

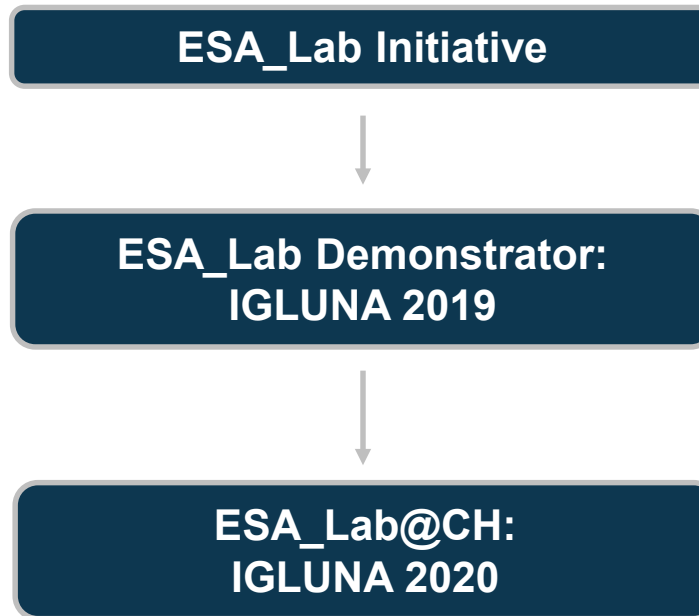
FROM BOOSTING SPACE EDUCATION TO BOOSTING SPACE ECONOMY

Increasing awareness about space technologies that help achieve the UN SDGs




FROM ESA_LAB INITIATIVE TO ESA_LAB@CH

Exploring new ways for academic and industrial collaboration to answer space challenges



Powered by:



 Schweizerische Eidgenossenschaft
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Swiss Confederation

Federal Department of Home Affairs FDHA
State Secretariat for Education and Research SER
Swiss Space Office

Focus

Demonstrating **technologies** to sustain life in an **extreme environment** for a space habitat

Objectives

A novel innovation platform

Building-up on academic projects

Include **new actors** with **novel technology**

Involve **industrial actors**

Support innovation **without being a funding mechanism**

Opportunities

Education

Being part of an **international** and **interdisciplinary** project

Working on technologies in **collaboration** with other actors from the space domain

Gaining space project **management experience**, international **visibility** and life-long **network**

IGLUNA SCOPE

Showcase for technologies

- Robotic exploration & ISRU
- Moon base demonstration & life support systems



Conducted by **student teams**

Demonstrate feasibility to European Stakeholders



Attract **engineers & scientists**



Integrate **industry, academia & research institutions**

Focus on key technologies & their operations

- Robotics & autonomous systems
- In situ manufacturing
- Life support systems & waste management
- Power generation & management
- Communication



Raise **public awareness** about space activities

IGLUNA 2019 FIELD CAMPAIGN

On the **Klein Matterhorn (Zermatt)**, the highest cable car station of Europe at 3883 m...



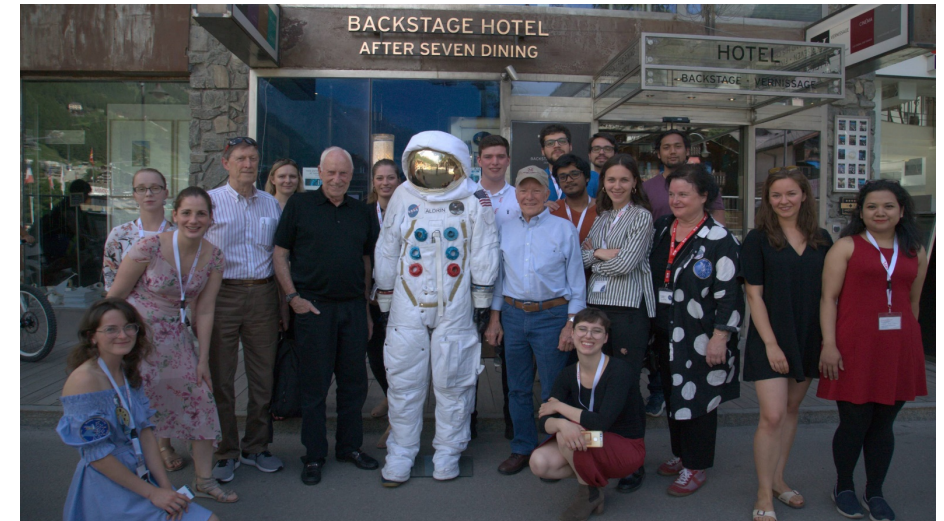
IGLUNA 2019 FIELD CAMPAIGN



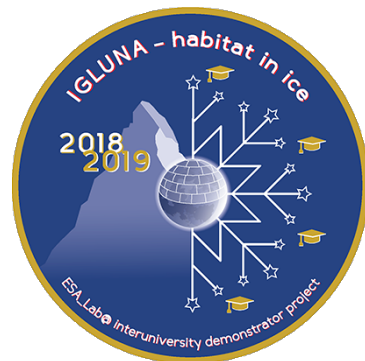
... -4°C inside a glacier cave ...



IGLUNA 2019 FIELD CAMPAIGN



... and in downtown Zermatt.

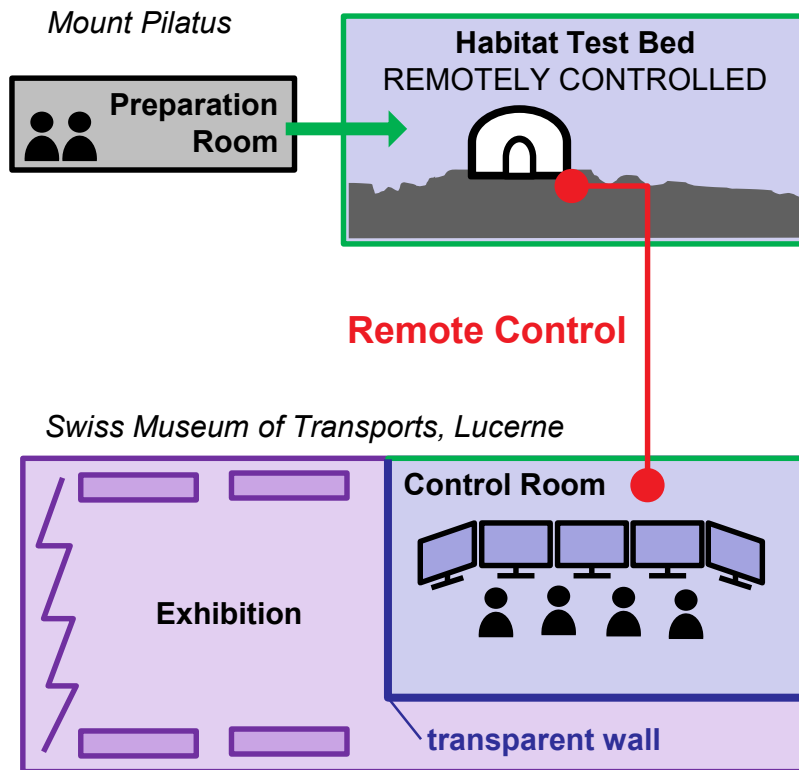


IGLUNA 2019 PARTNERS AND SPONSORS

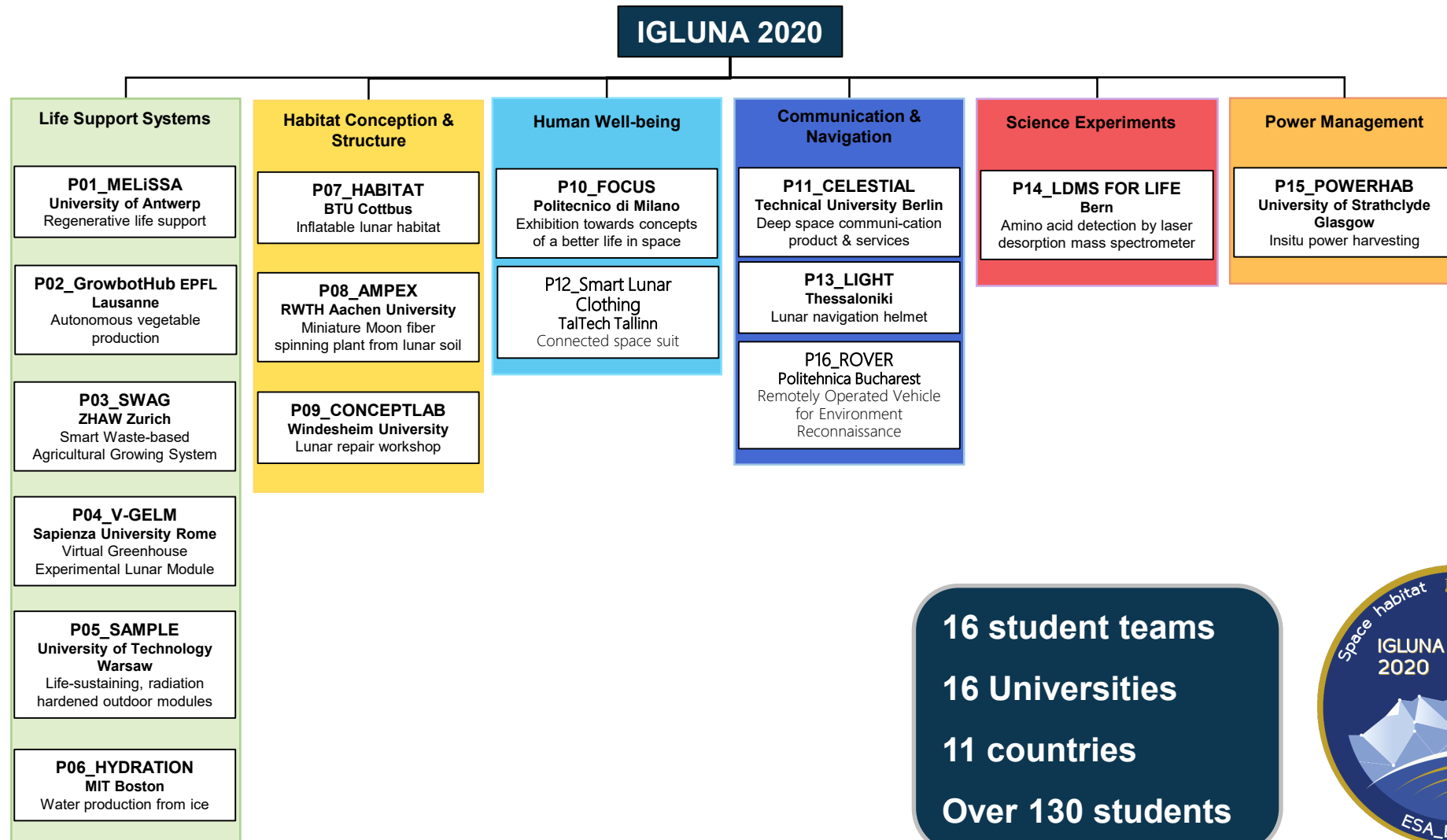


IGLUNA 2020 FIELD CONCEPT

Nine days of public accessible space technology and space exploration in 10-19 July 2020 – with a **Test Bed in an extreme environment on mount Pilatus** and an **Exhibition with the control room in the Swiss Museum of Transport** in Lucerne.



IGLUNA 2020 TEAMS



16 student teams
16 Universities
11 countries
Over 130 students



FOSTER ECONOMIC GROWTH OF SPACE SECTOR ACTIVITIES IN LINE WITH THE UN SDGS

06.02.2020



SPACE4IMPACT INITIATIVE

Reveals the added value of space data and infrastructures to financial actors

While supporting activities that are aligned with the United Nations Sustainable Development Goals (UN SDGs)



Promote space technologies & startups that can answer societal and environmental challenges defined by the UN SDGs



Bring political & financial actors together to raise awareness and trigger opportunities



Engage the private sector to invest in new ventures and support early-stage companies to foster the economic growth of the space sector

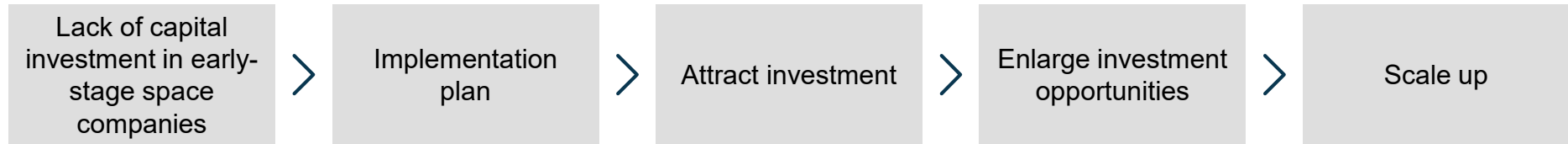


SPACE4IMPACT INITIATIVE

Scope and Tasks

Increase awareness about space technologies that benefit the UN SDGs

Engage the private sector to invest in new ventures and support early-stage companies



2020 — Feb — Apr — Jun — Aug — Oct — Dec — Feb — Apr — Jun — Aug — Oct — 2021

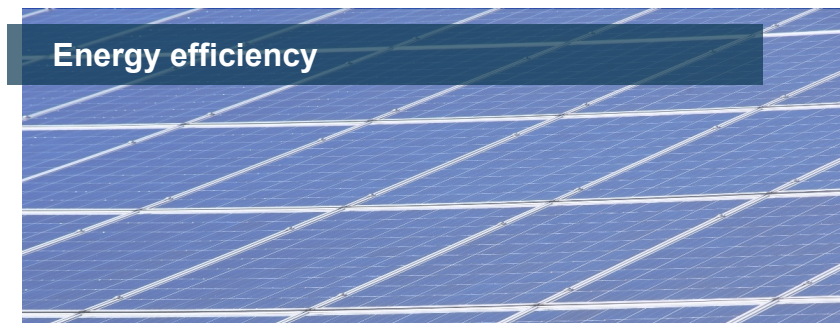




UN SDGS & SPACE TECHNOLOGY

Most space technology applications that help to achieve the UN Sustainable Development Goals (SDGs)

Promote space technology & startups to foster the economic growth of the space sector aligned with the SDGs



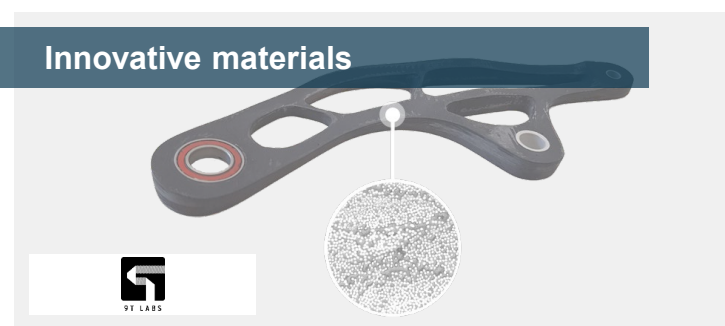
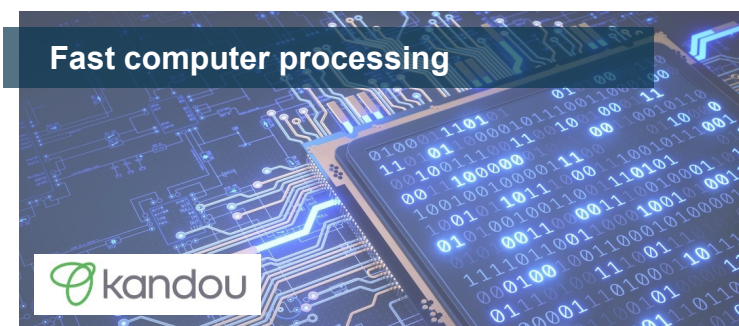
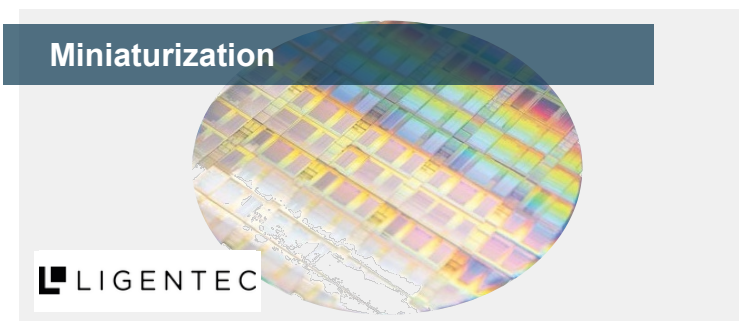
Source: UNOOSA/UN/ESA/EPFL



TECHNOLOGY & NEW SPACE COMPANY

Technology trends and New space Innovation wave

The technology development fosters the emergence of new space businesses and creates new revenue streams



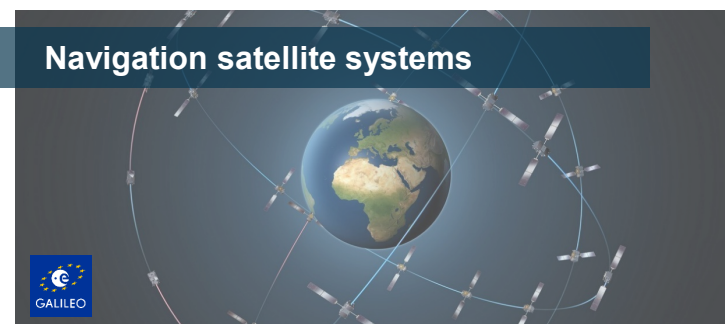
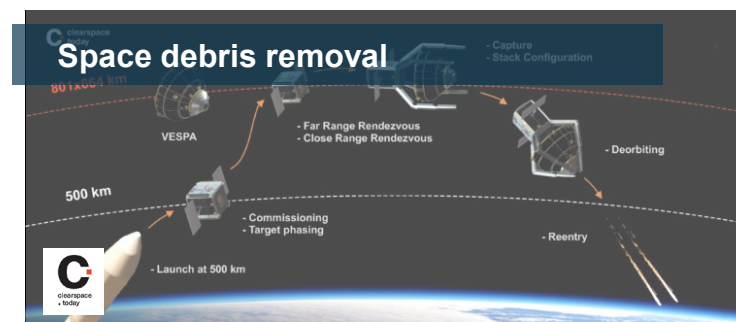
Source: Ligentec/Astrocast/SpaceBelt-Cysec/Kandou/9T Labs/Picterra



TECHNOLOGY & NEW SPACE COMPANY

Global Space infrastructures and data accessible to all

Satellite data processing using governmental & commercial infrastructures is a growing market



Source: ESA/Eumetsat/Clearspace/One Web/EU

EARTH OBSERVATION & NEW SPACE COMPANY



www.space4impact.org

Earth observation and remote sensing data processing is a growing market

Governmental infrastructures with open source data sets and new space CubeSat constellations open unlimited applications possibilities and as many business opportunities



ICEYE



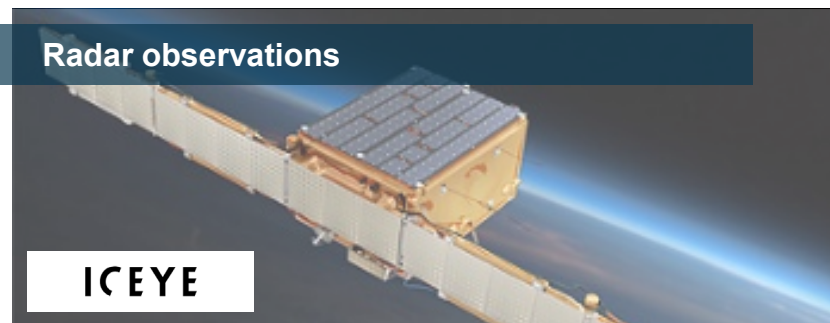
Optical observation



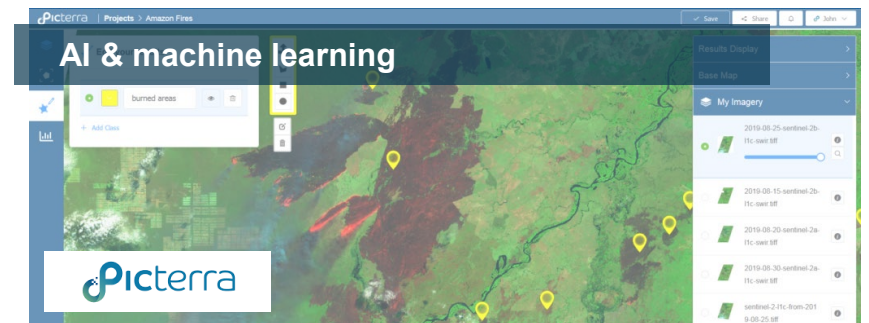
Hyperspectral imaging



Radar observations



AI & machine learning



Source: ICEYE/Planet/Gamaya/Picterra



INVESTMENT OPPORTUNITY

From the Governmental Space Age to the New Space Age

Acceleration of private investments in the last decade

A need for investments into early stage space companies in Europe



SPACE ANGELS

New revenue streams

Emergence:

- Satellites constellations
- Earth observation datasets

2009 – 2019:

- Financially robust investments

Investment profile

Capital raised for:

- Mainly late stage companies (C+)
- Mainly launch systems & constellation companies
- Nascent in Earth observation data processing

New Space investment

Capital investment in 2019:

- \$5.8B in space sector (U.S. 55%)
- Of which only \$686M for early stage (seed & A)

Capital source:

- Angel (30%) Corporate (30%) Venture Capital (30%)

ROI & Market size

2020s:

- Business exits will show high returns on investment

2040:

- New Space global market will be \$1T

Source: Space Angels/Morgan Stanley reports



SPACE4IMPACT KICK-OFF EVENT

Swiss Tech Convention

Center Lausanne,
27th – 28th May 2020



Bringing principal actors together to raise awareness and trigger opportunities

Who: New Space companies, Startups, ESA, UN, Swiss Federal Admin, Financial actors

Source: EPFL

Raise awareness

27th May 2020 Day
(13 – 18h)



How: Space Technology & Economy

What: How space data & infrastructures can answer societal and environmental challenges defined by the United Nations' Sustainable Development Goals

Networking event

27th May 2020 Evening
(20 – 22h)



How: Networking dinner & Startup pitch contest

What: Inspire and connect key stakeholders

Trigger opportunities

28th May 2020 Day
(9 – 13h)



How: Meet EU & non-EU startups, Workshop/Roadmap

What: Funding mechanisms for space technologies helping to achieve the UN SDGs

KICK-OFF EVENT: INTERNATIONAL CALL FOR STARTUPS



www.space4impact.org

Selection of 10 startups for a pitching contest during the Kick-off event

Call will be open from 15th February 2020 to 15th April 2020

Traveling costs covered for 3 selected startups from developing countries

Why should you apply as a start-up

- Share your need in the roadmap
- Help foster the increase of investment into early stage space companies
- Advertise your technology to the Space Ecosystem with a booth at the Kick-off event
- Visibility
- Network access
- Financial support
- Technical support

Who can apply

Easy apply:

- Fill in the application form
- Provide a pitch deck

Conditions:

- Registered startup less than 5 years old, with a space connection and aligned with at least one of the UN SDGs

Prize

- Prize money of CHF 10,000 awarded at the pitching contest
- Be labeled as the Space4Impact startup of the year

Contest criteria

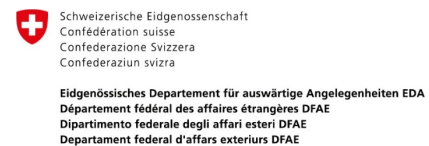
- Based on impact of the technology
- Business application



SPACE 4 IMPACT



**Partners co-funding
the kick-off event:**



Contact us for additional information: info@space4impact.org

Call for startups: www.space4impact.org/startup-call

