

## HORIZONTE EUROPA – Programa de Trabalhos 2021-2022 do Cluster 4: “Digital e Indústria” – Tópicos 2021

Referência tópico	Título	Tipo de projeto	M€ por projeto	Orçamento disponível (M€)	Deadline
<b><u>Destination – Climate Neutral, Circular and Digitised Production</u></b>					
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-01</a>	AI enhanced robotics systems for smart manufacturing (IA)	IA	8-10	28	23-09-2021
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-02</a>	Zero-defect manufacturing towards zero-waste (IA)	IA	8-10	27	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-03</a>	Laser-based technologies for green manufacturing (RIA)	RIA	5-7	26	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-05</a>	Manufacturing technologies for bio-based materials (RIA)	RIA	4-6	20	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-07</a>	Artificial Intelligence for sustainable, agile manufacturing (IA)	IA	4-6	18	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-08</a>	Data-driven Distributed Industrial Environments (IA)	IA	4-8	24	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-10</a>	Digital permits and compliance checks for buildings and infrastructure (IA)	IA	5	15	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-11</a>	Automated tools for the valorisation of construction waste (RIA)	RIA	6-10	21	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-12</a>	New breakthrough technologies supporting technological sovereignty in construction (RIA)	RIA	8-10	24	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-14</a>	Deploying industrial-urban symbiosis solutions for the utilization of energy, water, industrial waste and by-products at regional scale (RIA)	RIA	8-12	28	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-16</a>	Hubs for Circularity European Community of Practice (ECOP) platform (CSA)	CSA	2	2	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-17</a>	Plastic waste as a circular carbon feedstock for industry (IA)	IA	12-18	39	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-18</a>	Carbon Direct Avoidance in steel: Electricity and hydrogen-based metallurgy (IA)	IA	6-8	28	

<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-19</a>	Improvement of the yield of the iron and steel making (IA)	IA	4-5	14	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-20</a>	Reducing environmental footprint, improving circularity in extractive and processing value chains (IA)	IA	12	36	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-21</a>	Design and optimisation of energy flexible industrial processes (IA)	IA	12-18	39	
<a href="#">HORIZON-CL4-2021-TWIN-TRANSITION-01-22</a>	Adjustment of Steel process production to prepare for the transition towards climate neutrality (IA)	IA	4-5	14	

Referência tópico	Título	Tipo de projeto	M€ por projeto	Orçamento disponível (M€)	Deadline
<b>Destination – Increased Autonomy in Key Strategic Value Chains for Resilient Industry</b>					
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-01</a>	Ensuring circularity of composite materials (RIA)	RIA	8-9	24.7	23-09-2021
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-03</a>	Identifying future availability of secondary raw materials (RIA)	RIA	13.5	13.5	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-04</a>	Developing climate-neutral and circular raw materials (IA)	IA	12	36	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-05</a>	Building EU-Africa partnerships on sustainable raw materials value chains (CSA)	CSA	8	8	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-06</a>	Innovation for responsible EU sourcing of primary raw materials, the foundation of the Green Deal (RIA)	RIA	7.5	30	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-07</a>	Building innovative value chains from raw materials to sustainable products (IA)	IA	12	36	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-08</a>	Establishing EU led international community on sustainable-by-design materials to support embedding sustainability criteria over the life cycle of products and processes (CSA)	CSA	3-4	4	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-09</a>	Promote Europe's availability, affordability, sustainability and security of supply of essential chemicals and materials (IA)	IA	7-10	28	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-10</a>	Paving the way to an increased share of recycled plastics in added value products (RIA)	RIA	5-7	23	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-11</a>	Safe- and sustainable-by-design polymeric materials (RIA)	RIA	4-5	19	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-12</a>	Safe- and sustainable-by-design metallic coatings and engineered surfaces (RIA)	RIA	4-5	19	

<a href="#">HORIZON-CL4-2021-RESILIENCE-01-14</a>	Development of more energy efficient electrically heated catalytic reactors (IA)	IA	7-10	33	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-16</a>	Creation of an innovation community for solar fuels and chemicals (CSA)	CSA	5-7	4	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-17</a>	Advanced materials for hydrogen storage (RIA)	RIA	4-5	21	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-20</a>	Antimicrobial, Antiviral, and Antifungal Nanocoatings (RIA)	RIA	4-5	23	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-25</a>	Biomaterials database for Health Applications (CSA)	CSA	7-10	6	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-26</a>	Sustainable Industry Commons (RIA)	RIA	3-4	6	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-27</a>	Innovation Radar, Tech Due Diligence and Venture Building for strategic Digital and Industrial Technologies (CSA)	CSA	2.5-4	4	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-28</a>	Re-opening industrial sites preparatory action – Promoting a sustainable strategy for Europe’s industrial future (CSA)	CSA	1	2	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-29</a>	'Innovate to transform' support for SME's sustainability transition (CSA)	CSA	5	10	
<a href="#">HORIZON-CL4-2021-RESILIENCE-01-31</a>	European Technological and Social Innovation Factory (RIA)	RIA	3-5	5	
<a href="#">HORIZON-CL4-2021-RESILIENCE-02-01-PCP</a>	Boosting green economic recovery and strategic autonomy in Strategic Digital Technologies through pre-commercial procurement (PCP action)	PCP	9	9	

Referência tópico	Título	Tipo de projeto	M€ por projeto	Orçamento disponível (M€)	Deadline
<b><a href="#">Destination – World Leading Data and Computing Technologies</a></b>					
<a href="#">HORIZON-CL4-2021-DATA-01-01</a>	Technologies and solutions for compliance, privacy preservation, green and responsible data operations (RIA)	RIA	52	8-11	21-10-2021
<a href="#">HORIZON-CL4-2021-DATA-01-03</a>	Technologies for data management (IA)	IA	30	5	
<a href="#">HORIZON-CL4-2021-DATA-01-05</a>	Future European platforms for the Edge: Meta Operating Systems (RIA)	RIA	54	8-12	
<a href="#">HORIZON-CL4-2021-DATA-01-07</a>	Coordination and Support of the ‘Cloud-Edge-IoT’ domain (CSA)	CSA	3	1.5	
<a href="#">HORIZON-CL4-2021-DATA-01-08</a>	Roadmap for next generation computing and systems technologies (CSA)	CSA	2	2	

Referência tópico	Título	Tipo de projeto	M€ por projeto	Orçamento disponível (M€)	Deadline
<b>Destination – Digital and Emerging Technologies for Competitiveness and fit for Green Deal</b>					
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-01</a>	Ultra-low-power, secure processors for edge computing (RIA)	RIA	8-10	26	21-10-2021
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-05</a>	Open Source Hardware for ultra-low-power, secure processors (CSA)	CSA	2	2	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-06</a>	Advanced optical communication components (IA)	IA	4-6	26	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-07</a>	Advanced Photonic Integrated Circuits (RIA)	RIA	3-5	39	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-09</a>	AI, Data and Robotics for the Green Deal (IA)	IA	3-5	27	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-10</a>	AI, Data and Robotics at work (IA)	IA	3-5	22	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-11</a>	Pushing the limit of robotics cognition (RIA)	RIA	5	44.5	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-12</a>	European Network of Excellence Centres in Robotics (RIA)	RIA	11.3	11.5	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-13</a>	Academia-Industry Forum on Emerging Enabling Technologies (CSA)	CSA	2.5	2.5	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-14</a>	Advanced spintronics: Unleashing spin in the next generation ICs (RIA)	RIA	2-3	17	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-21</a>	Next generation quantum sensing technologies (RIA)	RIA	3-4	13.5	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-23</a>	International cooperation with Canada (RIA)	RIA	2.5	4	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-26</a>	Coordination of European Smart Network actions (CSA)	CSA	2.5	3	
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-27</a>	Development of technologies/devices for bio-intelligent manufacturing (RIA)	RIA	5-7	22.5	

<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-30</a>	Investing in new emerging quantum computing technologies (RIA)	RIA	8.6	10
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-31</a>	Functional electronics for green and circular economy (RIA)	RIA	3-5	35
<a href="#">HORIZON-CL4-2021-DIGITAL-EMERGING-01-32</a>	Support and coordination of the Quantum Technologies Flagship Initiative (CSA)	CSA	6.4	6.4

Referência tópico	Título	Tipo de projeto	M€ por projeto	Orçamento disponível (M€)	Deadline
<b><u>Destination – A human-centred and ethical development of digital and industrial technologies</u></b>					
<a href="#">HORIZON-CL4-2021-HUMAN-01-01</a>	Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (RIA)	RIA	4	36	21-10-2021
<a href="#">HORIZON-CL4-2021-HUMAN-01-02</a>	European coordination, awareness, standardisation & adoption of trustworthy European AI, Data and Robotics (CSA)	CSA	4-9	13	
<a href="#">HORIZON-CL4-2021-HUMAN-01-03</a>	European Network of AI Excellence Centres: Pillars of the European AI lighthouse (RIA)	RIA	9	9	
<a href="#">HORIZON-CL4-2021-HUMAN-01-04</a>	Trust & data sovereignty on the Internet (RIA)	RIA	12	12	
<a href="#">HORIZON-CL4-2021-HUMAN-01-05</a>	Trustworthy open search and discovery (RIA)	RIA	8.5	17	
<a href="#">HORIZON-CL4-2021-HUMAN-01-06</a>	Innovation for Media, including eXtended Reality (IA)	IA	8-9	26	
<a href="#">HORIZON-CL4-2021-HUMAN-01-07</a>	Next Generation Internet community-building and outreach (CSA)	CSA	2	2	
<a href="#">HORIZON-CL4-2021-HUMAN-01-08</a>	NGI International Collaboration - Transatlantic fellowship programme (CSA)	CSA	2	2	
<a href="#">HORIZON-CL4-2021-HUMAN-01-09</a>	NGI Tech Review (CSA)	CSA	1.5	1.5	
<a href="#">HORIZON-CL4-2021-HUMAN-01-13</a>	eXtended Reality Modelling (RIA)	RIA	4.8	14.5	
<a href="#">HORIZON-CL4-2021-HUMAN-01-14</a>	eXtended Reality for All – Haptics (RIA)	RIA	6	6	
<a href="#">HORIZON-CL4-2021-HUMAN-01-17</a>	Awareness raising on Intellectual property (IP) management for European R&I (CSA)	CSA	1	1	
<a href="#">HORIZON-CL4-2021-HUMAN-01-18</a>	Fostering standardisation to boost European industry's competitiveness (CSA)	CSA	1	1	
<a href="#">HORIZON-CL4-2021-HUMAN-01-19</a>	Testing innovative solutions on local communities' -demand (IA)	CSA	5	5	

<a href="#">HORIZON-CL4-2021-HUMAN-01-20</a>	Piloting a new industry-academia knowledge exchange focussing on companies' needs (CSA)	CSA	2	2
<a href="#">HORIZON-CL4-2021-HUMAN-01-21</a>	Art-driven use experiments and design (RIA)	RIA	2.8	8.5
<a href="#">HORIZON-CL4-2021-HUMAN-01-24</a>	Tackling gender, race and other biases in AI (RIA)	RIA	3-3.5	10
<a href="#">HORIZON-CL4-2021-HUMAN-01-25</a>	eXtended Collaborative Telepresence (IA)	IA	5-8	14
<a href="#">HORIZON-CL4-2021-HUMAN-01-26</a>	Workforce skills for industry 5.0 (RIA)	RIA	5	5
<a href="#">HORIZON-CL4-2021-HUMAN-01-27</a>	AI to fight disinformation (RIA)	RIA	6.5	13
<a href="#">HORIZON-CL4-2021-HUMAN-01-28</a>	eXtended Reality Ethics, Interoperability and Impact (CSA)	CSA	2.5	2.5
<a href="#">HORIZON-CL4-2021-HUMAN-01-29</a>	Support for transnational activities of National Contact Points in the thematic are of Digital	CSA	2.5	2.5
<a href="#">HORIZON-CL4-2021-HUMAN-01-30</a>	Support for transnational activities of National Contact Points in the thematic are of Industry	CSA	1.5	1.5
<a href="#">HORIZON-CL4-2021-HUMAN-01-31</a>	Support for transnational activities of National Contact Points in the thematic are of Space	CSA	1	1

**RIA - Research and Innovation Action** (financiamento: 100%); Action primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment.

**IA – Innovation Action** (70% dos custos diretos elegíveis, com exceção das entidades sem fins lucrativos que podem ser reembolsadas a 100%); Action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

**CSA - Coordination and Support Action** (financiamento: 100%); Actions consisting primarily of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of strategic planning, networking and coordination between programmes in different countries.