Greater photonics integration will unleash the power of 6G x-haul networks

The EU-funded FLEX-SCALE project performs disruptive research on optical x-haul network approaches related to optical switching nodes and their transceiver interfaces that enable flexible capacity scaling (>10 Tb/s rate per interface, >10 Pb/s capacity per link and >100 Pb/s throughput per optical node), based on utilisation of ultra-high bandwidth photonic/plasmonic technologies and the efficient exploitation of optical spatial and spectral switching (UWB/SDM). The network elements will be controlled by an ML-enabled SDN control plane that incorporates new resource allocation algorithms, enabling autonomous programmable disaggregated networks.
It will achieve record energy efficiency (sub-pJ per switched/transmitted bit) and low cost, enabled by photonic integration and optical transparency and the optimised traffic routing across network layers and segments, thus improving network QoS as per 6G requirements.

**Fields of science**

*engineering and technology* > *electrical engineering, electronic engineering, information engineering* > *information engineering* > *telecommunications* > *telecommunications networks* > *optical networks*

**Keywords**

FLEX-SCALE

**Programme(s)**

HORIZON.2.4 - *Digital, Industry and Space*  
MAIN PROGRAMME

**Topic(s)**

HORIZON-JU-SNS-2022-STREAM-B-01-03 - *Communication Infrastructure Technologies and Devices*

**Call for proposal**

HORIZON-JU-SNS-2022

See other projects for this call

**Funding Scheme**

HORIZON-JU-RIA - HORIZON JU Research and Innovation Actions

**Coordinator**

[Avatar]
PANEPISTIMIO PATRON

Net EU contribution

€ 587 375,00

Address

University campus rio patras
265 04 Rio patras
Greece

Region

Κεντρική Ελλάδα > Δυτική Ελλάδα > Αχαΐα

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 (11)

CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI

Net EU contribution

€ 398 750,00

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
CENTRE TECNOLOGIC DE TELECOMUNICACIONES DE CATALUNYA

Spain

Net EU contribution
€ 450 000,00

Address
Avinguda carl friedrich gauss 7 parc mediterrani de tecnologia
08860 Castelldefels barcelona

Region
Este > Cataluña > Barcelona

Activity type
Research Organisations

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

Other funding
€ 0,00

FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV

Germany

Net EU contribution
€ 398 746,00

Address
Hansastrasse 27c
80686 München

Region
Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type
THE HEBREW UNIVERSITY OF JERUSALEM
Israel
Net EU contribution
€ 332,187.50
Address
Edmond j safra campus givat ram
91904 Jerusalem
Activity type
Higher or Secondary Education Establishments

LIONIX INTERNATIONAL BV
Netherlands
Net EU contribution
€ 549,990.00
Address
Hengelosestraat 500
7521 AN Enschede
SME
Yes
Region
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
€ 61,110,00

OPSYS SENSING TECHNOLOGIES LTD
Israel
Net EU contribution
€ 249,750,00
Address
26 harokmim street
5885849 Holon

SME
Yes

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
€ 27,750,00

PICADVANCED, SA
Portugal
Net EU contribution
€ 549,256,00
Address
Universidade de aveiro incubator pci, creative sci via do conhecimento s/n
3830 352 Ilhavo

SME
Yes

Region
Continente > Centro (PT) > Região de Aveiro

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
€ 61 029,00

ERICSSON TELECOMUNICAZIONI SPA
Italy
Net EU contribution
€ 253 125,00

Address
Via anagnina 203
00118 Roma

Region
Centro (IT) > Lazio > Roma

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
€ 28 125,00

TELEFONICA INVESTIGACION Y DESARROLLO SA
Spain

Net EU contribution

€ 233 514,00

Address

Ronda de la comunicacion s/n distrito c edificio oeste i
28050 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  
Website  
Participation in EU R&I programmes  
HORIZON collaboration network

Other funding

€ 25 946,00

GIOUMPITEK MELETI SCHEDIASMOS YLOPOIISI KAI POLISI ERGON PLIROFORIKIS ETAIREIA PERIORISMEINIS EFTYNIS

Greece

Net EU contribution

€ 349 875,00

Address

Mithridatou 36-38
11632 Athina

SME

Yes

Region

Αττική > Αττική > Κεντρικός Τομέας Αθηνών

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
**VPIPHOTONICS GMBH**

Germany

Net EU contribution

€ 259 987,00

Address

Hallerstrasse 6
10587 Berlin

Region

Berlin > Berlin > Berlin

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

€ 28 888,00

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**EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH**

Switzerland

Net EU contribution

€ 0,00

Address

Raemistrasse 101
8092 Zuerich

Region

Schweiz/Suisse/Svizzera > Zürich > Zürich
Polariton Technologies AG
Switzerland
Net EU contribution
€ 0,00
Address
Soodstrasse 52
8134 Adliswil

SME
Yes
Region
Schweiz/Suisse/Svizzera > Zürich > Zürich
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Huber+Suhner Polatis Limited
United Kingdom
Net EU contribution
€ 0,00
Address
Milton road 332 cambridge science park
CB4 0WN Cambridge

SME
Yes

Region
East of England > East Anglia > Cambridgeshire CC

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
No data

Last update: 28 November 2022

Permalink: https://cordis.europa.eu/project/id/101096909

European Union, 2023