LIGHTWEIGHT TECHNOLOGIES FOR EXPLORATION ROVERS

Fact Sheet

Project Information

ROV-E

Grant agreement ID: 262744

Project website

Project closed

Start date
1 January 2011

End date
31 December 2013

Funded under
Specific Programme "Cooperation": Space

Total cost
€ 2 214 618,00

EU contribution
€ 1 478 041,50

Coordinated by
FUNDACION TECNALIA RESEARCH & INNOVATION
Spain

This project is featured in...

RESEARCH*EU MAGAZINE

Nothing gets lost: the power of biomass

Objective

Multifunctional structures are more than a new material a design concept The ROV-E proposal has considered the multifunctional design concept as a whole and intends to re-design the future exploration Rovers for Mars (eg ExoMars). The multifunctional approach is applied on several Rovers subsystems: mobility, telecom, power and service module.
In space exploration missions, Rovers have served as a platform for “mobile instrumentation” allowing the achievement of the scientific goals. These goals are very challenging and are more demanding. Due to the increasing need for carrying heavier PL, the mass of the Rovers has increased considerably. The trend is an increase in the total rover’s launch mass.
Therefore, mass is a major issue for interplanetary missions as each additional kilogram influences the cost of the mission and it requires more fuel to be carried (the trajectory is very long). Additionally, the autonomy of rover vehicles is too much dependent on its weight for both propulsion and flexibility on their movements.
AURORA programs have identified the possibilities to use lightweight and integrated electronics for moon and mars vehicles.
A need for a light-weight wheeled chassis with a performance comparable to the one provided by the current solutions and which satisfies future scientific needs is a “must” for future surface exploration missions.
The approach proposed on ROV-E is to integrate functions within the carrier structures by using lightweight advanced materials. The re-design of the following subsystems is envisaged: mobility, internal chassis, monitoring, power generation and storage. This re-engineering implies the study of the basic technologies required to improve the performance of each subsystem.
The main objective of the ROV-E project is the development of the technologies required to obtain lightweight–fully integrated equipments and subassemblies for exploration rovers based on multifunctional structures.

Fields of science (EuroSciVoc)

natural sciences > physical sciences > astronomy > **space exploration**

natural sciences > physical sciences > astronomy > planetary sciences > **planets**

Programme(s)

FP7-SPACE - Specific Programme "Cooperation": Space

Topic(s)

SPA.2010.2.1-04 - Space transportation for space exploration

Call for proposal

FP7-SPACE-2010-1
See other projects for this call

Funding Scheme

CP - Collaborative project (generic)

Coordinator

FUNDACION TECNALIA RESEARCH & INNOVATION

EU contribution

€ 482 278,00

Total cost

No data

Address

PARQUE CIENTIFICO Y TECNOLOGICO DE BIZKAIA, ASTONDO BIDEA, EDIFICIO 700
48160 DERIO BIZKAIA
Spain

Region

Noreste > País Vasco > Gipuzkoa

Activity type

Research Organisations

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Participants (5)

THALES ALENIA SPACE ITALIA SPA

Italy

EU contribution

€ 216 304,00

Address

VIA SACCOMURO 24
00131 Roma

Region

Centro (IT) > Lazio > Roma

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

DEUTSCHES ZENTRUM FUR LUFT - UND RAUMFAHRT EV

Germany

EU contribution

€ 279 547,00

Address

LINDER HOHE
51147 Koln

Region

Nordrhein-Westfalen > Köln > Bonn, Kreisfreie Stadt

Activity type

Research Organisations

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

STATE ENTERPRISE YUZHNOYE DESIGN OFFICE NAMED AFTER MIKHAIL YANGEL

Ukraine

EU contribution

€ 111 640,00

Address

KRIVOROZHSKAYA 3
49008 Dniepropetrovsk

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

UMECO STRUCTURAL MATERIALS (DERBY) LIMITED

United Kingdom

EU contribution

€ 159 453,00

Address

CONCORDE HOUSE, WARWICK NEW ROAD 24
CV32 5JG LEAMINGTON SPA

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

UNIVERSITY OF SOUTHAMPTON

United Kingdom

EU contribution

€ 228 819,50

Address

Highfield
SO17 1BJ Southampton

Region

South East (England) > Hampshire and Isle of Wight > Southampton

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

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