A LIGHTWEIGHT SOFTWARE STACK AND SYNERGETIC META-ORCHESTRATION FRAMEWORK FOR THE NEXT GENERATION COMPUTE CONTINUUM

Fact Sheet

Project Information

**NEPHELE**

Grant agreement ID: 101070487

**DOI**

10.3030/101070487

**EC signature date**

17 June 2022

**Funded under**

Digital, Industry and Space

**Total cost**

€ 9 127 711,25

**EU contribution**

€ 9 127 711,00

**Coordinated by**

ETHNICON METSOVION

POLYTECHNION

*Greece*

**Start date**

1 September 2022

**End date**

31 August 2025

Project description

A software stack and orchestration framework for the compute continuum

The next generation IoT and Edge Computing technologies are evolving at a rapid pace. This evolution moves in parallel with the increase in the heterogeneity of the IoT technologies. To efficiently manage hyper-distributed applications across heterogeneous infrastructure in the Cloud-to-Edge-to-IoT continuum, convergence of
IoT technologies and development of synergetic orchestration mechanisms has to take place. NEPHELE aims to tackle these challenges and enable the efficient, reliable and secure end-to-end orchestration of hyper-distributed applications over programmable infrastructure across the compute continuum, considering the integration of IoT devices with the rest part of the infrastructure. A set of use cases across various vertical industries are considered, including disaster management, logistic operations in ports, energy management in smart buildings and remote healthcare services.

**Fields of science**

- **engineering and technology**: electrical engineering, electronic engineering, information engineering
- **information engineering**: telecommunications, telecommunications networks, mobile network, 5G
- **natural sciences**: computer and information sciences, internet, internet of things
- **natural sciences**: computer and information sciences, software
- **social sciences**: sociology, industrial relations, automation
- **medical and health sciences**: health sciences, health care services

**Keywords**

- software stack
- meta-orchestration mechanisms
- sensors virtualization
- service mesh
- semantic interoperability
- autonomic functions

**Programme(s)**

- HORIZON.2.4 - Digital, Industry and Space
- HORIZON.2.4.7 - Advanced Computing and Big Data

**Topic(s)**

- HORIZON-CL4-2021-DATA-01-05 - Future European platforms for the Edge: Meta Operating Systems (RIA)

**Call for proposal**

2 of 14
HORIZON-CL4-2021-DATA-01

See other projects for this call

Funding Scheme

HORIZON-RIA - HORIZON Research and Innovation Actions

Coordinator

ETHNICON METSOVION POLYTECHNION

Net EU contribution
€ 2 416 875,00

Address
Heroon polytechniou 9 zographou campus
157 80 Athina
Greece

Region
Αττική > Αττική > Κεντρικός Τομέας Αθηνών

Activity type
Higher or Secondary Education Establishments

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

Other funding
€ 0,00

Participants (17)

CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI

Italy

Net EU contribution
€ 558 750,00
Address
Viale g. p. usberti 181a
43124 Parma

SME
Yes

Region
Nord-Est > Emilia-Romagna > Parma

Activity type
Higher or Secondary Education Establishments

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

Other funding
€ 0,00

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SIEMENS AKTIENGESELLSCHAFT
Germany

Net EU contribution
€ 799 375,00

Address
Werner-von-siemens-str. 1
80333 München

Region
Bayern > Oberbayern > München, Kreisfreie Stadt

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

Other funding
€ 0,00
ATOS IT SOLUTIONS AND SERVICES IBERIA SL

Spain

Net EU contribution

€ 381 500,00

Address

Ronda de europa 5
28760 Tres cantos madrid

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

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

Other funding

€ 0,00

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INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE

France

Net EU contribution

€ 432 147,50

Address

Domaine de voluceau rocquencourt
78153 Le chesnay cedex

Region

Ile-de-France > Ile-de-France > Yvelines

Activity type

Research Organisations

Links

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

Other funding

€ 0,00
UNIVERSITY OF MACEDONIA

Greece

Net EU contribution

€ 403,750,00

Address

Egnatia street 156
540 06 Thessaloniki

Region

Βόρεια Ελλάδα > Κεντρική Μακεδονία > Θεσσαλονίκη

Activity type

Higher or Secondary Education Establishments

Links

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

Other funding

€ 0,00

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FUNDINGBOX ACCELERATOR SP ZOO

Poland

Net EU contribution

€ 195,476,00

Address

Ul postepu 15
02-676 Warszawa

SME
Yes

Region

Makroregion województwo mazowieckie > Warszawski stołeczny > Miasto Warszawa

Activity type
Other

Links

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

Other funding
€ 0,25

THIRD-PARTY

FUNDINGBOX COMMUNITIES SL

Spain
Net EU contribution
€ 105 750,00
Address
Calle mendez alvaro 20
28045 Madrid
SME
Yes
Region
Comunidad de Madrid > Comunidad de Madrid > Madrid
Activity type
Other
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 0,00

ODIN SOLUTIONS SOCIEDAD LIMITADA

Spain
Net EU contribution
€ 433 187,50
Address
Calle peru 5, num. 5, planta 3, puerta 5, poligono I oeste-edificio forum
30820 Alcantarilla murcia
SME
Yes
ALTER WAY

France

Net EU contribution
€ 0,00

INTERNET INSTITUTE, COMMUNICATIONS SOLUTIONS AND CONSULTING LTD

Slovenia

Net EU contribution
€ 413 500,00
**ECLIPSE FOUNDATION EUROPE GMBH**

**Germany**

Net EU contribution

€ 303 125,00

**Address**

Berliner allee 47
64295 Darmstadt

**SME**

Yes

**Region**

Hessen > Darmstadt > Darmstadt, Kreisfreie Stadt

**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

**Other funding**

€ 0,00
WINGS ICT SOLUTIONS TECHNOLOGIES PLIOFORIKIS KAI EPIKOINONION ANONYMI ETAIREIA

Greece

Net EU contribution
€ 453 750,00

Address
189, syggrou avenue
171 21 Nea smyrni

SME
Yes

Region
Αττική > Αττική > Νότιος Τομέας Αθηνών

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

Other funding
€ 0,00

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

IBM IRELAND LIMITED

Ireland

Net EU contribution
€ 641 775,00

Address
Bd 2 ibm technology campus damastown industrial pa mulhuddart
D15 HN66 Dublin

Region
Ireland > Eastern and Midland > Dublin

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

Contact the organisation
Participation in EU R&I programmes

HORIZON collaboration network

Other funding

€ 0,00

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**ESAOTE SPA**

Italy

Net EU contribution

€ 273 750,00

Address

Via enrico melen 77
16152 Genova

Region

Nord-Ovest > Liguria > Genova

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

Other funding

€ 0,00

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**LUKA KOPER, PORT AND LOGISTIC SYSTEM, D.D.**

Slovenia

Net EU contribution

€ 244 987,50

Address

Vojkovo nabrezje, 38
6000 Koper

Region

Slovenija > Zahodna Slovenija > Obalno-kraška

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)
GEIE ERCIM
France
Net EU contribution
€ 483 762,50
Address
Route des lucioles 2004 sophia antipolis
06410 Biot
SME
Yes
Region
Provence-Alpes-Côte d’Azur > Provence-Alpes-Côte d’Azur > Alpes-Maritimes
Activity type
Other
Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network
Other funding
€ 0,00

SMILE
France
Net EU contribution
€ 586 250,00
Address
163 quai du docteur dervaux
92600 Asnieres-sur-Seine
Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network
Other funding
€ 0,00
Region
Ile-de-France > Ile-de-France > Hauts-de-Seine

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

Other funding
€ 0,00

Partners (1)

ZURCHER HOCHSCHULE FUR ANGEWANDE WISSENSCHAFTEN

Switzerland

Net EU contribution
€ 0,00

Address
Gertrudstrasse 15
8401 Winterthur

Region
Schweiz/Suisse/Svizzera > Zürich > Zürich

Activity type
Higher or Secondary Education Establishments

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

Other funding
€ 0,00

Last update: 26 August 2022

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