THE EU RESEARCH & INNOVATION PROGRAMME
2021 – 2027

Horizon Europe Information Days
Cluster 4 - Space
29 June 2021
Introduction & Overview
Space under Horizon Europe

HORIZON EUROPE

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications

Pillar I
EXCELLENT SCIENCE

- European Research Council
- Marie Skłodowska-Curie
- Research Infrastructures

Pillar II
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Clusters

Pillar III
INNOVATIVE EUROPE

- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation & Technology*

Joint Research Centre

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

- Widening participation & spreading excellence
- Reforming & Enhancing the European R&I system

* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

1) Manufacturing Technologies
2) Key Digital Technologies
3) Advanced Materials
4) Emerging Enabling Technologies
5) Artificial Intelligence and Robotics
6) Next Generation Internet
7) Advanced Computing and Big Data
8) Circular Industries
9) Low-carbon and Clean Industries
10) Space
EU Space Programme 2021-2027

4 Components – 3 horizontal activities

Total budget of 13,2 bEur (2018 constant prices)
Horizon Europe Space

Upstream Space

- Foster competitiveness of space systems
- Reinforce our capacity to access and use space

Strategic Research and Innovation Agenda SRIA

EU Space Programme Components and emerging initiatives

- Evolution of space and ground infrastructures
- Evolution of services
- Development of applications
- Innovative Capabilities
  - SSA
  - GOVSATCOM
  - Quantum
- Ecosystem for Entrepreneurship - Cassini

Targeted and strategic actions

- Critical Technologies for Non-Dependence
- IOD / IOV

Synergies with Data Strategy AI, HPC

- Space Science
- Education and Skills
- International Cooperation

Evolution of services

International Cooperation
DESTINATION – OPEN STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA

<table>
<thead>
<tr>
<th>Call HORIZON-CL4-2021-SPACE-01</th>
<th>STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA</th>
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Other Actions:

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HORIZON-CL4-2021-SPACE-01-

Foster competitiveness of space systems
11: End-to-end satellite communication systems and associated services
12: Future space ecosystems: on-orbit operations, new system concepts

Reinforce EU capacity to access and use space
21: Reusability for European strategic space launchers - technologies and operation maturation including flight test demonstration
22: Low cost high thrust propulsion for European strategic space launchers - technologies maturation including ground tests
23: New space transportation solutions and services
Evolution of space and ground infrastructure for Galileo/EGNOS: under Other Actions

Evolution of Copernicus services

41: Copernicus Climate Change Service evolution
42: Copernicus Atmosphere Monitoring Service evolution
43: Copernicus Security and Emergency Services evolution
44: Copernicus evolution for cross-services thematic domains

Evolution of EGNSS Services: under Other Actions

Innovative space capabilities: SSA, GOVSATCOM, Quantum
62: Quantum technologies for space gravimetry

Space entrepreneurship ecosystem (including "New Space" and start-ups) and skills: under Other Actions

Targeted and strategic actions supporting the EU space sector
81: Space technologies for European non-dependence and competitiveness
Call - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2022

HORIZON-CL4-2022-SPACE-01

HORIZON-CL4-2022-SPACE-01-

Foster competitiveness of space systems

11: Future space ecosystems: on-orbit operations, preparation of orbital demonstration mission

12: Technologies and generic building blocks for Electrical Propulsion

13: End-to-end Earth observation systems and associated services

Reinforce EU capacity to access and use space

21: Multi sites flexible industrial platform and standardised technology for improving interoperability of European access to space ground

85.7 MEur
28/10/2021 – 16/02/2022
Call - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA[2022]

HORIZON-CL4-2022-SPACE-01-

Evolution of space and ground infrastructure for Galileo/EGNOS: under other actions

Evolution of services of the EU space programme components: Copernicus

41: Copernicus Marine Environment Monitoring Service evolution
42: Copernicus Anthropogenic CO₂ Emissions Monitoring & Verification Support (MVS) capacity
43: Copernicus Land Monitoring Service evolution

Innovative space capabilities: SSA, GOVSATCOM, Quantum

62: Space Weather

Space entrepreneurship ecosystems (including "New Space" and start-ups) and skills

72: Education and skills for the EU space sector

Targeted and strategic actions supporting the EU space sector

81: Space technologies for European non-dependence and competitiveness
82: Space science and exploration technologies

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### DESTINATION – OPEN STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA

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Other Actions
Calls by EUSPA: HORIZON-EUSPA-2021-SPACE-02

HORIZON-EUSPA-2021-SPACE-02-

51: EGNSS and Copernicus applications fostering the European Green deal

52: EGNSS applications for Safety and Crisis management

53: EGNSS applications for the Digital Age

<table>
<thead>
<tr>
<th>Topics</th>
<th>Type of Action</th>
<th>Budgets (EUR million) 2021</th>
<th>Expected EU contribution per project (EUR million)</th>
<th>Number of projects expected to be funded</th>
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Calls by EUSPA: HORIZON-EUSPA-2022-SPACE-02

HORIZON-EUSPA-2022-SPACE-02-

51: EGNSS applications for Smart mobility

52: Public sector as Galileo and/or Copernicus user

54: Copernicus downstream applications and the European Data Economy

55: Large-scale Copernicus data uptake with AI and HPC

56: Designing space-based downstream applications with international partners

61: GOVSATCOM Service developments and demonstrations

48.1 MEur
27/10/2022 – 16/02/2023
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OTHER ACTIONS NOT SUBJECT TO CALLS FOR PROPOSALS

Grants to identified beneficiaries
1. HORIZON-CL4-SSA-SST-MS - New & improved EUSST Missions and Services
2. HORIZON-CL4-SSA-SST-STM-AE - SST & STM system architecture and evolutions
3. HORIZON-CL4-SSA-SST-SB - Space-based SST (mission, system and sensors network)
4. HORIZON-CL4-SSA-SST-SP - SST Sensors and Processing
5. HORIZON-CL4-SSA-SST-SD - SST Networking, Security & Data sharing

Public procurement
3. EGNSS Evolution: Mission and Service related R&D activities
4. Support European “New Space” entrepreneurship through CASSINI Space Entrepreneurship Initiative 2021-2027

Other budget implementation instruments
1. Indirectly managed actions
1. Indirectly managed actions delegated to ESA
2. Indirectly managed actions delegated to EUSPA

- EGNSS upstream
- Space Weather and NEO
- GOVSATCOM tech. Dev.
- Cassini IOD/IOV

- GOVSATCOM service
- EGNSS and Copernicus downstream, Cassini prizes
Eligibility conditions: same as Space Programme

In accordance with paragraph 11 of Annex IV of the Regulation (EU) 2021/695 establishing Horizon Europe, this action is implemented with regard to eligibility of legal entities in accordance with the Union Space Programme. In particular, for the reasons of EU strategic autonomy in space and the security and integrity of EU space assets, in order to guarantee the protection of the strategic interests of the Union and its Member States, legal entities established in any Member State will be eligible to participate where these entities comply with the conditions established in Article 24 of the Regulation (EU) 2021/696. https://eur-lex.europa.eu/legal-content/EN/AUTO/?uri=uriserv:OJ.L_.2021.170.01.0069.01.ENG&toc=OJ:L:2021:170:TOC

2022-SST: 5 grants to identified beneficiary = SST Partnership

2022-SPACE-02-61: GOVSATCOM
Eligibility conditions: Article 22(5)

- 2021-SPACE-01-11: End-to-end satellite communication
- 2021-SPACE-01-21: Reusability for EU strategic space launchers
- 2021-SPACE-01-22: Low cost high thrust propulsion
- 2021-SPACE-01-23: New space transportation solutions
- 2022-SPACE-01-21: Multi sites flexible industrial platform

- 2021-SPACE-01-43: Copernicus Security and Emergency Services

- 2021-SPACE-01-62: Quantum technologies for space gravimetry

- 2021-SPACE-01-81: Space technologies for European non-dependence
- 2022-SPACE-01-81: Space technologies for European non-dependence
# HorizonEU

http://ec.europa.eu/horizon-europe