

**HORIZON
2020**

Highly automatEd PHysical Achievements and PerformancES using cable roboTs Unique Systems

Fact Sheet

Project Information

HEPHAESTUS

Grant agreement ID: 732513

[Project website](#) 

DOI

[10.3030/732513](https://doi.org/10.3030/732513) 

Project closed

EC signature date

25 October 2016

Start date

1 January 2017

End date

31 December 2020

Funded under

INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies (ICT)

Total cost

€ 4 669 960,00

EU contribution

€ 3 984 542,50

Coordinated by

FUNDACION TECNALIA
RESEARCH & INNOVATION



Spain

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Artificial intelligence and industry: Advanced innovation for European manufacturing

Objective

The proposal addresses novel concepts for introducing Robotics and Autonomous Systems in the Construction Sector where, at this moment, the presence is minor. Specifically, the Hephaestus project focuses on highly risked and critical construction tasks such as prefab wall installation. In that sense, the Hephaestus has been conceived as a solution for accomplishing multiple tasks on vertical or inclined planes of the built and outdoor environment. For that purpose, the Hephaestus is mainly based on a cable-driven robot and a modular end effector kit. This modular kit can host several tools and devices and therefore we can say it is multifunctional. Among the functionalities, the research project will achieve tasks such as 3D laser scanning of the building structure and the posterior installation of the prefab wall. But we can foresee some other performances such as the cleaning and maintenance of the curtain wall, repair of cracks and painting. The apparatus of the Hephaestus is lean, compatible with other handling systems, highly versatile and its reachability is very broad. Moreover, the controlling system would offer an easy and fast calibration. For achieving this goal, matrix based design methods will be used. It basically consists on decomposing a complex solution, such as the Hephaestus, into interdependent subsystems that can be feasible to solve. Certainly, the integration and adaptation of several technologies into the Hephaestus will be carried out with a systematic approach that will facilitate the election, adjustment and development of suitable tools. This proposal envisages continuous techno-economical assessment, which includes several tests in real conditions where prototypes of the cable-robot and the modular end-effector kit will be demonstrated. As an output of the research, the well balanced consortium and its interdisciplinary expertise will offer a realistic solution to cover primordial needs of the Built Environment and Construction sector.

Fields of science (EuroSciVoc)

[humanities](#) > [arts](#) > [visual arts](#)

[social sciences](#) > [political sciences](#) > [political transitions](#) > **[elections](#)**

[engineering and technology](#) > [electrical engineering](#), [electronic engineering](#), [information engineering](#) > [electronic engineering](#) > **[robotics](#)**

[natural sciences](#) > [physical sciences](#) > [optics](#) > **[laser physics](#)**



Programme(s)

[H2020-EU.2.1.1. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies \(ICT\)](#)

MAIN PROGRAMME

Topic(s)

[ICT-25-2016-2017 - Advanced robot capabilities research and take-up](#)

Call for proposal

[H2020-ICT-2016-2017](#)

[See other projects for this call](#)

Sub call

H2020-ICT-2016-1

Funding Scheme

[IA - Innovation action](#)

Coordinator



FUNDACION TECNALIA RESEARCH & INNOVATION

Net EU contribution

€ 756 202,50

Total cost

€ 864 952,50

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 (10)

 THIRD-PARTY 

TECNALIA FRANCE SAS

 France

Net EU contribution

€ 76 125,00

Address

2 ALLEE DU DOYEN GEORGES BRUS UNITEC 1 BATIMENT A
33600 BORDEAUX 

Region

Nouvelle-Aquitaine > Aquitaine > Gironde

Activity type

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

Links

- [Contact the organisation](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

€ 108 750,00



TECHNISCHE UNIVERSITAET MUENCHEN

 Germany

Net EU contribution

€ 634 490,00

Address

Arcisstrasse 21

80333 Muenchen 

Region

Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 634 490,00



FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV

 Germany

Net EU contribution

€ 546 917,50

Address

HANSASTRASSE 27C

80686 Munchen 

Region

Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 546 917,50



CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

 France

Net EU contribution

€ 413 875,00

Address

RUE MICHEL ANGE 3
75794 Paris 

Region

Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type

Research Organisations

Links

- [Contact the organisation](#) 
- [Website](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

€ 447 625,00

 THIRD-PARTY

UNIVERSITE DE MONTPELLIER

 France

Net EU contribution

€ 33 750,00

Address

163 RUE AUGUSTE BROUSSONNET
34090 Montpellier 

Region

Occitanie > Languedoc-Roussillon > Hérault

Activity type

Higher or Secondary Education Establishments

Links

- [Contact the organisation](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

€ 33 750,00



CEMVI CATENA ELEVACION MANUTENCION VICINAY SA

Spain

Net EU contribution

€ 285 845,00

Address

CALLE CARNICERIA
48210 OTXANDIO

SME

Yes

Region

Noreste > País Vasco > Bizkaia

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

€ 408 350,00



NLINK AS

Norway

Net EU contribution

€ 333 375,00

Address

FOSSHAUGENE CAMPUS TROLLADALEN 30
6856 Sogndal

SME

Yes

Region

Norge > Vestlandet > Vestland

Activity type

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

Links

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

Total cost

€ 476 250,00



FOCCHI SPA

Italy

Net EU contribution

€ 339 850,00

Address

VIA CORNACCHIARA 805
47824 Poggio Torriana



SME



Yes

Region

Nord-Est > Emilia-Romagna > Rimini

Activity type

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

Links

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

Total cost

€ 485 500,00



ACCIONA CONSTRUCCION SA

Spain

Net EU contribution

€ 315 437,50

Address

CALLE MESENA 80
28033 MADRID 

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

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

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 450 625,00



R2M SOLUTION LTD

 United Kingdom

Net EU contribution

€ 248 675,00

Address

FLAT 4 BUILDING 74 HOLLAND PARK

W11 3SL London 

SME 

Yes

Region

London > Inner London — West > Kensington & Chelsea and Hammersmith & Fulham

Activity type

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

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 355 250,00

Last update: 23 August 2022

Permalink: <https://cordis.europa.eu/project/id/732513>

European Union, 2025

