



# Appels Cluster 4 2021-2022

« Numérique, industrie et espace »

Calendrier indicatif

Appel - TWIN GREEN AND DIGITAL TRANSITION 2021								
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)	
Destination 1	2021	Green, flexible and advanced manufacturing	HORIZON-CL4-2021-TWIN-TRANSITION-01-01	AI enhanced robotics systems for smart manufacturing (IA)	15/04/2021	23/09/2021	28	
Destination 1	2021	Green, flexible and advanced manufacturing	HORIZON-CL4-2021-TWIN-TRANSITION-01-02	Zero-defect manufacturing towards zero-waste (IA)	15/04/2021	23/09/2021	28	
Destination 1	2021	Green, flexible and advanced manufacturing	HORIZON-CL4-2021-TWIN-TRANSITION-01-03	Laser-based technologies for green manufacturing (RIA)	15/04/2021	23/09/2021	26	
Destination 1	2021	Green, flexible and advanced manufacturing	HORIZON-CL4-2021-TWIN-TRANSITION-01-05	Manufacturing technologies for bio-based materials (RIA)	15/04/2021	23/09/2021	20	
Destination 1	2021	Advanced digital technologies for manufacturing	HORIZON-CL4-2021-TWIN-TRANSITION-01-07	Artificial Intelligence for sustainable, agile manufacturing (IA)	15/04/2021	23/09/2021	18,5	
Destination 1	2021	Advanced digital technologies for manufacturing	HORIZON-CL4-2021-TWIN-TRANSITION-01-08	Data-driven Distributed Industrial Environments (IA)	15/04/2021	23/09/2021	24	
Destination 1	2021	A new way to build, accelerating disruptive change in construction	HORIZON-CL4-2021-TWIN-TRANSITION-01-10	Digital permits and compliance checks for buildings and infrastructure (IA)	15/04/2021	23/09/2021	15	
Destination 1	2021	A new way to build, accelerating disruptive change in construction	HORIZON-CL4-2021-TWIN-TRANSITION-01-11	Automated tools for the valorisation of construction waste (RIA)	15/04/2021	23/09/2021	21	
Destination 1	2021	A new way to build, accelerating disruptive change in construction	HORIZON-CL4-2021-TWIN-TRANSITION-01-12	New breakthrough technologies for technological sovereignty in construction (IA)	15/04/2021	23/09/2021	24	
Destination 1	2021	Hubs for circularity, a stepping stone towards climate neutrality and circularity in industry	HORIZON-CL4-2021-TWIN-TRANSITION-01-14	Deploying industrial-urban symbiosis solutions for the utilization of energy, water, industrial waste and by-products at regional scale (RIA)	15/04/2021	23/09/2021	27,5	
Destination 1	2021	Hubs for circularity, a stepping stone towards climate neutrality and circularity in industry	HORIZON-CL4-2021-TWIN-TRANSITION-01-16	Hubs for Circularity European Community of Practice (ECOP) platform (CSA)	15/04/2021	23/09/2021	2	
Destination 1	2021	Enabling circularity of resources in the process industries, including waste, water and CO2/CO	HORIZON-CL4-2021-TWIN-TRANSITION-01-17	Plastic waste as a circular carbon feedstock for industry (IA)	15/04/2021	23/09/2021	38	
Destination 1	2021	Enabling circularity of resources in the process industries, including waste, water and CO2/CO	HORIZON-CL4-2021-TWIN-TRANSITION-01-18	Carbon Direct Avoidance in steel	15/04/2021	23/09/2021	28	
Destination 1	2021	Enabling circularity of resources in the process industries, including waste, water and CO2/CO	HORIZON-CL4-2021-TWIN-TRANSITION-01-19	Improvement of the yield of the iron and steel making (IA)	15/04/2021	23/09/2021	14	
Destination 1	2021	Enabling circularity of resources in the process industries, including waste, water and CO2/CO	HORIZON-CL4-2021-TWIN-TRANSITION-01-20	Reducing environmental footprint, improving circularity in extractive and processing value chains (IA)	15/04/2021	23/09/2021	34,1	
Destination 1	2021	Integration of Renewables and Electrification in process industry	HORIZON-CL4-2021-TWIN-TRANSITION-01-21	Design and optimisation of energy flexible industrial processes (IA)	15/04/2021	23/09/2021	40	
Destination 1	2021	Integration of Renewables and Electrification in process industry	HORIZON-CL4-2021-TWIN-TRANSITION-01-22	Adjustment of Steel process production to prepare for the transition towards climate neutrality (IA)	15/04/2021	23/09/2021	14	

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Appel - TWIN GREEN AND DIGITAL TRANSITION 2022							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 1	2022	Green, flexible and advanced manufacturing	HORIZON-CL4-2022-TWIN-TRANSITION-01-01	Rapid reconfigurable production process chains (IA)	12/10/2022	30/03/2022	27
Destination 1	2022	Green, flexible and advanced manufacturing	HORIZON-CL4-2022-TWIN-TRANSITION-01-02	Products with complex functional surfaces (RIA)	12/10/2022	30/03/2022	20
Destination 1	2022	Green, flexible and advanced manufacturing	HORIZON-CL4-2022-TWIN-TRANSITION-01-04	Excellence in distributed control and modular manufacturing (RIA)	12/10/2022	30/03/2022	20
Destination 1	2022	Green, flexible and advanced manufacturing	HORIZON-CL4-2022-TWIN-TRANSITION-01-05	Intelligent work piece handling in a full production line (RIA)	12/10/2022	30/03/2022	20
Destination 1	2022	Advanced digital technologies for manufacturing	HORIZON-CL4-2022-TWIN-TRANSITION-01-06	ICT Innovation for Manufacturing Sustainability in SMEs (I4MS2) (IA)	12/10/2022	30/03/2022	30
Destination 1	2022	Advanced digital technologies for manufacturing	HORIZON-CL4-2022-TWIN-TRANSITION-01-07	Digital tools to support the engineering of a Circular Economy (RIA)	12/10/2022	30/03/2022	22
Destination 1	2022	A new way to build, accelerating disruptive change in construction	HORIZON-CL4-2022-TWIN-TRANSITION-01-09	Demonstrate the use of Digital Logbook for buildings (IA)	12/10/2022	30/03/2022	9
Destination 1	2022	Hubs for circularity, a stepping stone towards climate neutrality and circularity in industry	HORIZON-CL4-2022-TWIN-TRANSITION-01-10	Circular flows for solid waste in urban environment (IA)	12/10/2022	30/03/2022	42
Destination 1	2022	Enabling circularity of resources in the process industries, including waste, water and CO2/CO	HORIZON-CL4-2022-TWIN-TRANSITION-01-11	Valorisation of CO/CO2 streams into added-value products of market interest (IA)	12/10/2022	30/03/2022	40
Destination 1	2022	Enabling circularity of resources in the process industries, including waste, water and CO2/CO	HORIZON-CL4-2022-TWIN-TRANSITION-01-13	Raw material preparation for clean steel production (IA)	12/10/2022	30/03/2022	14
Destination 1	2022	Integration of Renewables and Electrification in process industry	HORIZON-CL4-2022-TWIN-TRANSITION-01-15	New electrochemical conversion routes for the production of chemicals and materials in process industries (RIA)	12/10/2022	30/03/2022	28
Destination 1	2022	Integration of Renewables and Electrification in process industry	HORIZON-CL4-2022-TWIN-TRANSITION-01-16	Modular and hybrid heating technologies in steel production (IA)	12/10/2022	30/03/2022	10
Destination 1	2022	Integration of Renewables and Electrification in process industry	HORIZON-CL4-2022-TWIN-TRANSITION-01-17	Integration of hydrogen for replacing fossil fuels in industrial applications (IA)	12/10/2022	30/03/2022	42

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Appel - A DIGITISED, RESOURCE-EFFICIENT AND RESILIENT INDUSTRY 2021								
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)	
Destination 2	2021	Novel paradigms to establish resilient and circular value chains	HORIZON-CL4-2021-RESILIENCE-01-01	Ensuring circularity of composite materials (RIA)	15/04/2021	23/09/2021	25	
Destination 2	2021	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2021-RESILIENCE-01-03	Identifying future availability of secondary raw materials (RIA)	15/04/2021	23/09/2021	13,5	
Destination 2	2021	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2021-RESILIENCE-01-04	Developing climate-neutral and circular raw materials (IA)	15/04/2021	23/09/2021	36	
Destination 2	2021	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2021-RESILIENCE-01-05	Building EU-Africa partnerships on sustainable raw materials value chains (CSA)	15/04/2021	23/09/2021	8	
Destination 2	2021	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2021-RESILIENCE-01-06	Innovation for responsible EU sourcing of primary raw materials, the foundation of the Green Deal (RIA)	15/04/2021	23/09/2021	30	
Destination 2	2021	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2021-RESILIENCE-01-07	Building innovative value chains from raw materials to sustainable products (IA)	15/04/2021	23/09/2021	36	
Destination 2	2021	Green and Sustainable Materials	HORIZON-CL4-2021-RESILIENCE-01-08	Establishing EU led international community on sustainable-by-design materials to support embedding sustainability criteria over the life cycle of products and processes (CSA)	15/04/2021	23/09/2021	4	
Destination 2	2021	Green and Sustainable Materials	HORIZON-CL4-2021-RESILIENCE-01-09	Promote Europe's availability, affordability, sustainability and security of supply of essential chemicals and materials (IA)	15/04/2021	23/09/2021	28	
Destination 2	2021	Green and Sustainable Materials	HORIZON-CL4-2021-RESILIENCE-01-10	Paving the way to an increased share of recycled plastics in added value products (RIA)	15/04/2021	23/09/2021	23	
Destination 2	2021	Green and Sustainable Materials	HORIZON-CL4-2021-RESILIENCE-01-11	Safe- and sustainable-by-design polymeric materials (RIA)	15/04/2021	23/09/2021	19	
Destination 2	2021	Green and Sustainable Materials	HORIZON-CL4-2021-RESILIENCE-01-12	Safe- and sustainable-by-design metallic coatings and engineered surfaces (RIA)	15/04/2021	23/09/2021	19	

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Appel - A DIGITISED, RESOURCE-EFFICIENT AND RESILIENT INDUSTRY 2021							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 2	2021	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2021-RESILIENCE-01-14	Development of more energy efficient electrically heated catalytic reactors (IA)	15/04/2021	23/09/2021	33
Destination 2	2021	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2021-RESILIENCE-01-16	Creation of an innovation community for solar fuels and chemicals (CSA)	15/04/2021	23/09/2021	4
Destination 2	2021	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2021-RESILIENCE-01-17	Advanced materials for hydrogen storage (RIA)	15/04/2021	23/09/2021	21
Destination 2	2021	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2021-RESILIENCE-01-20	Antimicrobial, Antiviral, and Antifungal Nanocoatings (RIA)	15/04/2021	23/09/2021	23
Destination 2	2021	Materials and data cross-cutting actions	HORIZON-CL4-2021-RESILIENCE-01-25	Biomaterials database for Health Applications (CSA)	15/04/2021	23/09/2021	6
Destination 2	2021	Materials and data cross-cutting actions	HORIZON-CL4-2021-RESILIENCE-01-26	Sustainable Industry Commons (RIA)	15/04/2021	23/09/2021	6
Destination 2	2021	Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	HORIZON-CL4-2021-RESILIENCE-01-27	Innovation Radar, Tech Due Diligence and Venture Building for strategic digital technologies (CSA)	15/04/2021	23/09/2021	4
Destination 2	2021	Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	HORIZON-CL4-2021-RESILIENCE-01-28	Re-opening industrial sites preparatory action – Promoting a sustainable strategy for Europe's industrial future (CSA)	15/04/2021	23/09/2021	1
Destination 2	2021	Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	HORIZON-CL4-2021-RESILIENCE-01-29	'Innovate to transform' support for SME's sustainability transition (CSA)	15/04/2021	23/09/2021	10
Destination 2	2021	Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	HORIZON-CL4-2021-RESILIENCE-01-31	European Technological and Social Innovation Factory (RIA)	15/04/2021	23/09/2021	5
Destination 2	2021	Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	HORIZON-CL4-2021-RESILIENCE-01-32	Social and affordable housing district demonstrator (IA)	15/04/2021	23/09/2021	10
Destination 2	2021	Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	HORIZON-CL4-2021-RESILIENCE-02-PCP	Boosting economic recovery and strategic autonomy in Strategic Digital Technologies through pre-commercial procurement (PCP action)	15/04/2021	23/09/2021	8,9

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Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 2	2022	Novel paradigms to establish resilient and circular value chains	HORIZON-CL4-2022-RESILIENCE-01-01	Circular and low emission value chains through digitalisation (RIA)	15/10/2021	30/03/2022	24
Destination 2	2022	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2022-RESILIENCE-01-02	Monitoring and supervising system for exploration and future exploitation activities in the deep sea (RIA)	15/10/2021	30/03/2022	14
Destination 2	2022	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2022-RESILIENCE-01-03	Streamlining cross-sectoral policy framework throughout the extractive life-cycle in environmentally protected areas (CSA)	15/10/2021	30/03/2022	2,4
Destination 2	2022	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2022-RESILIENCE-01-04	Developing digital platforms for the small scale extractive industry (IA)	15/10/2021	30/03/2022	15
Destination 2	2022	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2022-RESILIENCE-01-05	Technological solutions for tracking raw material flows in complex supply chains (RIA)	15/10/2021	30/03/2022	15,4
Destination 2	2022	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2022-RESILIENCE-01-06	Sustainable and innovative mine of the future (IA)	15/10/2021	30/03/2022	36
Destination 2	2022	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2022-RESILIENCE-01-07	Innovative solutions for efficient use and enhanced recovery of mineral and metal by-products from processing of raw materials (IA)	15/10/2021	30/03/2022	36
Destination 2	2022	Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy	HORIZON-CL4-2022-RESILIENCE-01-08	Earth observation technologies for the mining life cycle in support of EU autonomy and transition to a climate-neutral economy (RIA)	15/10/2021	30/03/2022	13,5
Destination 2	2022	Green and Sustainable Materials	HORIZON-CL4-2022-RESILIENCE-01-10	Innovative materials for advanced (nano)electronic components and systems (RIA)	15/10/2021	30/03/2022	19

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Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 2	2022	Green and Sustainable Materials	HORIZON-CL4-2022-RESILIENCE-01-11	Advanced lightweight materials for energy efficient structures (RIA)	15/10/2021	30/03/2022	19
Destination 2	2022	Green and Sustainable Materials	HORIZON-CL4-2022-RESILIENCE-01-12	Functional multi-material components and structures (RIA)	15/10/2021	30/03/2022	19
Destination 2	2022	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2022-RESILIENCE-01-13	Smart and multifunctional biomaterials for health innovations (RIA)	15/10/2021	30/03/2022	19
Destination 2	2022	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2022-RESILIENCE-01-14	Membranes for gas separations - membrane distillation (IA)	15/10/2021	30/03/2022	21
Destination 2	2022	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2022-RESILIENCE-01-16	Building and renovating by exploiting advanced materials for energy and resources efficient management (IA)	15/10/2021	30/03/2022	21
Destination 2	2022	Materials and data cross-cutting actions	HORIZON-CL4-2022-RESILIENCE-01-19	Advanced materials modelling and characterisation (RIA)	15/10/2021	30/03/2022	18
Destination 2	2022	Materials and data cross-cutting actions	HORIZON-CL4-2022-RESILIENCE-01-20	Climate Neutral and Circular Innovative Materials Technologies Open Innovation Test Beds (IA)	15/10/2021	30/03/2022	34
Destination 2	2022	Improving the resilience and preparedness of EU businesses, especially SMEs and Startups	HORIZON-CL4-2022-RESILIENCE-01-21	Leveraging standardisation in and Digital Technologies (CSA)	15/10/2021	30/03/2022	4
Destination 2	2022	Green and Sustainable Materials	HORIZON-CL4-2022-RESILIENCE-01-23	Safe- and sustainable-by-design organic and hybrid coatings (RIA)	15/10/2021	30/03/2022	19
Destination 2	2022	Materials for the benefit of society and the environment and materials for climate-neutral Industry	HORIZON-CL4-2022-RESILIENCE-01-24	Novel materials for supercapacitor energy storage (RIA)	15/10/2021	30/03/2022	23
Destination 2	2022	Materials and data cross-cutting actions	HORIZON-CL4-2022-RESILIENCE-01-25	Optimised Industrial Systems and Lines through digitalisation (IA)	15/10/2021	30/03/2022	15

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Appel - Call - WORLD LEADING DATA AND COMPUTING TECHNOLOGIES 2021 - 2022							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 3	2021	Data sharing in the common European data spaces	HORIZON-CL4-2021-DATA-01-01	Technologies and solutions for compliance, privacy preservation, green and responsible data operations (RIA)	15/04/2021	08/09/2021	51,1
Destination 3	2021	Data sharing in the common European data spaces	HORIZON-CL4-2021-DATA-01-03	Technologies for data management (IA)	15/04/2021	08/09/2021	29,5
Destination 3	2021	Strengthening Europe's data analytics capacity	HORIZON-CL4-2021-DATA-01-04	Extreme data mining, aggregation and analytics technologies and solutions (RIA)	15/04/2021	08/09/2021	29,5
Destination 3	2021	From Cloud to Edge to IoT for European Data	HORIZON-CL4-2021-DATA-01-05	Future European platforms for the Edge	15/04/2021	08/09/2021	52,5
Destination 3	2021	From Cloud to Edge to IoT for European Data	HORIZON-CL4-2021-DATA-01-07	Coordination and Support of the "Cloud-Edge-IoT" domain (CSA)	15/04/2021	08/09/2021	3
Destination 3	2021	From Cloud to Edge to IoT for European Data	HORIZON-CL4-2021-DATA-01-08	Roadmap for next generation computing and systems technologies (CSA)	15/04/2021	08/09/2021	2
Destination 3	2022	Strengthening Europe's data analytics capacity	HORIZON-CL4-2022-DATA-01-01	Methods for exploiting data and knowledge for extremely precise outcomes (analysis, prediction, decision support), reducing complexity and presenting insights in understandable way (RIA)	23/11/2021	05/04/2022	32,5
Destination 3	2022	From Cloud to Edge to IoT for European Data	HORIZON-CL4-2022-DATA-01-02	Cognitive Cloud	23/11/2021	05/04/2022	49
Destination 3	2022	From Cloud to Edge to IoT for European Data	HORIZON-CL4-2022-DATA-01-03	Programming tools for decentralised intelligence and swarms (RIA)	23/11/2021	05/04/2022	40
Destination 3	2022	Data sharing in the common European data spaces	HORIZON-CL4-2022-DATA-01-04	Technologies and solutions for data trading, monetizing, exchange and interoperability (IA)	23/11/2021	05/04/2022	51,1

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Appel - Digital and emerging technologies for competitiveness and fit for the green deal 2021							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 4	2021	Ultra-low power processors	HORIZON-CL4-2021-DIGITAL-EMERGING-01-01	Ultra-low-power, secure processors for edge computing (RIA)	15/04/2021	08/09/2021	25,6
Destination 4	2021	Ultra-low power processors	HORIZON-CL4-2021-DIGITAL-EMERGING-01-05	Open Source Hardware for ultra-low-power, secure processors (CSA)	15/04/2021	08/09/2021	1,5
Destination 4	2021	European Innovation Leadership in Photonics	HORIZON-CL4-2021-DIGITAL-EMERGING-01-06	Advanced optical communication components (IA)	15/04/2021	08/09/2021	25,6
Destination 4	2021	European Innovation Leadership in Photonics	HORIZON-CL4-2021-DIGITAL-EMERGING-01-07	Advanced Photonic Integrated Circuits (RIA)	15/04/2021	08/09/2021	38,4
Destination 4	2021	Innovation in AI, Data and Robotics	HORIZON-CL4-2021-DIGITAL-EMERGING-01-09	AI, Data and Robotics for the Green Deal (IA)	15/04/2021	08/09/2021	26,6
Destination 4	2021	Innovation in AI, Data and Robotics	HORIZON-CL4-2021-DIGITAL-EMERGING-01-10	AI, Data and Robotics at work (IA)	15/04/2021	08/09/2021	21,6
Destination 4	2021	Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted	HORIZON-CL4-2021-DIGITAL-EMERGING-01-11	Pushing the limit of robotics cognition (RIA)	15/04/2021	08/09/2021	44,3
Destination 4	2021	Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted	HORIZON-CL4-2021-DIGITAL-EMERGING-01-12	European Network of Excellence Centres in Robotics (RIA)	15/04/2021	08/09/2021	11,3
Destination 4	2021	European leadership in Emerging Enabling Technologies	HORIZON-CL4-2021-DIGITAL-EMERGING-01-13	Academia-Industry Forum on Emerging Enabling Technologies (CSA)	15/04/2021	08/09/2021	2,5
Destination 4	2021	European leadership in Emerging Enabling Technologies	HORIZON-CL4-2021-DIGITAL-EMERGING-01-14	Advanced spintronics: Unleashing spin in the next generation ICs (RIA)	15/04/2021	08/09/2021	16,7
Destination 4	2021	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2021-DIGITAL-EMERGING-01-20	Quantum sensing technologies for market uptake (IA)	15/04/2021	08/09/2021	23
Destination 4	2021	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2021-DIGITAL-EMERGING-01-21	Next generation quantum sensing technologies (RIA)	15/04/2021	08/09/2021	14
Destination 4	2021	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2021-DIGITAL-EMERGING-01-23	International cooperation with Canada (RIA)	15/04/2021	08/09/2021	4
Destination 4	2021	6G and foundational connectivity technologies	HORIZON-CL4-2021-DIGITAL-EMERGING-01-26	Coordination of European Smart Network actions (CSA)	15/04/2021	08/09/2021	2,5
Destination 4	2021	European leadership in Emerging Enabling Technologies	HORIZON-CL4-2021-DIGITAL-EMERGING-01-27	Development of technologies/devices for bio-intelligent manufacturing (RIA)	15/04/2021	08/09/2021	22,5
Destination 4	2021	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2021-DIGITAL-EMERGING-01-30	Investing in new emerging quantum computing technologies (RIA)	15/04/2021	08/09/2021	8,6
Destination 4	2021	European Innovation Leadership in Electronics	HORIZON-CL4-2021-DIGITAL-EMERGING-01-31	Functional electronics for green and circular economy (RIA)	15/04/2021	08/09/2021	33,9
Destination 4	2021	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2021-DIGITAL-EMERGING-01-XX	Support and coordination of the Quantum Technologies Flagship Initiative (CSA)	15/04/2021	08/09/2021	6,4

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Appel - Appel - Digital and emerging technologies for competitiveness and fit for the green deal 22022							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 4	2022	European Innovation Leadership in Photonics	HORIZON-CL4-2022-DIGITAL-EMERGING-01-03	Advanced multi-sensing systems (RIA)	23/11/2021	05/04/2022	46,7
Destination 4	2022	Innovation in AI, Data and Robotics	HORIZON-CL4-2022-DIGITAL-EMERGING-01-05	AI, Data and Robotics for Industry optimisation (including production and services) (IA)	23/11/2021	05/04/2022	18,7
Destination 4	2022	Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted	HORIZON-CL4-2022-DIGITAL-EMERGING-01-06	Pushing the limit of physical intelligence and performance (RIA)	23/11/2021	05/04/2022	27,5
Destination 4	2022	Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted	HORIZON-CL4-2022-DIGITAL-EMERGING-01-07	Increased robotics capabilities demonstrated in key sectors (IA)	23/11/2021	05/04/2022	35,4
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-09	Specific Grant Agreement for developing the first large-scale quantum computers (SGA)	23/11/2021	05/04/2022	40
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-10	Strengthening the quantum software ecosystem for quantum computing platforms (RIA)	23/11/2021	05/04/2022	12
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-11	Specific Grant Agreement for developing large scale quantum simulation platform technologies (SGA)	23/11/2021	05/04/2022	16
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-12	Specific Grant Agreement for building the Quantum Internet (SGA)	23/11/2021	05/04/2022	24
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-13	Specific Grant Agreement for Quantum encryption and future quantum network technologies (SGA)	23/11/2021	05/04/2022	25
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-14	Specific Grant Agreement for supporting open testing and experimentation for quantum technologies in Europe (SGA)	23/11/2021	05/04/2022	19
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-15	Specific Grant Agreement for supporting experimental production capabilities for quantum technologies in Europe (SGA)	23/11/2021	05/04/2022	19
Destination 4	2022	Flagship on Quantum Technologies: a Paradigm Shift	HORIZON-CL4-2022-DIGITAL-EMERGING-01-16	Basic Science for Quantum Technologies (RIA)	23/11/2021	05/04/2022	16
Destination 4	2022	Graphene: Europe in the lead	HORIZON-CL4-2022-DIGITAL-EMERGING-01-17	New generation of advanced electronic and photonic 2D materials-based devices, systems and sensors (RIA)	23/11/2021	05/04/2022	16,4
Destination 4	2022	Graphene: Europe in the lead	HORIZON-CL4-2022-DIGITAL-EMERGING-01-18	2D materials-based devices and systems for energy storage and/or harvesting (RIA)	23/11/2021	05/04/2022	8,9
Destination 4	2022	Graphene: Europe in the lead	HORIZON-CL4-2022-DIGITAL-EMERGING-01-19	2D materials-based devices and systems for biomedical applications (RIA)	23/11/2021	05/04/2022	5,9
Destination 4	2022	Graphene: Europe in the lead	HORIZON-CL4-2022-DIGITAL-EMERGING-01-20	2D-material-based composites, coatings and foams (IA)	23/11/2021	05/04/2022	8,9
Destination 4	2022	Graphene: Europe in the lead	HORIZON-CL4-2022-DIGITAL-EMERGING-01-22	Supporting the coordination of the Graphene Flagship projects (CSA)	23/11/2021	05/04/2022	2,8
Destination 4	2022	Ultra-low power processors	HORIZON-CL4-2022-DIGITAL-EMERGING-01-26	Open source for cloud-based services (RIA)	23/11/2021	05/04/2022	21,6
Destination 4	2022	European leadership in Emerging Enabling Technologies	HORIZON-CL4-2022-DIGITAL-EMERGING-01-35	Advanced characterisation methodologies to assess and predict the health and environmental risks of nanomaterials (RIA)	23/11/2021	05/04/2022	17,5

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Appel - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2021							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 5	2021	Foster competitiveness of space systems	HORIZON-CL4-2021-SPACE-01-11	End-to-end satellite communication systems and associated services	06/05/2021	07/09/2021	11,9
Destination 5	2021	Foster competitiveness of space systems	HORIZON-CL4-2021-SPACE-01-12	Future space ecosystems: on-orbit operations, new system concepts	06/05/2021	07/09/2021	5,9
Destination 5	2021	Reinforce EU capacity to access and use space	HORIZON-CL4-2021-SPACE-01-21	Reusability for EU strategic space launchers - technologies and operation maturation including flight test demonstration	06/05/2021	07/09/2021	43
Destination 5	2021	Reinforce EU capacity to access and use space	HORIZON-CL4-2021-SPACE-01-22	Low cost high thrust propulsion for EU strategic space launchers - technologies maturation including ground tests	06/05/2021	07/09/2021	19,8
Destination 5	2021	Reinforce EU capacity to access and use space	HORIZON-CL4-2021-SPACE-01-23	New space transportation solutions and services	06/05/2021	07/09/2021	3
Destination 5	2021	Evolution of Copernicus services	HORIZON-CL4-2021-SPACE-01-41	Copernicus Climate Change Service evolution	06/05/2021	07/09/2021	11,1
Destination 5	2021	Evolution of Copernicus services	HORIZON-CL4-2021-SPACE-01-42	Copernicus Atmosphere Monitoring Service evolution	06/05/2021	07/09/2021	7,4
Destination 5	2021	Evolution of Copernicus services	HORIZON-CL4-2021-SPACE-01-43	Copernicus Security and Emergency Services evolution	06/05/2021	07/09/2021	4,6
Destination 5	2021	Evolution of Copernicus services	HORIZON-CL4-2021-SPACE-01-44	Copernicus evolution for cross-services thematic domains	06/05/2021	07/09/2021	5,6
Destination 5	2021	Innovative space capabilities: SSA, Govsatcom, Quantum	HORIZON-CL4-2021-SPACE-01-62	Quantum technologies for space gravimetry	06/05/2021	07/09/2021	16,8
Destination 5	2021	Targeted and strategic actions supporting the EU space sector	HORIZON-CL4-2021-SPACE-01-81	Space technologies for European non-dependence and competitiveness	06/05/2021	07/09/2021	11,9
Destination 5	2021	Development of applications from the EU space programme components	HORIZON-CL4-2021-SPACE-02-51	EGNSS and Copernicus applications fostering the European Green deal	06/05/2021	07/09/2021	14
Destination 5	2021	Development of applications from the EU space programme components	HORIZON-CL4-2021-SPACE-02-52	EGNSS applications for Safety and Crisis management	06/05/2021	07/09/2021	9,3
Destination 5	2021	Development of applications from the EU space programme components	HORIZON-CL4-2021-SPACE-02-53	EGNSS applications for the Digital Age	06/05/2021	07/09/2021	9,3

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Appel - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2022							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 5	2022	Foster competitiveness of space systems	HORIZON-CL4-2022-SPACE-01-11	Future space ecosystems	05/05/2022	06/09/2022	20
Destination 5	2022	Foster competitiveness of space systems	HORIZON-CL4-2022-SPACE-01-12	Technologies and generic building blocks for Electrical Propulsion	05/05/2022	06/09/2022	5,1
Destination 5	2022	Foster competitiveness of space systems	HORIZON-CL4-2022-SPACE-01-13	End-to-end Earth observation systems and associated services	05/05/2022	06/09/2022	8,1
Destination 5	2022	Reinforce EU capacity to access and use space	HORIZON-CL4-2022-SPACE-01-21	Multi sites flexible industrial platform and standardised technology for improving interoperability of EU access to space ground facilities	05/05/2022	06/09/2022	2
Destination 5	2022	Evolution of services of the EU space programme components Galileo, EGNOS and Copernicus	HORIZON-CL4-2022-SPACE-01-41	Copernicus Marine Environment Monitoring Service evolution	05/05/2022	06/09/2022	9,7
Destination 5	2022	Evolution of services of the EU space programme components Galileo, EGNOS and Copernicus	HORIZON-CL4-2022-SPACE-01-42	Copernicus Anthropogenic CO <sub>2</sub> Emissions Monitoring & Verification Support (MVS) capacity	05/05/2022	06/09/2022	5,8
Destination 5	2022	Evolution of services of the EU space programme components Galileo, EGNOS and Copernicus	HORIZON-CL4-2022-SPACE-01-43	Copernicus Land Monitoring Service evolution	05/05/2022	06/09/2022	4,8
Destination 5	2022	Innovative space capabilities: SSA, Govsatcom, Quantum	HORIZON-CL4-2022-SPACE-01-62	Space Weather	05/05/2022	06/09/2022	2
Destination 5	2022	Space entrepreneurship ecosystems (including "New Space" and start-ups) and skills	HORIZON-CL4-2022-SPACE-01-72	Education and skills for the EU space sector	05/05/2022	06/09/2022	3
Destination 5	2022	Targeted and strategic actions supporting the EU space sector	HORIZON-CL4-2022-SPACE-01-81	Space technologies for European non-dependence and competitiveness	05/05/2022	06/09/2022	12
Destination 5	2022	Targeted and strategic actions supporting the EU space sector	HORIZON-CL4-2022-SPACE-01-82	Space science and exploration technologies	05/05/2022	06/09/2022	8
Destination 5	2022	Development of applications from the EU space programme components	HORIZON-CL4-2022-SPACE-02-51	EGNSS applications for Smart mobility	05/05/2022	06/09/2022	9,5
Destination 5	2022	Development of applications from the EU space programme components	HORIZON-CL4-2022-SPACE-02-52	Public sector as Galileo and/or Copernicus user	05/05/2022	06/09/2022	4,7
Destination 5	2022	Development of applications from the EU space programme components	HORIZON-CL4-2022-SPACE-02-54	Copernicus downstream applications and the European Data Economy	05/05/2022	06/09/2022	9,6
Destination 5	2022	Development of applications from the EU space programme components	HORIZON-CL4-2022-SPACE-02-55	Large-scale Copernicus data uptake with AI and HPC	05/05/2022	06/09/2022	9,6
Destination 5	2022	Development of applications from the EU space programme components	HORIZON-CL4-2022-SPACE-02-56	Designing space-based downstream applications with international partners	05/05/2022	06/09/2022	5,1
Destination 5	2022	Development of applications from the EU space programme components	HORIZON-CL4-2022-SPACE-02-61	GOVSATCOM Service developments and demonstrations	05/05/2022	06/09/2022	9,1

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Appel - A HUMAN-CENTRED AND ETHICAL DEVELOPMENT OF DIGITAL AND INDUSTRIAL TECHNOLOGIES 2021 - 2022							
Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 6	2021	Leadership in AI based on trust	HORIZON-CL4-2021-HUMAN-01-01	Verifiable robustness, energy efficiency and transparency for Trustworthy AI	15/04/2021	08/09/2021	35,4
Destination 6	2021	Leadership in AI based on trust	HORIZON-CL4-2021-HUMAN-01-02	European coordination, awareness, standardisation & adoption of trustworthy European AI, Data and Robotics (CSA)	15/04/2021	08/09/2021	12,8
Destination 6	2021	Leadership in AI based on trust	HORIZON-CL4-2021-HUMAN-01-03	European Network of AI Excellence Centres: Pillars of the European AI lighthouse (RIA)*	15/04/2021	08/09/2021	8,9
Destination 6	2021	An Internet of Trust	HORIZON-CL4-2021-HUMAN-01-04	Trust & data sovereignty on the Internet (RIA)	15/04/2021	08/09/2021	12
Destination 6	2021	An Internet of Trust	HORIZON-CL4-2021-HUMAN-01-05	Trustworthy open search and discovery (RIA)	15/04/2021	08/09/2021	17
Destination 6	2021	eXtended Reality (XR)	HORIZON-CL4-2021-HUMAN-01-06	Innovation for Media, including eXtended Reality (IA)	15/04/2021	08/09/2021	25,6
Destination 6	2021	An Internet of Trust	HORIZON-CL4-2021-HUMAN-01-07	Next Generation Internet community-building and outreach (CSA)	15/04/2021	08/09/2021	2
Destination 6	2021	An Internet of Trust	HORIZON-CL4-2021-HUMAN-01-08	NGI International Collaboration - Transatlantic fellowship programme (CSA)	15/04/2021	08/09/2021	1,9
Destination 6	2021	An Internet of Trust	HORIZON-CL4-2021-HUMAN-01-09	NGI Tech Review (CSA)	15/04/2021	08/09/2021	1,5
Destination 6	2021	eXtended Reality (XR)	HORIZON-CL4-2021-HUMAN-01-13	eXtended Reality Modelling (RIA)	15/04/2021	08/09/2021	14,3
Destination 6	2021	eXtended Reality (XR)	HORIZON-CL4-2021-HUMAN-01-14	eXtended Reality for All – Haptics (RIA)	15/04/2021	08/09/2021	5,9
Destination 6	2021	Systemic approaches to make the most of the technologies within society and industry	HORIZON-CL4-2021-HUMAN-01-17	Awareness raising on Intellectual property (IP) management for European R&I (CSA)	15/04/2021	08/09/2021	1
Destination 6	2021	Systemic approaches to make the most of the technologies within society and industry	HORIZON-CL4-2021-HUMAN-01-18	Fostering standardisation to boost European industry's competitiveness (CSA)	15/04/2021	08/09/2021	1
Destination 6	2021	Systemic approaches to make the most of the technologies within society and industry	HORIZON-CL4-2021-HUMAN-01-19	Testing innovative solutions on local communities'-demand (IA)	15/04/2021	08/09/2021	5

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**Appel - A HUMAN-CENTRED AND ETHICAL DEVELOPMENT OF DIGITAL AND INDUSTRIAL TECHNOLOGIES 2021 - 2022**

Destination	Année	Section	Acronyme du topic	Topic	Ouverture	Clôture	Budget (M€)
Destination 6	2021	Systemic approaches to make the most of the technologies within society and industry	HORIZON-CL4-2021-HUMAN-01-20	Piloting a new industry-academia knowledge exchange focussing on companies' needs (CSA)	15/04/2021	08/09/2021	2
Destination 6	2021	Systemic approaches to make the most of the technologies within society and industry	HORIZON-CL4-2021-HUMAN-01-21	Art-driven use experiments and design (RIA)	15/04/2021	08/09/2021	8,4
Destination 6	2021	Systemic approaches to make the most of the technologies within society and industry	HORIZON-CL4-2021-HUMAN-01-23	Support for National Contact Points in Digital, Industry and Space	15/04/2021	08/09/2021	4
Destination 6	2021	Leadership in AI based on trust	HORIZON-CL4-2021-HUMAN-01-24	Tackling gender, race and other biases in AI (RIA)	15/04/2021	08/09/2021	9,8
Destination 6	2021	eXtended Reality (XR)	HORIZON-CL4-2021-HUMAN-01-25	eXtended Collaborative Telepresence (IA - FSTP)	15/04/2021	08/09/2021	13,8
Destination 6	2021	Systemic approaches to make the most of the technologies within society and industry	HORIZON-CL4-2021-HUMAN-01-26	Workforce skills for industry 5.0 (RIA)	15/04/2021	08/09/2021	5
Destination 6	2021	Leadership in AI based on trust	HORIZON-CL4-2021-HUMAN-01-27	AI to fight disinformation (RIA)	15/04/2021	08/09/2021	12,8
Destination 6	2021	eXtended Reality (XR)	HORIZON-CL4-2021-HUMAN-01-28	eXtended Reality Ethics, Interoperability and Impact (CSA)	15/04/2021	08/09/2021	2,5
Destination 6	2022	Leadership in AI based on trust	HORIZON-CL4-2022-HUMAN-01-01	AI for human empowerment (RIA)	23/11/2021	05/04/2022	15,7
Destination 6	2022	Leadership in AI based on trust	HORIZON-CL4-2022-HUMAN-01-02	European Network of AI Excellence Centres	23/11/2021	05/04/2022	33,9
Destination 6	2022	An Internet of Trust	HORIZON-CL4-2022-HUMAN-01-03	Internet architecture and decentralised technologies (RIA)	23/11/2021	05/04/2022	22
Destination 6	2022	An Internet of Trust	HORIZON-CL4-2022-HUMAN-01-05	Next Generation Safer Internet	23/11/2021	05/04/2022	2
Destination 6	2022	An Internet of Trust	HORIZON-CL4-2022-HUMAN-01-07	NGI International Collaboration - USA and Canada (RIA)	23/11/2021	05/04/2022	6
Destination 6	2022	eXtended Reality (XR)	HORIZON-CL4-2022-HUMAN-01-14	eXtended Reality Technologies (RIA)	23/11/2021	05/04/2022	18,7
Destination 6	2022	eXtended Reality (XR)	HORIZON-CL4-2022-HUMAN-01-19	eXtended Reality Learning - Engage and Interact	23/11/2021	05/04/2022	21,1

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