教育部深空探测联合研究中心

CENTER OF SPACE EXPLORATION, MINISTRY OF EDUCATION

COSE

中心概况 | 组织机构 | 公告公示 | 新闻资讯 | 国际交流 | 学术交流 | 科普

行业动态

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SPACELAND

A new perspective for international cooperation:

SPACELAND公司利用飞行模拟火星重力开展生物医学研究

SpaceLand & COSE initiative for novel Mars Habitats and first Mars-gravity Research and Educational Flights open to STEM users and public

United Nations/China Global Partnership Workshop on Space Exploration and Innovation
Eng. Doct. Carlo Viberti, SpaceLand President – Haikou (China) 22 Nov. 22

SpaceLand is the world's first private 0-G research agency: from 2005 prepares people, hardware, experiments for low-G biomed, techno-innovation & science research flights <u>open to all</u>

Ethical science and eco-sustainable technology innovation: bi-partizan values *showcased* by SpaceLand collaboration with USA entities and with China's Center "COSE"

SPACELAND

Records *(left)* and Spaceport study license

Record-breaking crew-members **selected among the general public, trained and brought to fly by SpaceLand team led by former ESA-zero-gravity test engineer and Space Station MIR European Technology Experiments Coordinator Doct. Carlo Viberti for *biomedicine, technology and/or bioengineering* experiments commissioned by Nobel-Prize-winner led groups, taking off from the *NASA Space Shuttle L.F.***
(Kennedy Space Center, Cape Canaveral, Florida)

World's youngest kid as research test subject in zero-gravity: 11 yrs old

11-year-old Kim Marco Viberti flew in 2008 as test subject for neurobiological sampling experiments related to studies on neuropathologies such as the Alzheimer's syndrom, commissioned to SpaceLand by the European Brain Research Institute led by dr. Rita **Levi Montalcini (Nobel Prize winner),** Italian State Health Institute (ISS), Italian State Research Center (CNR) and University of Milan (I); results reported in scientific paper issued for the European Low Gravity Research Association's Congress in Bonn (D).

Left : free-flying break between sampling, right: interview by Italian State TV "TG1" prime news report

World's oldest man in zero-gravity: 93 yrs old

93 year old man, flying as test subject for bioengineering experiments commissioned by the **Don Gnocchi Science Foundation's Bioengineering Center** of Milan (image from **CNN TV news report**)

Images show footages from CNN TV reports

World's 1st disabled for technology tests in zero-g

100% disabled woman as test operator for hand-free ICT control systems commissioned by **AIDA Modena ("Informatic tools for disabled and elderly")**

Footage showing Elma operating at the SpaceLand technology payload rack, Broadcasted by the Italian State TV "RAI2" and Mediaset TG 4 news reports

SpaceLand / Carlo Viberti have been awarded, inter alia, the following prizes:
. European "EOS" Award for Innovation Policy, by the European Commission
. Prize *"Torre di Castruccio"* - Gold Medal by the President of the Republic of Italy
. Prize *"Etica ed Impresa"* by Italy's Federmanagement and AssoQuadri associations
. Italian Aeronautics and Astronautics Association Award
. Finalist rank for Italy's ConfCommercio *"Innovation Prize"*

First non-US citizen taking off from NASA Space Shuttle L.F.

SpaceLand Flight Mission Commander **Eng. Doct. Carlo Viberti** is the **1st non-U.S. citizen** authorized to take off for microgravity research flights from the NASA Kennedy Space Cente
He has been formally proposed by the *Head of the Italian Space Agency* to fly as **1st Astronaut-Engineer** on the ***first sub-orbital research flight campaigns.***
The program has been presented with guest lectures in Oxford at the 1st UK Space Agency's workshop on microgravity and the 1st Space Commerce Summit in 2013 in London with NASA

Left: footage from RAI and Swiss State TV ; right: Viberti with Space Shuttle pilot Rick Searfoss,

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UNITED STATES DEPARTMENT OF COMMERCE
BUREAU OF INDUSTRY AND SECURITY
WASHINGTON, D.C. 20230

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Applicant Reference Number: S180052

APPLICANT: S388709 Covered by NDA

PURCHASER:

SPACELAND

ULTIMATE CONSIGNEE:
SpaceLand Africa Ltd.
Level 3 Juris Tax
Ebene House Hotel Av. 33
Ebene
Mauritius

INTERMEDIATE CONSIGNEE:

APPROVED END USER(S):

SPACELAND

SpaceLand Africa Ltd.
Level 3 Juris Tax
Ebene House Hotel Av. 33
Ebene,
Mauritius

SpaceLand Italia S.r.l.
Via Saorgio 168
Torino
Italy

COMMODITIES:

QTY	DESCRIPTION (May Include Product Name or Model Number)	ECCN	TOTAL PRICE
1	9E515.f: Technology required to study the possibility of designating Mauritius a[illegible] Landing Site to include environmental evaluation, trajectory reviews and runway compatibility including thermal analysis. See attached SOW	9E515	

SpaceLand Center & Spaceport programs for Europe & Africa shown at the U.N.-UAE High Level Forum on Space with renowned scientist as *Head of State* of Mauritius: next SpaceLand in China?

https://www.youtube.com/watch?v=2RthuFMcdfg

SpaceLand *demonstrated* Microgravity R&D in 2005 to first commercial 0-G operators

Poster of first marketing campaign for commercial micro-G flights in the USA back in the year 2005

Initial marketing campaign by first USA 0-G flight operators shows images of SpaceLand 0-G R&D demo, led by 1st private cosmonaut-engineer nominee Eng. Doct. Carlo Viberti (proposed in 2000 by U.S.-Russian group for MIR space station)

www.theguardian.com/science/2000/may/24/spaceexploration1

First “public” microgravity underwater training camps, R&D flights and activities co-funded in Italy, Belgium and at the NASA Kennedy Space Center by:

European Space Agency

Italian Government’s Research and Education Ministery

Italian Health Institute

European Brain Research Institute

460 members, incl. NASA, Musk’s SpaceX, Bezos’ Blue Origin, etc.

*(until 2010 led by winner of **Nobel Prize for Medicine** dr. Levi-Montalcini)*

and many other private and public entities

Other sponsors, endorsements and/or SpaceLand Congress participants

Images from some of the SpaceLand 0-G training camps

Multi-disciplinary engagement open to laypersons

Areas of business

Life Sciences, also for **human longevity extension**, e.g.:
Biomedicine and pharmaceutics
Nutritional sciences
Esobiology and Biology (including microbiologiy, zoology and botanics)

Material Sciences, e.g.:
Aerothermodynamics
Propulsion and Combustion sciences
Research and Development services for new composite and/or metal alloys
Novel ISRU-based reinforced concrete for Mars, Moon and new housing contruction methods

Technology innovation, e.g.:
Artificial Intelligence robotics in low-gravity for planetary exploration
Bioengineering
Satellite and space debris capture systems
Habitat systems (includes novel ISRU-based technologies for Mars, Moon and Earthly housing contruction technologies)
Data Management, Guidance & Navigation Control systems, Astronaut / Crew Support Systems, Environmental Control & Life Support Systems
Thermal Control System, Payload systems, Aero-launch systems

Education in Low-Gravity STEAMM (Science, Tech, Engineering, Arts, Math, Medicine), e.g.:
Congresses, conferences, key-note speeches
School or academia-related courses
Professional education and qualification
Exhibits and public outreach events
Edutaiment and Space-related entertainment, incl. support to media production,MICE events

Space Access services:
Incubator for international start-ups and SMEs
Microgravity and Low-gravity training and qualification for aerospace tourism
Program management and operations for zero-G or Low-gravity flights, abroad or domestic
Support to United Nations' research spaceflight operations
Support to spaceport qualification and to aero-launching of satellite-orbit-injection rockets and hypersonic point-to-point spaceplanes

Retail services, including "Space-Cult fashion" items (SpaceLand-branded clothing, merchandising, gadgets, etc.)

Italy is a valued partner with the U.S. on various space programs, including the ISS," said NASA Spaceport Development Manager Jim Ball. "We are pleased to host these experiments that take off from the Shuttle Landing Facility."

PRESS RELEASE

Italy's SPACELAND Teams Up With Zero Gravity Corporation to Fly Oldest Man Ever on Weightless Research Flight

https://spaceref.com/press-release/italys-spaceland-teams-up-with-zero-gravity-corporation-to-fly-oldest-man-ever-on-weightless-research-flight/

also vaccines & human longevity R&D

MENU CERCA LA STA… ABBONATI ACCEDI

L'ingegnere torinese: "La risposta al coronavirus potrebbe arrivare dall'assenza di gravità"

Carlo Viberti sta realizzando un centro SpaceLand alle Mauritius che diventerà leader nella ricerca del vaccino Covid-19

Carlo Viberti (a sinistra) con l'ex astronauta NASA Rick Searfoss

ANTONIO LO CAMPO

07 Aprile 2020 | Modificato il: 07 Aprile 2020 2 minuti di lettura

www.lastampa.it/torino/2020/04/07/news/l-ingegnere-torinese-la-risposta-al-coronavirus-potrebbe-arrivare-dall-assenza-di-gravita-1.38690067/

Invitational presentation at the NASA IAF *Idea Breakfast*
20 Sept. 2022 Paris
(IAC 2022)

First world-record from the NASA Space Shuttle L.F. in 2005: first 100% disabled person in microgravity

Venerdì 5 maggio 2006 — CRONACA AREZZO — LA NAZIONE VII

LA STORIA Una diversamente abile e il suo sogno che si avvera

Dalla sedia a rotelle allo spazio Elma Schippa presto in orbita

di Marco Picinotti

AREZZO — Chissà. Magari quando era più piccola, dopo aver visto quel capolavoro di «2001: Odissea nella spazio», si promise che un giorno anche lei sarebbe andata fin lassù. Fino a toccare le stelle. Elma Schippa. Una ragazza diversamente abile che il prossimo 15 agosto, entrerà in orbita. Sparata nello spazio da un Boeing 727. In alto, lontano, fino a raggiungere la gravità zero.

«Le bellezze del cortonese sono note da sempre sia in Italia che nel mondo. Grazie ad Elma, da oggi, saranno conosciute anche nello spazio!». E' con queste parole e con una chiara espressione d'orgoglio nel viso, che il sindaco di Cortona, Andrea Vignini, ha salutato la sua illustre concittadina.

Una veterana delle missioni spaziali. Già l'anno scorso, infatti, aveva intrapreso un volo ben poco simile ai canoni classici. Un volo a gravità zero, un volo che aiuterà tante persone. Già perché Elma, lassù c'è andata e ci tornerà, non per puro piacere, ma per qualcosa di molto più importante: «potrò dare, nel mio piccolo, un contributo per aiutare le persone con... alimentare quel sogn... no, porterà una pers... na a non avere più... ma». E lo ha detto... agli occhi e il sorr...

La missione è portata avanti dall'agenzia non governativa Spaceland

PROGETTO Elma Schippa, cortonese doc intraprenderà un volo spaziale per fini scientifici insieme all'agenzia Spaceland

come per evidenziare l'onore e la ... ne Toscana, che permetterà di fare ... ci, che ha un'intelligenza fuori dal...

sociali, nonché vice-presidente della Provincia, Mirella Ricci — Quella che senza pietismo vede come protagonisti del cambiamento proprio quelle persone un pò più sfortunate. A gravità zero — ha poi concluso Ricci — tutti si possono muovere allo stesso modo. Elma resta in piedi come tutti gli altri».

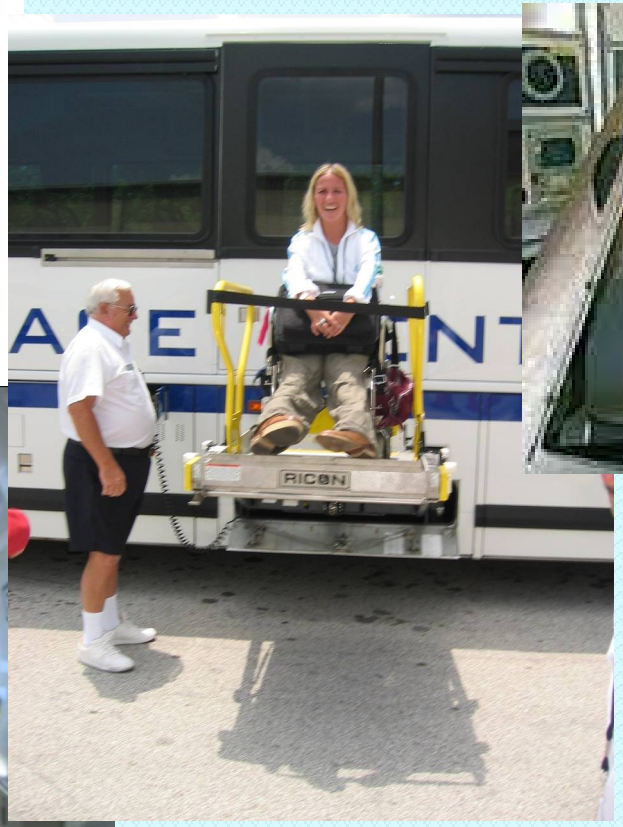
Già, Elma in quella maniera guarda tutti quanti negli occhi. Li guarda senza dover alzare la testa, come quando è seduta nella sua carrozzina. E nel progetto aiuta quanto le persone «normali», senza dover essere aiutata.

«Il progetto è piaciuto a tante istituzioni — dice l'ingegner Viberti, responsabile di Spaceland — talmente tanto che quest'anno ci appoggerà anche la Nasa, concedendoci le piste dello Space Shuttle. Ed è la prima volta nella storia che l'agenzia americana fa una cosa del genere con un'agenzia non governativa».

A sottolineare l'importanza del progetto anche una probabile collaborazione con la Rai per creare un reality show scientifico: «Il primo dei reality intelligenti», come ha detto l'ingegner Viberti.

Ma adesso c'è da aspettare il pri...

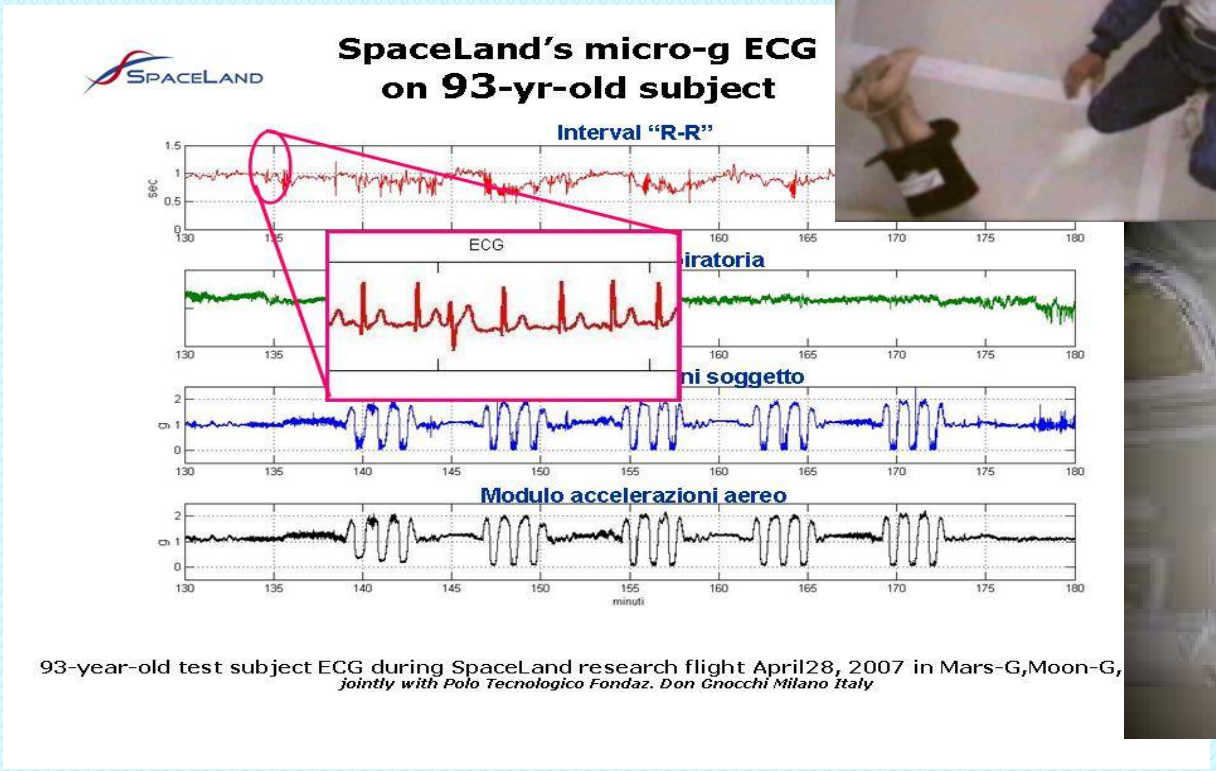
Quest'anno ad appoggiare l'importante progetto anche la Nasa



Development & micro-G tests of a new no-touch computer control system, for astronauts as well as to help disabled and elderly in everyday's life

World's oldest test subject in microgravity (93 years old)

Qualification testing of remotely controlled undergarment for real-time biomedical monitoring system to be launched to the International Space Station (now on the ISS)



93-year-old test subject ECG during SpaceLand research flight April28, 2007 in Mars-G,Moon-G,
jointly with Polo Tecnologico Fondaz. Don Gnocchi Milano Italy

World's youngest 0-G research test subject (11-yr-old)

flying from NASA Space Shuttle L.F. for SpaceLand R&D on behalf of science group led by winner of Nobel Prize for Medicine

SALIVARY NGF, BDNF AND CORTISOL LEVELS DURING PARABOLIC FLIGHT

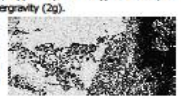
D. Santucci[a]; N. Francia[a]; C. Viberti[b]; L. Aloe[c]; E. Alleva[a]

[a]Section of Behavioural Neuroscience, Department of Cell Biology and Neuroscience, Istituto Superiore di Sanità, Rome, Italy; [b]SpaceLand Italia SRL, Grugliasco, Turin, Italy; [c]Institute of Neurobiology and Molecular Medicine, CNR, European Brain Research Institute (EBRI), Rome, Italy; (daniela.santucci@iss.it)

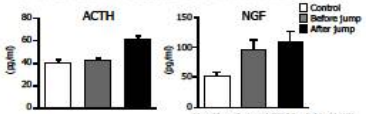
Nerve growth factor (NGF) is a well-studied polypeptide growth factor involved in the development and maintenance of specific peripheral and central populations of neuronal cells. In the central nervous system NGF acts as trophic factor for those neurons (mainly cholinergic and peptidergic) that are known to degenerate in disorders, such as Alzheimer's disease, which is becoming progressively more frequent due to the longer lifespan of the western population. More recently, NGF target cells have been identified in the nervous, immune, and endocrine systems, and an increasing body of evidence suggest that NGF, in addition to its role as a neurotrophic agent, may operate through multiple paths to ultimately regulate physiological homeostasis and behavioural coping.

In previous studies, we used a mouse model of social stress to demonstrate that NGF levels increase both in plasma and in the hypothalamus following intermale aggressive interactions and more recently, we found an increase in NGF levels both in plasma and in some brain areas, such as the frontal cortex, hippocampus and hypothalamus, of mice exposed to rotation-induced hypergravity (2g).

In humans, experiences such as the anticipation of the first jump with a parachute also result in increased NGF plasma levels and in changes in the distribution of NGF receptors on lymphocytes.

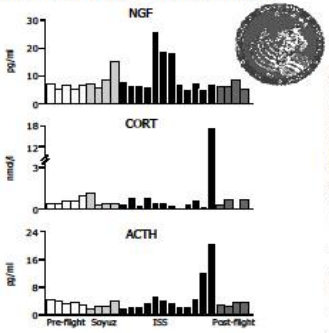


ACTH AND NGF LEVELS IN THE BLOOD OF PARACHUTISTS OF THE BRIGATA "FOLGORE" BEFORE AND AFTER JUMPING



Similarly, an astronaut experiencing stress related to a space mission shows an increase in the salivary levels of NGF preceding the hormonal response.

SALIVARY LEVELS OF NGF, CORT AND ACTH MEASURED IN THE ASTRONAUT DURING THE ENEIDE MISSION



In order to evaluate NGF levels and others neurochemical parameters, known to be involved in the responses to stress, saliva samples were collected before, during and after parabolic flight with Lunar-, Mars-, and Zero-gravity conditions.

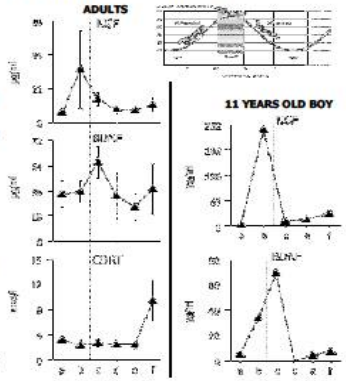
Work was supported by ISS-ASI grant "Neurobehavioural effects of gravitational environment in developing mice" to DS

EXPERIMENTAL PROCEDURE

Saliva samples were self-collected by the experimental subjects (nine adults and a 11 years old boy) using Salivette kits (Sarstedt, Aktiengesellschaft & Co., D-51588 Nümbrecht, Germany) before, during and after the parabolic flight. Saliva was collected by chewing on a cotton rolls for 2-3 min and returned to transport vial. Samples were stored frozen at -70°C until assay.

Saliva was assayed for nerve growth factor (NGF), brain derived neurotrophic factor (BDNF) and cortisol (CORT) levels.

SALIVARY LEVELS OF NGF, BDNF AND CORT MEASURED DURING THE PARABOLIC FLIGHT



CONCLUSION

In agreement with previous studies on parachutists and on astronaut experiencing stress related to skydiving and space mission, experimental subjects showed an increase in salivary levels of NGF and BDNF only during specific phases of the flight. Moreover, individual as well as age-related differences have been observed. These data confirm the role of NGF and BDNF in the adaptative response to "extreme situations" involving psychological stress.

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Francia N, Corezzi G, Petrozzi S, Santucci D, Alleva E. Behavioural responses to hypergravity in the CD-1 mouse. Acta Astronaut. 2006; 58(8):401-10.

Francia N, Simonzi M, Petrozzi S, Santucci D, Aloe L, Alleva E. Repeated acute exposures to hypergravity during early development subtly affect CD-1 mouse neurobehavioural profile. Brain Res Bull. 2006; 69(6):560-72.

Flight missions also for renowned industries & commercial producers

CRONACA AREZZO

LA STORIA Una diversamente abile e il suo sogno che si avvera

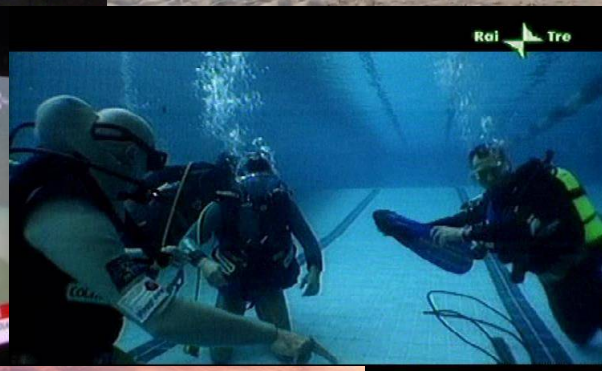
Dalla sedia a rotelle allo spazio Elma Schippa presto in orbita

PROGETTO Elma Schippa, cortonese doc intraprenderà un volo spaziale per fini scientifici insieme all'agenzia Spaceland

come per evidenziare l'onore e la tanta responsabilità che la sta atten- ne Toscana, che permetterà di fare sperimentazioni e di misurare para- ci, che ha un'intelligenza fuori dal- la norma.

ASTRONAUTA a 11 anni

Un **record** mondiale per sostenere la ricerca scientifica; un'esperienza indimenticabile che ha fatto capire a un **ragazzino** quanto **studiare** possa essere importante e persino divertente: l'inglese per Carlo Viberti, suo padre, ci racconta la storia dell'astronauta **più giovane del mondo**



Next flights for all users & tourists on world's longest 0-G vehicle, also for aero-launch services

FOR IMMEDIATE RELEASE

Paris, Tuesday, September 20th, 2022

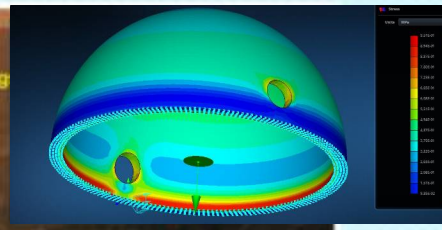
0-G Launch and SpaceLand Announce Signed Partnership for International Zero-Gravity Flight Services in Switzerland, Italy and Mauritius

Announcement made during the 2022 International Astronautical Congress (IAC) in Paris regarding Agreement to Conduct Yearly Consumer Zero-Gravity, Moon-Gravity and Mars-Gravity Parabolic Flights from Switzerland, Italy and Mauritius Regions

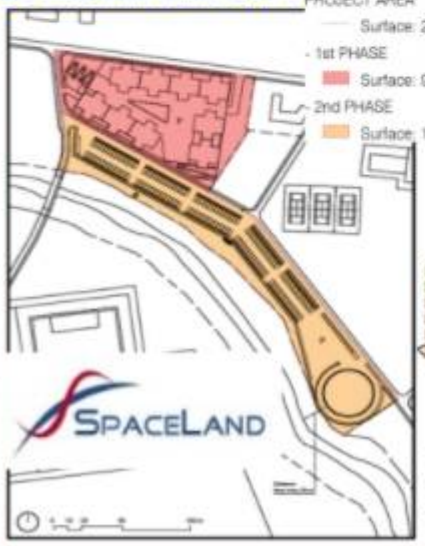
Mixed-use *SpaceLand City* with Mars habitat demonstrators hosting SpaceLand Center 0-G underwater & ground facilities

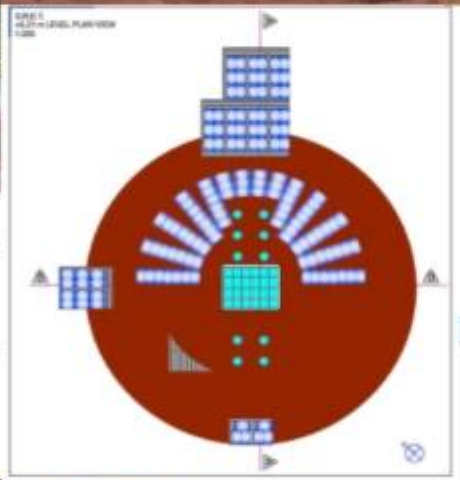
Architectural Design:
Celeste Petraroli Architect
Piazza IV Novembre, 2 Lavena Ponte Tresa (VA)
Italy
celestepetraroli@gmail.com;
engineering@spaceland.it

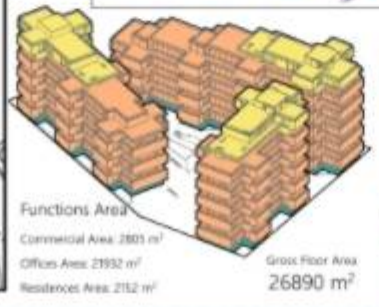
Structural Design:
Prof. Architect Walter Ceretto
Professor of Structural Design at Polytecnic of Turin (TO) Italy
walter.ceretto@polito.it

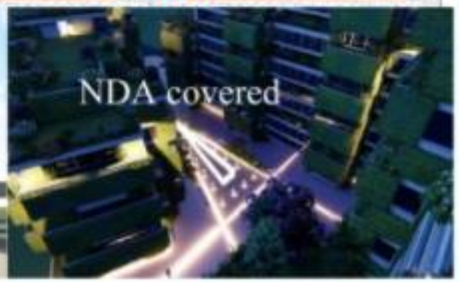


SPACELAND CITY









Equity investors are welcome, globally

→ more than 5x R.O.I. in 5 years

OpportunityNet

SpaceLand - Democratizing Space and its Benefits

Company information/ Informazioni sull'azienda	
Sector/ Settore	Training, research and development for micro-gravity STEAMMs *, Aerospace Tourism / Formazione, ricerca e sviluppo per STEAMM * microgravitazionali, Turismo Aerospaziale
Activities/ Attività	provides ground and air services, support through the creation of a centre of excellence / fornisce servizi di terra e di volo, supporto attraverso la creazione di un centro di eccellenza
Location/ Regione	Lugano Airport / Global
Financial data/ Dati finanziari	
Turnover/ Fatturato	EUR 184m*
EBITDA	EUR 151m*
Headcount/ Personale	30-35*
Investment details/ Dettagli dell'investimento	
Investment size/ Investimento totale	< EUR 14m*
Equity share/ Quota di azioni	< 49%*

* These figures have not been verified by Credit Suisse.

Please contact your relationship manager at Credit Suisse for further information.

ID XXXX: Investment op… …unit… …investimento

Background/Contesto

Our client provides ground and … these sectors through the creation of a centre of excellence in existing bu…ings … …port, open to the public and the academic, industrial, biomedical and scientific com… …synergies with universities. There is now an opportunity to acquire up to 49% of N… …'s … … for … capital contribution of up to CHF 14 million, with an option to double the term… …a stake… …ter centre of the tropical smart city under construction in Mauritius and the possibil… …a furth… …eal estate' stake in the latter. The Swiss challenge to Musk and Bezos' space p…grams for … …naires. Not only tourism: state-of-the-art R&D for Robotics A.I. and human longevity e… …on, a… …y initiated at NASA for winners of the Nobel Prize in Medicine.

Il nostro cliente fornisce servizi terrestri e aerei a supp… …di questi … attraverso la creazione di un centro di eccellenza in edifici esistenti presso l'A… …porto … …gano, aperto al pubblico e alle comunità accademiche, industriali, biomediche e scient… …, con sig… … con le università. Esiste ora l'opportunità di acquisire fino al 49% delle azioni di N… …er u… …pporto di capitale fino a 14 milioni di franchi svizzeri, con l'opzione di raddoppiar… …l… … parte… …one nel centro gemello della smart city tropicale in costruzione a Mauri… …ssibilità … ulteriore partecipazione "immobiliare" in quest'ultima. La risposta svizzera … …gram… …lusk e Bezos per soli miliardari. Oltre al turismo aerospaziale, attività di avanguardia … …botica intelligente e ricerche sull'estensione della longevità umana, attivate alla NASA p… …mi Nobel per la …dicina.

SpaceLand in Lausanne for EU, Mauritius for Africa, in China...?

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