

GALACTIC SUITE

Galactic Suite Limited

Press Brochure
2010

GALACTIC SUITE

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GALACTIC SUITE

The company

Galactic Suite Limited is one of the leading companies in the emerging space tourism industry. Founded in Barcelona in 2007, Galactic Suite creates and develops cutting-edge concepts to improve the orbital tourism experience. As of today, the company is involved in the design, development, and promotion of the Galactic Suite Experience.

The company is developing the world's first space hotel chain with modular space habitats, small bioinspired space stations orbiting around the Earth designed to accommodate space tourists. The company's ultimate goal is to be the world's largest chain of space resorts and to make space tourism accessible to the public.

- **Xavier Claramunt.**

Chairman

As an architect for over 20 years he and his team have produced astonishingly creative concepts which have provided an element of surprise in each new project. Constant innovation continues to be the driving force behind his firm's development. Among his projects are the Chic & Basic hotels in Barcelona, awarded with the Contract World 2007 architecture and design prize. Mr. Claramunt is also known as a pioneer in the field of outer space architecture.

Master of Architecture, The Barcelona School of Advanced Architecture (1993).

The company developed its project by bringing together a multidisciplinary team of engineers, architects, industrial designers, economists and lawyers, who worked in partnership for two years to make the vision a reality:

- **EQUIP XAVIER CLARAMUNT** is a pro-active, Barcelona-based, multidisciplinary group of architects, designers and specialists in building design who work towards revolutionary, innovative, advanced architectural concepts.
- **GBT** is a strategic advisory firm, dedicated to formulating strategies and developing new business initiatives. From their headquarters in Barcelona, they assist start-up ventures in addressing innovative business models.
- **CTAE** (Aerospace Research and Technology Centre) is a private, *non-profit* foundation which aims to provide technology services to the aerospace sector. It is a multidisciplinary group of specialists, who work directly for private clients, or as members of integrated teams at

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both the planning and implementation stages of space projects. It is based in Viladecans near Barcelona.

- **4FRONTIERS CORPORATION** is an emerging American space commerce company with unique expertise in space facility design and related technologies. The company has access to a broad array of technical and social science specialists that strive for unparalleled realism in modelling the new space frontier.
- **IRS STUTTGART** is a Stuttgart University Department specialized in orbital mechanics.
- **ADS** is a Swiss engineering group providing consultancy services on sustainability at all levels of the architecture process.

The Company has brought together world wide aerospace specialists to constitute the Galactic Suite Advisory Board, which holds its meetings regularly in the city of Barcelona.

Mr. Accensi, Antoni

He has been with ESA since 1967 managing several space projects such as Biorrack and has also been involved in the Extravehicular Activities (EVA) space suit system design and development.

Prof. Bedini, Daniele

Space architect, member of ADI. He serves as consultant to the European Space Agency (ESA) in developing space habitats, and is assistant professor of space architecture at the International Space University (ISU).

Mr. Collins, Patrick

He is the co-founder of Space Future Consulting, and an exceptionally well known and respected authority on space economics, space tourism, reusable launch vehicles, and space solar power.

Mr. de Dalmau, Juan

He is a staff member of the European Space Agency (ESA) since 1985, and is currently seconded to the Aerospace Research and Technology Centre (CTAE) to serve as the Centre's Director.

Mr. Harillo, Rafael

He is a member of the Spanish Centre for Space Law (CEDE), and the Spanish representative of the European Centre for Space Law

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(ECSL). He is also Secretary of various Executive Committees of space associations.

Mr. Homnick, Mark

He is the CEO of 4Frontiers Corporation, an emerging space commerce company, and program manager for the Mars settlement Generation II design study. He has directly managed \$1 billion in capital projects.

Prof. Martínez Abascal, Eduardo

He is Professor in the Financial Management Department in IESE Business School. He has also been a visiting scholar in the Sloan School of Management at the Massachusetts Institute of Technology (MIT).

Prof. Peeters, Walter

Professor of space business and management at the International Space University (ISU). He has been with ESA since 1983 involved in several space initiatives such as EuroMir and former head of EAC.

Prof. Tolyarenko, Nikolai

Director, Masters Programs at the International Space University (ISU). PhD in Orbital Mechanics, and his research interests are design methods for space transportation systems and orbital space stations.

Galactic Suite Limited believes that space tourism will contribute significantly to economic growth and hence global welfare, as well as to promote peace through shared international activities in space.

This can be achieved in a variety of ways. For example, a set of fundamental technologies that cuts across all industries/sectors could be leveraged, and benefits derived from the employment they create. From health and medicine to leisure and entertainment, space tourism will bring new business opportunities and new technologies that will be revolutionizing the way we live and work.

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Galactic Suite Limited figures.

THE COMPANY		
Date of establishment	2007	
Employees	53	
Invoicing	1.5 M euros	
THE EXPERIENCE		
Ticket price	3 M euros	
Pre-flight training	16 weeks	
Flight duration	4-6 days	
Post-flight recovery	2 weeks	
Pre-reservations (as 31/12/2008)	38	
GALACTIC SUITE SPACEPORT		
Gross surface	8000 m2	
Investment	150 M euros	
GALACTIC SUITE SPACESHIP		
Number of passenger	4 pass.+ 2 crew	
Investment	1000 M euros	
GALACTIC SUITE SPACERESORT		
Number of modules	5	
Investment	1000 M euros	

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The Galactic Suite Experience

The company has positioned itself in the emerging space tourism industry by launching a fully integrated space-based tourism concept focused on giving people an extremely thrilling, transcendental experience - the Galactic Suite Experience. The package will combine elements of training, leisure and entertainment, both on Earth and in orbit. The experience has been designed for three different types of space tourists:

- The *space tourist* who will go through the full experience, including training and the orbital trip.
- Members of the *space tourist's family* who may accompany the *space tourist* to the launch as well as in leisure activities.
- The *occasional visitor* who will be able to visit the leisure installations for short periods of time, but will have no contact with *space tourists* and their families.

The whole experience is divided into five segments:

PRE-LAUNCH ACTIVITIES

This segment includes all the operations to bring *space tourists* and their *families* from their homes to the Galactic Suite Space Port's specially selected site. The Galactic Suite medical team has designed a 16-week physical training course prior to the flight. Space tourists will be instructed in the theory and practice of different rescue techniques in preparation for potential emergency situations. They will also experience life-size Galactic Suite Space Resort models and simulators. Theoretical tuition will include basics in space environment physics, chemistry and physiology. To achieve a fully responsible approach to space travel, there will be a philosophy course which will include an overview of ancient beliefs and modern theories about space, its origins and destiny. *Space tourists* and their relatives will be accommodated in suites with all the comforts required for a perfect stay on an idyllic island. As they relax in the natural landscape, they will enjoy a whole range of activities such as visits to the beach, canoeing, diving, golf and sightseeing

LAUNCH AND TRANSFER TO ORBIT

Space tourists will be launched into space aboard the Galactic Suite Spacecraft, which will then travel to the space resort. The flight will be one of the main highlights of the experience. Aboard the craft, *space tourists* will reach a speed of 28,000 km/h in ten minutes after rocket ignition. With adrenaline flowing and tension building up, this will be one of the most exciting moments in a *space tourist's* life.

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A STAY IN ORBIT

This segment is the climax to the whole experience, the stay aboard the Galactic Suite Space Resort. The modules have been specially developed to comfortably accommodate *space tourists* in space while they enjoy the experience of viewing the Earth and stars. From such a privileged observatory, *they* will watch fifteen sunrises and sunsets each day while completing an orbit around the Earth every 80 minutes.

The Galactic Suite Space Resort has been designed to provide space tourists with the largest protected private enclosure in space which will enable them to enjoy floating around in a state of weightlessness. The *space tourist* will also be able to take part in different team activities and undergo the unique experience of a space bath while the crew take care of their every need to ensure their stay is most pleasant.

RETURN TO EARTH

Waking up on the last day in the Galactic Suite Space Resort, space tourists will feel downcast, but there will still be a few sunrises and sunsets to watch before leaving the hotel. Space tourists will take their last pictures of the Earth and stars before packing their personal belongings and loading everything back onto the Galactic Suite Spacecraft, which will have been docked at the hotel during the whole stay. After the systems are turned off, the craft will undock and the hotel will be left ready to receive the next group of lucky *space tourists*.

POST-FLIGHT ACTIVITIES

Space tourists will need about two weeks for post-flight recovery on the Galactic Suite island. Special physical and psychological rest periods will enable them to re-adjust to everyday living on Earth. At the end of such a long journey of almost five months, Galactic Suite will then take *space tourists* back to their homes wherever they may be on Earth. No matter where they may live, nowhere will be as high up as the Space Resort they have just left.

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The Galactic Suite Space Resort

The general concept for the Galactic Suite Space Resort is that of a space refuge without permanent human presence on board orbiting at an altitude of 450km. It will be occupied every one or two weeks for a length of four or six days. Every time the Galactic Suite spacecraft docks at the hotel, it will bring just the passengers and a minimal amount of supplies. This is a similar concept to a mountain refuge or hut - when passengers arrive, they will turn the systems on, use the refuge for a few days, and then turn everything off again before leaving. With no human presence on board, systems will run at a minimum.

The Space Resort's standard configuration will consist of three living modules, one recreational module and one service module.

LIVING MODULE

The living module is a personal space for resting, relaxing, reading, stargazing and other activities carried out as an individual or as a couple. As only a fraction of the life support systems will be housed in these modules, the main part of the enclosed space will be open to let the participant float around and use the personal space as they wish.

RECREATIONAL MODULE

The recreational module is a leisure module where the participants carry out both individual and group activities related to relaxation and training. Although short-term stays in orbit do not require passengers to do exercise, Galactic Suite will offer space tourists the chance to engage in sport so they can experience their body under microgravity conditions. Such exercise will include space cycling, treadmills, resistance exercise equipment. The sick bay and toilet are also located in this module along with the "Space Spa", a recreational water activity inside a bubble two meters in diameter.

SERVICE MODULE

The service module houses all the docking ports to the recreational module, living modules and the spacecraft. Group activities such as meals and group games take place here along with group transmissions to Earth. The majority of the required life support systems are also to be found in this module.

The interior of the Galactic Suite Space Resort modules has been designed in such a way that it maximizes available space by concealing necessary equipment inside a curved section of a wall. This section reminds us of a hilly Tuscan landscape covered in the most glamorous, sensual materials suitable for use in space. The modules will each have a large window, *The Eye*, facing the Earth and the rest of the Universe. The whole concept will inspire the space tourist to gaze at the Earth and stars while he or she discovers the uniqueness of our world and existence.

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The Galactic Suite Space Port

The Galactic Suite Space Port comprises all the infrastructures needed for Earth-bound activities related to the space tourist experience. Situated on a tropical island, it meets all the requirements for a suitable location from which to launch spacecraft into the Galactic Suite Space Resort's chosen orbit. It is made up of different operational areas spread over a total surface of 100,000m², with investment in facilities totaling 150 million euros in the first phase.

TECHNICAL AREA

The technical area consists of all the facilities required for take-off, landing and maintenance of Galactic Suite Spacecraft and private jets, including the control buildings. There is also a large harbour for deliveries of technical equipment and fuel

The buildings take their inspiration from the outline of the existing landscape, stretching out into radiating beams which blend into the surrounding terrain. They are designed as luminous structures which allow the spacecraft to emerge from their interior on the Maglev acceleration module while the buildings open up in layers, enabling the interior to be bathed in natural light. They will cover a built-up surface area of 28,000m².

TRAINING AREA

This holds all the training facilities for *space tourists* during the required 16-week training period. It will include all necessary installations such as a human centrifuge, swimming-pool, gyms, conference halls, library and infirmary as well as the dining quarters and cafeterias, which are also used by the technical staff.

These buildings are situated alongside the technical area and are similarly shaped to the technical buildings, but on higher ground. Their total surface area will be around 12,000m².

RECREATIONAL AREA

This area is proposed as a facility for visitors on one-day excursions from nearby locations to view operations in the technical and training areas. These facilities will also provide opportunities for the space tourists's families to enjoy educational and recreational activities related to space as well as offer a magnificent viewing platform overlooking the launchway and landing area.

Situated at the top of a cliff on the southern side of the Galactic Suite island, the buildings are conceived as large skylights that direct light into their interior while inviting visitors to view the outside. They house museums, simulators, shops,

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restaurants, cafeterias and a viewing platform overlooking the launchway. The area will cover a total surface of 20,000m².

ACCOMMODATION AREA

This will comprise a luxurious hotel resort surrounded by breathtaking natural landscape, which will serve to accommodate *space tourists* and their families during their stay on the island. The main part of the island will remain undeveloped in order to preserve the native flora and fauna. The resort will include a total of 200 rooms divided between different types of floating suites along the coastline and rooms hanging over nearby cliffs. The central building will hold a conference centre, restaurants, cafeterias, a spa and wellness centre and facilities for sports such as golf, tennis and canoeing.

The buildings find their inspiration in large flowerpots, some of them half-buried, covered by ground and water to improve the building's passive adaptation to the climate. The accommodation area will have a total surface of 40,000m².

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The Galactic Suite Spaceship

Many projects are presently underway to develop private spaceflight vehicles. Galactic Suite has decided to monitor the progress of vehicle developers and to negotiate directly with suitable candidates who could provide access to the Galactic Suite Space Resort. Access to the hotel is currently provided by Soyuz launches from Baikonour, in Russia.

Several designs have been produced by Galactic Suite which show a horizontal take-off and landing vehicle, this type being more suitable than other designs for providing comfort and enjoyment for the space tourist. The Galactic Suite Spacecraft will accommodate two crew members and 4 passengers. Take-off will be assisted by Maglev launch technology which will accelerate the craft on a module suspended in the air above a track. The module will be propelled forward for about 3km by repulsive and attractive magnetic forces. When released from the Maglev launchway, the craft will have reached a speed close to Mach 1 and will switch on a first rocket that will lift the vehicle to about 100km. After jettisoning the first section, a second rocket will accelerate the vehicle to an orbital speed of about 25,000km/h. It will take less than two days to reach the Galactic Suite Space Resort and perform docking manoeuvres.

The spacecraft interior has been carefully designed to hold the two crew with the four passengers behind. Passenger seating is reconfigurable - it faces forward during the launch, but will be then rotated or retracted to provide more space to experience weightlessness and observe the Earth and stars through the windows.

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A Sustainable Project

One aim of the whole experience is to help people realise the importance of preserving our planet. This is why the project on Earth is being planned to maximise its sustainability and maintain environmental balance. The Galactic Suite Space Port and island facilities are intended as an architectural case study in environmentally aware design.

The Galactic Suite Spaceport is located on an island, where all its needs will be controlled within a closed cycle with capacity for production, control and waste management.

It was decided that the planned facilities should guarantee a high degree of respect towards the environment while providing space tourists with the high standard of comfort they deserve. The main premise of the sustainability study is therefore to limit energy and material requirements without detracting from the service offered to customers.

The project will achieve total sustainability by focusing on the water cycle, the matter cycle, energy flows, energy generation, transportation and management of urban processes.

As regards the launch systems, the Galactic Suite Space Port will also significantly improve the sustainability of space launches by using a Maglev system to accelerate the craft using electromagnetic forces along a Maglev launchway. This new technology consists of an acceleration module suspended above a track. The module is then propelled forward using repulsive and attractive magnetic forces. After reaching approximately the speed of sound, the spacecraft will uncouple from the Maglev acceleration module. Using its rocket engine, it will then climb into the sky until it reaches orbit.

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FAQ

How was the Galactic Suite Project born?

Galactic Suite is a multidisciplinary company where architects, engineers and industrial designers work together in a team. Part of the company, the LAB, largely focuses on researching advanced design concepts. The Galactic Suite Project was born there and then came along investors who considered the project feasible.

Have you had any contact with space engineers at NASA or ESA regarding the development of the Galactic Suite Project?

Galactic Suite is an exclusively private venture which was set up to build a hotel in space. As it is entirely funded by private investment, government agencies such as ESA or NASA have taken no direct part in it. However, many of the people working on Galactic Suite have been involved with such agencies and several enterprises which are providing services to Galactic Suite are regular service providers to these agencies.

What stage is the project currently at?

The project has passed several major milestones and is well on its way to becoming a reality in the near future. Plans for building the Galactic Suite Space Resort are at an advanced stage and the company has set up the necessary partnerships to achieve it by 2012.

Why did you chose a tropical island as the location for the training and launch area? What is special about this particular area of the planet? What is the island called?

A tropical island has been chosen due to the advantages it brings with regard to technical considerations and our whole concept. Firstly, the lush vegetation in the equatorial regions allows us to get extremely close to nature. More than anything, however, being close to the equator enables us to take advantage of the Earth's rotation for launches. The name and exact location of the island cannot yet be revealed.

What kind of persons are NOT eligible to travel to the Galactic Suite Spae Resort?

According to Professor Walter Peeters, a consultant advising Galactic Suite, a difference should be made between two categories when it comes to defining medical criteria: The first one covers the so-called "select-out criteria", or "causes for disqualification", which are defined as 'any medical condition or treatment regime which could endanger the health of the passenger, fellow passenger, or crew; compromise safety in-flight or on the ground or pose a threat to completion of the flight'. Such criteria will, theoretically, prevent a person from taking part in space flights. The second category includes

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"exceptions or waivers", which provides for a number of circumstances under which a theoretical prohibiting factor could be offset by a waiver.

What kind of training will the passengers undergo?

The Galactic Suite space tourists will receive specially designed training in preparation for their trip of a lifetime. It will consist of 16 weeks physical training to ensure their bodies are able to withstand acceleration forces and microgravity conditions. Training will also cover special rescue procedures in case passengers are faced with emergency situations. The Galactic Suite space tourist will also receive instruction on physiology, physics and chemistry in space. They will take a philosophical look at the way ancient civilizations regarded space, together with the latest theories on the origins of space and its future.

What will the space tourist's diet be like?

We cannot reveal what kind of meals they will eat yet. However, the project has developed new concepts in space cuisine, as it is not just about bringing Earth food into space to eat it there, but also about developing new ways of eating. Eating in the Galactic Suite will become a game, playing not only with the food but also its packaging.

What kind of experiments will the space tourist carry out?

Galactic Suite is developing a programme to set up a series of experiments for its initial flights in 2012. The aim is to offer space tourists original activities which they can participate in while cooperating with universities by carrying out experiments under microgravity conditions. Some of the items in this programme have already been decided on and include cooking experiments, space crystal growth, organic growth in space and Earth observation.

Are there any national or international regulations regarding putting a hotel into space? What do they consist of?

International space regulations are currently in their infancy, but a few countries such as the US have already introduced such laws. We will definitely see changes with regard to legislation over the next few years.

Which of the three segments of the experience is the most challenging one?

There is no doubt that the spacecraft is the most challenging obstacle yet to be overcome. Although access to the hotel is currently provided by the Russian Soyuz spacecraft, the ultimate goal of the Galactic Suite is to have a reusable craft to reduce launching costs.

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