We in business group GMV believe that behind each new need, behind each new problem, lie a challenge and a chance to innovate. Technology is not an end in itself; it is the means to make something new or 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 specific and singular needs of our clients, furnishing tailor-made innovation and technology. We take on our clients’ challenges as our own, spurring us on to new heights of innovation.

GMV goes even beyond the requisites of its clients, exploring their real needs with a total readiness to seek solutions. This enables us to come up with the right response, often imaginative, sometimes unique and always honest.
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Despite the difficult economic situation, 2008 was a good year for GMV, which grew close to 19% in terms of turnover and EBITDA, even topping the average 15% growth rate of the last 5 years. Our staff also continues to grow, now over 1000 strong. This year saw the completion of the extension work on our Tres Cantos office. This means that we now have a total floorspace of over 10,000m², suitably fitted out as a working environment for the 600+ employees now working in our head office.

Our growth strategy is based on the development of new products and services and on international expansion. 45% of our turnover comes from the space sector, where GMV is still leader in control systems. By the end of 2008 a total of 150 satellites were being controlled by GMV systems. One of the most headline-grabbing missions of the whole year was the totally automatic docking in space between the orbiting International Space Station (ISS) and its new cargo resupply spacecraft sent out from earth, the Jules Verne ATV. GMV played a key role in the design and operation of this mission’s flight dynamics. GMV continued its work for the Galileo ground segment and also developed many applications for the future navigation system under the aegis of European Commission R&D programs in the security and transport sectors. There were also new and ongoing projects for Eurocontrol and AENA (Spanish Airports and Air Navigation Authority) in the aeronautics sector and for the DGAM (Directorate General of Armaments and Material) in the defense sector. Further developments were also phased into our Moviloc® service, the web-based fleet management and tracking system, now being used by over 3000 vehicles. Pride of place in the IT sector goes to the launch of our new atlas GMV® product, allowing the use of BlackBerry® smartphones with open source Linux-based email systems. Our growing portfolio of products for the healthcare sector now includes radience, an intraoperative radiotherapy treatment planner. Our arthroscopy training simulator insightArthroVR®, for its part, won new customers in the USA and Asia through the distributor Immersion Medical. Our US subsidiary was chosen by Star One, South America’s biggest satellite operator, for supplying the control system of Brasilsat satellites. Deployment of the DGPS network on the coast of Malaysia started this year, and in October we inaugurated a new business area of explosive ordnance disposal. As the only Spanish firm in this field we recently won accreditation as a UN vendor.

The downturn looks set to continue in 2009. We therefore foresee a year of consolidation and more moderate growth. The sheer diversity of GMV’s areas of activity and the soundness of our financial structure bode well for our future stability, especially in view of the fact that some of these activities, like the space sector, are largely immune to the short term economic trend. Our response to falling demand is to increase our commercial activities and supply range and to continue with our strategy of international expansion, opening up commercial offices in Korea and Malaysia and a new subsidiary in Poland in the first half of 2009. Both abroad and at home we are keen to convince our clients of the quality of our work. To do so we need to make sure we recruit the best professionals both now and in the future. This year we have therefore once more sponsored diverse competitions and events to flush out talented youngsters who share our passion for technology. Although the worldwide economic situation calls for a dash of prudence, the ongoing confidence of our clients stands us in good stead for 2009.

Cordial greetings,
Mónica Matínez
True to our motto “Rising to the challenges of our clients: a chance to innovate”, GMV continued in 2008 to work hard at ensuring client satisfaction. We never flag in our ongoing drive to offer our clients an increasingly comprehensive and attractive range of products, solutions and services that meet their every need and help to improve their operations and activities in general. This effort has borne fruit in terms of a notable 19% turnover increase in our existing business, achieved largely by almost harnessing the synergies from our company takeovers of previous years. Business margins have also held steady at habitual levels, boosting consolidated profit by 14%.

This positive trend in the company’s overall results is clearly important. Equally important, however, is the across-the-board nature of this growth in all GMV’s sectors of activity, allowing us to provide a continual stream of new products, solutions and services to cement the loyalty of existing customers and win new ones. This bodes well for our future growth prospects. New contract awards were won in the transport sector, like the bus system for the Polish city of Gdansk, while more contract awards also came from the Spanish railway network Renfe for passenger information and fleet management systems. Business was also brisk in the information and communication technology sector, where new product developments of recent years (such as atlas GMV®) have now started to bear fruit and look likely to go from strength to strength in coming months. In the defense and security sector we have opened new working lines with a promising future. New contract awards continue to come from the European Defence Agency (EDA), for whom we are now Spain’s biggest provider. We have also struck out on a new business area with demining and demilitarization activities, which are likely to boost GMV’s future growth prospects. In the space sector GMV’s products continue to reap success in the commercial and institutional market, bearing out the shrewdness of GMV’s R&D policy. There was a particularly noteworthy increase of activity in the US institutional market, with contract awards for crucial activities in key missions such as Landsat. 2008 will also go down as a successful year for operations of the Jules Verne ATV, where GMV has played a key role.

In an increasingly globalized world GMV is keen to expand its business worldwide. This year we continued to develop our overseas activities through our new subsidiaries in the US and Portugal. We have also successfully taken part in tenders in new markets in Europe, Asia and the Americas. GMV will continue to strive to become a worldwide benchmark in all the technological sectors we trade in. In 2008 we also reinforced the international team with the designation of a market development manager for central and eastern Europe. In the coming years these countries are likely to be a seedbed of business opportunities as they strive to close the gap on their new European partners. This will present us with chances to sell tailor-made products, services and systems and also provide us with a nursery of new professionals to keep pace with GMV’s expected growth rate.
A key factor in GMV’s competitiveness is the technology and innovation component. We are therefore convinced that our efforts to develop new technologies and products are bound to pay off in the future. In 2008 there was no flagging in this endeavor. Our personnel were continually challenged to come up with groundbreaking solutions for the problems of our clients and anticipate their future needs in all the sectors we trade in. In line with this policy we stepped up our R&D outlay by 50%.

In 2009 we will continue to be a knowledge-intensive company whose main asset is its personnel. We will therefore keep up our efforts to find and recruit the best personnel wherever they may be while continuing to develop and extend our training programs. A broader and continually refreshed talent base will enable us to offer increasing value to our clients, fuelling even greater growth in the future. With the best technicians and executive teams behind us, we are confident of being able to ride out any economic storms that might be looming this year.

Lastly, I cannot pass up this chance to thank everyone once more for their collaboration, primarily our employees but also our partners, suppliers and clients and all other related organizations and persons. We are convinced that the firm must continue to play a social role over and beyond the beholden duty to its shareholders. We are determined, with the collaboration of all concerned, to spread the benefits of our activity within society.

For yet another year, many thanks to all concerned.
Jesús B. Serrano
GOVERNING BODIES

BOARD OF DIRECTORS
EXECUTIVE MANAGEMENT
MANagements of SUBsidiary COMPANIES
HISTORY OF THE COMPANY

GMV was born in 1984 as fruit of the business initiative of Professor Dr. Juan José Martínez García. At first GMV centered on the space and defense sector, taking its first steps in fields like mission analysis, flight dynamics, control centers, satellite navigation or simulation, all areas in which GMV is nowadays a leading light internationally. It started out with a small group of engineers that won a contract for ESA’s European Space Operations Centre (ESOC) in an open international tender. GMV then went from strength to strength, growing into a solid firm boasting a 100-strong staff by the late eighties. It participated actively in ESA’s first space missions and provided highly specialized services for the main international satellite manufacturers and operators. In a few short years the sheer quality of its work won GMV a cast-iron reputation in the European space sector. In 1988 it was declared to be a Center of Excellence in Orbital Mechanics by the European Space Agency. In the
early nineties GMV decided to branch out into other sectors by way of technology transfer. This gave rise to new business lines in the transport and telecommunication sectors and in the application of information technologies for the public sector and companies in general. By breaking into these new areas GMV became a trailblazer in fields like internet or satellite navigation applications, still in their infancy in those days. GMV installed the first computer firewall system in Spain and set up Spain’s first SMS-Internet gateway. In the transport field GMV became a pioneer in Spain in intelligent transportation systems with the development of the first GPS-based fleet tracking and management systems. The company thus began to transfer to other markets the experience built up in the space sector in control centers, geographic information systems (GIS), satellite navigation, telecommunications and data networks. It was also during the nineties that GMV consolidated its position in the defense market, especially in the fields of command and control systems, military applications of satellite navigation systems and simulation.

By the end of the nineties GMV’s diversification process had been successfully negotiated and its staff had built up to almost 300. The turnover now topped 20 million euros, of which about 50% came from sectors like transport, telecommunications and information technologies.

In 2001 the founder and president of GMV, Professor Juan José Martínez Garcia, passed away. This led to a change in the executive structure of the business group GMV, creating the post of general CEO while the presidency of the group was taken on by Dr. Mónica Martínez Walter.

In these years GMV entered upon a new stage with a twofold objective: firstly to maintain its business independence and secondly to develop a future plan that would guarantee ongoing profitable growth both in its traditional areas and the new ones. A big investment was therefore made in the development of new products and solutions in space, defense, transport and information technologies; the decision was also taken to break into new sectors and an ambitious program was unfurled for internationalizing the long-standing business lines.

As a result of this international expansion policy GMV took a crucial step forwards in 2004 with the creation of its US-based subsidiary, thus becoming a company trading in two continents. The new subsidiary focused on the US aerospace market with the aim of carving itself out a niche as a tried and trusted supplier of the US industry and institutions of the sector.

In May 2005 the business group GMV confirmed its strategy of international growth and development with the purchase of a 58% stake in Skysoft, a Portuguese firm with business lines and target markets very similar to those of GMV. In 2007 the operation was completed with the purchase of 100% of Skysoft, thereby knitting its operations seamlessly into the rest of the business group.

GMV’s new corporate identity was officially launched in September 2006, to bring it into line with the actual situation of the business group GMV. The group had by now broken into many new sectors and expanded its business internationally. To make sure the corporate brand did not lag behind this new situation we decided to carry out a thoroughgoing overhaul of the group’s identity, unifying all the corporate brands under a single denomination. As a result, all the subsidiaries now have the new GMV brand as a single corporate identity.

In June 2007, GMV purchased a 66% stake in Masisconvi, S.A, a company specializing in the design, development, manufacture and marketing of ticket-vending and fare collection systems, using cutting-edge technology. Later, in 2008, GMV completed the purchase of 99.69% of Masisconvi, S.A. This operation allowed GMV to round out its range of passenger transport telematics, hitherto focused on fleet management systems.

Our track record bears us out: with nearly 25 years of history behind it, GMV has evolved from a small aerospace engineering company into a business group with a 1000-strong staff trading in various hi-tech sectors and boasting a healthy international client portfolio.
KEENNESS TO TAKE ON THE CHALLENGES OF OUR CLIENTS

A CHANCE TO INNOVATE

Our goal is to support our clients' processes by dint of technologically advanced solutions, providing integrated systems, specialized products and services covering the whole life cycle. These range from consultancy and engineering services up to the development of software and hardware, the integration of turnkey systems and operational backup.

Technological development is now accelerating at breakneck speed and change has become the byword of modern life. The institutions and companies making up our markets are therefore obliged to innovate continually to cater for these changes and rise continually to new challenges. New needs for improvement, new processes or operational problems crop up every day. Innovation, the incorporation of new technologies, is no longer just an opportunity to stand out from the pack; it has now become a must to avoid slipping back in the race.

In GMV we are firmly of the belief that behind every new need, behind every new problem, lie a challenge and a chance to innovate. Technology is not an end in itself; it is the means for making something new or something old better. In GMV we draw on our range of existing products and services or, if necessary, we develop completely new ones to meet the specific and singular needs of our clients, furnishing tailor-made innovation and technology. We take on our clients’ challenges as our own, spurring us on to new heights of innovation.
A NEW FORWARD-LOOKING BRAND

GMV has recently broken into many new sectors and expanded its business internationally. To make sure the corporate brand did not lag behind this new situation GMV decided in 2006 to revamp the whole group’s corporate image. The new image captures the essence of our range of products and services and conveys the image of a well-knit multinational business group working in many different technological sectors, all pulling together towards the same forward-looking aim of onward growth. The new image draws on this common denominator to create a unified image in keeping with the common strategy, culture and roots of the whole group: continual innovation, unstinting desire to improve, keenness for challenge and leadership in technological excellence.

Since then, throughout 2007 and 2008, the group carried out an ambitious communication and marketing campaign plan to set up the new corporate image, with publicity in specialized media of the sectors GMV trades in and widespread participation in trade fairs, congresses, etc. The result of these actions was a significant increase in knowledge and recognition of the GMV brand, with a 700% increase in its number of mentions in the media. Worthy of particular mention here is GMV’s membership of the Forum of Renowned Spanish Brands (Foro de Marcas Renombradas Españolas) to join another eighty outstanding Spanish brands.
GENERAL DEVELOPMENT AND TRENDS

In 2008 the business group GMV posted a consolidated turnover of 91.5 million euros, representing a 19% increase on the previous year. This increase in GMV’s turnover is the result of joint growth in all the business lines in which GMV’s various subsidiaries operate. All these subsidiaries outstripped their turnover forecasts for the year. It should be stressed that these good results have been chalked up during difficult times with a worldwide recession.

Despite GMV’s expansion into other sectors, the space sector continues to account for the lion’s share of its turnover (45%) and net profits. In 2008 GMV held onto its ranking as the world’s second biggest independent supplier of satellite control systems. By the end of 2008 over 150 satellites of the world’s main manufacturers were basing their operations on GMV-supplied systems. GMV’s client portfolio, already boasting all the world’s major operators and international space agencies, swelled further with new clients like the operators Star One (Brazilian operator and the biggest in South America), Nilesat (Egypt) and OPTUS (Australia). GMV is still working on its contracts for the development of critical ground segments of Galileo, making it the third biggest European participator in the satellite navigation system and the biggest in Spain. It is also winning itself a growing participation in the system’s future development, forging excellent long-term business prospects in this field. In the USA GMV continues to build up a strong position in the various programs of NASA. In 2008 it won the contract for developing the operations system of the Landsat mission operations and the flight dynamic system for the scientific satellite Glory. GMV is still the only European firm whose flight-dynamics and satellite-control systems are being simultaneously used in Europe and in the USA: in Europe at the operations center of ESA, EUMETSAT and CNES and in the USA at NASA’s Goddard Space Flight Center and the Johnson Space Center.

In the defense sector GMV has now broken into the field of demining and demilitarization activities, making use of cutting-edge technologies. This new activity rounds out its traditional activities in the fields of command and control systems and electronic warfare. The main feat in 2008 in this area was operational validation of the field artillery
command and control system, giving the green light to operational implementation of the system in the army in the coming years. GMV also made further promising progress in its relations with the European Defence Agency. In 2007 GMV became the first European firm to win an R&D contract for development of a sniper detection system, following this up in 2008 by winning two new EDA contracts through its Portuguese subsidiary.

GMV has once again shown a healthy growth rate in the aeronautics sector. This progress was made mainly on three fronts: firstly in the promising field of integrated modular avionics, in which GMV is working on the development of new distributed systems through various projects from Spain and Portugal; secondly in the air traffic control field by winning three new contracts from EUROCONTROL; and lastly as preferred supplier of EADS-CASA. In terms of future prospects, special mention must go to GMV’s participation in the inflight refueling system of the Airbus A-330 MRTT (Multi Role Tanker Transport Aircraft).

In 2008, as in 2007, the transport sector recorded a sharp growth rate. Back in 2007 GMV purchased practically the whole of Masisconvi, S.A, the manufacturing firm of electronic fare collection systems. In 2008 it continued to build up its various lines of activity in the field of transport by road, rail and sea. Fleet transport systems for public transport are worth a special mention with a great number of new products for setting up new systems or renewing or extending existing ones. By now GMV has become the undisputed number one in the Spanish market, with systems up and running in over 30 cities. Its contracts with the Spanish railway network RENFE have also produced a tidy amount of business, with continuing work on the passenger information and fleet management systems begun in 2007. In this same sector GMV pulled off a major feat abroad, winning a contract for setting up a passenger information system in the Polish city of Gdansk. In sea transport GMV continues to increase its activity in DGPS systems and AIS networks with a growing participation in diverse projects both inside and outside Spain. Outstanding projects here are maintenance of the DGPS network of Puertos del Estado (the Seaports Authority), deployment of the DGPS network of Malaysia and implementation of AIS networks for diverse clients such as REPSOL and Caniçal port in Madeira.

GMV also recorded a healthy growth rate in the sector of information and communication technologies (ICTs), supplying advanced solutions and services in the areas of information security, ICT integration and mobility solutions for the public sector, large corporations, banks, insurance companies and telecommunications operators. Vodafone, a longstanding client of GMV in this field, distinguished GMV as a “Best Partner”. Fruit of their collaboration was the joint launch of the GMV-developed atlas GMV® product giving access to push emails in BlackBerry® smartphones supported by open source servers. GMV also
performed far-reaching projects for the public sector, developing and setting up email platforms and portals for various government authorities including two regional councils, the Junta de Andalucía and the Junta de Castilla y León. In the information security field it carried out R&D projects such as Seguridad 2020 or €-Confidencial. GMV also earned itself the confidence of new clients such as the bank CAM (Caja Mediterráneo), the winery Miguel Torres or the Ministerio de Economía y Hacienda (Ministry of Economics and Finance). Under an epoch-making agreement signed with INTECO, GMV opened a new office in León, thus setting up a center of excellence in the areas of software quality, security and accessibility.

In the healthcare sector the sales of the arthroscopy surgery training simulator insightArthroVR® have spread to hospitals, universities and institutions of Spain, the United States, the United Kingdom, Denmark, Sweden and Japan. Sales of the simulator are bound to pick up even further in the future on the strength of the increased commercial efforts being made by Immersion Medical Inc., world leader in marketing medical simulation products and international distributor of insightArthroVR®. Investment in the simulator continue, with significant upgrades this year, while other highly promising products were also brought on line, such as the intraoperative radiotherapy planner radiance, which is now being used in important hospitals such as Madrid’s Gregorio Marañón.

Taken as a whole, the business group GMV once more recorded a sharp growth rate in 2008 in all the sectors it trades in and continues to reap the fruits of its product-development investments in recent years. GMV has not only grown but has also improved its competitive position across the board. It has made further inroads abroad and continues its strategy of permanent expansion of its business lines and products on the back of its R&D policy.

MAIN FIGURES

- Turnover: 91,5 M€
- EBITDA: 10 M€
- EBIT: 6,6 M€
- Net profit: 4,2 M€
- Number of employees: 1,029
GMV provides integrated systems, specialized hi-tech products and services. Its activities take in the whole life cycle of the system, ranging from consultancy and engineering services up to the development of software and hardware, the integration of turnkey systems and right through to operational backup. These products and services are supplied through its various subsidiaries to eight different sectors: Aeronautics, Defense, Space, Healthcare, Security, Information Technologies for the Public Sector and Large Corporations, Telecommunications and Transport.
ACTIVITIES IN 2008

AERONAUTICS

GMV works for the main manufacturers of the aeronautics sector as well as organizations like AENA and Eurocontrol as a specialist in engineering, development of aeronautics software and systems under the strictest quality standards. The most important areas of activity for the aeronautics sector are the following:

- Development of safety-critical systems and software under the standard RTCA DO-178
- Development of onboard software for certifiable avionics systems
- Development of experimental systems and equipment
- Integration of flight testing platforms
- Navigation systems
- GNSS Infrastructure (SBAS, GBAS, LAAS)
- Backup systems for air traffic control
- Simulators
- Testbeds
- Aeronautical telecommunications
In March 2008 the first phase of the Atlántida project came to an end. This project is co-funded by CDTI (Industrial Technology Development Center) under the Ingenio 2010 project, in turn forming part of the Single European Sky ATM Research (SESAR) program. The main aim of Atlántida is to develop an experimental platform for integrating prototypes of the main elements of the future air traffic management system (CNS/ATM). GMV is developing the navigation system carried onboard the UAVs (“Unmanned Aerial Vehicles”) to be used in the project. It has also taken on responsibility for the ground deployment of a satellite navigation support system and the development of two prototypes, one for planning air operations and the other for calculating the optimum 4D trajectories for the specific mission of each user.

In 2008 GMV won yet another contract with Eurocontrol. The FASTI team, belonging to Eurocontrol, awarded a contract for developing the TPAT (“Trajectory Prediction Assessment Tool”) to a consortium formed by Skysoft-ATM and GMV. The main object of the program is to coordinate the implementation and deployment of an air traffic control support system. The core of the TPAT system is based on a strategic analysis of trajectories, to be established and implemented by GMV, for measuring the precision of the trajectory prediction by comparing the forecast figures with the actual figures obtained operationally from the surveillance systems.

In the CNS (“Communication, Navigation and Surveillance”) area Eurocontrol renewed with GMV the satellite navigation support contract (GNSS) with personnel posted to Eurocontrol’s Experimental Center in Paris. This support focuses mainly on ground based augmentation systems (GBAS) and includes, among other possibilities, active participation in international working groups dealing with the standardization, certification and operational commissioning of GBASs and maintenance of the Pegasus system, which Eurocontrol distributes to give support to the operational implementation of GNSSs for air navigation.

In the field of geographical information systems (GIS), Eurocontrol awarded GMV’s Portuguese subsidiary, Skysoft, a project for modernizing the support system for operations of Eurocontrol itself and also of associated air navigation agencies.

GMV also continued working on the EURONOTAM contract, another Eurocontrol project, awarded in late 2007 to a GMV-led consortium. This contract is the precursor of the operational system to be used by Eurocontrol in the future for Europe-wide generation of NOTAMs and it also allows GMV to work and liaise with GroupEAD, the company in charge of providing the aeronautical information service to the whole of Europe through the EAD database (European Aeronautical Information Services Database).

NOTAMs (Notice to Airmen) are informative notes sent by the air-navigation services provider of each state (AENA in Spain’s case) to alert all airspace users of any potential flight security threat, such as the unavailability of a GPS+EGNOS-based approach and landing procedure due to a problem in these systems.
In 2008 GMV consolidated its position as one of AENA's main GNSS technology suppliers with the award of a contract for updating the GNSS Analysis Support Infrastructure (ISAGNSS). ISAGNSS is an in-flight test-bed designed to support operational validation and certification of the GNSSs (SBAS and GBAS) in the aeronautics field, applied mainly to approach and landing operations. Under this contract AENA will update the equipment and functions of ISAGNSS to give it the required capacities in coming years and ensure ongoing operation.

As part of the support activities for AENA's R&D, GMV is collaborating with this public body in the study of the collaborative planning process of the ATFM (air traffic flow management) as defined in the Single European Sky ATM Research program, SESAR.

GMV has also upped its profile in the area of new integrated modular avionics (IMA) systems, carrying out several far-reaching projects.

The SAFAR (“Small Aircraft Future Avionics Architecture”) project kicked off in 2008. Part of the European Commission’s FP7, this project aims to introduce groundbreaking technology into the general aviation segment, such as fly-by-wire and fault-tolerant GNSS-based navigation systems, designed and developed by GMV.

Development work continued this year on the DIANA project (Distributed equipment Independent environment for Advanced avioNic Applications), a project financed within the European Commission’s FP6 and carried out by a consortium of companies led by GMV’s Portuguese subsidiary, Skysoft, bringing together several of the world’s main stakeholders in the area of modular integrated avionics (IMA). This project represents the world’s first step towards an integrated modular electronics platform (IME), allowing distributed execution of avionics systems in virtual machines. Its first results were presented during the aeronautics sector’s most important event in Europe in 2008, held in Farnborough, England.

In this same field the track record of GMV’s Portuguese subsidiary in ARINC 653 modular avionics systems prompted the German avionics systems specialist, Sysgo AG, to turn to GMV for carrying out the verification tests of its Pikeos1 ARINC 653 system.
GMV gave further proof of its growing IMA prowess with participation in the IDEFIX project within the technology procurement program of the Spanish Ministry of Defense, in collaboration with the defense ministries of Great Britain, France, Sweden, Germany and Italy. This project also involves the certification bodies of the participating countries, including Spain’s Technical Aerospace Institute (Instituto de Técnica Aeroespacial: INTA). The IDEFIX program will come up with advanced technology solutions for the ASAAC (Allied Standard Avionics Architecture Council) military system, building on the activity begun by GMV back in 2005 under the EUCLID program (European Cooperation for Long Term in Defense).

Another noteworthy development in the IMA technology field came in early 2008 with the IMPERIO project, which aims to develop an unmanned aerial vehicle to carry out maritime and forestry surveillance duties. Within this project GMV’s Portuguese subsidiary is responsible for specification, implementation and validation of the avionics systems.

In 2006 GMV was officially listed by EADS-CASA as preferred supplier of onboard software, after several years of providing this service on an ad-hoc basis. This has enabled it to step up its development of aeronautical safety-critical software. In particular, GMV is developing safety-critical software for the EADS-CASA air-to-air refueling control unit (tail boom) for the Airbus A-330 MRTT (Multi Role Tanker Transport Aircraft), currently being marketed with such success by EADS-CASA. This software is being developed under the strictest standards, such as RTCA DO-178B, including components classified at Level B and Level A (the most restrictive in terms of safeguarding and safety requisites and where the most advanced IMA concepts are applied) in accordance with the standard ARINC 653. As well as the aforementioned participation in the flight control laws (FCL) and the design and implementation of the Boom Control Computing System (BCCS) GMV has also developed various modules for engineering and training simulators.

GMV is also providing technical consultancy on safety-critical software systems for the Spanish aeronautics company CESA (Compañía Española de Sistemas Aeronáuticos, S.A) as part of the development of the BRSU unit (Bending Ring Sensor Unit) for the aforementioned Tail Boom project of EADS-CASA.
Further collaboration with EADS-CASA came as part of the supply operation of C-295 type VIMAR aircrafts for the Portuguese Airforce. GMV’s Portuguese subsidiary is continuing to work successfully on a development and integration project of diverse subsystems both in the ground segment and flight segment of these aircrafts’ Fully Integrated Tactical System (FITS).

Other noteworthy projects are: the Portuguese subsidiary’s participation in the FLYSAFE and ANASTASIA projects, both in their final phase and key factors in new implementations of onboard systems; the SCARLET project, which kicked off in 2008, is geared towards modular technology for the next generation of aircraft, while the SOFIA project has generated a new set of responsibilities in the air traffic management and surveillance segment.

As part of GMV’s ongoing collaboration this year with EADS’s Integrated Logistic Support, GMV is developing a trainer of different multifunction displays of the F-18 combat aircraft. In fact GMV has been working for EADS-CASA for some years on the development of components for the simulators of other aircraft, such as the Eurofighter (ASTA simulator - Aircrew Synthetic Training Aid, and Interim Training), CN-235, C-295, A-400M, etc, and also on the development of specific system trainers for some of these aircraft.

In 2008 GMV continued to work on two of the star programs of the armed forces: the Tiger attack helicopter and A400M transport aircraft. For the A400M, under a contract with EADS-CASA, GMV is developing several simulation models for the landing gear and other aircraft systems. In the Tiger program, under a contract with Eurocopter, GMV is providing the software design, development and testing for the mission and attack computer AMCSG (Armament and Mission Computer and Symbol Generator). The previous year saw the maiden flight of the Tiger’s HAD version (Hélicoptère d’Appui Destruction / Support Destruction Helicopter), representing a great step forward in the development of this helicopter. This progress was consolidated in 2008. GMV has also increased its collaboration with Eurocopter in the development of the NH90 helicopter’s software system for diverse pieces of equipment.
In cooperation with the Spanish navy, GMV is continuing to develop SISCAR in keeping with the PAPS (“Phase Armaments Programming System”) methodology. SISCAR is a groundbreaking GPS-based instrumental approach system for use on aircraft carriers and unprepared landing strips.

In 2008 GMV also continued to participate in various international groups for aeronautical standardization and specification of approach and landing systems, the UAVs, system security and development of the standard RTCA DO-178B.

Mention must finally be made of the company’s continuing strategic investment in several aeronautical research projects. Work was completed this year on the SAFEE security project, in particular involving a new generation of onboard threat-detection systems.
GMV has won itself a position as one of the main suppliers of the international space organizations and agencies and also of the main satellite constructors and operators.

With a track record of almost 25 years behind it, GMV is one of the world’s top two suppliers of satellite control centers and one of ESA’s main contractors in this field, playing a key role in most of its space missions. GMV supplies all the following:

- Satellite control centers
- Flight dynamics systems
- Ground infrastructure of global satellite navigation systems (EGNOS and Galileo)
- Mission planning systems
- Data processing centers of earth observation satellites
- Scientific satellite operation centers
- Engineering, guidance, navigation and control
- Mission analysis services and systems
- Onboard software
- Simulator development
- Development of space applications
In 2008 GMV held onto its position as the world's second biggest supplier of satellite control centers and flight dynamics systems. By the end of 2008 over 150 satellites of the world’s main manufacturers, operated by the main commercial agencies and operators, were being controlled with systems developed and supplied by GMV. GMV's client portfolio now includes all the major operators of commercial satellites and also a host of small and medium-sized operators around the world.

Throughout 2008 GMV's clutch of products for satellite control and monitoring (hifly®, flight dynamics (focusSuite), communications payload management (smart rings) and mission planning (flexplan) have all helped to swell its client portfolio.

In this year GMV was chosen by Star One, South America's biggest satellite operator, for supplying the satellite control system for the Brasilsat B1, B2, B3 and B4 satellites. This is the first contract GMV has signed with Star One and involves the supply of hardware and software for updating the current satellite control system until the end of its useful life. GMV will integrate the control center, the baseband units and radio software. It will also provide the telemetry and remote command system, the flight dynamic system and the supervision and control of ground stations.

GMV also continued to develop its longstanding relation with Hispasat. hifly®, the multi-satellite system developed by GMV for satellite monitoring and control, was declared fit by Hispasat for flying the Amazonas 1 satellite. Hispasat is already using focusGEO, GMV's orbital dynamic operations product, for planning, preparing and assessing the maneuvers of its whole fleet of satellites, but it runs four different satellite control systems. hifly® is the system chosen by Hispasat to bring its fleet together under a common multi-satellite control program. GMV has also been selected by Hispasat for providing the flight dynamic system for its Amazonas 2 satellite, a satellite based on the Eurostar E3000 platform and due for launch in 2009. The flight dynamic system will be developed on the basis of GMV's focusGEO and it will be complemented with hifly® as its control and monitoring system.

GMV has built up a close relationship with Eutelsat over more than fifteen years, supplying the control systems for its complete fleet of satellites. This relation was reinforced in 2008 with new contract awards. As well as adapting the focusGEO system to the W2M satellite, GMV also won a new contract for adapting this system to the new W2A and W7 satellites, to be launched in 2009.

GMV's long and proven expertise in satellite collocation² using focusGEO prompted the Australian satellite operator OPTUS to choose GMV's flight dynamic product to support its whole fleet. focusGEO will solve the compatibility problems between two satellites in the same orbital position and will ensure common and coherent calculation of the necessary orbital maneuvers. This project is a development from other

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² Placing a satellite in orbit in relation to a nearby group of satellites.
activities previously carried out by GMV for OPTUS, beginning the year before with the delivery of matool, as mission analysis system for geostationary satellites.

Midway through the year Thales Alenia Space and Globalstar Inc officially accepted the first version of the GMV-developed flight dynamics system for the Globalstar constellation. This version replaces the current flight dynamics system of Globalstar, used to operate the current constellation formed by satellites of Space Systems Loral.

Likewise, the Egyptian satellite operator Nilesat selected the GMV systems hifly® and focusGEO for controlling the Nilesat 201 satellite and carrying out its flight dynamics operations. This satellite, based on Thales Alenia Space’s Spacebus 4000B2 platform, is fully compatible with GMV’s systems. The supply will include the creation of a main control center in Cairo and a backup control center in Alexandria. The system will also include optional components such as GMV’s autofly system, to automate the operations of the satellite itself and the ground station and the archiva system, another inhouse GMV development, for long term archiving operations and obtaining quick access to satellite telemetry from hifly® clients.

Through its US subsidiary GMV pulled off many notable feats in 2008. For example, the subsidiary will provide support to The Hammers Company, a company carrying out a 14.9 million dollar NASA contract, in developing the Mission Operations Element (MOE) of the Landsat mission. GMV thus manages to win itself a role in this recognized NASA mission, which has been carrying out vital earth observation work since 1972. The project includes the design, development, integration, testing, delivery and installation of the MOE system, integration and testing support at system and mission level, support for operation certification activities, engineering support during the launch and orbit-insertion period, plus a subsequent engineering assistance period.

GMV was also chosen by Orbital Sciences Corporation for supplying an adaptation of the focusLEO flight dynamics system to bring it into line with the Glory scientific satellite mission being carried out by Orbital for NASA. The Glory satellite forms part of NASA’s A-Train constellation for measuring the earth’s climate. This is the second NASA A-Train mission for which GMV has supplied focusLEO.

Also through its US subsidiary GMV successfully installed in 2008 its inhouse system for telemetry and remote command hifly® in NASA’s Johnson Space Center (JSC) in Texas. The installation includes another two GMV systems: archiva, the high-speed archiving and trend analysis system, and hiflyviews®, as new interactive hifly® screens. This is GMV’s first contract for this historic NASA center, the base for running all its manned space missions.
GMV is providing in situ support in Norway for delivery operations of the Thor II-R satellite, owned by Telenor Satellite Systems, made and launched by Orbital Sciences Corporation. This support forms part of GMV’s contract enlargement with Orbital for supplying the flight dynamics system of Thor II-R.

In October 2008 GMV organized the third satellite control system users conference. After the resounding success of the previous conference held in the USA, GMV once more brought together the world’s main space agencies, communication satellite operators and satellite builders. The venue this year was El Escorial (Madrid).

March 2008 saw the launch of the Jules Verne ATV, which successfully docked with the International Space Station on 3 April. This mission means that Europe now joins the USA and Russia as pioneers in new technologies, sending the first ever vehicle that has rendezvoused and docked with the International Space Station (ISS) completely automatically.

The CNES (Centre Nacional d’Etudes Spatiales), responsible for the ground system and the ATV cargo vehicle’s operations, chose GMV in 2008 for developing the mission’s orbital subsystem. This made GMV the only Spanish firm working in the CNES control center in Toulouse, with responsibility for checking the ATV trajectory to the ISS. As well as the outward maneuvering operations GMV was also responsible for the return maneuvers, then giving support for the cargo vehicle’s operations right up to September.

Elsewhere, the European and Russian space agencies (ESA and Roskosmos) signed a collaboration agreement for jointly developing a manned vehicle for making low earth orbit flights (to the International Space Station) and moon flights, as part of a program called CSTS (Crew Space Transportation System). GMV is playing a key role in the European industrial consortium that is collaborating with the Russian firm Energia in system definition. It is responsible for mission analysis and the design of optimum trajectories for launch, abortion, transfer to the lunar orbit and return to earth, as well as identification of the best sequence for rendezvous and coupling maneuvers in the earth and moon orbit.

In 2008 GMV also continued to build on its time-honored relationship with the European Space Agency (ESA) now dating right back to 1984, taking an active part in many of ESA’s programs. Especially noteworthy here are the framework contracts of mission analysis, flight dynamics, ground data-processing systems, operations and engineering. All this has made GMV one of ESA’s prime suppliers of operational systems. GMV has also been working busily on technology development programs, spawning a good number of projects in the areas of algorithms and maneuver optimization, space system engineering, simulation, autonomy, etc. It is also playing an evermore prominent part
in ESA’s main programs of exploration and advanced technology, such as Aurora, CSTS, Exomars, IXV, Proba-3 and NEXT.

GMV, ever keen to play a leading role in advanced technologies, took part in many ESA studies in 2008, with particular stress on the application of groundbreaking space-system technologies. Witness the study it conducted to assess the feasibility of using deployable rotor systems for entry, descent and landing on Mars and other planets with an atmosphere. The study included a mockup to be tested in wind tunnels.

GMV also signed a contract for defining Phase A of the NEXT-Mars mission. This is an intermediate ESA mission running from the launch of ExoMars, scheduled for 2013, and Mars Sample Return, due to be launched in 2020. GMV is responsible for all matters related to the RendezVous and Capture Experiment (RVCE).

Together with Glasgow University GMV is participating in ESA’s DAF (DAFA) project, which aims to demonstrate the advantages of using distributed agents in space systems. The introduction of a new design based on the technology of several agents offers great opportunities for exploring new solutions for some of ESA’s most complex missions, such as ExoMars, GMES and Darwin.

GMV has been working for many years with the European Space Operations Centre (ESOC). 2008 was no exception with several new contracts.

Within the EGOS program (ESA Ground Operations Systems), for example, GMV won a contract for the implementation phase of “Generic Database SW” (GDDBS, also known as DABYS), in direct competition with other important suppliers of ground segment systems. ESOC also awarded GMV the contract for adapting its advanced telemetry display system (hiflyviews®) to EGOS infrastructure. This activity is part and parcel of the ESOC-led EGOS initiative, an ambitious program that aims to standardize the infrastructure employed in ESOC’s ground segments, with the purpose of improving their reliability, profitability and interoperability.

At the end of the year ESOC awarded GMV, in open tender with ESA’s main ground system suppliers, the contract for setting up the Swarm mission control center (SMCS) and the development of the Earth Explorer Kernel. Swarm is a mission comprising a three-satellite constellation whose goal is the precise measurement of the earth’s magnetic field. GMV’s development will be based on the SCOS-2000 Earth Explorer Kernel, which contains all the common MCS components for the Earth Explorers.

GMV’s Portuguese subsidiary, under the direction of Astos Solutions, has begun its support activity for ESA’s NLP Solver project (Non-Linear Programming Solver for Space Trajectory Optimization). This project
aims to come up with a response to the clear need in Europe for a new "Sparse NLP Solver"\(^3\), capable of solving the increasingly complex and demanding nonlinear trajectory optimization problems on space missions.

At the end of the year, under a contract with ESRIN, GMV’s Portuguese subsidiary began to work on the ASAPSU ("AVHRR and SeaWiFS Acquisition and Processing System Upgrade") program within ESA’s “Earth Observation” (EO) framework contract. The aim of the project is to improve the MEOS\(^4\) Polar data acquisition and processing system.

In 2008 GMV’s Portuguese subsidiary, Skysoft, continued to fine tune its SANTA solution (Satellite Network Transport System) as a benchmark protocol for satellite communications. SANTA was successfully used for sending meteorological information to aircraft under the European Commission’s FLYSAFE project and in the ANASTASIA protect.

In the satellite communications area this subsidiary is carrying out important activities in collaboration with EADS Astrium in the framework of the IRIS AVISAT project.

Within the earth observation area, in 2008 GMV began working on the implementation, validation and integration of the operational processor of ESA’s SWARM mission. The mission belongs to the group of earth observation space missions called “Earth Explorers” designed to measure the fundamental physical parameters that help to understand and analyze the environment. GMV will implement the algorithms, carry out the operational processing and validate the whole system and will deliver it in ESA’s ground segment in ESRIN (Italy).

GMV, through its subsidiaries in Spain and Portugal, continues to take an increasingly active role in the major European program GMES as part of its ongoing support of endeavors that are conducive to planet sustainability. The GMES program, focusing on the global monitoring of the environment and security, is jointly brokered by the European Commission (service component) and the European Space Agency (space component).

Within the service component of the GMES program, GMV is investing heavily in diverse projects for the use and working up of remote sensing data to enhance the services provided for national and European authorities in the fields of maritime security (MARISS), critical infrastructure protection and border surveillance (LIMES), discharge surveillance (MARCOAST), analysis of space technologies as a key security element (SecureSPACE and 2SI), etc.

GMV is also involved in the development of the data processing chain of the MIRAS instrument of ESA’s SMOS (Soil Moisture and Ocean Salinity) mission. In 2007 the first version of MIRAS’s level 1 and level 2 processors 3. Software package for solving nonlinear optimization problems.
4. Multi-mission system for capturing, filing, processing, analyzing and distributing meteorological data.
was handed over, while in 2008 work was carried out on level 3 and 4 processors. GMV’s participation in the SMOS mission is not limited to the development of processors but also takes in the development of key elements of the ground segment, such as the SMOS Plan Generation Facility (SPGF) and the Payload Operations and Programming Center (PLPC), as well as other elements of the calibration center.

As regards the ENVISAT observation satellite, GMV’s Portuguese subsidiary continued its activity with ESRIN, the ESA Centre for Earth Observation, for adapting the MERISAT tool to Linux and optimizing algorithms to improve their performance in the ENVISAT processing chain.

For some time now GMV has maintained close relations with ESA’s European Space Astronomy Centre (ESAC). Through its Spanish and Portuguese subsidiaries GMV is now working on the framework science contract signed between ESTEC and GMV, taking in all the agency’s ESAC activities. GMV personnel have been posted to ESAC’s site to work on missions that are already underway (XMM-Newton) and others that are still in the pipeline (Herschel). Since 2008 it has also been working on the Rosetta and BepiColombo missions. Apart from this contract GMVs also installed the systems developed within the SMOS mission center.

GMV is one of the main industrial providers in the field of satellite navigation. This was borne out in 2006 with the award of five Galileo projects worth 40 million euros. This made GMV the top Spanish supplier of Galileo and the third biggest in Europe, behind only Thales-Alenia Space and EADS-Astrium. Work continued on these contracts in 2008, with GMV leading the development of four of Galileo’s main ground segment systems, two of which are critical for final system performance. This in particular is the case of the IPF (the element responsible for calculating the integrity parameters that allow Galileo to be used for critical applications). After passing its Functional Qualification Review (FQR) at the beginning of the year, this system then successfully passed its Critical Design Review (CDR). This marked the end of the design and specification phase and the start of the integration and validation phase of its various components.

Late April saw the successful launch of GIOVE-B (“Galileo In Orbit Validation Element”), which then began to send signals on 7 May. This was a historic moment for satellite navigation, since it was the first time that a common GPS-Galileo signal was ever sent from space. GMV coordinates the experiments of GIOVE’s mission segment and participates in the in-orbit-test phase of this satellite, the main objective of which is to carry out an early characterization of the atomic clocks onboard the satellite.

GMV is participating actively in six projects within ESA’s GNSS development program, whose objective is to lead research aspects related to technologies, development and verification in the GNSS field.
As regards the developments of current systems, GMV was awarded two contracts for studying possible improvements in the integrity service provided by the Galileo system. MASSTRA (Matrix SISA and Matrix SISMA) will study potential improvements in the integrity performance that might be obtained by sending information to users in matrix form. ADVENT (Advanced Integrity for Satellite Navigation Systems) will assess the possibility of improving integrity performance by automatic monitoring of orbits and clocks onboard the satellites.

Also worthy of note within the satellite navigation field is the acceptance this year by the international science organization IGS (International GNSS Service) of GMV’s candidature for participating as Analysis Center in the pilot project IGS Real Time. This project will look into the possibility of calculating precise ephemeris (orbits and clocks) of the GPS satellites in real time, using its magicODTS product. This project makes GMV the only private firm participating in IGS, together with other GNSS research centers of recognized prestige like ESA/ESOC, CODE (Center for Orbit Determination in Europe) and JPL (Jet Propulsion Laboratory).

Although the bulk of the EGNOS development work ended four years ago, GMV has continued to participate actively in the EGNOS support contracts, as well as in maintenance extensions and developments for the CPFPPS elements (main EGNOS processing element, led by GMV) and ASQF (element providing support for the validation, certification and performance of EGNOS at system and user level).

In 2008 GMV’s Portuguese subsidiary, Skysoft, continued to work under a contract with the European Space Agency for assessing and testing the commercial-off-the-shelf (COTS) software installed in six of the main applications with maximum security and safety-critical requisites of the EGNOS ground segment. This contract is bound to make a substantial contribution towards the EGNOS certification process for use of the system in safety-critical applications such as civil aviation.

Finally, within the field of satellite navigation, both GMV and its Portuguese subsidiary Skysoft, under a contract with ESTEC, are developing technology for navigation inside buildings and other closed environments such as parking lots or tunnels, using a combination of GNSS signals with other technologies such as mobile telephony, WiFi, DWB (Digital wideband) or UWB (Ultra wideband). The project has the brightest prospects for the future, since it places GMV at the head of research and development into new technologies enabling systems such as GPS to be used even inside buildings. This will open up GNSS use to other professional markets and also mass consumption.
ACTIVITIES IN 2008

DEFENSE

GMV is a tried and trusted supplier of the armed forces and international defense organizations. Its activities in this field take in the engineering, design, development, integration and maintenance of defense systems covering their whole life cycle.

The products provided in this area are capable of meeting the most demanding needs under strict quality standards. They cover the following areas:

- Engineering, development and integration of command, control and communication systems (C³I)
- Processing of data and signals, intelligence systems
- Training, operational research and R&D simulators
- Development of military systems based on GPS, EGNOS and Galileo
- Onboard equipment, avionics software and test-beds
- Logistic and maintenance services for systems and software
- Military space applications
- Physical and logical security systems and engineering
- Engineering and development of multimedia training tools
- Demilitarization and humanitarian demining applications and services
In 2008 GMV continued to work on the MUSAS project (Multi Sensor Anti Sniper System). The contract, awarded the year before by the European Defence Agency (EDA) to a GMV-led consortium, is a 5.7-million-euro, 30-month research project looking into the best ways of detecting and locating snipers before they fire the first shot, using a mixed bag of technologies to do so: acoustic and radar sensors, image processing, honing of detection techniques by fusion of data from information services, human-machine interfaces, etc. This contract, the first R&D contract won from EDA, confirms GMV’s leadership in the development and integration of command and control systems and gives the company an even firmer foothold in the international defense market.

The European Defense Agency also awarded two new projects to GMV’s Portuguese subsidiary. SIGAT aims to study the military frequency spectrum allocations required for insertion of unmanned aerial vehicles into the GAT. The second project, SCORED, studies the Military Software-Defined-Radio Capabilities including application of cognitive-radio-based spectrum management to the security and defense domains.

In October 2008 GMV’s new Explosive Ordnance Disposal (EOD) area was officially inaugurated in a ceremony attended by the Military Commander of Valladolid and Palencia, Juan Miguel Mateo Castañeyra. This new activity in the Defense area can be broken down into five main segments: Environmental audits of soil contaminated by warfare material; specialist practical and technical training in the disposal of munitions and devices; R&D into new explosive-detection and -disposal technologies; demilitarization and humanitarian demining operations.

During the year GMV also continued working on the supply of a field hospital under a three-year contract awarded the year before by the Weapons Systems Directorate of the Spanish army’s Logistic Support Command. The field hospital is a single-unit health facility of modular composition. It is a fundamental part of health backup in the third scale of operations, capable of providing medical-surgical and specialized treatment wherever the army is deployed. Within the project GMV will supply a set of components that make up a complete and completely-operational field hospital, together with the documentation compiled in a set of managerial and integrated-logistic-support deliverables plus the supply of the telemedicine system.

GMV also continued to work on the R&D program “Future Combat System” (“Combatiene del Futuro”: COMFUT) under a contract awarded in 2006 by the Directorate General of Armaments and Material (Dirección General de Armamento y Material: DGAM) of the Spanish Ministry of Defense to a consortium led by EADS-CASA. GMV has a key role, being responsible for the design and development of the command and control system and also the information and communications system (ICS), the veritable heart of the system, which provides soldiers with all necessary information for carrying out their
mission. A key feature here is “situational awareness”. The first 12 prototypes delivered to the Ministry of Defense were put through their paces in 2008. In light of the results of this assessment, the necessary modifications will be made for the next delivery of 24 additional systems.

GMV has also continued its work in developing artillery command and control systems for campaign purposes (the Campaign Artillery Group Control and Command Post - PCGACA in Spanish initials) and also the anti-aircraft artillery (CIO/CPL system - Operation and Information Center / Personnel and Logistic Post, in Spanish initials – as part of the COAAAS program). 2008 saw the operational validation tests of the PCGACA project, in which GMV, in coordination with Program Management, set up a controlled test scenario as similar as possible to the real operational environment. The 5 months of tests produced very promising results in terms of the viability of serial production of the system. CIO/CPL validation exercises were also carried out in March, with the attendance of GMV to back up the units involved and validate the functionality and communications of the system in its final phase.

In 2006 GMV won the contract for developing the PAFAD project for the Spanish Navy Marines. PAFAD stands in Spanish for Firing Support Prototype for Artillery Landing (Prototipo de Apoyo de Fuegos para la Artillería de Desembarco); it is a command and control system that aims to help in the tactical planning of firing support within an amphibious operation. Under this contract GMV developed the technical subsystem to solve the ballistic firing problems when using artillery howitzers of the PAFAD system. In 2008 it finished development of this subsystem, which passed all tests with flying colors, bringing the contract to a close.

During the year, under its contract with the DGAM, GMV finished the complete development of a Landing Craft Control System for the Naval Group, which has been successfully fitted on the amphibious assault ships Galicia and Castilla and on the LCMs of the Spanish Navy. This system allows crew members in the assault ship’s Combat Information Center (CIC) to control the landing craft during the assault phase of an amphibious operation.

Within the technological development program of the Future Ground Combat System (FSCT in Spanish initials), two demonstration programs on which GMV was working came to an end in 2008. The first falls within the sphere of satellite navigation systems and their military applications; it involved the development of advanced GNSS navigation equipment (GPS and EGNOS) in built-up environments. The second program tackled the development of a complete demonstrator of DDS (Data Distribution Service) technology for real time systems. This is publication/subscription middleware for distributed systems, developed in response to the limitations of the CORBA standard (“Common Object Request Broker Architecture”) in systems of this type.

GMV also continued developing the Mobile ISTAR Operating system, called “SEISMO” after its Spanish initials: “Sistema de Explotación ISTAR Móvil”. The SEISMO program, part and parcel of Spanish participation in
the multinational MAJIIC program ("Multi-sensor Aerospace-Ground Joint ISR Interoperability Coalition"), consists in the design, development and commissioning of an ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) data operating system for processing and working up the various kinds of information and products. In September, with GMV participation, the fifth MAJIIC exercises were held in the laboratories of NATO’s Consultancy, Command and Control Agency, whereby SEISMO was recognized both by the exercise organizer and the representatives of the Spanish Ministry of Defense, receiving a special mention and a diploma vouching for its enhanced degree of progress.

In 2008 GMV continued its longstanding work on the development of evaluation stations as part of the electronic warfare program of The Spanish Defense Staff (EMAD), the Spanish Chief of Staff’s support and command body in charge of defining and developing military strategy and planning and running military operations. In 2008 GMV in fact won several new contracts within this program.

The Spanish National Defense Staff (Estado Mayor de la Defensa) also awarded GMV the execution of two projects related to the Military Information System (MIS). The MIS covers the support needs of military command and control functions by means of services using a common infrastructure and possessing the appropriate security level to protect the classified information. The system also needs to be accessible to users as a computer tool at their workstations. One of the projects involved the implementation of the telecommunications system infrastructure, IT systems and basic service platforms for the MIS node of the Nato Rapid Deployable Corps (CGTAD in Spanish initials) in Valencia. The other involved implementation of the necessary infrastructure for the Remote MIS Nodes.

Lastly, the GMV inhouse development SAGRAN ("Relative GPS based approach system for naval landing", in Spanish initials) received recognition from the international organization Space Foundation in the form of certified space technology. This certification scheme recognizes the useful spin-offs from space programs that help to improve life on earth.
Information and telecommunication technologies, virtual-reality simulation and digital-image processing are all new arrows in the quiver of healthcare professionals, giving them a whole new set of techniques and resources to work with.

GMV draws on the technologies developed for the defense and aerospace sectors to create groundbreaking healthcare products:

- Surgical training simulators based on virtual reality
- Planning/simulation systems in aid of diagnosis and treatment
- 3D anatomical modeling
- Medical image processing
- Teleassistance systems
- Mobility solutions
- Vehicle management and tracking systems
- Aid systems for disabled people
- Humanitarian aid and emergency infrastructure based on satellite technology
- Epidemiology early-warning systems for public health
- Secure healthcare information systems based on the monitoring of standards and compliance with the Spanish data protection act
GMV is world number one in arthroscopy simulation for surgeon-training purposes and is also the world’s only supplier of an intraoperative radiotherapy surgery planner.

In 2008 GMV stepped up its investment in the minimally invasive surgery simulator, phasing in new and important functions and substantially upgrading its performance features. International patent applications have been made to protect some of these technological developments.

In this period there was also a more systematic promotion campaign of the arthroscopy surgery training simulator (insightArthroVR®). Many presentations of the product were given and it was also taken to congresses, courses and workshops in hospitals, medical organizations and institutions in Europe, Asia and the Americas.

These promotion activities, together with recognition of insightArthroVR® as a useful teaching tool by prestigious institutions, have prompted many hospitals and clinics in Spain and abroad to set up permanent insightArthroVR® facilities in 2008. Witness Japan’s Tsukuba University, diverse FREMAP centers in Spain, the Hospitalet Region of Denmark, Sweden’s Karolinska Institutet and the USA’s William Beaumont Army Medical Center.

GMV also continued in 2008 to collaborate with the Fundación ICOMEM of the Madrid Physician’s Association (Ilustre Colegio de Médicos de Madrid) under the framework contract signed the previous year between the Foundation and GMV for promoting teaching and training activities in the medical field to pinpoint new needs in continual medical education and investigate them from different perspectives, offering hands-on virtual surgery workshops on a regular basis. GMV also continued to collaborate with the arthroscopy courses organized by the Spanish Arthroscopy Association (Asociación Española de Arthroscopia) throughout the year and struck up a new collaboration agreement with the French Arthroscopy Society, presenting insightArthroVR® in its Annual Congress held in late 2008.

The worldwide insightArthroVR®-distribution agreement, signed with Immersion Medical Inc. in 2007, began to bear fruit in 2008. Immersion Medical Inc. is the world leader in marketing surgery simulation equipment, so the agreement greatly enhanced GMV’s international
commercial and customer-support capacity in 2008. Hence the outstanding sales figures chalked up in the USA, China and Korea.

Recognition of the groundbreaking technological features of insightArthroVR®, came this year with the award of various prizes such as the Enterprise University Prize 2007 and the prize “100 groundbreaking ideas” granted by the publication “Actualidad Económica”. At regional level the Comunidad de Madrid (Regional authority of Madrid) granted the Madrid Healthcare Silver Plaque 2008 to the orthopedic surgery service of Hospital Severo Ochoa for its collaboration in the project. It also received recognition from the international organization Space Foundation in the form of certified space technology. This certification scheme recognizes the useful spin-offs from space programs that help to improve life on earth.

In 2008 GMV also stepped up its promotion and marketing of radiance, GMV’s intraoperative radiotherapy planner. This system is unique and trailblazing at world level, ensuring better planning of intraoperative radiotherapy, especially the radiation dose study required under Spanish law, and a better documentation of the whole treatment process. A first demonstrator of the system was presented in the international conference of the International Society of Intraoperative Radiotherapy (SIORT), arousing keen interest and expectation among the market stakeholders.

The first validation and assessment studies of the technology are being conducted by Madrid’s Gregorio Marañón General University Hospital, world leader in intraoperative radiotherapy techniques and the Provincial Hospital of Castellón. The first conclusions, to be presented in the most prestigious international congresses of the specialty, show that this system outperforms traditional procedures in terms of information provided and safety levels.

At the end of the year GMV signed a framework contract together with other public and private organizations for the creation in Granada of the ‘Living Lab Salud Andalucía’. The project, authorized by the
Andalusian Consejo de Gobierno (Executive Council) and promoted by the regional ministries of Health and Innovation, Science and Business, will consist of a laboratory that will work in fields that GMV has been trading in for years, such as telemedicine, teleassistance, telecare and robotics and virtual reality.

As regards the application of new technologies in the management of healthcare emergencies, GMV is responsible for the design and integration of SAFE, a Europe-wide early warning system of epidemiological outbreaks. The project, due to finish in 2009, is being carried out in close collaboration with experts of the World Health Organization. Preoperational demonstrations will test its potential for dealing with epidemiological outbreaks, natural disasters and terrorist attacks.

GMV is also playing a key role in GlobAer, a project for measuring the air concentration of aerosols throughout the world. In 2008 work began on processing the observation data, in which 40 Tbytes of earth observation data will be analyzed to obtain daily aerosol readings from several onboard satellite instruments. This information will be passed on to users for pollution control and healthcare purposes; it will also be used in atmospheric and meteorological chemistry models for improving the forecasting of atmospheric phenomena. Research groups were also trained up to apply different dispersion models to the products generated during this project phase.

At the end of the year GMV signed a framework contract together with other public and private organizations for the creation in Granada of the ‘Living Lab Salud Andalucía’.
GMV has been Spanish leader in the development of network security services and technologies and information systems for over 12 years now. GMV provides engineering products and integrated solutions for security, intelligence centers, emergency management and crisis management:

- Engineering, security services and solutions for information networks and systems
- Security auditing
- Security planning
- Unified user management
- Implementation of security management systems
- Security hardening of platforms, networks and services
- Security services (monitoring, detection of vulnerabilities, etc.)
- Backup centers
- Perimeter surveillance and access control systems
- Advanced security systems incorporating new technologies
- Emergency and crisis management systems, “112” emergency call centers, SOS
- Monitoring and management systems for security forces’ vehicles and personnel and dealing with emergencies
- Onboard security and video-surveillance systems for passenger transport companies
One of the milestones this year was the signing of an agreement between GMV and INTECO for opening a new GMV office in León, thereby creating a new center of excellence in the areas of software quality, security and accessibility, with special stress on product R&D and the development of online services for the public sector.

Within the PROFIT program GMV continued to work in 2008 on two important projects subsidized by the Ministry of Industry, Tourism and Trade (Ministerio de Industria, Turismo y Comercio) in information-system security matters: Seguridad 2020 and €-Confidencial.

The remit of Seguridad 2020 project, brought to completion in March 2008, was to come up with a global solution for the definition and hardening of digital territories in intelligent environments, taking into account such factors as interoperability, standardization, social and legislative aspects. The aim is to establish a reference framework for confidence in the information systems, comprising methods, architecture, models and guides to ensure an advance in the actual state of the art in this matter. As a result diverse demonstrators are being developed for such areas as banking, transport and government.

The aim of the €-Confidencial project, which is continuing throughout 2008, is to develop a platform for the security hardening of sensitive applications such as internet voting or banking operations. The platform being developed will ensure trustworthy performance of the most delicate operations, such as authentication, data encryption and management and passwords.

At the beginning of the year GMV carried out a pioneering initiative, enabling the Regional Council of Castilla la Mancha (Junta de Castilla la Mancha) to obtain in a single process dual certification of its information security and quality processes under ISO 27001 and ISO 9001, respectively.

In 2008 GMV implemented an Information Security Management System (ISMS) in the offices of the prestigious winery Miguel Torres. In July the implemented system successfully passed the audit process.

The bank called Caja de Ahorros del Mediterráneo (CAM) also awarded GMV the contract for running its Managed Security Services. The project is based on the provision of a security incident detection, correlation and centralization service through GMV’s SOC (Security Operations Center).

In 2007 GMV also gave support to the Cadastre Directorate General (Dirección General del Catastro), a dependent body of the Ministry of Economics and Finance (Ministerio de Economía y Hacienda) in the operational management of the security infrastructure set up the previous year. The project took in the different technologies of firewalls,
intrusion-detection systems, antivirus, bandwidth management and centralization of events. In 2008 the seminar Computing awarded this development a prize as one of the best ICT initiatives.

GMV is also collaborating with the Madrid Polytechnic University (Universidad Politécnica de Madrid: UPM) as sponsor of the Ibero-American Thematic Network of Cryptography and Information Security, CriptoRed. In 2008 GMV signed a extension of the existing agreement, adding on a newly created product, the Aula CriptoRed GMV UPM (UPM GMV CriptoRed Classroom). To set up this new project the web server of the thematic network will have to be updated and its contents translated into English to open it up to the English-speaking world. A universal search engine for information security data will also have to be designed.

In 2008 GMV continued to collaborate with the Subdirectorate General of Information and Communications of the Ministry of Economy and Finance in the area of IT security. GMV is providing high-level on-site technical support to the internet access security facilities as well as technical advice on how to harden and optimize its systems. Security system management work is also being carried out (antivirus, firewalls, IPS, etc.) which helps to detect and eliminate faults such as bottlenecks and security incidents.

In the access-control area GMV put the finishing touches this year to the Ministry of Defense’s access-control system. The project involved the supply and integration of all the equipment (turnstiles, surveillance cameras, card readers, biometric sensors, license plate readers, etc.) for controlling access of visitors and staff to a series of the ministry’s buildings, including the main ministry building. The whole system is managed with a GMV application that implements all the functions required of systems of this type.

In the same year GMV set up a new access-control system in its head office in Tres Cantos (Madrid) and initiated a project for installing a similar system in its Valladolid office. Both systems incorporated a new infrastructure of turnstiles and readers, the Sócrates application software and a new card design for distinguishing between different types of people (personnel, collaborator or visitor) and determining their respective access rights to specific parts of the building.

Also GMV set up an integral and unified information access management project for the Catalan Data Protection Agency (Agència Catalana de Protecció de Dades) of the Generalitat de Catalunya (Regional Government of Catalonia). The aim of this project is to obtain integral control of information access, including all the following: physical access to client facilities, user terminal access control (laptop or desktop), document printing control and identification of both users and information. In the latter case the control of hard-copy files is kept by means of RFID technology (Radio Frequency IDentification).
Within the area of emergency and disaster management GMV continued in 2008 to develop its groundbreaking system called osmógrafo (osmograph), which involves fitting a positioning device to sniffer dogs in search operations to find people buried under rubble after a catastrophe. The device sends its information, picked up by a GPS receiver, to a central unit that in turn receives information from the local meteorological station. By processing the position- and wind-readings, the system determines the dog’s scent trail. The input of this information makes the search operations safer and more efficient and ensures that the area is not abandoned until it has been thoroughly combed. In 2008 the project is in internal acceptance phase and a start is being made on the first field tests.

GMV is playing a key role in several security-related projects of the European security project GMES (“Global Monitoring for Environment and Security”) such as MARISS, LIMES, MARCOAST, RiskEOS, SecureSPACE and 2SI.

In the MARISS project GMV is in charge of providing maritime security services for Puertos del Estado (Spanish Seaports Authority) and the Guardia Civil and also in providing the service to final Portuguese users, including the Portuguese Navy and the authorities of the islands of Madeira and Azores. In 2008 MARISS began a new phase in which new technologies are being phased in, such as AIS information (“Automatic Identification System”). This will be integrated with data from earth observation satellite data and in situ sensors to improve maritime security by means of new border surveillance resources, control of piracy and backup for international naval operations.

The object of the LIMES project is to define and develop pre-operational services based on space technology to back up security management in different areas. In 2008 there was close, ongoing liaison with the various system users to identify their needs and requisites and also to establish the services to be provided in what will be the first security services within the European Commission’s GMES program. In 2008 LIMES carried out the first preoperational demonstrations within the context of security on land and sea. GMV ran the set of demonstrations within the land-security area, including: border surveillance, security of critical infrastructure, monitoring of non-proliferation treaties and security at major events. These demos are an important step forward in constructing sustainable services applied to security by means of space technologies.

The aim of the RiskEOS project is to provide early-warning services to improve risk management in various areas, including floods and spates in high-risk areas. In 2008 GMV developed the flash flood early warning service for the River Jucar catchment area, in collaboration with Météo-France (French Meteorology Institute), the Spanish Meteorology Institute and the Júcar Water Board. The first demonstration of the service showed highly promising flood-warning
performance in the various rivers of the Júcar catchment area, giving several hours warning of the risk. In 2008 the system was successfully validated on the site of the State Meteorology Agency. These two months of tests involved a reprocessing of a real flood-alert situation to assess the quality of the products generated by the system before its operational declaration.

Lastly, within the GMES projects, GMV also participated in two 2008 projects for the European Commission’s DG-JLS (Directorate General for Justice, Freedom and Security), involving analysis of space technologies as a key security element. These had two different slants: firstly considering space infrastructure as critical infrastructure underpinning the economic and social welfare of the public at large and secondly considering space as a key element for protecting all types of critical infrastructure: energy, transport, water, communications, etc.

GMV has been playing a very important role in several projects of the Preparatory Action Security Research (PASR) of the European Commission and security-related Framework Programs such as: ASTRO+ (demonstration of the possibilities of using Space facilities – earth observation, telecommunications and navigation – in Homeland Security applications), SOBCAH (research into the surveillance of border coastlines and harbors in Europe), ISCAPS (real time reduction of the risk of malicious events in crowds of people), GEOCREW (development of a global architecture for the use of geospatial data to improve crisis situations) and WINTSEC (development of secure wireless communications), the latter still in development phase.

At the end of the year GMV successfully organized the first demonstration of the OSIRIS project, an R&D project of the European Commission for standard monitoring of all types of geographically referenced phenomena based on in situ sensors. Within the Thales-led consortium GMV is organizing the air quality scenario. The objective of this project is to implement intelligent sensor networks while working towards the use of a European information-exchange standard.

Within FP6 GMV successfully completed the Harmless project, whose aim was to encourage the more widespread use of EGNOS and Galileo for emergency and disaster management, humanitarian aid and law enforcement. The project, run by a GMV-coordinated consortium of eleven companies, included analysis of technical aspects and demonstration and identification of the most promising applications.

Within the security chapter of the European Commission’s FP7, the COPE project kicked off in 2008 (“Common Operational Picture Exploitation”) carried out by a consortium including GMV’s Portuguese subsidiary, Skysoft. This is a security R&D project which aims to improve the effectiveness of First Responders in civil crisis management operations. A better view of the apparatus situation by the responders,
firemen, police and the alarm centres will cut down the margin of error and strengthen cooperation as a whole.

Also in 2008, and within the European Commission’s FP7, activities continued under the MAGES project, whose objective is to analyze the use of Galileo for emergency management purposes. Through its Spanish and Portuguese subsidiaries GMV is preparing and fine-tuning a series of demonstrations of the system in diverse emergency scenarios.

This year also saw the end of the SONIS (Solution Outline for New Information System) project as part of the consultancy services for EMSA (European Maritime Safety Agency). This project, carried out by GMV’s Portuguese subsidiary, comes under the Paris MOU (Paris Memorandum of Understanding), an administrative agreement on the in-port inspection of merchant ships by means of the PSC mechanism (Port State Control). It was born in response to the breaking up and consequent oil spill of the tanker Amoco Cadis off the French coast in 1978.

In 2008, EMSA commissioned a study from GMV’s Portuguese subsidiary to look into the possibilities of implementing an information system on standards of training, certification and watchkeeping or STCW (Certification and Watch-Keeping for Seafarers).

Within the maritime security area, the Subdirectorat General of Fishery Inspection (Subdirección General de Inspección Pesquera) awarded a contract to GMV for updating the REVIPES system, an application that takes on responsibility for fishery inspection and surveillance, writing inspection reports within the framework agreement between the Ministry of the Environment and Rural and Marine Affairs, on the one hand, and the Ministry of Defense, Ministry of the Interior, Ministry of Public Administration and political regions of Spain (Comunidades Autónomas) on the other. The new project will meet the new needs that have cropped up since the previous project was implemented.

In 2008 the European Commission’s Joint Research Centre (JRC) awarded GMV two contracts. The objective of the first contract is to analyze the causes of forest fires in the European Union, drawing up a proposal for a data model to harmonize the causes, converting and integrating historical data into the new model, carrying out a geostatistical analysis of the causes of the fire and handing over thematic cartography to be loaded into the European Forest Fire Information System (EFFIS). The aim of the other project is to design a classification of forest fires in Europe, generating the corresponding maps and establishing an automatic updating system.
GMV has consolidated its position as one of Spain’s trailblazing firms in designing, manufacturing and installing Intelligent Transportation Systems based on GPS technology. Originally trading only in the traditional market of fleet management systems, it has now branched out with new spinoff developments for the maritime sector (AIS systems) and the railway sector (Railway Fleet Management Systems: SAE-R®). GMV’s solutions in this field are designed to streamline operations and increase service quality:

- Passenger-transport fleet management systems
- Ticket vending and fare collection systems
- Backup systems for the management of on-demand passenger transport
- Fleet management systems for railway transport
- Transport services planning software
- Specialist fleet management products and services; municipal services, emergencies, etc.
- Electronic tolling systems
- Public-thoroughfare parking-management systems
- AIS/VTS systems for maritime transport
- DGPS coastal systems for navigational aid
In 2008 GMV completed the takeover of practically the whole of the capital of the Masisconvi company, whose specialist business is the design, manufacture and marketing of ticket-vending and electronic fare collection systems. Bringing Masisconvi into the fold enhances GMV’s competitive capacity in some segments of the transport market, where the current trend is towards the integration of fleet management systems (where GMV is national leader) and electronic fare collection systems, where Masisconvi boasts over 200 clients inside and outside Spain.

This year GMV made further headway in Catalunya’s passenger transport technology market. It won a contract for setting up a fleet management system for Transports Pujol i Pujol of Gerona, taking in its 14-bus urban fleet in the town of Lloret del Mar and 11-bus interurban fleet. The fleet management system will be integrated with the fare collection system of GMV’s subsidiary, Masisconvi. The system represents another satisfied customer for GMV in the field of Intelligent Transportation Systems in Catalunya. Its growing list of clients here now include such important firms as ATM Barcelona, ATM Tarragona, ATM Girona, TMB Barcelona, TUS Sabadell, Autobuses de Lleida, SARFA Girona, Reus Transport, Mataró, Tarrasa, Manresa and Vilanova i la Geltrú.

GMV also won a contract for updating and enlarging the fleet management system already set up for ATM Barcelona. The project includes enlargement of the accessible historical data, enhancement of the fleet management system’s interoperability with external systems, furnishing web services for swapping real time information on bus-stop passing times and giving other types of data (traffic incidents and historical or topological information). Operators’ posts were also updated with new functions.

GMV also upgraded the Call Center for the passenger transport operators of Sermetra, an investee company of the Metropolitan Transport Authority (Autoritat del Transport Metropolità: ATM), which pools Barcelona’s main transport operators. This project involves setting up breakdown Call Center services not only for ATM’s fleet management system but also the ticket vending systems fitted to the buses of the transport operators associated with Sermetra. GMV also renewed the third-level maintenance contract of ATM’s fleet management system, including over 2000 pieces of equipment. It also won the contract for first-level maintenance of this same system for about 550 buses.

The Municipal Transport Company (Empresa Municipal de Transportes) of the Madrid suburb of Fuenlabrada awarded GMV the contract for setting up a fleet management system for its buses. This represents another contract to chalk up for the Regional Transport Consortium of Madrid (Consorcion Regional de Transportes de Madrid) together with the system already up-and-running in Alcalá de Henares. The project includes a GPRS-based fleet management system for 34 buses, a complete system of acoustic and visual passenger information inside the
bus and a fleet management information system for inspectors on mobile terminals. The subsequent phases of the system will be rounded out with the corresponding passenger information systems.

In 2008 the Urban Bus System of Las Palmas (Guaguas Municipales de Las Palmas) once more turned to GMV for updating the fleet management system it fitted in 2000. The main advances of the upgraded system will be its technological duality for the new system of GPRS/PMR communications. This means that the equipment grafted on, belonging to a new generation with better performance features and capacities, will be completely compatible with the existing system. The upgrade also includes a commonly-used high-performance database server, complete updating of the control center, extension to new buses (29 new “guaguas”) and passenger information panels.

Yet another contract award for GMV in this area came from the Valladolid Urban Transport company (AUVASA), with enlargement of the video surveillance system for its fleet of buses. This GMV-supplied system encompasses a video recorder with a series of cameras fitted onboard the buses and integrated with the fleet management system also supplied by GMV in the past.

New technologies based on new mobile communication services are now being used widely by transport companies, not only for voice and data communication in fleet management systems but also in their passenger information systems. As part of this trend the municipal transport companies of the towns of Gijón and Reus have awarded GMV a contract for implementing a cell-phone-based passenger information system to tell them the ETA of the next bus.

The Bay of Cádiz Metropolitan Consortium (Consorcio Metropolitano de Bahía de Cádiz: CMTBC) is Spain’s only transport organization offering a combined land and waterborne passenger transport network running under the same fare system. In late 2008, through its subsidiary Masisconvi, GMV signed a contract for fitting an electronic fare collection system in the concessionaire fleets of this consortium. The project involves the installation of read and write units, ticket vending machines and a processing unit, including a GPRS device for downloading real-time revenue information at the end of the working day. This system will allow CMTBC to integrate its fare structure with other transport consortia of the province, such as Málaga and Granada, also fitted with systems by this GMV subsidiary. Worthy of special mention here is the integration of the abovementioned fare collection system with the fleet management system of COJETUSA, which runs the urban service of Jerez de la Frontera. COJETUSA’s fleet management system was installed by GMV and this integration will now add on new functions.

In 2008 the Regional Land and Housing Ministry (Consejería de Ordenación del Territorio y Vivienda) of the Regional Council of Castilla
la Mancha (Junta de Castilla La Mancha) decided to set up an on-demand transport management platform in one of its most strategic rural areas, Molina de Aragón. GMV is past master in setting up and running schemes of this sort. This particular project includes the supply of the GPS onboard units (OBU), charging console, printer with contactless card reader and mobile GPRS communications with the central office. The system also includes its own booking service open to the public from Monday to Sunday. This contract award confirms GMV as undisputed leader in the development, implementation and operation of solutions of this type, having already set up an on-demand transport management system for the Junta de Castilla y León.

In the international arena GMV won several contracts in 2008 that give it an even firmer foothold in the international market of intelligent transportation systems.

The Andorra Interurban Cooperative (Cooperativa Interurbana Andorrana) awarded GMV a contract for installing a state-of-the-art, GPRS/UMTS-based fleet management system for urban passenger transport in Andorra la Vella and also for long-haul vehicles. The project includes an onboard passenger information system and a passenger counting system on each bus of the fleet.

Midway through the year GMV signed a contract for supplying the new passenger information system of the Polish city of Gdansk. The system includes 40 passenger information posts set up throughout the city while GMV’s A30 onboard units are to be fitted to the 350 buses and trams making up this Polish city’s transport network. A central system will also be set up for generating and managing user information.

After procuring a pilot test of the Moviloc® fleet service in Moscow in early 2008, the Russian firm RISDE (“Russian Institute of Space Device Engineering”) turned to GMV for supplying three fleet-management-system demonstrators tailored to meet the specific needs of three types of clients: collective bus transport, railway transport and emergency management fleets (police, fire brigades, ambulances, etc). The procured demonstrators will include the complete equipment to be fitted onboard each one of these three types of vehicles plus the software license of their corresponding control center: SAE-R® and hegeo®.

In 2008 GMV’s inhouse web-based fleet management system, marketed under the tradename Moviloc®, continued to evolve and phase in new functions and performance features, both at platform level and peripherals. These upgrades are designed to meet the needs of a swelling number of increasingly diverse clients, adding up to a total of 3000 vehicles by the end of 2008. Some of the most important new features are the connection to the digital tachograph for remote file downloading, the temperature and door-opening sensors, the panic button and the data...
display and handling tools. These enhancements have made Moviloc® an even more attractive option for sectors such as freight transport, security, the transport of living animals or control of concrete quality, etc.

GMV carried out this year several specialist fleet tracking projects with implementation of its Moviloc® system for diverse clients. These include GES (“Global Energy Services”) which further swelled Moviloc®’s bulging client portfolio in 2008. GES runs a fleet of about 750 windfarm-maintenance vehicles in Spain. A Moviloc® based system was also fitted to the armored vehicles of the security firm Grupo Norte in its nine offices spread throughout the whole country; this contract shows that Moviloc® is also regarded as a viable and robust option for such a high-risk sector as cash transportation. It includes the installation of diverse peripherals on the mobile equipment, such as door-opening sensors, acoustic alarm and panic button.

The public corporation “RED.es”, belonging to the Ministry of Industry, Tourism and Trade (Ministerio de Industria, Turismo y Comercio) has awarded GMV the “Project for the Demonstration of Technological Solutions in the Micro-Enterprise Transport Sector of Castilla y León”. This project is part of the Plan Avanza whereby RED.es hopes to phase ICTs into the business processes of small and medium-sized enterprises. It comprises the technical wherewithal plus the concomitant assistance and consultancy services. As part of the project GMV will furnish all companies that have opted into the scheme with its Moviloc® fleet management system.

As the icing on the cake Moviloc® received in 2008 recognition by the international organization Space Foundation as certified space technology, a certification awarded to technologies originally developed in space programs that have then generated spinoff products and services to improve life on earth.

Within FP7 and run by the European GNSS Supervisory Authority, the STANDARDS project kicked off this year. GMV is coordinating the study of the standardization aspects of the use of GNSS in the road sector and in other fields, including intermodal transport and emergency management.

This time within FP6, the MENTORE project continued in 2008. Its objective is to encourage the use of GNSS technology for tracking and tracing purposes in EU regulated domains. In this project GMV is responsible for the pilot livestock transport tracking system, which has to abide by the applicable Council Regulation 1/2005. Throughout 2008 the system was developed and demonstrated to bring it into line with the requisites laid down by said Regulation, making use of the SISNeT technology.

Also within FP6, the M-TRADE and REPOSIT projects were brought to completion. The M-TRADE project, run by the European GNSS
Supervisory Authority, set out mainly to analyze and evaluate the advantages of introducing GNSS positioning technology into multi-modal freight transport and also to furnish the technological wherewithal for running combined transport in the main trans-European corridors. REPOSIT, run by the European Commission and led by GMV, centered on the study of a groundbreaking system for preventing crossroad collisions by means of V2V (vehicle to vehicle) communication technologies and relative GPS.

In this same field GMV continued to work during 2008 on the MARTA project (Mobility and Automation in Advanced Transport Networks), which forms part of the Spanish government’s CENIT program. A consortium of companies from various sectors, led by the company FICOSA, are taking part in this project, together with public research organizations. The role of GMV in this project is to develop the driver’s future services, such as the sending of information in the event of an accident; the monitoring of tailbacks and congestion; the precise tracking of vehicle fleets; the “pay as you drive” (PAYD) information for insurers and accident prevention.

In 2007 the GMV-developed onboard unit (OBU) allroad I-10 model passed all the tests laid down by the Dutch government for all suppliers and providers working towards the future implementation of an electronic tolling system (AbvM) in Holland. The passing of the stringent demands established in these tests opened up bright prospects for GMV’s electronic tolling applications. By the end of the year, for example, GMV had already negotiated a new contract with the European GNSS Supervisory Authority for using this same technology in Holland’s road pricing scheme. This will culminate in the GINA project, due to start in 2009.

In recent years GMV’s Portuguese subsidiary, Skysoft, has won itself a leading position in the ITS area in Portugal, partly on the strength of its close collaboration with its Spanish colleagues. In 2008 it finished work on the contract awarded the year before for developing a telematics platform based on GPS and mobile communications for setting up insurance models known as “Pay As You Drive” (PAYD) for an important insurance group. Under this project GMV will become a real trailblazer, developing and setting up one of the world’s first PAYD platforms.

In 2008 work also finished on the European Space Agency’s ARMAS project, which was led by GMV’s Portuguese subsidiary, Skysoft. In this project a series of transport systems were tested using GNSS applications, including the transport of children and the transport of hazardous goods.

GMV’s Portuguese subsidiary, Skysoft, has also continued to work hard on developing its RITA product for managing road traffic control centers and road safety matters. This spadework has enabled it to become one
of Portugal’s main suppliers of solutions of this type. In 2008 the system was successfully installed in the concession-based Grande Lisboa (Greater Lisbon) road system while an agreement was reached with AENOR for extending the RITA system to another two concessions in Portugal: Beira Litoral y Alta and Costa de Prata.

In the area of railway transport GMV began work in 2008 on two important RENFE contracts won the year before. Both are pioneering projects in railway transport in Spain, making GMV one of RENFE’s benchmark suppliers. The first, under the direction of Renfe’s Freight and Logistic Services Directorate (Dirección de Servicios de Mercancías y Logística), is for the supply and installation of the onboard railway-operation platform and control center in a total of 360 freight transport locomotives. The second, under the direction of Renfe’s Directorate of Long-Haul – High-Speed Services (Dirección de Servicios de Alta Velocidad – Larga Distancia), is for the supply and installation of an onboard railway-operation platform and control center for a total of 337 high-speed long-haul trains (TALGO light articulated train and self-propelled trains). In both cases GMV will be supplying and implementing not only the onboard equipment but also the hardware platform and software applications for the Control Center, based on GMV’s inhouse fleet management system, already widely tried and tested elsewhere and now especially adapted for railway management purposes.

SAE-R®, the railway fleet-management equipment developed on the strength of the previous contracts awarded by RENFE, passed in 2008 the certification tests under the ruling railway standards, establishing this system as a beacon for the rest and paving the way for more progress in the railway world in the future. This equipment, designed in light of GMV’s wealth of experience in the public transport market, is shaping up as a standard to be incorporated in future railway projects, not only of trains but also trams and light rail transit systems.

In the maritime transport area GMV was selected by the Autoridad Portuaria de Cartagena (Cartagena Harbor Authority) for supplying an Automatic Identification System (AIS). The project includes a study of AIS coverage in waters of the port zone, integration and deployment of an AIS base station, together with the AIS ASM control center and storage and working up of all information culled by the system.

In 2008 GMV continued to work on the contract won the year before from Puertos del Estado (Spanish Seaports Authority) for technical assistance in Spain’s DGPS (Differential GPS) network for maritime navigation. For the next two years GMV will be providing services of supervision, technical backup and data management of this network, made up by 18 differential-correction transmitting stations, 6 zonal control centers and a national monitoring center in the Puertos del Estado headquarters in Madrid.
Also within the maritime field, GMV, in collaboration with its Malaysian partner ATBS, continued with the work of setting up Malaysia’s coastal DGPS network, a contract won the year before from the Peninsular Malaysia Maritime Department. The network is made up by 4 transmitting stations, 2 remote monitoring stations and a control center. As well as coordinating the installation of the various systems, GMV is also developing the reference stations and the necessary communications software and integrity monitors on each site, plus the specific remote-monitoring and control-center software.

GMV’s prowess in the application of AIS technology to the maritime sector received further recognition with a contract award from REPSOL in the port of Tarragona. This contract included deployment of an AIS ground station in REPSOL’s jetty, an AIS AtoN (Aids-to-Navigation) in the single buoy mooring plus the necessary applications for monitoring the buoy and maritime traffic in the coverage area of the AIS base station. Under this project GMV will improve the signaling system of the single buoy mooring and enhance control over the entrance and departure of ships to and from the port of Tarragona and also their relative position to the SBM. There will also be an alarm management system, notice configuration and real time monitoring of the ships.

Within this same field GMV also played an important part in the Marcia project, a coastal surveillance project for which GMV’S Portuguese subsidiary, Skysoft, is developing an integral solution for merging VTS data with AIS data for the Port of Caniçal (Madeira).

Finally, GMV won the consultancy and external assistance contract for the Supervision, Auditing and Management of the project for the Development, Implementation and Commissioning of the new Geographical Information System (GIS) of the Spanish Road Traffic Authority (Dirección General de Tráfico: DGT). The DGT’s new GIS will meet the needs of the traffic authority’s various areas. It is designed to function throughout the DGT’s whole sphere of competence and its final objective is to serve as the nexus for all the information systems, current and future, used by the DGT in its regulation, management and traffic-control tasks.
ACTIVITIES IN 2008

TELECOMMUNICATIONS AND INFORMATION TECHNOLOGIES FOR THE PUBLIC SECTOR AND LARGE CORPORATIONS

TELECOMMUNICATIONS
GMV works closely with the main operators and providers of telecommunication services, offering services and solutions tailor-made to meet their needs:

- Platform reengineering and development consultancy
- SS7/IN voice services
- SIP/IMS convergence services
- High performance messaging services
- Detection of terminal capacity and service use
- Core-Network control panel services
- Developments on handhelds
- Solutions for monitoring compliance with the Spanish data protection act
- Fraud control solutions
- e-nterprise: management and control of data communication
- Integration solutions for mobile virtual network operators
- Capacity Planning
- Publicity campaign management and planning platform
- Internet publicity campaign monitoring platform
- Payload reconfiguration systems for satellite operators
- System consolidation and virtualization
- ITIL process backup tools
- 24x7 backup services

INFORMATION TECHNOLOGIES FOR THE PUBLIC SECTOR AND LARGE CORPORATIONS
GMV provides the most technologically advanced ICT products to improve the processes and innovation capacity of leading organizations. Government authorities, major companies and banks all turn to GMV sure in the knowledge of receiving secure solutions based on the experience of specialist professionals:

- Corporate mail and agenda solutions and synchronization with mobile devices
- E-government solutions
- Email solutions
- Content management platforms
- Intranet, portals, document management platforms
- E-learning platforms
- Mobility and messaging solutions
- System and infrastructure architectures
- Process consultancy and technology consultancy
- Information network and system security
- Open source software
In 2008 Vodafone continued to place its trust in GMV as technological ally in the provision of its services. GMV has also been chosen as a “Best Partner” within Vodafone’s Alianzas program on the strength of the two companies’ proactive collaboration in developing new business opportunities. GMV’s main assets for Vodafone are quality, flexibility and backup. The quality is fruit of our long and proven track record and the in-depth knowledge of technology built up over that time. Our flexibility is a sine qua non of today’s fleet-footed business world in which “time-to-market” is paramount. The backup offered for all our products is crucial for providing an excellent service. Worthy of particular mention this year is the launch of atlas GMV®, the world’s first product allowing the use of BlackBerry® smartphones with open source corporate email systems.

Some of the most important projects carried out with Vodafone in 2008, in close collaboration with its Security Department, were the analysis and security hardening of some of its most critical platforms, the development of tools for facilitating integration of Vodafone with Tele2, the award of SS7/IN voice services, the platform for the connection, payment collection and implementation of new third-party services and the development of next generation services (IMS) for implementation of convergent services (fixed telephony, cell telephony, Internet and TV).

GMV also finished developing and setting up two integration platforms for Hits Mobile, integrated in Hits Telecom Spain, a unit of the Kuwait-based Hits Telecom Holding Company Co. K.S.C, recently launched in Spain as a Mobile Virtual Network Operator (MVNO). The first platform consists of the integration of Hits Mobile’s system with Vodafone, its host mobile network operator, and the second involves integration of the MVNO with the various recharge providers like Euro6000, La Caixa, Sermepa and Telecor.

The Madeira project won the “Celtic Excellence Award” on the strength of its development and the excellent performance. Completed the year before, it was run by a consortium of 14 European firms including GMV. The project came under the European CELTIC initiative, which pools research and development projects in the telecommunications sector. GMV acted as national coordinator and worked in the areas of incident detection and the administration console.

Some years ago GMV developed for Renfe its web portal and, later on, an instant messaging platform for a photography competition, based on its factoría móvil® product. In 2008 RENFE once again turned to GMV for setting up an instant messaging platform within its infrastructure, based on GMV’s e-smovil® product. This project arose in response to RENFE’s declared need for an SMS interchange platform to serve as basic infrastructure for SMS sending and receiving. The system had to work with RENFE’s existing applications and also any future ones that may be developed and phased in later. The project will be extended and reinforced with the development of an SMTP interface for this platform by means of esmessaging and eslocator, to allow the processing of SMS messages.

GMV continues to lend assistance to the implementation and commissioning of the communications services and infrastructure of the
I*Net Model for the Spanish Ministry of Defense. GMV has been working on this project since 2006 as part of the objectives of the Information Society Development Plan 2006-2010, which aims to modernize the Spanish public sector, increase the quality of life of Spain’s population and the efficiency of its firms.

In 2008 GMV also continued to work with Spain’s regional authorities, collaborating with the Junta de Castilla y León (JCyL) in various projects to do with the Single Administrative Information System (known by its Spanish initials of SIAU). 2007 saw the official unveiling of the new portal of the Junta de Castilla y León (HYPERLINK "http://www.jcyl.es" www.jcyl.es), converting the Junta’s website into one of the most modern and advanced in Spain. This was followed up in 2008 with the debut of the latest GMV-developed service, the Junta’s personalized portal, TuJCyl.es is an adaptation of the corporate portal to bring it into line with the particular needs of the region’s population. Among many other facilities the portal offers citizens the chance of accessing relevant information in a personalized way as well as an area for personalizing their preferences and subscribing to various services offered by the Junta.

An even closer relation was forged between GMV and the Junta de Andalucía in 2008 with the award of several contracts.

Firstly, GMV developed for the Regional Environment Ministry of the Junta de Andalucía a web platform for managing the information and registration of the region’s Game Farms and Fish Farms. The platform designed by GMV allows the Regional Ministry to manage this information in a thoroughgoing way, taking in such fundamental aspects as output and site suitability.

Shortly afterwards GMV carried out a pilot project for setting up a Service Oriented Architecture (SOA) in the Junta’s e-government platform.

GMV also won a project for the installation and integration of system infrastructure to serve as the base for the future corporate ERP of EGMASA, a public corporation of the Regional Environment Ministry of Andalucía. This system infrastructure ranges from critical mission servers to virtualized systems, storage and backup, as well as training and support.

In 2008 GMV signed a collaboration agreement with eyeOS, a leading supplier of open-source software, thereby ratifying a collaboration that began in 2006 when GMV integrated eyeOS technology into a software project for the Junta de Andalucía. Both companies signed this agreement with the aim of joining forces and formalizing their strategic alliance in the development of integration solutions. This will be done by
way of open source software developments that meet the quality standards and requisites set during GMV’s long and distinguished career.

2008 also saw the inauguration of the new website of Lepe Town Council, a project in which GMV took responsibility for information architecture, virtual prototyping, graphic design, analysis/design of tools and implementation of the chosen solution, as well as providing customer backup in the reorganization, recompilation and publication of contents.

Some years back GMV developed the portal of the International Spanish Language Congresses for the Cervantes Institute (Instituto Cervantes). By now this portal has received more than 800,000 visits in which over 13 million pages have been displayed. Spurred on by this success, GMV has begun work on a new development in collaboration with the Instituto Cervantes. The task this time is to make Miguel de Cervantes’s magnum opus “Don Quixote” available in XHTML after its previous publication on internet by the Centro Virtual Cervantes in 1998. This will be done in due accordance with the web contents accessibility requisites defined by UNE 139803, of obligatory compliance under Spanish legislation.

In previous years a close relationship was forged between GMV’s Portuguese subsidiary, Skysoft, and Lisbon City Council with the development and backup of two critical information systems. This relationship was enhanced in 2008 with new contract awards. Midway through the year the City Council awarded a contract to this subsidiary for updating and adapting its “Business Intelligence” solution to serve as analysis support for the city’s town-planning work.

The Portuguese subsidiary also won a project for developing a new and complex solution for managing processes, documents and files through an intranet for the Technology and Science Foundation (Fundación para la Ciencia y la Tecnología: FCT). The project also includes consultancy and re-engineering work.

GMV’s team has by now built up a wealth of experience in consultancy and implementation of portal and intranet platforms for the public sector and large corporations, carrying out projects for diverse universities, regional governments and ministries. This has made its team a past master in this field and it has now started work as an internal provider on the remodeling project of its own corporate intranet. Midway through 2008, GMV inaugurated a portal to facilitate and simplify information access procedures, providing access to the tools of daily use to simplify and speed up internal business processes and favor information swapping and collaboration between employees. This is being done by way of distributed content management tools together with publication and categorization thereof.

In 2008 the Junta de Castilla y León launched its personalized portal, TuJCyl.es, the latest service developed by GMV to bring the corporate portal into line with the particular needs of the region’s population.
Right from the word go GMV has made its personnel policy one of the cornerstones of its whole business project. In GMV we are convinced that a staff of top professionals is the best way to gain a competitive edge over the rest. GMV therefore aims to attract the best professionals and then ensure that they stay with the company to pursue their careers and realize their full potential. GMV offers them a unique teamwork environment where their talent, imagination and personal endeavors are continually challenged and stimulated.

In line with this overall policy GMV has been applying a human resources plan based on three mainstays: a thoroughgoing personnel-selection policy, a stable environment in which to pursue their careers and a continuous top-up training plan.

To keep pace with its brisk growth rate at home and abroad GMV took on a significant number of new personnel in 2008, resulting in a 13% rise in staff numbers. GMV closed the year with 1031 employees; 85% have university degrees and their average age is about 32.

Such a painstaking personnel-selection procedure involves a heavy outlay and so does GMV’s subsequent concern for the stable career development of its employees. It therefore aims to recoup this investment by maintaining a high level of indefinite-term contracts, a rate of about 92% in 2008.

One of the main planks of the human resources policy is training, since the company’s activity sectors call for specialist and bang-up-to-date knowledge of the most advanced technologies. To develop the professional skills of its employees GMV works with an integrated training model to pinpoint its employees’ knowledge and expertise. Training activities increased significantly in 2008, both in terms of classroom hours and outlay. In all, about 470 training courses were held in 2008 on both an individual and group basis, adding up to a sum total of 19,809 training hours involving over 70% of GMV’s personnel.

GMV liaises permanently with study centers and universities in all the countries it trades in, either by way of temporary agreements, with grants to help university students join the job market, or more permanent project-based collaboration agreements. This habitual liaison with universities has been reinforced by an increasing participation of GMV in various employment forums, both at home and abroad.

The GMV Chair, a joint academic initiative set up between the Polytechnic University of Madrid (Universidad Politécnica de Madrid: UPM), the Higher Technical School of Aeronautical Engineers (Escuela Técnica Superior de Ingenieros Aeronáuticos: ETSIA) and GMV,
continued with its work of training, research, development and
innovation by holding courses, seminars and conferences involving the
participation of professors and leading experts. In 2008, together with
the UPM, GMV also created the Aula CriptoRed GMV UPM (UPM GMV
CriptoRed Classroom) with the aim of exchanging knowledge and
experience in the information security area.

The Chair in Information System Risks (Cátedra de Riesgos en Sistemas
de Información), set up the year before in collaboration with the
Business Institute (Instituto de Empresa) and Oracle, has managed to
make itself a benchmark forum within the sector. Throughout 2008 it was
busy organizing various seminars, courses, debates and think tanks.

GMV participates in several initiatives to nurture budding talent, either
single-handedly or in collaboration with other institutions. Pride of place
here goes to the Best-GMV Engineering Competition, a joint initiative of
the Board of European Students of Technology (BEST) the Polytechnic
Universities of Catalunya, (UPC), Madrid (UPM), Valladolid, the
Universidad Carlos III de Madrid and GMV, which aims to boost the
practical knowledge and skills of students and encourage team working
among engineering students. Under this same heading, mention must
also be made of the sponsorship of the award scheme called Premio
AFCEA Portugal, given to the best aeronautical engineering student of
the Universidad da Beira Interior.

Another important university-collaboration initiative in 2008 was GMV
sponsorship of the Spanish team that took part in the “Lunar Robotics
Challenge” on Teide, comprising industrial engineers from the
Universidad Politécnica de Madrid (UPM). In this ESA-brokered
competition teams from eight European universities competed to design
the best lunar rovers for moving over the moon’s surface and performing
sample return missions.

GMV’s firm and ongoing commitment to the development of talent in
the technological field prompted it in 2008 to embark on a series of
activities designed to foment an interest in engineering and technology
among the very youngest. In 2008 it once more sponsored and took a
leading role in the tradefair Madrid es Ciencia (Madrid is Science), which
attracts thousands of children of all ages and has become the most
important event of its type in Spain. In this same year GMV was again
one of the main sponsors of the First Lego League in Spain, an
international robotics competition for children, born as offspring of the
FIRST and LEGO® alliance in 1989. It also sponsored the robotics
classroom of the Miguel Hernández school, Complubot, a team of
talented youngsters that develop and build their own robots and
participate in diverse international competitions, with excellent results.
QUALITY

The commitment of the firms of business group GMV to their clients, their concern for excellence, innovation and continual improvement are all reflected in the quality management processes.

The sheer technological complexity of all GMV’s developments calls for the highest quality standards in all its processes. The various firms of GMV are therefore all in possession of the quality certificates to match their areas of activity and specialization.

The subsidiary GMV Aerospace and Defence S.A. has certificates under the requisites of the ISO 9001:2000 standards. It has also been awarded certificates to cover its various areas of activity, such as the EN 9100:2003, based on ISO 9001:2000 and specifically designed for developments in the aerospace area or the Pecal 2110 and 160 certificates for defense activities. Since 2005 it has formed part of the small and exclusive club of Spanish firms that have obtained level 3 maturity under the CMMI model (Capability Maturity Model Integrated), a prestigious international certificate granted by an independent body after the most thoroughgoing evaluation. Furthermore, a plan has already been put in place for raising CMMI classification to the highest level of this demanding quality-assurance model.

The Quality Management System of the subsidiary GMV Soluciones Globales Internet S.A. also abides by the ISO 9001:2000 standard. GMV Soluciones Globales Internet also boasts an information security management system certified under standard ISO 27001, with a nod towards ISO 27002. During 2008 its scope was extended to the East Coast Office as well as the offices of Madrid, Seville, Barcelona and Boecillo whose certification dates back to 2006, and even to 2004 under the forerunning standard UNE 71502.

The subsidiary GMV Sistemas S.A. is likewise in possession of certification under ISO 9001:2000, the standard guaranteeing that the subsidiary’s Quality Assurance System conforms to the requirements of the standard UNE-EN ISO 9001:2000. This system covers all the following: the design, development, production and after-sales service for the sectors of telematics, transport, remote control and satellite navigation, including the supply, installation and management of onboard equipment in trains and web-based fleet management and tracking services.
The quality management system of GMV's Portuguese subsidiary, Skysoft, meets the requisites of the standard ISO 9001: 2000. During the year efforts were stepped up to obtain level 3 of CMMI (Capability Maturity Model Integrated).

Lastly, GMV has undertaken to carry out its activity within the parameters of sustainable development, keeping a proper control over all the environmental aspects involved in its work. Hence the fact that the Environmental Management System covering the activities in GMV’s central Madrid site conforms to the UNE-EN ISO14001: 1996 standard.

GMV is mindful of the fact that quality assurance is not simply a matter of obtaining a given certificate or title; it needs to pervade the daily work of the whole personnel. The organization to a man is pledged to the goal of achieving top quality in all its products. They often participate in the design of procedures and regularly attend all necessary courses so that they fully understand GMV’s quality system and make sure it is applied in all the work they do.
GMV IN THE WORLD

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ANALYSIS OF THE
FINANCIAL SITUATION
THE COMPANY’S OVERALL FINANCIAL PERFORMANCE

GMV closed the financial year 2008 with a turnover of over 91 million euros, representing an increase of about 19% on the total gross revenue of the previous year.

In 2008 GMV posted a net post-tax profit of 4.2 million euros, representing a 14% rise in the net results figure. Stockholders’ equity thus increased by over 15% to more than 28 million euros. As for its end-of-year valuation, GMV recorded a 17% ROE with a net profit sales ratio of 5% and an asset turnover growing to 4%.

The net financial debt figure recorded in the balance sheet is below 16 million euros, still well within the maximum gearing ratio allowed by the financial structure. Most of this debt financed the increase in fixed assets after the phase 3 enlargement of the firm’s head office in Tres Cantos, funded by means of a property leasing transaction.

The financial leverage did not rise, therefore. This means that the company’s creditworthiness is still very sound with low insolvency risks and a high immunity to any rise in interest rates.

Certain changes in the financial structure, already evident in previous years, followed the same trend in 2008: reduction in the average weighted cost of the capital employed while the average yield of operating assets also held steady, despite the sharp growth of assets employed. The ratio of net profit to shareholders’ equity held firm despite the equity growth. Economies of scale were enhanced by the growing size of the business.

In terms of the financial evaluation, very positive end-of-year values are still observed in the liquidity and solvency ratios (1.40 and 1.83 respectively), with hardly any change in the debt to equity ratio. This means that the financial structure is still ideal for harnessing capital-intensive growth opportunities calling for a higher degree of financial leverage.

As a result of the growth of total assets, the relative weight of working capital declined in relation to total assets employed, with a concomitant decrease in working capital used.

As a net result of all the above, the financial statements show a clear process of growth: sales up by 16% with lower investments in working capital, thereby releasing cash flow, and a strong correlation between the growth in net profit and the growth in sales.

The consolidated effective tax bill for 2008 hardly changed on the previous year, standing at about 16%.

These figures clearly show that the company is going through a business cycle of moderate and profitable growth on a more mature basis with no need for regular external financing. The recorded growth rate is still within the sustainable growth rate limits marked by the growth in ROE and is conducive to a controlled debt scenario and a better harnessing of investment opportunities in other business, which can be tapped into as quickly as market conditions allow.

The net result of all the above is that the operational cash flow stands at 7.5 million euros, and the consolidated EBITDA climbs up towards 10 million euros.

<table>
<thead>
<tr>
<th>MAIN FINANCIAL FIGURES</th>
<th>2007</th>
<th>2008</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total turnover</td>
<td>77,0</td>
<td>91,5</td>
<td>18,8%</td>
</tr>
<tr>
<td>NOPAT</td>
<td>4,8</td>
<td>5,8</td>
<td>21,2%</td>
</tr>
<tr>
<td>Operating Cash Flow</td>
<td>6,1</td>
<td>7,6</td>
<td>23,7%</td>
</tr>
<tr>
<td>EBITDA</td>
<td>8,1</td>
<td>10,0</td>
<td>23,4%</td>
</tr>
<tr>
<td>EBIT</td>
<td>5,6</td>
<td>6,6</td>
<td>17,1%</td>
</tr>
<tr>
<td>Net Income</td>
<td>3,7</td>
<td>4,2</td>
<td>14,3%</td>
</tr>
</tbody>
</table>
DISTRIBUTION OF RESULTS

GMV maintains a conservative self-financing policy. Indeed it has no dividend distribution plan reinforcing its financial structure and ensuring its financial autonomy. As a company that trades in the hi-tech market, GMV has plowed back its profits to build up the business group. These retained profits have enabled it to step up its investment in its own inhouse research and development projects. GMV’s total cumulative investment in its own R&D projects now adds up to over 12 million euros.

BUSINESS UNITS AND SUBSIDIARIES

GMV’s business units grew out of a diversification process to broaden the customer base and increase revenue in other related markets where the group could offer its technological products. This process has had a beneficial effect on the revenue mix and has also helped to spread market risk. This policy has been maintained and combined with an effort to spread into other geographical areas. The set of companies making up GMV has been maintained unchanged, with business units taking the legal form of joint stock companies (sociedades anónimas). This is thought to be the best way of bringing their human, financial and material resources into line with the specific needs of each business and thus ensuring their long-term viability.

The controlling stake has been maintained in the US company GMV Space Systems Inc, set up with the aim of promoting our range of products and services in that market. The commercial activities taken on have shown a satisfactory development, chipping in with their own contribution to the overall revenue figure. This profitability, albeit still modest, looks set to blossom in the coming years.

In May 2007, GMV acquired a controlling stake in the company Masisconvi, S.A. In January 2009 this stake was increased to 99.69%. Masisconvi, S.A, has gradually been knitted into GMV’s structure: commercial, production, financial operations and resources. During 2008 the company was fully integrated into GMV.

Since October 2007 GMV has also held a 100% stake in the company Skysoft Portugal Software e Tecnologias de Informação S.A, now fully integrated into the group’s operations.

The company GMV Soluciones Globales Internet S.A provides the legal structure for the network engineering and applications activities while GMV Sistemas S.A. does likewise for our business unit dealing with transport- and logistics-engineering, whose target market now includes electronic fare collection systems after the Masisconvi takeover. GMV Aerospace and Defence S.A. still gives legal coverage to the space and defense activities in Europe and GMV Space Systems Inc. occupies an identical position in the US market. Skysoft, for its part, exploits GMV’s target-market opportunities in Portugal.

Above them all in the organization chart stands Grupo Tecnológico e Industrial GMV S.A. acting as parent company, supporting the whole value chain and laying down the strategic guidelines.

This organization model has proven to be fruitful in terms of business, resource efficiency, profitability and viability. With this business strategy, based on specialization in the various production lines and designed to make the processes more productive, GMV has been able to record a sharp growth in its whole set of activities.

ANALYSIS OF THE SUBSIDIARIES PERFORMANCE

We recorded a rise in net income in all GMV’s lines of activity, particularly in the space and defense market. There was also an improvement in the standard operating margin in the rest of the
business segments, albeit with a somewhat uneven distribution.

In this year GMV’s subsidiaries have thus been able to keep up a satisfactory level of operational profitability in a turbulent and fiercely competitive environment that has tended to squeeze profit margins.

We have recently introduced some new products and we plan to launch more in the future. We are also looking to expand our business to geographically scattered markets. The general gross margin may be trimmed in the future, due firstly to this expansion in products and markets (some of these activities having tighter margins) and secondly to the constant downward price pressure exerted by the competition in certain business areas.

To a certain extent these new products and services are still in start-up phase. This calls for an outlay both to develop the new product and to gain a foothold in the new market. We are confident that this will then usher in a phase of rapid growth with brighter financial results.

As for the performance in 2008, the space and defense business put in a very good showing, recording a 14% growth in gross turnover and making an additional input of 6.5 million euros to the business increase.

The areas of e-solutions and security posted an increase of almost 14% in gross turnover with an input of additional business worth almost 3 million euro.

The area of transport and logistics recorded a gross turnover of over 8% with an additional 1.2 million euro input from gross sales.

### BUSINESS SEGMENT HIGHLIGHTS

<table>
<thead>
<tr>
<th>Revenues Streams (segment) (gross sales)</th>
<th>2007</th>
<th>% total</th>
<th>2008</th>
<th>% total</th>
<th>delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defense</td>
<td>46,0</td>
<td>58%</td>
<td>52,4</td>
<td>59%</td>
<td>14,08%</td>
</tr>
<tr>
<td>ICTs for the Public Sector &amp; Large Corporations</td>
<td>9,0</td>
<td>24%</td>
<td>21,7</td>
<td>24%</td>
<td>13,75%</td>
</tr>
<tr>
<td>Transport Telematics</td>
<td>14,2</td>
<td>18%</td>
<td>15,3</td>
<td>17%</td>
<td>8,31%</td>
</tr>
<tr>
<td>Total revenues</td>
<td>79,2</td>
<td>89,4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In terms of EBITDA, the space and defense business clocked up a value of 5.9 million euros (14% up on the previous year), despite having made a big commercial effort on three fronts: firstly, to win itself a good position in the Galileo program, secondly to increase its profile in the defense market and thirdly to break into the US institutional space market. These efforts augur well for 2009 and subsequent years.

The area of e-solutions and security, for its part, recorded an EBITDA of 2.6 million euros, a 40% increase on the previous year’s figure. This makes it the group’s second biggest source of added value, with excellent prospects for the coming year 2009.

Lastly, the area of transport and logistics grew sharply with a clear improvement of profitability on resources used and an EBITDA contribution of 1.5 million euros.

The financial year 2008 confirmed a consolidation of all our business lines, with satisfactory financial results, the formation of important strategic lines of action, all contributing to the establishment of GMV in a leading position in the market of hi-tech services. We foresee an even brighter picture for the financial year 2009. All our market areas also firmed up their market positions considerably in 2008, in a time of sweeping changes and fierce competition in the telecommunications

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### Revenues Streams (segment) (net sales) 2007 % total 2008 % total delta

<table>
<thead>
<tr>
<th>Segment</th>
<th>2007</th>
<th>% total</th>
<th>2008</th>
<th>% total</th>
<th>delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defense</td>
<td>37,3</td>
<td>65%</td>
<td>40,0</td>
<td>62%</td>
<td>7,21%</td>
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<tr>
<td>ICTs for the Public Sector &amp; Large Corporations</td>
<td>2,4</td>
<td>22%</td>
<td>15,8</td>
<td>25%</td>
<td>25,09%</td>
</tr>
<tr>
<td>Transport Telematics</td>
<td>7,1</td>
<td>12%</td>
<td>8,6</td>
<td>13%</td>
<td>22,14%</td>
</tr>
<tr>
<td>Total revenues</td>
<td>57,0</td>
<td>64,4</td>
<td></td>
<td></td>
<td>13,02%</td>
</tr>
</tbody>
</table>

(*) The revenues figure, gross sales and EBITDA include inter company operations.
and telematic applications market. This poses a sterling challenge in terms of breaking into new markets and integrating the new business into the existing market of our products and services.

**SCOPE OF CONSOLIDATION AND STAKES IN OTHER COMPANIES**

The consolidated financial statements for this year include a total scope of consolidation with respect to the investee companies. Pursuant to the equity method, exclusion is made only of those companies in which GMV’s stake is less than 20%, which would form part of the financial assets in the consolidated balance sheet.

GMV holds a 14.3% stake in the company Grupo Navegación por Satélite, Sistemas y Servicios SL (formerly Galileo Sistemas y Servicios S.L.); other stakes in this company are held by Indra Espacio SA, SENER SA, Hispasat SA, AENA, EADS CASA and Alcatel Espacio. This company, set up in July 2000 by the main companies of the Spanish aerospace sector, aims to promote the development, operation and commercial use of applications and services based on the future Galileo satellite navigation system.

**INVESTMENT POLICY**

The overall fixed asset investment in 2008 amounted to almost 9 million euros. The main outlay here was the phase 3 enlargement work of the company’s head office in Tres Cantos. This figure also includes regularization of the construction value in 1991 of the first phase of GMV’s head office building in Tres Cantos financed by a property leasing transaction; according to the accounting principles obtaining at that time this transaction was an off-balance-sheet item. After a long legal process that eventually found in our favor, this must now be necessarily recorded in our financial statements.

The rest of the capital expenses corresponded to technical and IT equipment and fixtures necessary for the normal business activity. This figure also includes the R&D investment made in 2008 in those seedbed activities likely to capture market shares in the medium term.

In 2008 GMV made a big investment in training, adding up to nearly 1 million euros. It plans to continue this policy in the future. An increase of over 4% is scheduled for 2009, with the clear strategy of attracting and training highly qualified personnel.

**USE OF EBITDA**

GMV assesses its operational performance on the basis of several factors, including the main financial measurement of earnings before interest, taxes, depreciation and amortization, omitting the company financing structure and form (EBITDA). GMV considers EBITDA to be a good indicator of the operational strength and performance of its business activities, including the capacity of generating cash flow to finance debt and capital costs.

The use of EBITDA cancels out the irregular effect in business segments of the depreciation of tangible fixed assets and intangible fixed assets as recognized in business combinations by the traditional accounting method. In any case the EBITDA factor should be considered not as a substitute but rather as an addition to net operating profit and other measurements of financial performance presented in accordance with generally accepted accounting principles.
# BALANCE SHEET AND PROFIT AND LOSS ACCOUNT

## BALANCE SHEET 2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed assets</td>
<td>24,536,027.26</td>
<td>32,106,939.68</td>
<td>Stockholders' equity</td>
<td>23,529,912.96</td>
<td>28,396,580.90</td>
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<tr>
<td>Deferred charges</td>
<td>100,382.53</td>
<td></td>
<td>Capital grants</td>
<td>3,060,514.91</td>
<td>2,076,379.95</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Minority interests</td>
<td>534,984.84</td>
<td>760,366.92</td>
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<td></td>
<td></td>
<td></td>
<td>Long-term funding</td>
<td>10,661,165.17</td>
<td>12,205,276.00</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Interest free credits</td>
<td>1,499,606.76</td>
<td>1,789,970.87</td>
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<td></td>
<td></td>
<td></td>
<td>Long term funding</td>
<td>9,161,558.41</td>
<td>11,015,305.13</td>
</tr>
<tr>
<td>Total fixed assets</td>
<td>24,636,409.79</td>
<td>32,106,939.68</td>
<td>Total Long-term Funding</td>
<td>37,786,577.88</td>
<td>43,438,603.77</td>
</tr>
<tr>
<td>Inventories</td>
<td>5,554,292.62</td>
<td>5,638,530.23</td>
<td>Short term liabilities</td>
<td>24,333,788.93</td>
<td>27,015,186.34</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>28,517,746.06</td>
<td>28,630,044.14</td>
<td>Bank loans and overdrafts</td>
<td>12,472,930.55</td>
<td>10,960,382.61</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Non-trade payables</td>
<td>11,860,853.88</td>
<td>16,054,803.73</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Deferred payments</td>
<td>2,009,561.79</td>
<td>1,283,630.04</td>
</tr>
<tr>
<td></td>
<td>Trade debtors</td>
<td>34,973,323.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trade services on account</td>
<td>-7,612,959.37</td>
<td>-7,136,592.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other debtors</td>
<td>1,157,381.58</td>
<td>1,237,363.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>5,421,480.13</td>
<td>5,361,906.10</td>
<td>Total short term liabilities</td>
<td>26,343,350.72</td>
<td>28,298,816.38</td>
</tr>
<tr>
<td>Total current assets</td>
<td>39,493,518.81</td>
<td>39,630,480.47</td>
<td>Total liabilities</td>
<td>64,129,928.60</td>
<td>71,737,420.15</td>
</tr>
<tr>
<td>Total assets</td>
<td>64,129,928.60</td>
<td>71,737,420.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working capital</td>
<td>13,150,168.09</td>
<td>11,331,664.09</td>
<td>Working balance</td>
<td>13,150,168.09</td>
<td>11,331,664.09</td>
</tr>
<tr>
<td>Working capital/Equity</td>
<td>34.80%</td>
<td>26.09%</td>
<td>Working balance/fixed assets</td>
<td>53.38%</td>
<td>35.29%</td>
</tr>
</tbody>
</table>

## PROFIT AND LOSS ACCOUNT 2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of goods</td>
<td>13,243,850.80</td>
<td>16,950,467.94</td>
<td>Turnover</td>
<td>74,500,611.31</td>
<td>86,299,058.49</td>
</tr>
<tr>
<td>Ancillary Services</td>
<td>7,736,765.00</td>
<td>9,550,465.29</td>
<td>Own expenses capitalized</td>
<td>1,555,696.07</td>
<td>3,422,941.11</td>
</tr>
<tr>
<td>Taxes</td>
<td>63,522.39</td>
<td>47,726.03</td>
<td>Operating grants</td>
<td>785,365.57</td>
<td>1,232,896.56</td>
</tr>
<tr>
<td>Employee Costs</td>
<td>47,158,785.82</td>
<td>54,656,813.45</td>
<td>Financial Income</td>
<td>149,385.29</td>
<td>128,345.54</td>
</tr>
<tr>
<td>Financial Expenses</td>
<td>1,104,222.19</td>
<td>1,593,847.76</td>
<td>Extraordinary Income</td>
<td>47,302.92</td>
<td>457,532.57</td>
</tr>
<tr>
<td>Extraordinary Expenses</td>
<td>61,574.28</td>
<td>13,033.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period Depreciation and Amortization</td>
<td>2,443,493.60</td>
<td>3,368,567.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriations, transfer to Provisions</td>
<td>693,537.51</td>
<td>351,888.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expenses</td>
<td>72,505,751.59</td>
<td>86,532,810.39</td>
<td>Total income</td>
<td>77,038,361.16</td>
<td>91,540,774.27</td>
</tr>
<tr>
<td>Corporate income tax</td>
<td>862,078.59</td>
<td>812,675.13</td>
<td>Pre-tax profit</td>
<td>4,532,609.57</td>
<td>5,007,963.88</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Post-tax profit</td>
<td>3,670,530.98</td>
<td>4,195,288.75</td>
</tr>
</tbody>
</table>
# Cash Flow Statement

## Operating Activities

<table>
<thead>
<tr>
<th>Description</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit after tax</td>
<td>3,670,530.98</td>
<td>4,195,288.75</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>2,443,493.60</td>
<td>3,368,567.43</td>
</tr>
<tr>
<td><strong>Operating Cash Flow</strong></td>
<td><strong>6,114,024.58</strong></td>
<td><strong>7,563,856.18</strong></td>
</tr>
<tr>
<td>Net finance expense</td>
<td>1,104,222.19</td>
<td>1,593,847.76</td>
</tr>
<tr>
<td>Corporate income tax</td>
<td>862,078.59</td>
<td>812,675.13</td>
</tr>
<tr>
<td><strong>EBITDA</strong></td>
<td><strong>8,080,325.36</strong></td>
<td><strong>9,970,379.07</strong></td>
</tr>
<tr>
<td>(Increase) / decrease in trade and other receivables</td>
<td>-3,141,265.25</td>
<td>-196,535.69</td>
</tr>
<tr>
<td>Increase / (decrease) in trade and other payables</td>
<td>-3,017,641.42</td>
<td>4,193,945.35</td>
</tr>
<tr>
<td>(Decrease) / increase in provisions</td>
<td>185,537.14</td>
<td>-725,931.75</td>
</tr>
<tr>
<td>Deferred income (capital grants)</td>
<td>-785,365.57</td>
<td>-1,232,896.56</td>
</tr>
<tr>
<td><strong>Cash flow generated from operations</strong></td>
<td><strong>1,321,590.26</strong></td>
<td><strong>12,008,960.42</strong></td>
</tr>
<tr>
<td>Tax paid</td>
<td>-862,078.59</td>
<td>-812,675.13</td>
</tr>
<tr>
<td><strong>Net cash flow from operating activities</strong></td>
<td><strong>459,511.67</strong></td>
<td><strong>11,196,285.29</strong></td>
</tr>
</tbody>
</table>

## Investment Activities

<table>
<thead>
<tr>
<th>Description</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of subsidiary undertaking (Goodwill)</td>
<td>-373,008.42</td>
<td>-97,298.56</td>
</tr>
<tr>
<td>Capital expenditure - plant and equipment</td>
<td>-9,193,837.42</td>
<td>-8,753,548.47</td>
</tr>
<tr>
<td>Capital expenditure - intangible assets</td>
<td>-961,006.04</td>
<td>-1,988,250.29</td>
</tr>
<tr>
<td><strong>Net cash flow from investing activities</strong></td>
<td><strong>-10,527,851.88</strong></td>
<td><strong>-10,839,097.32</strong></td>
</tr>
</tbody>
</table>

## Financing Activities

<table>
<thead>
<tr>
<th>Description</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net new debt (debt increase + debt repayments)</td>
<td>10,031,350.55</td>
<td>31,562.89</td>
</tr>
<tr>
<td>Capital Grants and subsidies on capital</td>
<td>1,246,627.31</td>
<td>248,761.60</td>
</tr>
<tr>
<td>Interest paid</td>
<td>-1,104,222.19</td>
<td>-1,593,847.76</td>
</tr>
<tr>
<td>Dividends paid to equity shareholders</td>
<td>-279,639.08</td>
<td>-376,532.90</td>
</tr>
<tr>
<td>Paid-in capital</td>
<td>43,278.22</td>
<td>1,172,683.83</td>
</tr>
<tr>
<td>Minority Interests</td>
<td>-43,195.19</td>
<td>225,382.08</td>
</tr>
<tr>
<td>Results attributable to the Minority Interests</td>
<td>-111,430.15</td>
<td>-124,771.74</td>
</tr>
<tr>
<td><strong>Net cash flow from financing activities</strong></td>
<td><strong>9,782,769.47</strong></td>
<td><strong>-416,762.00</strong></td>
</tr>
<tr>
<td>(Decrease) / increase in cash and cash equivalents</td>
<td>-285,570.74</td>
<td>-59,574.03</td>
</tr>
<tr>
<td>Cash and cash equivalents at beginning of year</td>
<td>5,707,050.87</td>
<td>5,421,480.13</td>
</tr>
<tr>
<td><strong>Cash and cash equivalents at end of year</strong></td>
<td><strong>5,421,480.13</strong></td>
<td><strong>5,361,906.10</strong></td>
</tr>
</tbody>
</table>