



# HORIZON EUROPE



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## THE EU RESEARCH & INNOVATION PROGRAMME

2021 – 2027

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Greek Info Day

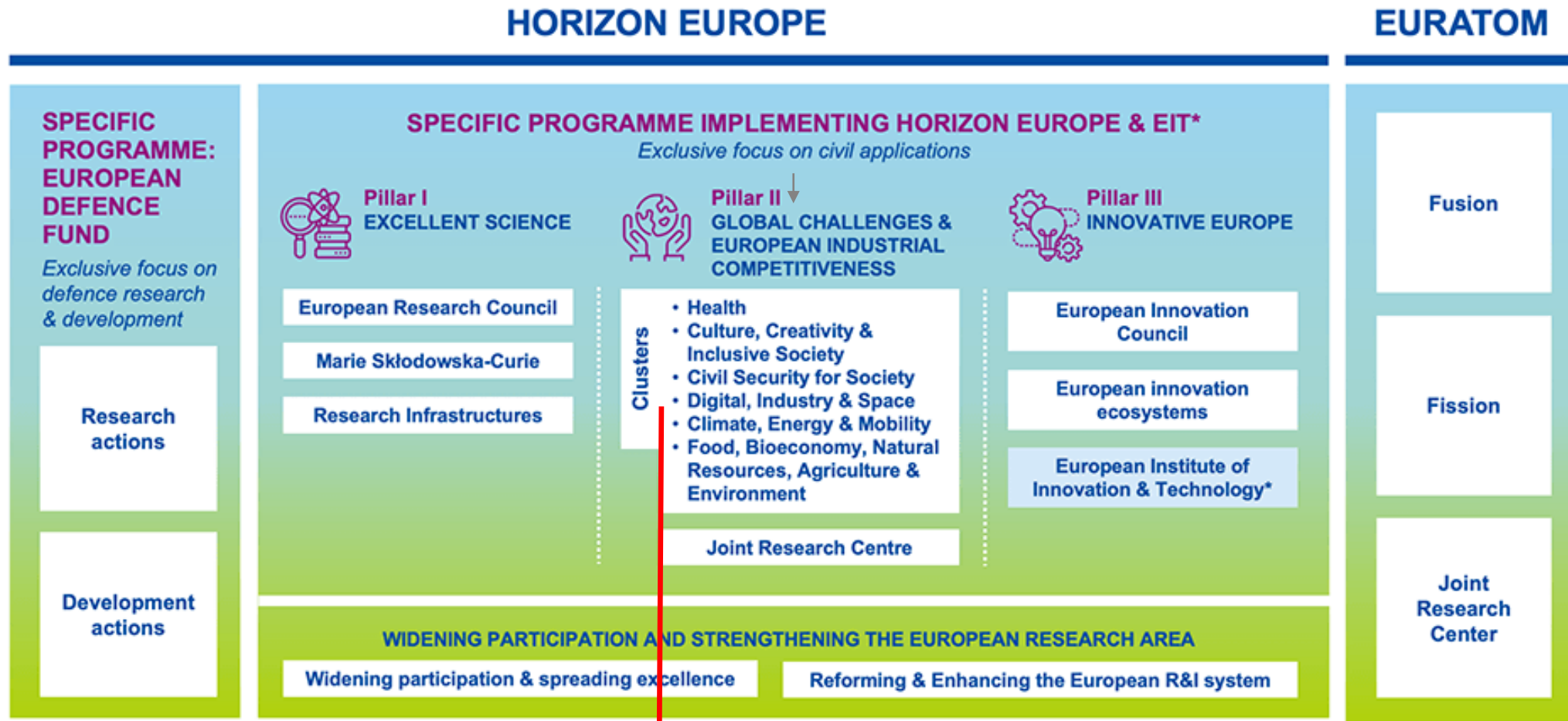
Cluster 4 - Space

19 July 2021

Francesco Barbato, Policy Officer  
DG DEFIS



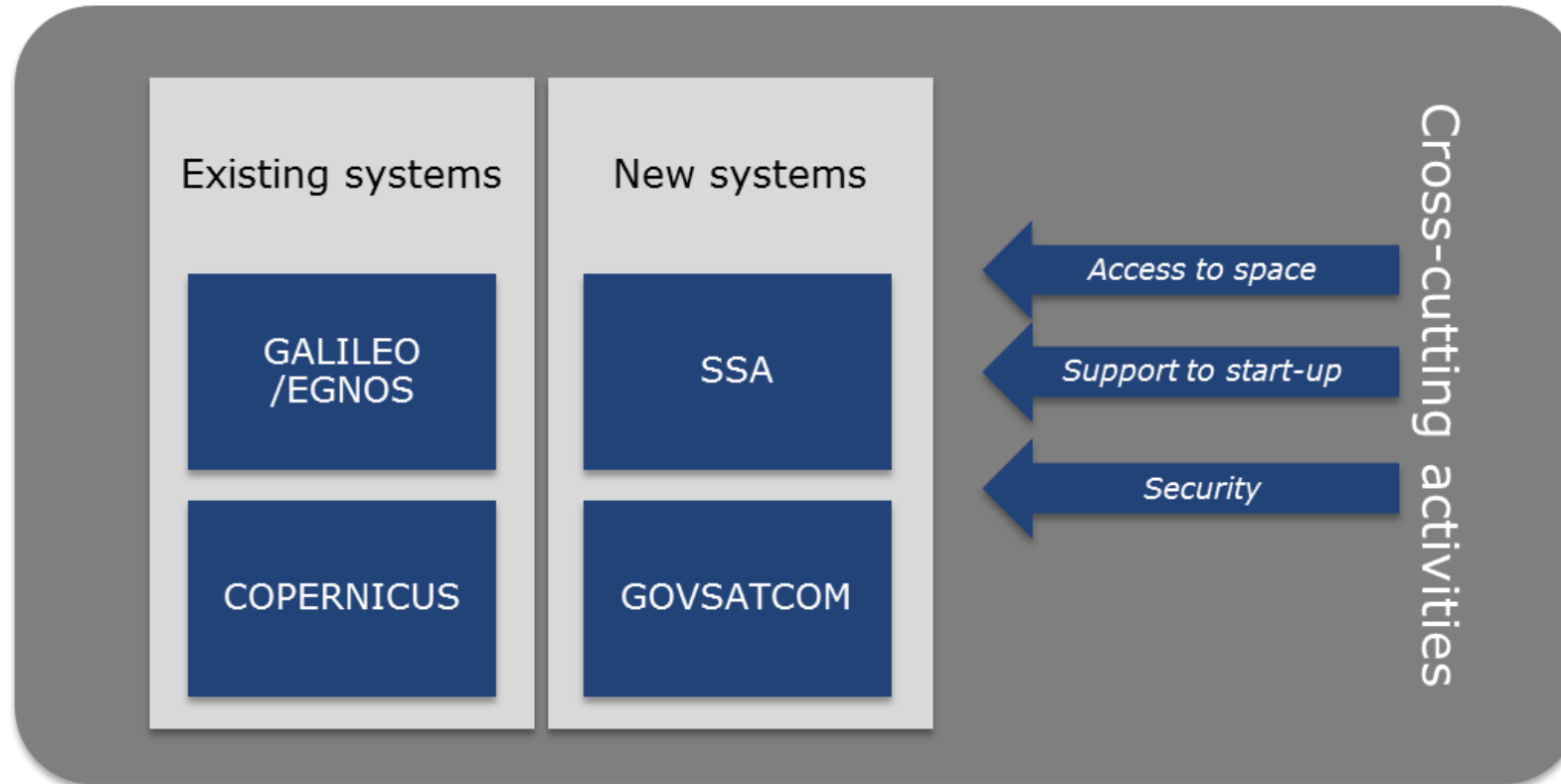
# Space under Horizon Europe



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

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

EGNNS

**Evolution of space and ground infrastructures**

EGNNS and Copernicus

**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**

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

Call HORIZON-CL4-**2021**-SPACE-01

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

136,2 MEur

28/10/2021 – 16/02/2022

Call HORIZON-EUSPA-**2021**-SPACE-02

STRATEGIC AUTONOMY IN DEVELOPING,  
DEPLOYING AND USING GLOBAL SPACE-BASED  
INFRASTRUCTURES, SERVICES, APPLICATIONS  
AND DATA - **APPLICATIONS**

32,6 MEur

28/10/2021 – 16/02/2022

(TBC)

Call HORIZON-CL4-**2022**-SPACE-01

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

85,7 MEur

28/10/2021 – 16/02/2022

Call HORIZON-EUSPA-**2022**-SPACE-02

STRATEGIC AUTONOMY IN DEVELOPING,  
DEPLOYING AND USING GLOBAL SPACE-BASED  
INFRASTRUCTURES, SERVICES, APPLICATIONS  
AND DATA - **APPLICATIONS**

48,1 MEur

27/10/2022 – 16/02/2023

(TBC)

Other Actions

# Call - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2021

HORIZON-CL4-2021-SPACE-01

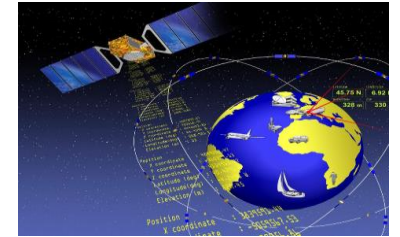
136,2 MEur  
28/10/2021 – 16/02/2022

## 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



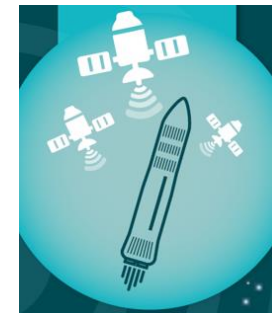
### Reinforce EU capacity to access and use space

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

-11	RIA	12.00 <sup>205</sup>	4.00 to 6.00	2
-12	RIA	6.00	1.00 to 2.00	3
-21	RIA	39.00 <sup>206</sup>	30.00 to 39.00	1
-22	RIA	19.80 <sup>207</sup>	15.00 to 19.00	1
-23	RIA	3.00 <sup>208</sup>	1.00 to 1.50	2



# Call - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2021

## HORIZON-CL4-2021-SPACE-01-

### 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

-41	RIA	11.00 <sup>209</sup>	10.00 to 11.00	1
-42	RIA	7.50 <sup>210</sup>	6.00 to 7.50	1
-43	RIA	5.00 <sup>211</sup>	4.00 to 5.00	1
-44	RIA	5.60 <sup>212</sup>	Around 3.00	2

#### Copernicus Services



### *Evolution of EGNSS Services: under Other Actions*

### Innovative space capabilities: SSA, GOVSATCOM, Quantum

62: Quantum technologies for space gravimetry

-62	RIA	17.00	15.00 to 17.00	1
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### 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

-81	RIA	10.32 <sup>213</sup>	2.00 to 3.00	4
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# Call - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2022

*HORIZON-CL4-2022-SPACE-01*

85,7 MEur  
28/10/2021 – 16/02/2022

HORIZON-CL4-2022-SPACE-01-

## Foster competitiveness of space systems

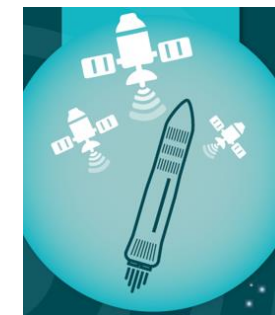
- 11: Future space ecosystems: on-orbit operations, preparation of orbital demonstration mission
- 12: Technologies and generic building blocks for Electrical Propulsion
- 13: End-to-end Earth observation systems and associated services



·11	RIA	26.00	20.00 to 26.00	1
·12	IA	5.10	1.00 to 2.00	3
·13	IA	8.10	2.00 to 3.00	3
·21	RIA	2.00	1.00 to 2.00	1

## 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





# 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 CO<sub>2</sub> 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

-41	RIA	10.00 <sup>231</sup>	8.00 to 10.00	1
-42	RIA	6.00 <sup>232</sup>	5.00 to 6.00	1
-43	RIA	5.00 <sup>233</sup>	4.00 to 5.00	1
-62	RIA	2.00	0.50 to 1.00	2
-72	CSA	3.00	2.00 to 3.00	1
-81	RIA	10.50 <sup>234</sup>	2.00 to 3.00	4
-82	RIA	8.00	1.00 to 1.50	6



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

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INFRASTRUCTURES, SERVICES, APPLICATIONS  
AND DATA - **APPLICATIONS**

48,1 MEur

27/10/2022 – 16/02/2023

(TBC)

Other Actions



# Calls by EUSPA: HORIZON-EUSPA-2021-SPACE-02

32,6 MEur  
28/10/2021 – 16/02/2022  
(TBC)

## 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



Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) <sup>304</sup>	Number of projects expected to be funded
		2021		
Opening: 2021 (indicative) Deadline(s): 2021-2022 (indicative)				
HORIZON-EUSPA-2021-SPACE-02-51	IA	14.00 <sup>305</sup>	2.00 to 3.00	5
HORIZON-EUSPA-2021-SPACE-02-52	IA	9.30 <sup>306</sup>	2.00 to 3.00	3
HORIZON-EUSPA-2021-SPACE-02-53	IA	9.30 <sup>307</sup>	2.00 to 3.00	3
Overall indicative budget		32.60		

# Calls by EUSPA: HORIZON-EUSPA-2022-SPACE-02

48,1 MEur  
27/10/2022 – 16/02/2023  
(TBC)

## 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

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) <sup>310</sup>	Number of projects expected to be funded
		2022		
Opening: May 2022 (indicative) Deadline(s): Sep 2022 (indicative)				
HORIZON-EUSPA-2022-SPACE-02-51	IA	9.50 <sup>311</sup>	2.00 to 3.00	3
HORIZON-EUSPA-2022-SPACE-02-52	PCP	5.20	2.60 to 5.20	2
HORIZON-EUSPA-2022-SPACE-02-54	IA	9.60 <sup>312</sup>	2.00 to 3.00	3
HORIZON-EUSPA-2022-SPACE-02-55	RIA	9.60 <sup>313</sup>	2.00 to 3.00	3
HORIZON-EUSPA-2022-SPACE-02-56	RIA	5.10	0.50 to 1.00	5
HORIZON-EUSPA-2022-SPACE-02-61	RIA	9.10 <sup>314</sup>	1.00 to 1.50	6

# CLUSTER 4 – SPACE DESTINATION



Watch the Topics presentations:

<https://www.horizon-europe-infodays2021.eu/event/cluster-4-digital-industry-space/destination-5-open-strategic-autonomy-developing-deploying>



# OTHER ACTIONS NOT SUBJECT TO CALLS FOR PROPOSALS



2022

## 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](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



# Article 22(5) – state of play

“In view of ensuring maximum excellence of R&I for the EU and to maintain EU’s spirit of global openness, before opening these actions for applications, the eligibility to participate in these 21 actions will be extended to include legal entities established in (candidate) Associated Countries which provide assurances concerning the protection of EU’s strategic assets, interests, autonomy or security. On the basis of the outcome of the discussions in the relevant configurations of the Horizon Europe Programme Committee, the Commission will reflect the changes in the work programme in full consistency with the decision establishing the Horizon Europe specific programme, especially through comitology procedures as foreseen in articles 13 and 14(4) of it.”

# Eligibility conditions: Article 22(5)

Current work programme eligible countries:

- Member States + EEA countries Iceland & Norway

Until now: Discussions with Member States on assurances from candidate associated countries (AC).

During July: Candidate AC to reply to questionnaire

August-September: Assessment of replies, discussions, Commission - MS

October: WP update to add candidate AC (publication before 28 October)

# Guidance documents for Space calls

Guidance documents are foreseen for:

- Critical space technologies
- Copernicus evolution topics
- Future space ecosystem – on orbit operations

They will be published on the EU Funding and Tenders Portal no later than 28 October



**Thank you for your attention**

**# HorizonEU**

**<http://ec.europa.eu/horizon-europe>**



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