

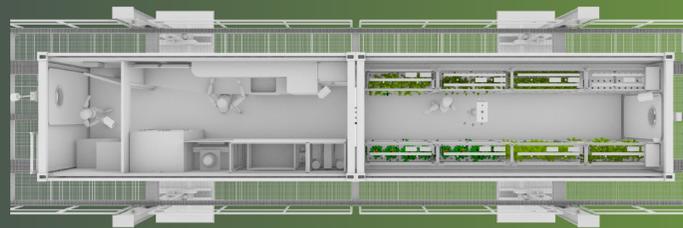


# EDEN ISS

## Ground Demonstration of Plant Cultivation Technologies for Safe Food Production in Space

A key enabling technology for the future human exploration of space will be the capability of providing fresh food to the crew. Innovative food cultivation technologies in closed-loop life support systems must be developed as an integral part of future space systems.

The goal of the EDEN ISS project is to advance controlled environment agriculture technologies beyond the state-of-the-art. It focuses on ground demonstration of plant cultivation technologies and their application in space. EDEN ISS will demonstrate safe food production technologies under representative conditions, for later verification on board the International Space Station. These technologies will be critical for future space exploration vehicles and planetary outposts.



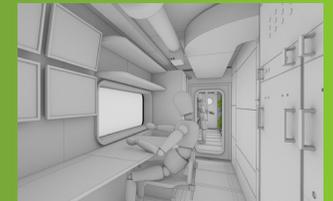
A mobile container-sized greenhouse test facility will be designed and built to demonstrate and validate different key technologies and procedures necessary for safe food production within a (semi-) closed system.

The plant cultivation technologies will first be tested in a laboratory setting at the sites of the consortium partners. The laboratory will be integrated at DLR in Bremen, followed by an exhaustive check-out and test phase.

all images are visualisations of the mobile greenhouse for the Neumayer III station in Antarctica

credit EDEN ISS consortium, renderings: LIQUIFER Systems Group, 2015

In October 2017 the complete facility will be shipped to the German Neumayer III station in Antarctica. The Neumayer III station is operated by the Alfred-Wegener-Institute and has unique capabilities and infrastructure for testing plant cultivation under extreme environmental and logistic conditions. It is foreseen that the container-sized greenhouse of the EDEN ISS project will provide supplementary fresh food throughout the year for the Neumayer Station III crew.



The EDEN ISS project will develop an advanced nutrient delivery system, a high performance LED lighting system, a bio-detection and decontamination system and food quality and safety procedures and technologies.



**EDEN ISS**

[www.eden-iss.net](http://www.eden-iss.net)



German Aerospace Center  
Institute of Space Systems

**Daniel Schubert (Project coordinator)**  
Robert-Hooke-str. 7  
28359 Bremen, Germany  
[daniel.schubert@dlr.de](mailto:daniel.schubert@dlr.de)  
T ++49 421244201136

LIQUIFER Systems Group GmbH

**Dr. Barbara Imhof**  
Obere Donaustrasse 97-99/1/62  
1200 Vienna, Austria  
[barbara.imhof@liquifer.com](mailto:barbara.imhof@liquifer.com)  
T ++43 12188505

National Research Council

**Dr. Alberto Battistelli**  
Viale Marconi 2  
05010 Porano (TR), Italy  
[alberto.battistelli@ibaf.cnr.it](mailto:alberto.battistelli@ibaf.cnr.it)  
T ++39 0763374910

University of Guelph

**Dr. Mike Dixon**  
50 Stone Road East  
N1G 2W1 Guelph, Ontario, Canada  
[mdixon@uoguelph.ca](mailto:mdixon@uoguelph.ca)  
T 1-519-824-4102, ext 52555

Alfred-Wegener-Institute  
for Polar and Marine Research

**Dr. Eberhard Kohlberg**  
Am Alten Hafen 26  
27568 Bremerhaven, Germany  
[eberhard.kohlberg@awi.de](mailto:eberhard.kohlberg@awi.de)  
T ++49 47148311422

EnginSoft S.p.A.

**Dr. Lorenzo Bucchieri**  
Via Stezzano  
24126 Bergamo (BG), Italy  
[l.bucchieri@enginsoft.it](mailto:l.bucchieri@enginsoft.it)  
T ++39 35368711

Airbus Defense and Space GmbH

**Viktor Fetter**  
Claude Dornier Strasse  
88039 Friedrichshafen, Germany  
[Viktor.Fetter@airbus.com](mailto:Viktor.Fetter@airbus.com)  
T ++49 754583088



Thales Alenia Space Italia

**Giorgio Boscheri**  
Strada Antica di Collegno 253  
10146 Torino (TO), Italy  
[giorgio.boscheri@thalesaleniaspace.com](mailto:giorgio.boscheri@thalesaleniaspace.com)  
T ++3901119787803

Aero Sekur S.p.A.

**Guiseppe Bonzano**  
Via Bianco di Barbania 16  
Caselle Torinese (TO) 10072, Italy  
[bonzano@sekur.it](mailto:bonzano@sekur.it)  
T ++39 011 19887712

Wageningen University and Research  
Greenhouse Horticulture

**Dr. Tom Dueck**  
Droevendaalsesteeg 1  
6708 PB Wageningen, The Netherlands  
[Tom.dueck@wur.nl](mailto:Tom.dueck@wur.nl)  
T ++ 31 317 483207

Heliospectra AB

**Anthony Gilley**  
Box 5401  
Göteborg SE-402 29, Sweden  
[anthony.gilley@heliospectra.com](mailto:anthony.gilley@heliospectra.com)  
T ++4631406710

Limerick Institute of Technology

**Dr. Michelle McKeon-Bennett**  
Moylish Park  
Limerick, Ireland  
[Michelle.bennett@lit.ie](mailto:Michelle.bennett@lit.ie)  
T ++35361293286

Telespazio S.p.A.

**Dr. Raimondo Fortezza**  
via Tiburtina 965  
00156 Roma, Italy  
[raimondo.fortezza@telespazio.com](mailto:raimondo.fortezza@telespazio.com)  
T ++390816042451

This project has received funding  
from the European Union's Horizon  
2020 Research and Innovation  
Programme under grant agreement  
no. 636501