

# ULISSE

## The USOCs KnowLedge Integration and dissemination for Space Science Experimentation

### RESEARCH AT THE INTERNATIONAL SPACE STATION

*Since 1998, the International Space Station (ISS) provides for a permanent human presence in space. A prime example of successful international cooperation, ISS serves as mankind's outpost laboratory for space experimentation. The project ULISSE provides ground support for the optimum exploitation of ISS experiments.*

Some 400 km above Earth, travelling orbits at a speed of 27,700 km/h, the ISS is home to a permanent crew of 3-6 astronauts from Europe, Russia, USA, Canada and Japan. Here at the junction between Earth and outer space, the **ISS' tough environment provides an ideal setting for scientific experiments** that pave the way for future space travel to the Moon and Mars.

ULISSE provides specific services and tools for their exploitation through a software platform. These experiments include **Space Medicine research, biotechnology**, and the life science area of **exobiology**. Further knowledge in these diverse domains offers new insights on how human beings may be able to sustain living in space over extensive time periods, which is essential for the success of future interplanetary space missions. Also, we learn more about how cells are affected by long periods of weightlessness and radiation, and - in the area of exobiology - we aim at learning more about the most extreme conditions any form of life may survive in the universe.



Mankind's outpost laboratory, the International Space Station (ISS) is home to research facilitated by User Support and Operations Centres (USOC) across Europe. sharply\_done © Fotolia

The ULISSE project is conceived by a large number of partners already operative in **space experimentation**. The project links these existing User Support and Operation Centres (USOC) from across Europe and is adding value by facilitating further exploitation of competences and resources, and is complementing ISS activities with new initiatives aimed at increasing the return of scientific space activities.

For this purpose, ULISSE intends to pursue the **valorisation and exploitation of ISS scientific data** and of the already available data from previous space experiments as well as data from other space platforms.

The aim of the project is **increased involvement of European researchers in scientific research on the ISS**, and enhanced awareness among Europeans of the outstanding possibilities that the world's outpost laboratory offers all of us, whilst circling the Earth some 15 times a day in fast orbit high above.



**LUIGI CAROTENUTO**  
IS PROJECT COORDINATOR

### QUESTIONS & ANSWERS

#### What do you want to achieve with this project?

ULISSE will develop a middleware software platform to collect, exploit and valorize scientific data from previous and future space science experiments on various platforms like the ISS. To this aim specific services will be developed involving specialized scientific communities.

#### Why is this project important for Europe?

ULISSE exploits competences of the User Support and Operation Centers (part of the European Ground Infrastructure for space experimentation) to make scientific data available to a broader user community and to implement services that maximize space experimentation exploitation.

#### How does your work benefit European citizens?

ULISSE will contribute to further capitalize on the investments made by the European society in space research. ULISSE also increases the citizens' awareness of the contribution of space research to human knowledge and its daily life application.

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## LIST OF PARTNERS

- Microgravity Advanced Research and Support Center S.r.l. (MARS), Italy
- Telespazio S.p.A., Italy
- Institut d'Aéronomie Spatiale de Belgique, Belgium
- Consiglio Nazionale delle Ricerche (CNR-ISTC), Italy
- Institut de Médecine et de Physiologie Spatiales (MEDES), France
- Space Applications Services (SpaceApps), Belgium
- Centre National d'Etudes Spatiales (CNES), France
- Università degli Studi di Roma "La Sapienza", Italy
- Damec Research Aps - Danish Aerospace Medical Centre of Research, Denmark
- Stichting Nationaal Lucht- en Ruimtevaartlaboratorium (NLR), The Netherlands
- Deutsches Zentrum für Luft- und Raumfahrt (DLR), Germany
- Eidgenössische Technische Hochschule Zürich (ETH), Switzerland
- NTNU Samfunnsforskning AS, Norway
- Centrum Badań Kosmicznych Polskiej Akademii Nauk (SRC PaS), Poland
- Universidad Politécnica de Madrid, Spain
- Werum Software & Systems AG, Germany
- European Low Gravity Research Association (ELGRA), The Netherlands

## COORDINATOR

**Microgravity Advanced Research and  
Support Center S.r.l. (MARS), Italy**

## CONTACT

**Luigi Carotenuto**  
Tel: +39 081 6042 480  
E-mail: carotenuto@marscenter.it

## PROJECT INFORMATION

The USOCs KnowLedge Integration and dissemination  
for Space Science Experimentation (ULISSE)  
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