

# GALACTIC SUITE GROUP

Get Your Private Space

## Outreach

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## 1. Mission

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GALACTIC SUITE GROUP is a Barcelona based group of companies, which create opportunities around technology and people to promote a private access to Space. Founded in 2007 by Xavier Claramunt, the group creates and promotes cutting-edge concepts to foster alliances and help creating relationships among companies and research centres.

GALACTIC SUITE GROUP is actively involved in the development of a change of paradigm in the space business, where public actors and traditional large contractors will share scenario with smaller private entrepreneurial initiatives, including (1) private suborbital flights with reusable spacecrafts able to fly up to 100km and reenter in controlled gliding flights, and staying some minutes in microgravity; (2) private spaceports developed by private owners as first stones for complex real state and commercial operations; (3) private manned orbital stations to be used as space hotels or scientific private platforms; (4) private communications, global positioning systems, remote sensing satellites, provided with reduced sized satellites; (5) private access to the Moon or other bodies for mining, responsible exploitation of planetary resources, etc.

## 2. Vision

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GALACTIC SUITE GROUP firmly believes that space contributes significantly to economic growth and to global welfare in a variety of ways. It helps developing a range of fundamental technologies cutting across current industry sectors that will generate significant additional employment. From health and medicine to leisure and entertainment, space generates new business opportunities and new technologies that will continue to revolutionize the way we live and work.

GALACTIC SUITE GROUP envisages the emerging space tourism industry as a major driver for this change of paradigm in the space economy. To create a complete driving project, the company designs, develops, and promotes of a fully integrated space-based tourism concept focused on giving people an extremely thrilling, transcendental experience: the GALACTIC SUITE EXPERIENCE will combine elements of training, leisure and entertainment, both on Earth and in orbit.

## 3. FEEL

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The Foundation for Space and Lunar Exploration (FEEL) is a private non-profit foundation created to support the technological and industrial development in the Catalan and Spanish aerospace sector.

Through its Plans and Programs, the FEEL provides technological, scientific, legal, cultural, and educational services, such as (1) support to the participation of the Barcelona Moon Team, the only official team in the Google Lunar X PRIZE, in all the aspects of the competition, both technical, social and educational; (2) promotion of infrastructures for habitation of human in space; (3) promote of

technology transfer from the aerospace industry to other industrial sectors; (4) promote, in accordance with the reality of the sector, a widening involvement of private companies in the access to space; (5) promote the development of specific legislation on space with the definition of a specific authority to be responsible for the organization of space activities both public and private; and (6) promote the organization and production of exhibitions, meetings, conferences, seminars as well as graphic and audiovisual material related to these objectives.

FEEL drives and gives support to the official participation of the Barcelona Moon Team in the Google Lunar X PRIZE (GLXP), in all the areas of the competition, both technical and those social and educational of the event.

## 4. UPC Chair

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GALACTIC SUITE GROUP and the Technical University of Catalonia (UPC) have created the GALACTIC SUITE CHAIR as a specific instrument of particular intensity and duration, to formalize the collaboration between the company and the university in activities related to R+D and transfer knowledge.

The Chair is directed by Antonio Benito Martinez, head of the Department of Systems Engineering, Automation and Industrial Informatics (ESAI) and is co-directed by the UPC Emeritus Professor Josep Amat, and Xavier Claramunt and Marc Zaballa as part of Galactic Suite.

The Chair will have an initial term of three years and develop a general program of activities organized around lines of science and engineering and robotics systems to support the team Barcelona Team Moon, among other projects.

The Chair will also develop outreach work and organize joint activities related to the promotion of research and technological development, such as calls for scientists, engineers and students from around the world to conduct experiments and robots that will be chosen and get a flight opportunity at the Barcelona Moon Team initiative.

## 5. Companies

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The GALACTIC SUITE Group operates as a platform in which innovative concepts and start-ups under the defined conceptual strategy around technology and people are born and developed. New filial companies are then established, such as GALACTIC SUITE Design, Galactic Suite Spaceresort, or Galactic Suite Moonrace.

### 5.1. Galactic Suite Design

GALACTIC SUITE DESIGN is a filial company of the GALACTIC SUITE GROUP that develops conceptualisation, design and marketing in the aerospace industry. The company supports other companies to renew their product strategies in fields such as individual and collective transport,

conceptualization of new spaces and times in air, overland vehicles and railway transportation, and aerospace interior design.

GALACTIC SUITE DESIGN has developed a chain of habitats organised at different altitudes and depths above and below the earth's surface. The projects include (1) GS MARS, a conceptual design for a future colony on the Red Planet; (2) GS NEARSPACE, the development of a reusable aircraft on an helium balloon to reach an altitude of 40km; (3) GS DIRIGIBLE, the conceptual design for small inflatable aircraft rooms; (4) GS HIMALAYAS, the concept design for a capsule hotel on the Himalayas mountain range; or (5) GS SEASUITE, a hotel under the sea, at a depth of around 50 metres.

GALACTIC SUITE DESIGN also created GALACTIC SUITE TRANSFER to bridge between space and earth applications, and to apply concepts or technologies used on the aerospace experience to new situations on the every day life. GALACTIC SUITE TRANSFER is one more step in the direction of socializing space, with the vision of bringing space in people's heart. GALACTIC SUITE TRANSFER deeply thinks that the awareness of space is going to change human life on Earth.

To focus in the socialization of space, GALACTIC SUITE DESIGN also created GALACTIC SUITE FOR FUN, an initiative to explore the entertaining possibilities of space through the social media, and to pave the path for the Homo Spaciens, the individual engaged for and to social space.

## 5.2 Galactic Suite Spaceresort

GALACTIC SUITE SPACERESORT designs and promotes the first space hotel, the orbital segment of the GALACTIC SUITE EXPERIENCE, a mini space station orbiting in low earth orbit (LEO) dedicated to accommodate private passengers, the space tourists, and conceived as a non-permanently occupied shelter for tourists and crew.

The station is designed to maximize the customer experience, to rediscover his body in weightlessness inside the customized interiors that maximize the empty volume and provide the largest possible views to space, offering 16 sunsets and sunshines a day due to the high speed of the module that completes an Earth orbit in 90 minutes.

After fruitful discussions with EADS Astrium the architecture of the station is defined using modified ATV modules, which would sustain the space tourists for short stays of 4 to 6 days. A baseline mission sets a single module orbiting as a free flyer, considered as the first brick of an autonomous orbital station. Initially the station is set for two passengers and one crew using the Soyuz S/C as access vehicle. The number of space tourists and crew members will increase depending on future availability of RLV with larger capacity; and then the space hotel will also expand in a T-shape cluster up to four modules.

The company's ultimate goal is to develop the world's first space hotel chain with modular space habitats and make space tourism accessible to the public.

### 5.3 Galactic Suite Moonrace

GALACTIC SUITE Moonrace is a filial company of the GALACTIC SUITE Group, developing space missions with the philosophy of the low cost, reducing budgets and implementation times without jeopardizing the security.

GALACTIC SUITE Moonrace pursues gathering extensive know-how to develop future commercial missions both for private or governmental agencies. The company also focuses on future markets in the sale of services to private sector including images for media and scientific data for future commercial uses, as well as secondary payloads such as pharmaceutical experiments, etc..

The first mission commissioned to the company is the leadership of the Barcelona Moon Team, the only Spanish team at the Google Lunar X PRIZE competition. This is an unprecedented international competition that challenges and inspires engineers and entrepreneurs from around the world to develop low-cost methods of robotic space exploration.

The Barcelona Moon Team is a multidisciplinary joint venture bringing together entrepreneurial, industrial and academic capabilities including ALTRAN, GMV, EADS CASA ESPACIO, THALES ALENIA ESPACIO SPAIN, NATIONAL INSTITUTE OF AEROSPACE TECHNOLOGY, TECHNICAL UNIVERSITY OF CATALONIA, etc. The goal of this first mission is to bring a rover to the Moon with private funding.

### 5.4 Galactic Suite Easy Space

GALACTIC SUITE EASY SPACE is a filial company of the GALACTIC SUITE GROUP, aiming at being an international recognized operator in the construction and transportation of small and medium payloads to space with a low-cost philosophy.

GALACTIC SUITE EASY SPACE has developed strategical agreements with China Great Wall Industry Corporation to commercialize its launch vehicles in Europe, reducing the costs associated with the missions to LEO and GEO.

The company is also proposing initiatives to lead the construction and launch of active debris removal missions, one of the biggest challenges for current and future space missions, specially in LEO.

## 6. Consortium

To support the company in its different projects, it is set the following industrial consortium of preferred partners with China Great Wall Industry Corporation (launch service technology partner in China), Altran (as technology and business development partner in their offices both in Spain and China) , GMV, EADS Astrium, EADS CASA Espacio, Thales Alenia Space and the support of the National Institute of Aerospace Technology – INTA, for the design and construction of the products. The consortium also includes the necessary legal and insurance world leading partners.

GALACTIC SUITE altran



### 2.1. EADS Astrium

Astrium is a global space industry leader, with world-class expertise and extensive prime contractorship experience across all sectors of the space business: in Europe for the space system and space services; it covers almost all domain such as launchers, satellites, manned orbital systems and services. Astrium has more than 12000 employees in several sites in Europe mainly in France, Germany and United Kingdom but also in Spain and Netherlands.

### 2.2. China Great Wall Industry Corporation

Established in 1980, China Great Wall Industry Corporation (CGWIC) is the sole commercial organization authorized by the Chinese government to provide satellites, commercial launch services and to carry out international space cooperation.

CGWIC is devoted to the internationalized development of China's space industry by providing comprehensive solutions for commercial launch services, satellite export, satellite ground tracking and control station construction, satellite applications, project financing, project insurance and technical training, etc.

### 2.3. Altran Technologies

Altran Technologies is a multinational company for technological and innovation consultancy, with more than 17.000 advisors all around the world. It has been part of many European space projects such as the Ariane 5 launcher, the International Space Station (ISS), the Automated Transfer Module (ATV), large communication satellites and science projects such as the Mars and Venus Express probes, the Herschel-Planck space telescope or the SMOS-MIRAS mission.

Altran is an strategic partner of the EADS group for the engineering and R+D development of their products. Within the Altran Group, its Spanish filial company has an special relevance with close to 2000 advisors and a growing participation in the space sector.

### 2.4. GMV

GMV is a privately owned technological enterprise group with an international presence. The group employs more than 1,000 staff, most of whom work in the Space business (about 550) and have outstanding experience and capabilities, including consultancy, system engineering, software development and turn-key systems integration, characterized by the common denominator of innovation for the areas of global navigation satellite systems and applications, flight dynamics, satellite control centres, mission analysis, mission planning and scheduling, payload data segments, science operations centres, user segments and space segment, satellite communications, simulation, systems engineering and GNC, and on-board and embedded software.

### 2.5. EADS CASA ESPACIO

EADS Casa Espacio is a company part of Astrium. Located in Madrid, it is composed of more than 400 qualified workers dedicated for more than 30 years to Space Systems, including satellites, platforms, payloads and launchers. The Company has special strength in System Engineering tasks and Assembly, Integration and Verification (AIV) activities for the different payloads and platforms. It is also a reference point for thermal control, mechanisms and structure subsystems design and for antennas design and manufacturing. It has been Prime Contractor of several projects (Minisat, PAZ, INGENIO, SMOS and Spainsat payloads among others) having as customers ESA, HISPASAT, Arianespace, INTA and NASA and standing out for the quality of the results provided.

### 2.6. THALES ALENIA SPACE España

Thales Alenia Space España is a Spanish company devoted to the development of space systems and equipment for telecommunications, Earth observation, scientific research, exploration of the universe, navigation and space vehicles and infrastructure for commercial and institutional programs both civilian and military. The company is a global leader in telecommunication systems and repeaters and Telemetry, Tracking and Command (TTC) data communications equipment in S-band for satellites and spacecraft, with a share of 50% of the world accessible market. Thales Alenia Space España has been working for over 20 years in scientific and Earth observation programmes, providing communications equipment and data processing and mechanism control units for space agencies around the world. It also develops RF and optical sensors for formation flying with application in future scientific and exploration missions.

## 2.7. National Institute for Aerospace Technology (INTA)

INTA is a public research organization specialized in aerospace research and technology development. Its main functions include: acquisition, maintenance and continuous improvement of all those technologies for aerospace application; the realization of all kinds of tests to verify and certify materials, components, equipment, subsystems and application systems in aerospace; the technical advice and services to institutions and government agencies as well as industrial and technology companies; act as a technology centre of the Ministry of Defense.

## 2.8. Centro de Tecnología Aeroespacial (CTAE)

CTAE is a not-for-profit private foundation that provides technology services to local industry, while also participating in national level and European research programs. It comprises a multidisciplinary group of specialists who work directly for private clients, or as members of integrated project teams with clients including the European Space Agency, the Galileo Supervisory Authority, the regional government of Catalonia, the national government of Spain, and the European Commission, in addition to many industrial customers. Recently it has integrated into the larger ASCAMM technology centre.

## 2.9. Barcelona Tech – Technical University of Catalonia (UPC)

The UPC is a public institution of higher education and research, specializing in the fields of architecture and engineering sciences and involved in technology development. UPC develops quality research, and its high level of technology transfer to society generates knowledge, research, innovation and technological advancement.

To assist the project the University has created a chair with participation of several departments, including the Engineering Department of Automatic Control and Industrial Informatics (ESAI), the Research Centre in Nanoengineering (Crne), or the Department of Applied Mathematics

## 2.10. Stardust Consulting

Stardust Consulting is a legal advisory firm specialized in space. It advises both private companies and public institutions, including the issue of space tourism. Its members are part of the International Institute of Space Law (IISL) and the European Centre for Space Law (ECSL) of the ESA. Its activities aim at developing the Spanish space sector regulation because, unlike other countries around Spain, there is no Spanish Space Law regulating space activity and encouraging its access to the private sector

## 2.11. International Space Brokers

International Space Brokers (ISB), part of Aon Risk Solutions, is the world's only insurance broker dedicated exclusively to the space industry. We harness our insurance and space industry expertise to make complex situations simple, developing innovative responses that bring value to our clients.

The ISB team brings together experts in space engineering, contract negotiation, finance, risk management and insurance. In less than two decades we have become one of the most respected names in space insurance, with a client list that includes eight of the world's top 20 satellite companies. We currently place over 35% of the world's space insurance premium.

## Contact

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