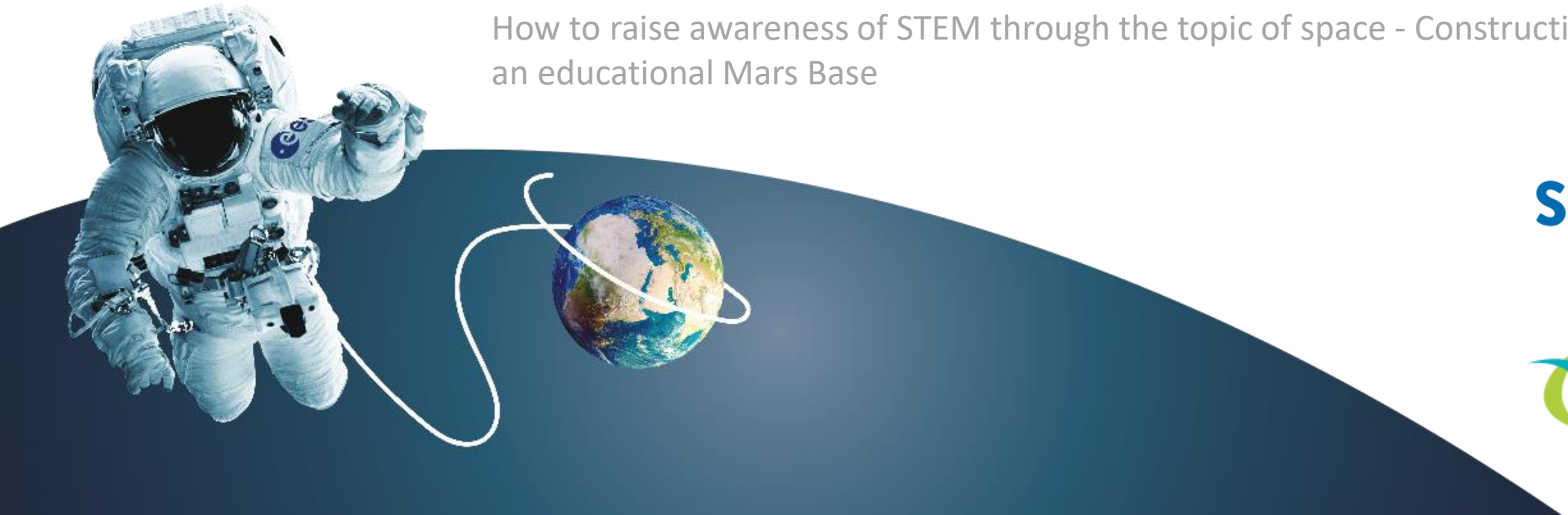
MELISSA
MICRO-ECOLOGICAL
LIFE SUPPORT SYSTEM
ALTERNATIVE

CREATING
A CIRCULAR
FUTURE

Mars Camp

How to raise awareness of STEM through the topic of space - Construction of an educational Mars Base



EURO
SPACE
CENTER

IDELUX
Pour vous

SPACE HUB ESA REDU - GALAXIA

GALAXIA BUSINESS PARK

esa
European Space Agency

EURO SPACE CENTER

RHEA GROUP

spaceopal
a DLR GfR and Telespazio company

TELESPAZIO
a LEONARDO and THALES company

Redu Space Services
CUSTOMIZING SATELLITE SOLUTION

EURO SPACE CENTER

- Since June 1991
- 70 000 visitors and 15 000 trainees a year
- Focus on raising awareness and educating people about Space and related sciences
- Which people? Families, companies, and schools from all around the world

EURO SPACE CENTER

- Schools (37 different nationalities):
  - Excursions – Space classes (3 days / 5 days)
  - Satellite assembly in a clean room, space mission simulation, moonwalk, rocket construction…
- 14 different thematic camps (6-18 years):
  - Possibility of 2 levels (Rocket Camp and Satellite Camp)
  - Assembly and programming of a robot, construction and launch of a two-stage rocket or a satellite, 3D printing, drone piloting, construction of an astronomical telescope, …
- Events: Night of the Stars, Belgian Space Week, …

BUT ALSO MANY OTHER EDUCATIONAL PROJECTS …

FAVORISER L'EMPLOI DANS LE DOMAINE SPATIAL ET TECHNOLOGIQUE (F.E.S.T.)

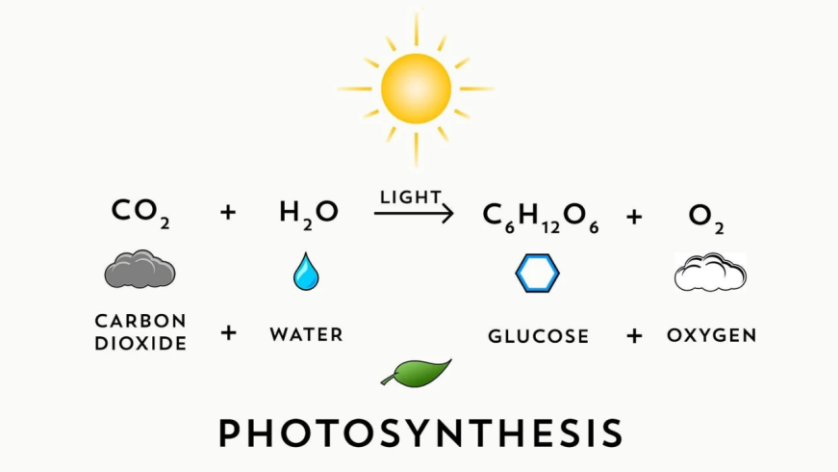
- Promoting Employment in Space and Technology
- Projects to raise awareness of STEM among young people to promote scientific careers
- For the Euro Space Center:
  - **EURO SPACE LAB**: a place of exchange and discovery to enable the development of personal projects
  - **EURO SPACE CLUB**: teacher networks to foster connections between school subjects and space-related disciplines
  - **MARS CAMP**: aimed at putting into perspective the technologies and techniques needed for life on Mars, in relation to our planet Earth

LIFE ON MARS IS ~~IM~~POSSIBLE

LIVING ON MARS

OXYGEN

- Photosynthesis (algae, plants)
- CO_2 / O_2 sensors
- Electrochemistry



ENVIRONMENT

- Particle detector
- Installation of an ultraviolet flux meter
- Culture / incubation: samples from hands and furniture
- Extravehicular activity (E.V.A.)
  - cleaning of the suit (sterilisation)
  - installation of measuring instruments

LIVING ON MARS

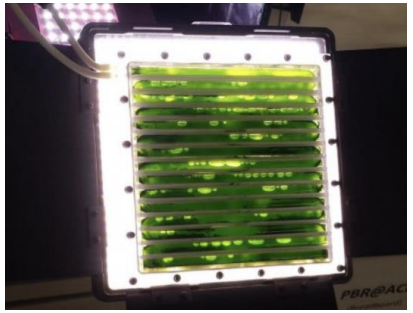
WATER

- Water and Waste treatment→ MELiSSA technologies
- Geophony (water and ice pouch detector)

FOOD

- Establishment of a diet (proteins, …)
- Hydroponic greenhouse (educational)
- Edible algae bioreactor

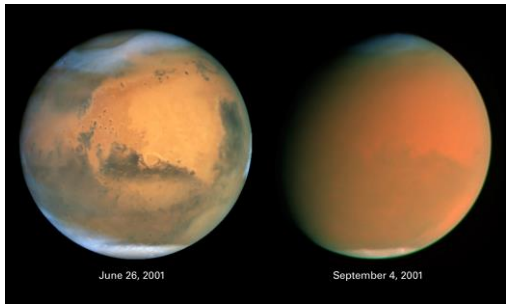
  → food + oxygen
  - Spirulina



LIVING ON MARS

ENERGY

- ~~Return journey~~
- Water electrolysis→ hydrogen
- Fuel cells
- Solar panels (activity / Martian base)
- Martian calendar (succession of seasons, night cycle, storm, …)

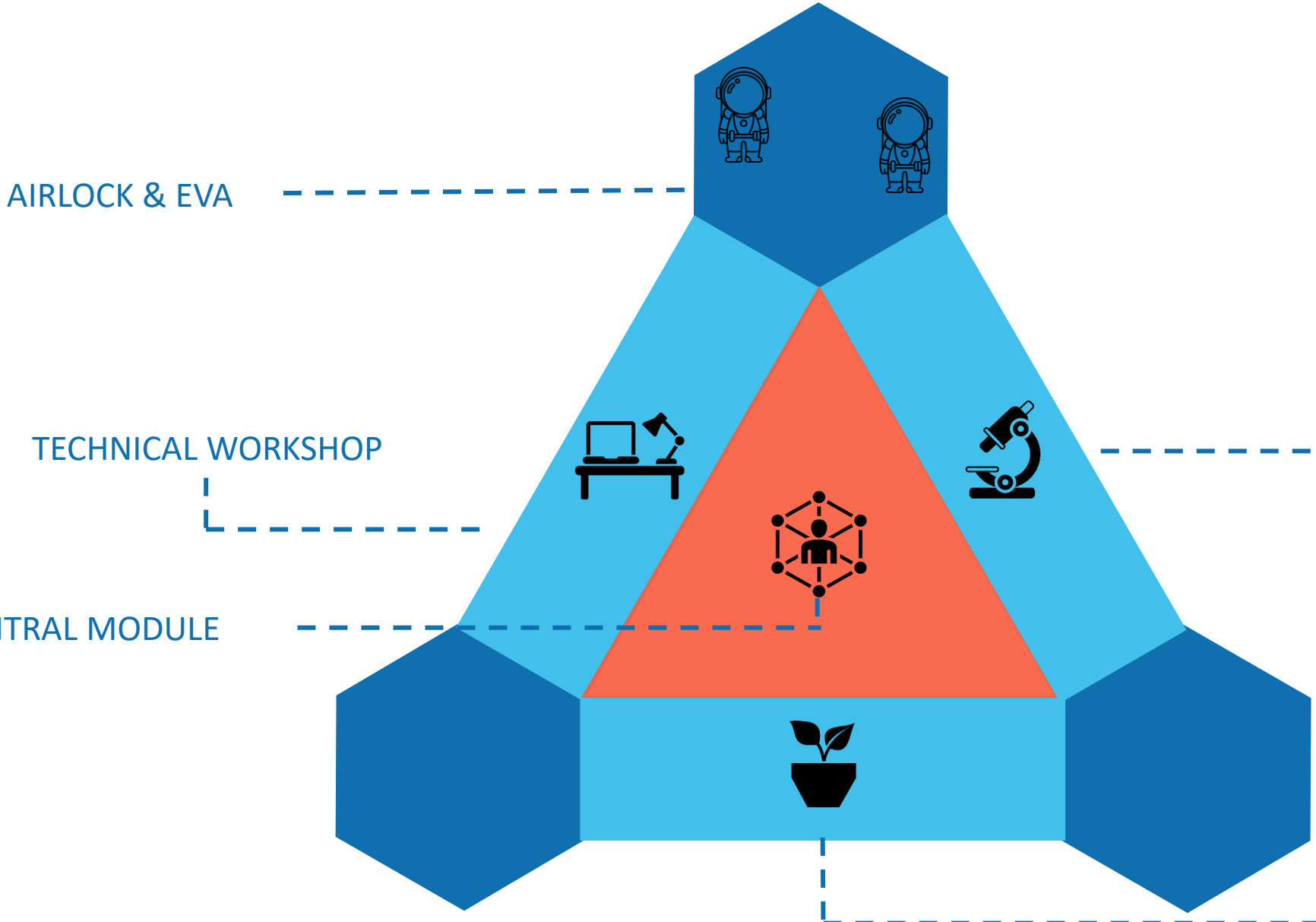


MAINTENANCE

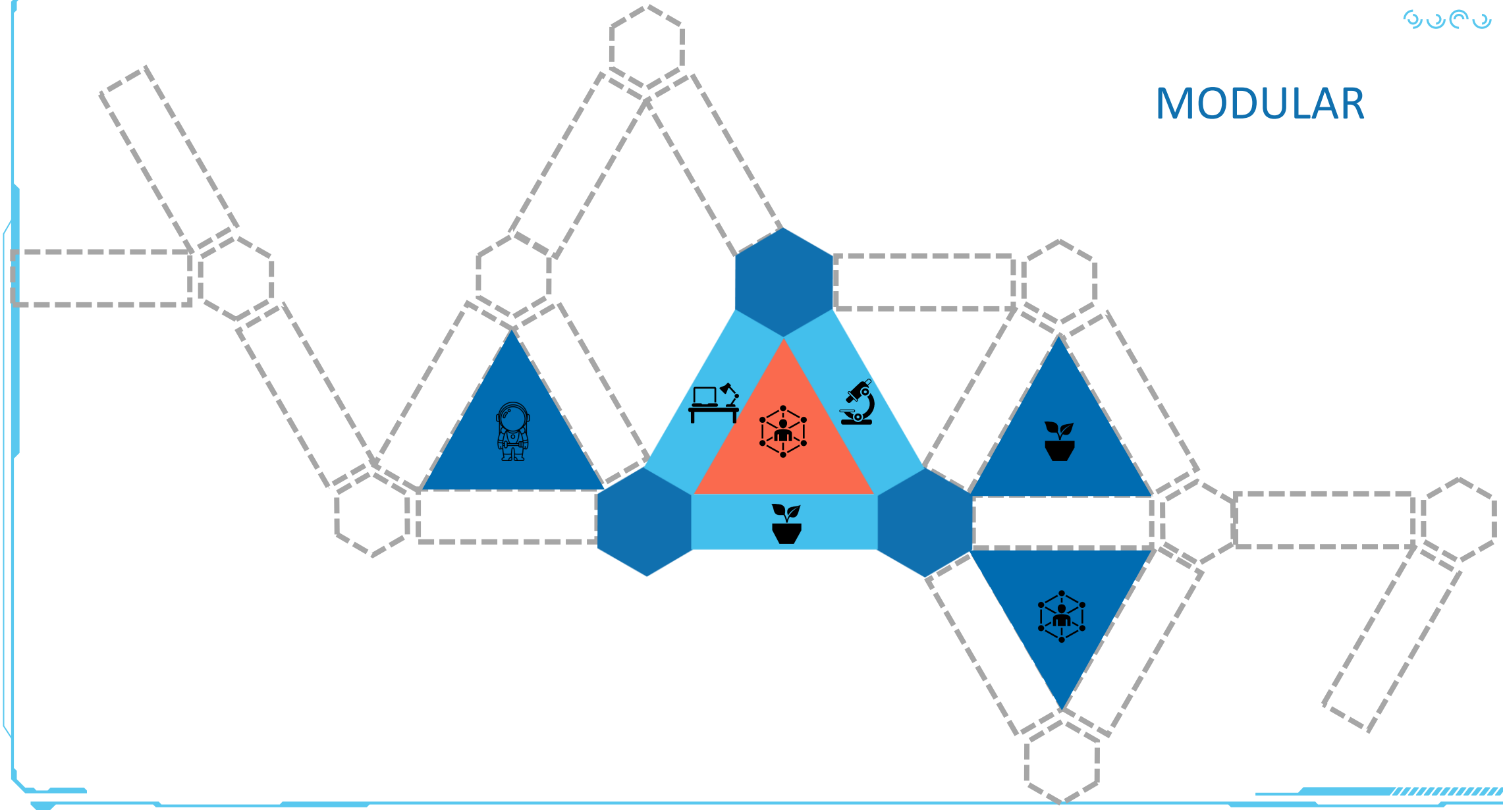
- Sealed environment
- Extravehicular activity (E.V.A.)
  - Solar panels to be cleaned
  - Repair of robots, drones,…
- Culture, humidity and temperature sensors, …
- 3D printer for the production of parts that we do not have

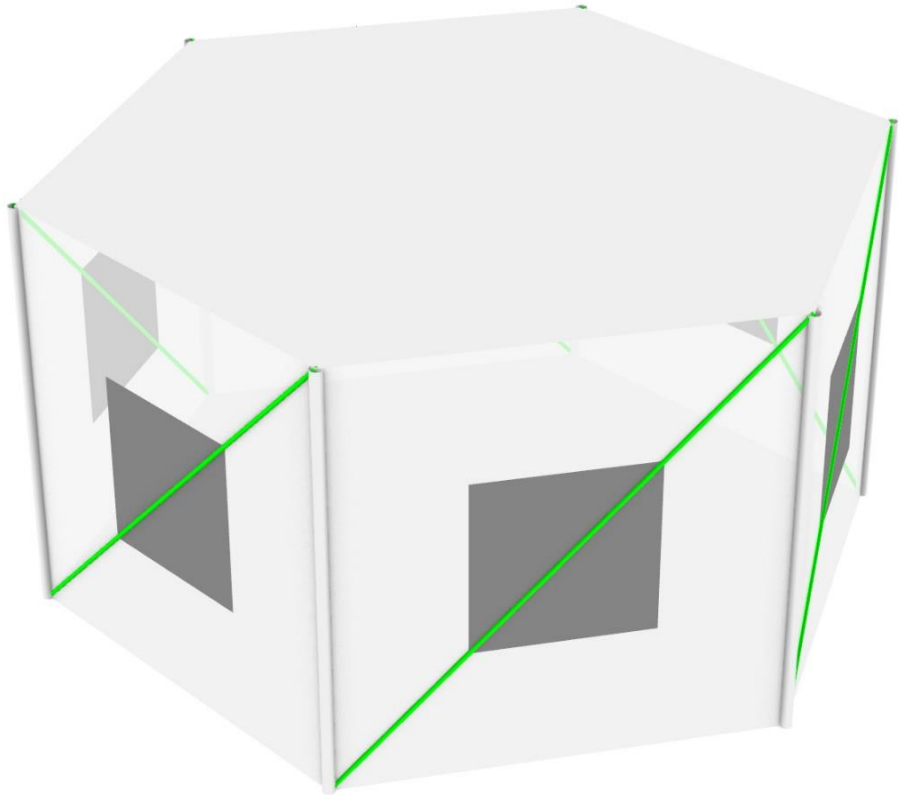
LIVING ON MARS

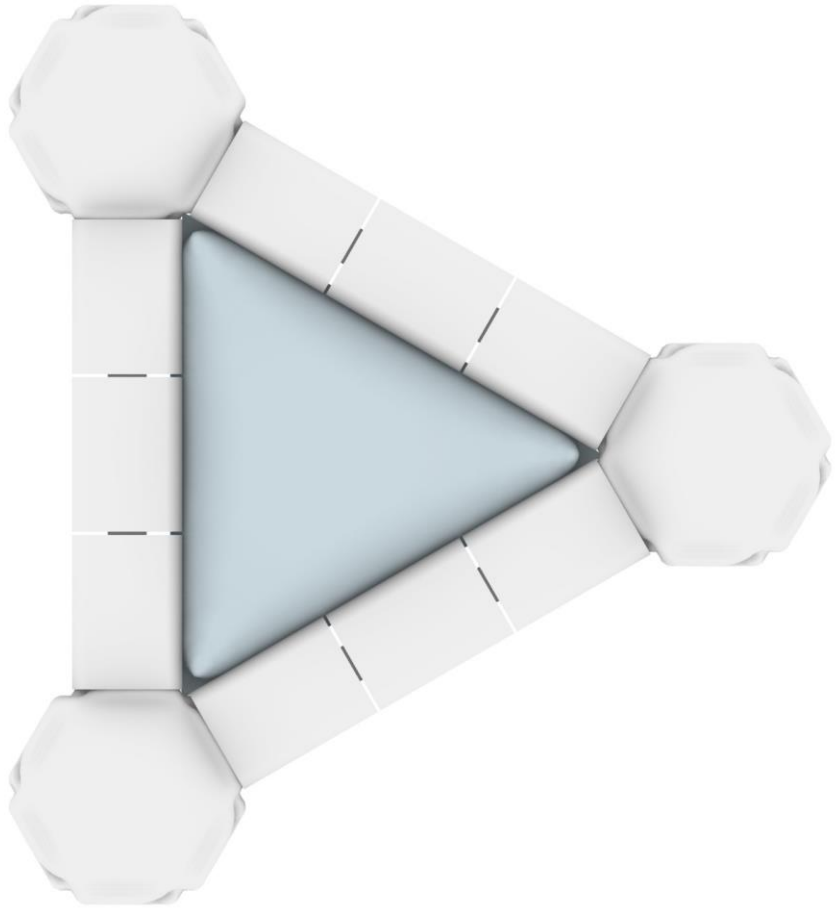
OUR MARS BASE


AIRLOCK & EVA
TECHNICAL WORKSHOP
CENTRAL MODULE
LABORATORY
GREENHOUSE

MODULAR







MARS CAMP PROJECT

Q & A

Gaëtan GRECO

Pierre-Emmanuel PAULIS

MELiSSA

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ALTERNATIVE

THANK YOU.

www.**melissafoundation**.org

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