largest of its kind, and it has been compiled using data from European hospitals and pharmaceutical laboratories.





## Summary CYBERSECURITY

In 2022, cybercrime took on a special relevance because of the war in Ukraine, as pro Russian groups committed numerous cyberattacks targeting the critical infrastructure of Western governments. GMV contributed to cyber protection of potential targets in Spain, by providing services through the company's cybersecurity operations center known as GMV-CERT. In this way, contributions were made to initiatives such as the CiberSOC project of red.es, which is a groundbreaking public entity dedicated to digitalization of public administration and society, and to incorporating GMV-CERT into Spain's National SOC Network, a platform created by the CCN CERT national center to bring together the SOCs of all Spanish public administration bodies, with inclusion of the entities that provide those SOC services and the public institutions that benefit from them.

The company continued to invest in innovation, by taking advantage of the various tendering opportunities presented by the Spanish government for allocating Next Generation EU funds. GMV's development and coordination of projects such as AgrarIA and TARTAGLIA provided an excellent test bench for applying and updating GMV's innovative solutions such as **uTile** and **uPathWay**. Both of those projects were funded by Spain's Ministry of Economic Affairs and Digital Transformation, through the R&D Missions in Artificial Intelligence Program of the State Secretariat for Digitalization and Artificial Intelligence (SEDIA) (file MIA.2021.M01.0004), using funds from the country's Recovery, Resilience, and Transformation Plan. Another project led by GMV, known as CUCO, was also launched as part of that plan, with funding from Spain's public-sector company CDTI and support from the Spanish Ministry of Science and Innovation.

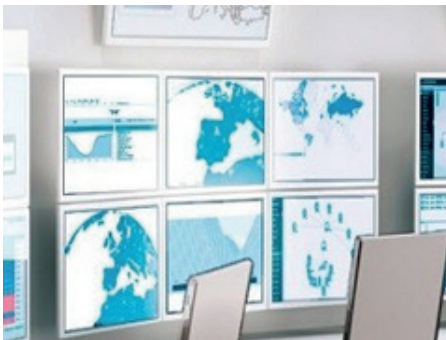
In 2023, we will be participating in a significant push for European legislation on the subject of cybersecurity, which will have an impact on the public's willingness to trust digital public services, while also driving dynamism in the industry in terms of both supply and demand. Implementing robust and resilient digital services requires imposition of the strictest requirements and standards, which means that the only appropriate suppliers will be those that are able to offer the highest levels of excellence. Challenges such as establishing a self-sovereign digital identity, ensuring secure sharing of information among collaborators, and creating the developmental bases for quantum technology and the post-quantum era have already become realities that GMV is now passionately addressing.



# Milestones Ciberseguridad



The Smart NOC project was initiated, to conduct research on emerging technologies for intelligent management of communication network control centers. In this project, GMV is applying artificial intelligence technologies to Network Operations Centers (NOCs), as a way to streamline their management and increase automation. This project is being carried out by a multi-industry, multidisciplinary R&D consortium, with the collaboration of six top-level technology and telecommunications companies (Retevisión, Gsertel, GMV, Optare, Taiger, and Scope) led by Retevisión (Cellnex), with support from four leading Spanish research institutions.



GMV became a Gold Member of Spain's National SOC Network: The Spanish National Cryptology Center (CCN CERT) has promoted creation of a National SOC Network (*Red Nacional de SOC*, or RNS), which is bringing together the country's leading public and private operations centers, with the aim of enhancing collaboration and communication among the various Security Operations Centers that provide services to public-sector entities in Spain.



GMV played an important role in the viability study for the Caramuel project, which is the world's first mission focused on the use of geostationary satellite communications for quantum key distribution (QKD). This is one of the technologies that will come to define secure information transfers in the future. This study was funded by the European Space Agency (ESA) through its program known as ARTES 4S (Advanced Research in Telecommunications Systems – Space Systems for Safety & Security), with additional backing from a group of Spanish companies and entities known for their international presence, led by Hispasat.



GMV renewed its agreement to provide comprehensive cybersecurity services, through its subsidiary in Colombia, to Santillana's operations centers in 19 Latin American countries, including incident response and activity monitoring. The trust that this major communications group has placed in GMV, in relation to enhancing its security and increasing its resilience, has resulted from the experience and professionalism demonstrated by GMV's cybersecurity experts.





## Summary

# INTELLIGENT TRANSPORTATION SYSTEMS

As we initially predicted in 2021, a strong recovery of activity took place in the public transportation and automotive industries in 2022, following the tremendous impact of the COVID 19 pandemic. In 2022, all key indicators showed very significant improvements in these industries, including figures for revenue, sales, and earnings, which returned to or even exceeded pre pandemic levels. This was true despite the fact that 2022 was also an especially challenging year, for other reasons such as high inflation levels, along with shortages of electronic components on the market, which is a crisis that actually worsened during 2022. However, thanks to the measures implemented in 2021 and strengthened in 2022, GMV was able to comply with all of its delivery commitments.

Recovery of business activity was experienced in all market segments for these industries.

For GMV, one especially noteworthy highlight in relation to public transportation was awarding of the computer-aided dispatch / automatic vehicle location (CAD/AVL) contract for the Barcelona Metropolitan Transit Authority (ATM), which is a regional, multi-operator system. All of its nearly 1,000 buses will now benefit from installation of an entire new product ecosystem that GMV has developed, which includes state-of-the-art technologies the company has been working on for several years.

In relation to the railroad industry, we continued to experience a strong growth trend during 2022, with expansion of our client portfolio of rolling stock manufacturers.

In the automotive industry, 2022 also proved to be an exceptional year for GMV. One excellent example is appearance on the market of BMW's first vehicles equipped with our precise and secure positioning solution for autonomous driving. That product resulted from an enormous R&D effort involving all sectors at GMV, with technical leadership from the company's Satellite Navigation sector. BMW continued to demonstrate its trust in GMV by announcing that this product will also be installed on its next generation of autonomous driving vehicles. Also, as another especially relevant event, GMV entered into a strategic agreement with the Swiss company u blox, the top manufacturer of automotive global navigation satellite system (GNSS) receivers. The two companies will now be collaborating to provide the automotive industry with a unique GNSS receiver featuring secure high-precision navigation.

The outlook for 2023 is very positive, and we have confidence that our growth will continue in relation to all industries and geographical areas, to produce a global revenue figure that will greatly exceed the one posted for 2022.



# Milestones Intelligent Transportation Systems



GMV's secure precise positioning solution made its appearance on the highways: GMV's reliable and secure high-precision positioning technology (location, speed, and direction) was installed on vehicles produced by the German premium automaker BMW. This secure positioning solution has two components: the onboard software (positioning engine or PE) and the GNSS corrections service (CS), which makes use of global navigation satellite system (GNSS) data in combination with information collected by various sensors mounted on the vehicles.



A computer-aided dispatch / automatic vehicle location (CAD/AVL) system was installed on the multi-operator fleet of the Barcelona Municipal Transportation Authority (ATM): This contract awarded to GMV, with a budget of more than €7 million, includes supply, installation, and entry into operation of the CAD/AVL system, for a fleet of 916 buses managed by 27 operators. Through this contract with ATM, GMV will be adjusting the CAD/AVL equipment it delivers to fit each operator's needs, by providing two different versions, including a more advanced equipment option with an onboard video surveillance system (CCTV) and a passenger counting system.



A contract was signed with Stadler for a new onboard communications platform, to be installed on its new suburban trains produced for Spanish rail operator Renfe: Supply of an onboard communications platform will be added to the onboard video-surveillance (CCTV) system and exit signal warning devices that GMV previously supplied to Stadler. This communications system, which has already been installed on Renfe's other trains, is a unified control and management system for this new fleet, with capabilities that include location tracking, communications, data capture, and mobile office features.



Light rail location tracking contract signed for Poland's largest fleet of trams in Warsaw: GMV signed a contract with Warsaw's light rail system to deliver and install an onboard location tracking service, which calculates route deviations and displays and transmits the pertinent information. GMV will be equipping 650 of the system's trams with this onboard equipment (the innovative new EP200), to produce a total of 731 installed equipment elements for monitoring two-way travel.



In 2022, the European Union launched a strategy to create a single market for data, open to information derived from sources throughout Europe. The aim is to help drive what is referred to as the data economy, by allowing data to flow freely among the Member States and various industries, to the benefit of companies, researchers, and public administrations. This is all being done within a governance framework that allows data to be freely exchanged while also fully respecting European standards and values, with rules for data access and use that are fair, practical, and clear. Guaranteed privacy and security will also help generate trust in the system. GMV has become a major player in the push to develop the data economy, thanks to its experience with creation of technological big data platforms; the solutions the company offers such as **uTile**, which makes it possible to use data while also guaranteeing privacy and security; the company's know how in the area of data governance, as applied in projects such as the Datos.gob.es portal and Ciudades Abiertas (Open Cities); and its participation in Europe's Gaia X federated data infrastructure.

With the AgrarIA project, GMV is actively participating in developing and implementing a data space for the agriculture industry, with the aim of creating a single platform that can combine a variety of cross-cutting technologies, which can then be used for a wide range of applications across the food and agriculture value chains. These data spaces will allow for voluntary sharing of data, under a system of common governance and security mechanisms, as a way to help transform those industries and allow them to serve as a reference point for others.

In 2022, GMV also emerged as a leader in what is being called as the second quantum revolution, which is focused on leveraging the enormous advances achieved in recent years with regard to quantum manipulation of matter. These advances are now driving rapid development in the field of quantum computing, which will have an enormous impact on artificial intelligence. The capacity being shown by AI to model, infer, decide, and act will make it possible to efficiently orchestrate autonomous mobility; precisely match energy production to the consumption demand existing at any given moment; perfectly synchronize logistics chains with production and supply needs; adjust food production to demand levels; and optimize many other processes that have a social, economic, or environmental impact. GMV has led the CUCO project as part of Spain's CDTI Missions Program, which is helping to create a collaborative platform with leading-edge quantum computing capabilities. The goal is to accelerate implementation of applications with a sustainable impact on strategic industries in Spain.

In addition, with the aim of allowing more efficient and sustainable use of our planet's resources, the use of robotics for process automation is now having a significant impact on production models. One example of this is GMV's application of collaborative robotics in the industrial sector, where robots created to physically interact with humans in a collaborative work environment, known as cobots, are allowing more intelligent use of adhesive materials, to reduce consumption of raw materials by performing tasks with greater precision and fewer errors, thereby minimizing waste. This is a form of optimization that can also be transferred to applications involving cutting, assembly, and finishing. All of this translates into the use of an automated production tool that puts an emphasis on savings and safety, while also allowing measurement and control of the impact that activities have on the environment: temperature, gas emissions, waste products, etc.





# Milestones

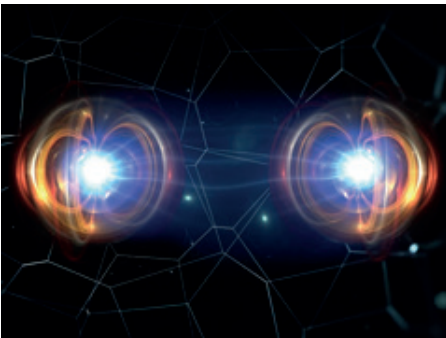
## Information and communications technology



GMV implemented a system to automate the sample disposal process at Cepsa's La Rábida Energy Park in Palos de la Frontera, Spain, near the city of Huelva. This represents the first usage case of a collaborative robot (cobot) at Cepsa, and its presence in the laboratory will allow human tasks to be refocused on other activities with more added value. In this way, Cepsa has been able to improve employee safety, while also improving efficiency and productivity. The project is also contributing to advancement of production processes based on circular economy principles, by automating sample assessment and recycling of containers.



AgrarIA is a project led by GMV and carried out by a consortium of 24 public and private organizations, to investigate applications of artificial intelligence across the entire food and agriculture value chains. This project specifically involves developing a platform that can incorporate all models and components required in the agricultural value chain, including production, transformation, and distribution, while allowing definition of process flows that are integrated with AI technologies necessary for their development. Additional digital enabling technologies will also be implemented.



GMV has been leading the CUCO project, with the aim of advancing scientific and technological knowledge for quantum computing algorithms. This project has funding from Spain's Center for Development of Industrial Technology (CDTI), with support from the Ministry of Science and Innovation as part of the country's Recovery, Transformation, and Resilience Plan. Research has now been performed on use cases including Earth observation, the fight against climate change, environmental protection, information traceability across supply chains, optimization and simulation of complex financial calculations, and signals intelligence.



The governments of the United Kingdom and United States announced the 12 finalists selected during the first phase of their prize challenge for privacy-enhancing technologies (PETs). GMV was named as one of these expert companies, based on entry of its **uTile** solution, which allows for secure, private calculations using distributed data, with no need for the organizations involved to expose their data or perform any transfers to other locations. This allows the solution to make use of confidential data to improve machine learning algorithms and analytical models, while complying at all times with each organization's own requirements, to ensure that their data will remain private, with all security regulations respected.



05

HOW WE DO IT





# We put people first

At GMV, we believe that having the best professionals gives us a strong competitive advantage, and this is why our policies are designed to attract, motivate, develop, and retain top talent.

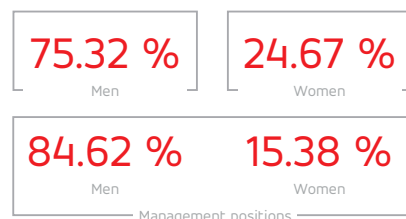
Policies made for and by our employees, offering:



## Stability and flexibility



## Diversity and inclusion



Collaboration with over **ten Spanish associations** and special employment centers for people with disabilities

**60** different nationalities

More than **32 employees** are over 60 years of age

## Career development and continuing education

31,408

Hours of training provided

## Encouragement of communication, dialogue, and transparency

113

Suggestions received

24

Improvements made

## Main actions



The BE YOU diversity and equality program was launched. This program includes a series of actions to promote equal opportunities and prevent any discriminatory behavior within the organization. It covers five dimensions: gender, age, culture, sexual orientation, and disability.

GMV signed the Diversity Charter, a European Commission initiative designed to help companies express their commitment to equal opportunities and non discrimination, both in the workplace and outside of it.

GMV implemented a platform that allows it employees to plan their own path for professional development. This platform represents a cultural change at GMV, as employees now have an agile and simple tool for managing all their professional needs within the company.



# Innovation, quality, and excellence management

## Innovation is in the company's DNA

The constant search for new horizons of development and innovation is one of GMV's main strategic thrusts. The company uses existing products and services and, if necessary, develops completely new ones to meet the specific and unique needs of its customers, delivering bespoke innovation and technology.

Investment in R&D: **10 %** of turnover

**18 patents** granted + **5 pending**

**Over 100 proprietary products and solutions**

## Long-term relationships with schools and universities

In order to continue innovating and delivering groundbreaking solutions, GMV strives to attract and cultivate the best and brightest talent. One of the company's aims is to provide students and graduates with the keys to realize their full professional potential in an increasingly volatile, complex, and competitive environment.

**103 schools**  
Collaboration agreements

**280**  
Internship grants

**139 Students hired** after completing an internship at GMV

## Certified under international standards

Excellence management is a daily task involving the entire workforce. However, the technological complexity of GMV's developments and the diversity of its target markets create a need for certain standards, improvement models, and certifications in line with the given area and specialization.

# Certifications

### GMV Innovating Solutions SL

- ISO/IEC 27001:2013  
*Information security management*
- UNE-EN ISO 14001:2015  
*Environmental management systems*
- UNE-EN ISO 50001:2011  
*Energy management system*
- UNE-EN 61340-5-1:2016  
*Protection of electronic devices from electrostatic phenomena*
- Carbon Footprint Verification

### GMV Aerospace and Defence SAU

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*Quality management*
- PECAL/AQAP 2110, PECAL/AQAP 2210 and AQAP 2310  
*Specific for purposes of defense*
- UNE-EN 9100:2018  
*Quality systems in the aerospace and defense sector*
- ISO/IEC 27001:2013  
*Information security management*
- UNE-EN ISO 14001:2015  
*Environmental management systems*
- UNE-EN ISO 50001:2011  
*Energy management system*
- Carbon Footprint Verification

### GMV Soluciones Globales Internet SAU

- UNE-EN ISO 9001:2015  
*Quality management*
- UNE-ISO/IEC 20000-1:2018  
*IT services management*
- ISO 13485:2016  
*Health product quality management: intraoperative radiotherapy planning systems*
- UNE-EN ISO 14001:2015  
*Environmental management systems*
- UNE-EN ISO 50001:2011  
*Energy management system*
- Carbon Footprint Verification

- ISO/IEC 27001:2013  
*Information security management*
- ISO 22301:2019  
*Business continuity management. Resilience*
- UNE 166002:2021  
*R&D&i management*
- RD 3/2010  
*National Security Scheme (Esquema Nacional de Seguridad: ENS), Spain*
- CEN/TS 16555-1:2013  
*Innovation Management*
- UNE-ISO/IEC 27701:2019  
*Data protection and privacy management*

### GMV Sistemas SAU

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*Quality management*
- ISO/IEC 27001:2013  
*Information security management*
- UNE-EN ISO 14001:2015  
*Environmental management systems*
- UNE-EN ISO 50001:2011  
*Energy management system*
- Carbon Footprint Verification
- UN/ECE N° 10  
*Conformity of production*

### Grupo Mecánica del Vuelo Seguridad Integral SAU

- ISO/IEC 27001:2013  
*Information security management*

### GMV GmbH

- CMMI Level 5
- ISO 9001:2015  
*Quality management*

### GMVIS Skysoft, SA

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*(ICT for business scope) Quality management*
- UNE-EN ISO 9001:2015  
*(Space, defense and intelligent transportation systems scope) Quality management*

- UNE-EN ISO 14001:2015  
*Environmental management systems*
- UNE-ISO/IEC 27001:2013  
*Information security management*
- UNE-EN 9100:2018  
*Quality systems in the aerospace and defense sector*

### GMV Innovating Solutions, Inc

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*Quality management*

### GMV Innovating Solutions Sp.z o.o

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*Quality management*

### GMV Innovating Solutions SRL

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*Quality management*

### GMV Innovating Solutions, SARL

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*Quality management*

### GMV NSL Ltd

- CMMI Level 5
- UNE-EN ISO 9001:2015  
*Quality management*
- Certificate of Assurance  
*Cyber Essentials Scheme*

### Good corporate governance: Information security management system (ISMS)

GMV has a policy in place that sets out the rules, guidelines, and procedures for ensuring that all information technology assets and resources are used and managed in a manner that protects their confidentiality, integrity, and availability. The scope of this policy includes all of GMV, including its processes and personnel, as well as any entity that accesses information through the company, while the responsibility for information protection extends to all organizational and functional levels.

### Underpinned by ethical values at all levels of the organization

## Main actions



**GMV GSharp**®, the full and precise positioning solution based on satellite navigation technologies (GNSS) from GMV, was awarded the Smart & Safe Prize at the 7<sup>th</sup> European Association of Automotive Suppliers (CLEPA) Innovation Awards.



GMV won first prize in the transportation category of the Smart City Poland Award competition. GMV was awarded for modernizing the bus stop infrastructure in the city of Torun, Poland, where it had implemented a fleet management system (**ITS Suite**) together with the **GMV Planner** module and a dynamic.



GMV was awarded in the Smart Energy Operations category at the enerTIC Awards 2022. The winning project, developed by Cepsa as user and GMV as technology partner, involved automating the sample assessment process at the Palos de la Frontera Energy Park Laboratory in Huelva, Spain, using collaborative robotics and open source technology.





Always  
committed

### To society and those most in need

The unfortunate events that society has been facing in recent years have widened the inequality gap among communities, tested the responsiveness of the business world, and called for greater attention to be paid to social, economic, and environmental issues. Conscious of this situation, GMV collaborates with several non-profit foundations and participates in various initiatives to bridge this gap.

## Main actions



GMV launched a campaign with UNHCR to raise funds to provide resources for thousands of families displaced by the crisis in Ukraine.



Collaboration with the Adecco Foundation, which promotes equality and diversity in the workplace through awareness-raising initiatives.



With the support of its employees, GMV works with the Food Bank year after year to raise funds to purchase and distribute food to families in need.

## To the environment

In addition to its environmental policy, which lays down guidelines for the protection and conservation of the environment, GMV collaborates with various organizations and initiatives that carry out actions to protect the environment and promote a sense of responsibility at all levels.

## Main actions



GMV supported the SOS ARCTIC 2022, a scientific expedition that crossed Greenland on a wind sled to increase scientific knowledge of climate change and raise awareness of the dangers of melting ice caps.



As part of the Earth Week CleanUps 2022 initiative, GMV joined the work of FOLAR (Friends of the LA River), whose mission is to preserve the environment of the Los Angeles River, the main local urban waterway in the region.



Collaboration with the Reforesta association in forest conservation work to preserve the ecosystem of the Barranca Valley in the Sierra de Guadarrama mountain range in Madrid, which has been damaged by centuries of grazing, logging, and charcoal extraction.

## To sustainable development

GMV uses its technology and multidisciplinary experience to deliver solutions that make the world a better place. This focus has given rise to a wide range of services and solutions that are aligned with the United Nations' plan for a better, fairer, and more sustainable future. The key SDGs of this strategy:



## To education and STEM careers

As a technology organization, GMV has a team of professionals with advanced professional qualifications, mainly linked to training in science, technology, engineering, and mathematics (STEM). This team's talent enables the company to seize opportunities as they arise, thus contributing to scientific progress and social change. GMV is aware of the challenges facing education and is committed to fostering talent in these areas.

## Main actions



GMV sponsored the 6th ASTI Robotics Challenge, an event hosted by the ASTI Foundation to develop STEM talent and empower the future generation of leaders in the field of collaborative mobile robotics.



As a silver member of Women in Aerospace Europe (WIA-E) since 2021, GMV gives various talks in schools. Several of the company's professionals were speakers at the 1st Children's Space Congress, an event attended by around 800 10- to 11-year olds from different schools.



GMV maintains a close relationship with the FIRST® LEGO® LEAGUE, either as a national tournament partner or by supporting competing teams. This year GMV sponsored a team of students who won third place in the Spanish final and a place at the International Open in Rio de Janeiro, Brazil, with a pioneering project in the field of sustainable mobility.



# 06

## ECONOMIC AND FINANCIAL RESULTS

*\* All figures shall be understood in Euro (EUR)*



# BALANCE SHEET

ASSETS	2021	2022	LIABILITIES	2021	2022
Fixed assets	61.065.808,84	60.586.882,59	Stockholders' equity	55.502.269,28	60.875.193,18
			Capital grants	421.692,13	1.632.107,58
			Minority interests	18.873.026,21	18.976.436,07
			Long-term funding	24.271.732,99	22.926.075,20
			<i>Interest free credits</i>	5.427.425,34	5.476.944,49
			<i>Long term funding</i>	18.844.307,65	17.449.130,71
<b>Total fixed assets</b>	<b>61.065.808,84</b>	<b>60.586.882,59</b>	<b>Total Long-term Funding</b>	<b>99.068.720,61</b>	<b>104.409.812,03</b>
Inventories	21.125.835,00	36.961.893,30	Short term liabilities	49.199.557,73	71.543.710,27
Accounts receivable	12.937.787,97	4.569.308,68	<i>Bank loans and overdrafts</i>	24.268.710,15	18.218.121,52
<i>Trade debtors</i>	42.340.113,38	56.751.804,23	<i>Non-trade payables</i>	24.930.847,58	53.325.588,75
<i>Trade services on account</i>	-36.217.149,82	-64.658.575,55	Deferred payments	455.229,41	4.204.596,79
<i>Other debtors</i>	6.814.824,41	12.476.080,00			
Cash	53.594.075,94	78.040.034,52			
<b>Total current assets</b>	<b>87.657.698,91</b>	<b>119.571.236,50</b>	<b>Total short term liabilities</b>	<b>49.654.787,14</b>	<b>75.748.307,06</b>
<b>Total assets</b>	<b>148.723.507,75</b>	<b>180.158.119,09</b>	<b>Total liabilities</b>	<b>148.723.507,75</b>	<b>180.158.119,09</b>
Working capital	38.002.911,77	43.822.929,44	Working balance	38.002.911,77	43.822.929,44
Working capital/Equity	38,36 %	41,97 %	Working balance/fixed asset	62,23 %	72,33 %

# PROFIT AND LOSS ACCOUNT

EXPENSES	2021	2022	INCOME	2021	2022
Purchase of goods	72.755.690,84	95.473.691,71	Turnover	254.003.324,38	305.735.803,65
Ancillary Services	19.400.726,55	23.871.095,07	Own expenses capitalized	3.490.938,21	3.632.033,18
Taxes	541.268,16	727.065,27	Operating grants	537.657,58	1.164.638,63
Employee Costs	147.213.346,79	170.747.711,74	Financial Income	177.627,13	87.257,95
Financial Expenses	1.253.205,93	868.604,65	Extraordinary Income	897.478,84	719.925,59
Extraordinary Expenses	35.296,83	53.308,75			
Period Depreciation and Amortization	9.809.400,38	10.440.892,78			
Appropriations, transfer to Provisions	490.578,78	483.558,97			
<b>Total Expenses</b>	<b>251.499.514,26</b>	<b>302.665.928,94</b>	<b>Total income</b>	<b>259.107.026,14</b>	<b>311.339.659,00</b>
			<b>Pre-tax profit</b>	<b>7.607.511,88</b>	<b>8.673.730,06</b>
Corporate income tax	1.327.165,06	2.068.368,91	<b>Post-tax profit</b>	<b>6.280.346,82</b>	<b>6.605.361,15</b>

# CASH FLOW STATEMENT

	2021	2022
Profit after tax	6.280.346,82	6.605.361,15
Depreciation and amortization	9.809.400,38	10.440.892,78
<b>Operating Cash Flow</b>	<b>16.089.747,20</b>	<b>17.046.253,93</b>
Net finance expense	1.253.205,93	868.604,65
Corporate income tax	1.327.165,06	2.068.368,91
<b>EBITDA</b>	<b>18.670.118,19</b>	<b>19.983.227,49</b>
(Increase) / decrease in trade and other receivables	9.005.189,85	-7.467.579,01
Increase / (decrease) in trade and other payables	236.194,45	28.394.741,17
(Decrease) / increase in provisions	-3.773.451,42	3.749.367,38
Deferred income (capital grants)	-537.657,58	-1.164.638,63
<b>Cash flow generated from operations</b>	<b>23.600.393,49</b>	<b>43.495.118,40</b>
Tax paid	-1.327.165,06	-2.068.368,91
<b>Net cash flow from operating activities</b>	<b>22.273.228,43</b>	<b>41.426.749,49</b>
<b>INVESTMENT ACTIVITIES</b>		
	2021	2022
Purchase of subsidiary undertaking (Goodwill)	-1.550.536,29	-1.550.536,29
Capital expenditure - plant and equipment	-3.195.030,70	-5.454.460,74
Capital expenditure - intangible assets	-1.563.747,04	-2.956.969,50
<b>Net cash flow from investing activities</b>	<b>-6.309.314,03</b>	<b>-9.961.966,53</b>
<b>FINANCING ACTIVITIES</b>		
	2021	2022
Net new debt (debt increase + debt repayments)	-15.196.031,60	-7.396.246,42
Capital Grants and subsidies on capital	474.503,36	2.375.054,08
Interest paid	-1.253.205,93	-868.604,65
Dividends paid to equity shareholders	-1.106.025,96	-1.048.839,18
Paid-in capital / Adjustments to the equity value	-1.237.641,32	1.365.592,67
Minority Interests	2.814.388,86	103.409,86
Results attributable to the Minority Interests	-1.435.350,55	-1.549.190,74
<b>Net cash flow from financing activities</b>	<b>-16.939.363,14</b>	<b>-7.018.824,38</b>
<b>(Decrease) / increase in cash and cash equivalents</b>	<b>-975.448,74</b>	<b>24.445.958,58</b>
Cash and cash equivalents at beginning of year	54.569.524,68	53.594.075,94
<b>Cash and cash equivalents at end of year</b>	<b>53.594.075,94</b>	<b>78.040.034,52</b>

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