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

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**
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

Total cost
€ 2 416 875,00

Participants (17)

CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI

Italy

Net EU contribution
€ 558 750,00
VIALE G. P. USBERTI 181A
43124 Parma

SME: Yes
Region: Nord-Est > Emilia-Romagna > Parma
Activity type: Higher or Secondary Education Establishments

Total cost: €558,750,00

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)

Total cost: €799,375,00
ATOS IT SOLUTIONS AND SERVICES IBERIA SL
Spain
Net EU contribution
€ 381 500,00
Address
ROND 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
Total cost
€ 381 500,00

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
Total cost
€ 432 147,50
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

Total cost

€ 403 750,00

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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 stoleczny > Miasto Warszawa

Activity type

Other

Links

Contact the organisation
Participation in EU R&I programmes
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

Total cost
€ 105 750,00

ODIN SOLUTIONS SOCIEDAD LIMITADA

Spain

Net EU contribution
€ 433 187,50

Address
CALLE PERU 5, NUM. 5, PLANTA 3, PUERTA 5, POLIGONO L OESTE-EDIFICIO FORUM
30820 ALCANTARILLA MURCIA

SME
Yes
**ALTER WAY**

**Country**
France

**Net EU contribution**
€ 0,00

**Address**
1 RUE ROYALE
92210 Saint-Cloud

**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

**Total cost**
No data

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**INTERNET INSTITUTE, COMMUNICATIONS SOLUTIONS AND CONSULTING LTD**

**Country**
Slovenia

**Net EU contribution**
€ 413 500,00
Address
CRNA VAS 128
1000 Ljubljana

SME  Yes

Region
Slovenija > Zahodna Slovenija > Osrednjeslovenska

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
€ 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

Total cost
€ 303 125,00
WINGS ICT SOLUTIONS TECHNOLOGIES PLIOFORIKIS KAI EPIKΟΙΝΩΝΙΟΝ ΑΝΟΝΥΜΗ ΕΤΑΙΡΕΙΑ

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)

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

Total cost
€ 453 750,00

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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)

Links
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)

Total cost

€ 273 750,00

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)

Links

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

Total cost

€ 244,987,50

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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

Total cost

€ 483,762,50

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SMILE

France

Net EU contribution

€ 586,250,00

Address
Partners (1)

ZURCHER HOCHSCHULE FUR ANGEWANDTE 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

Total cost

No data

Last update: 26 August 2022