



HORIZON EUROPE

THE EU
RESEARCH & INNOVATION
PROGRAMME

2021 – 2027

Horizon Europe Information
Days

Cluster 4 - Digital, Industry
and Space

29-30 June 2021

Introduction & Overview



Info Days – Day 1

Programme of the info day

Day 1 | Day 2

- 9:00** ● **Welcome and general presentation of the 'Digital, Industry and Space' 2021 Work Programme**
9:00 - 10:45 CEST | Plenary session
[Watch this session >](#)
- 11:00** ● **Horizontal Issues**
11:00 - 12:45 CEST
[Watch this session >](#)
- 13:15** ● **Destination 1 - Climate neutral, circular and digitised production**
13:15 - 17:30 CEST | Breakout room
[Watch this session >](#)
- 13:15** ● **Destination 5 - Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data**
13:15 - 17:30 CEST | Breakout room
[Watch this session >](#)
- 13:30** ● **Destination 6: A human-centred and ethical development of digital and industrial technologies**
13:30 - 17:45 CEST | Breakout room
[Watch this session >](#)

Info Days – Day 2

Programme of the info day

Day 1 | Day 2

- 9:00 ● Destination 6: Systematic approaches to make the most of the technologies within society and industry
9:00 - 10:00 CEST | Breakout room
[Watch this session >](#)
- 10:15 ● Destination 3 - World leading data and computing technologies
10:15 - 11:30 CEST | Breakout room
[Watch this session >](#)
- 10:30 ● Destination 2: Increased autonomy in key strategic value chains for resilient industry
10:30 - 13:45 CEST | Breakout room
[Watch this session >](#)
- 11:45 ● Destination 4 - Digital and emerging technologies for competitiveness and fit for the green deal
11:45 - 13:00 CEST | Breakout room
[Watch this session >](#)
- 14:00 ● Destination 4 - Digital and emerging technologies for competitiveness and fit for the green deal
14:00 - 18:00 CEST | Breakout room
[Watch this session >](#)
- 14:30 ● Destination 2 - Increased autonomy in key strategic value chains for resilient industry
14:30 - 17:30 CEST | Breakout room
[Watch this session >](#)



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Cluster 4 'Digital, Industry and Space' – Political Priorities



[European Space Strategy](#)

[Action Plan on critical raw materials](#)

[Circular Economy Action Plan – For a cleaner and more competitive Europe](#)

[Europe's Digital Decade: digital targets for 2030 | European Commission \(europa.eu\)](#)

Cluster 4 – Vision

Competitive technologies respecting the boundaries of our planet, and reflecting human needs

Twin Green and Digital Transitions

Industrial and Digital transformation

- mastering technologies
- deploying technologies – technology infrastructures
- securing autonomy in strategic value chains and critical raw materials



Climate-neutral, circular and clean industry

- Innovative production and manufacturing processes
- Sustainable-by-design advanced materials and technologies
- Deep decarbonisation of energy-intensive industries

Major contribution to Inclusiveness and Resilience

- engagement with users, workers, citizens
- development of skills
- development of regions

Cluster 4 – Strategic Priorities

From EU priorities to Work Programme Destinations



Cluster 4 directly supports the following three Key Strategic Orientations outlined in the Strategic Plan 2021-2024:

- Promoting an open strategic autonomy by leading the development of key digital, and enabling and emerging technologies, sectors and value chains (A)
- Making Europe the first digitally enabled, circular, climate-neutral and sustainable economy (C)
- Creating a more resilient, inclusive and democratic European society (D)

Cluster 4 'Digital, Industry and Space' Destinations in Work Programme 2021-22

Key Strategic Orientation	Destination
<p>Making Europe the first digitally enabled, circular, climate-neutral and sustainable economy</p>	<p>Climate neutral, circular and digitised production TWIN-TRANSITION</p>
<p>Promoting an open strategic autonomy by leading the development of key digital, and enabling and emerging technologies, sectors and value chains</p>	<p>A digitised, resource efficient, and resilient industry RESILIENCE</p>
	<p>World-leading data and computing technologies DATA</p>
	<p>Digital and emerging technologies for competitiveness and fit for the green deal DIGITAL-EMERGING</p>
<p>Creating a more resilient, inclusive and democratic European society</p>	<p>Open Strategic Autonomy in developing, deploying and using global space-based infrastructures, services, applications and data SPACE</p> <p>A human-centred and ethical development of digital and industrial technologies HUMAN</p>

Partnerships in Cluster 4

- Processes4Planet – Transforming the European Process Industry for a sustainable society (1,300M€)
- Clean Steel – Low-carbon Steelmaking (700M€)
- Made in Europe (900M€)
- EuroHPC, High-Performance Computing (JU, 900M€)
- KDT, Key Digital Technologies (JU, 1,800M€)
- SNS, Smart Networks and Services (JU, 900M€)
- Artificial Intelligence, Data and Robotics (1,300M€)
- Photonics (340M€)
- Globally competitive Space Systems (proposed)
- Metrology (Art. 185, 300M€)

Indicative Budget of Cluster 4

2021-27 budget of 15.348 bn€ (including NGEU)

For the WP 2021-2022, the **programmable budget is ~3.5 bn€**, distributed *approximately* as:

DESTINATION	BUDGET 2021-2022
Destination 'Climate neutral, circular and digitised production'	737.5 M€
Destination 'Increased autonomy in key strategic value chains for resilient industry'	776.4 M€
Destination 'World leading data and computing technologies'	346.0 M€
Destination 'Digital and emerging technologies for competitiveness and fit for the green deal'	750.0 M€
Destination 'Open Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data' (incl. Other Actions)	517.6 M€
Destination 'A Human-centred and ethical development of digital and industrial technologies'	327.0 M€
Other Actions (other than Space-related)	36.0 M€



Climate neutral, circular, and digitised production

SECTIONS	NUMBER OF TOPICS	ESTIMATED BUDGET (M€)
Green, flexible and advanced manufacturing	8	193
Advanced digital technologies for manufacturing	4	94
A new way to build, accelerating disruptive change in construction	4	69
Hubs for circularity, a stepping stone towards climate neutrality and circularity in industry	3 (including 1 CSA)	72.5
Enabling circularity of resources in the process industries, including waste, water and CO ₂ /CO	6	173.5
Integration of Renewables and Electrification in process industry	5	135.5
TOTAL estimated budget WP 2021-2022	30	737.5



Autonomy in Key Strategic Value Chains for Resilient Industry

SECTIONS	NUMBER OF TOPICS	ESTIMATED BUDGET (M€)
Novel paradigms to establish resilient and circular value chains	2	50
Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	12 (incl. 2 CSA)	253.9
Green and Sustainable Materials	9 (incl. 1 CSA)	173
Materials for the benefit of society and the environment and materials for decarbonising Industry	8 (incl. 2 CSA)	175
Materials and data cross-cutting actions	5 (incl. 1 CSA)	59.5
Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	8 (incl. 4 CSA)	65
TOTAL estimated budget WP 2021-2022	44	776.4



World leading Data and Computing Technologies

SECTIONS	NUMBER OF TOPICS	ESTIMATED BUDGET (EUR M)
Data sharing in the common European data spaces	3	134
Strengthening Europe's data analytics capacity	2	63
From Cloud to Edge to IoT for European Data	5 (incl. 2 CSAs)	149
TOTAL estimated budget WP 2021-2022	10	346

EuroHPC JU: 243 MEUR

Wed 30/06, am

Digital and emerging technologies for competitiveness and fit for the green deal

SECTIONS	NUMBER OF TOPICS	ESTIMATED BUDGET (EUR M)
Ultra-low power processors	3 (incl. 1 CSA)	50
European Innovation Leadership in Electronics	2 (incl. 1 CSA)	38
European Innovation Leadership in Photonics	3	113
6G and foundational connectivity technologies	3 (incl. 1 CSA)	29
Innovation in AI, Data and Robotics	3	68
Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted	4	120,5
European leadership in Emerging Enabling Technologies	4 (incl. 1 CSA)	59,5
Flagship on Quantum Technologies: a Paradigm Shift	17 (incl. 1 CSA + 6 SGAs in OA)	228,5
Graphene: Europe in the lead	5 (incl. 1 CSA)	43,5
TOTAL estimated budget WP 2021-2022	44	750

Wed 30/6, pm

KDT JU: 460 MEUR, SNS JU: 243 MEUR

A human-centred and ethical development and industrial technologies

SECTIONS	NUMBER OF TOPICS	ESTIMATED BUDGET (EUR M)
Leadership in AI based on trust	7 (incl. 1 CSA)	131,5
An Internet of Trust	8 (incl. 3 CSAs)	64,5
eXtended Reality (XR)	7 (incl. 1 CSA)	103,5
Systemic approaches to make the most of the technologies within society and industry incl. 3 <u>NCP Networks for Cluster 4 (Digital, Industry and Space)</u>	9 (incl. 7 CSAs)	27,5
TOTAL estimated budget WP 2021-2022	31	327

Tue 29/6,
pm



European
Commission

Open strategic autonomy in developing, deploying and using global Space based infrastructures, services, applications and data

SECTIONS	NUMBER OF TOPICS/ACTIONS	ESTIMATED BUDGET (EUR M)
EGNSS upstream	3 Other Actions (OA)	98
Copernicus services evolution	7 Topics	50
EGNSS and Copernicus applications	8 Topics	72
SSA / GOVSATCOM / Quantum	4 Topics, 6 OA	92
Cassini space entrepreneurship (incl. IOD/IOV)	1 CSA, 2 Prizes, 3 OA	51
Competitiveness	5 Topics	57
Access to space	4 Topics	64
Targeted and Strategic Actions (incl. Space science)	3 Topics	29
TOTAL estimated budget WP 2021-2022	46	513

Social Sciences and Humanities (SSH)

- Involving Social Sciences and Humanities can significantly enhance the outcomes of many projects in Digital, Industry and Space. Examples include
 - Human-robot collaboration, Human empowerment
 - Improving working environments
 - Engaging with society to develop and adopt green and digital solutions
 - Removing biases in Artificial Intelligence
 - Trustworthiness in Next-generation Internet and Artificial Intelligence
- Role of Social Sciences and Humanities explicit in 52 topics of Cluster 4
- Opportunities for **Social Innovation** in 20 topics of Cluster 4

International Cooperation

- General opening of Horizon Europe to international cooperation
 - Low- and middle-income countries can participate with EU funding
 - Other countries can participate, normally without EU funding, except in justified cases
- International cooperation explicitly encouraged in 42 topics of the cluster
 - flagged on portal as ‘A Stronger Europe in the World’
- Associated Countries
 - Transitional arrangement for countries formerly associated in Horizon 2020, UK, Kosovo* and Morocco – until association agreements enter into force
 - Switzerland depends on progress with the general cooperation agreement
 - Art. 22.5

** This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.*



Thank you!

HorizonEU

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



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