

#innovacion
#ayudascdti
#asesoramiento
#internacionalizacion



@CDTIoficial



HORIZONTE 
EUROPA
@HorizonteEuropa

eXtended Reality
@Horizon Europe
Enrique Pelayo Campillos

Index



Horizon Europe
(HE)



eXtended
Reality @ HE



Additional
information

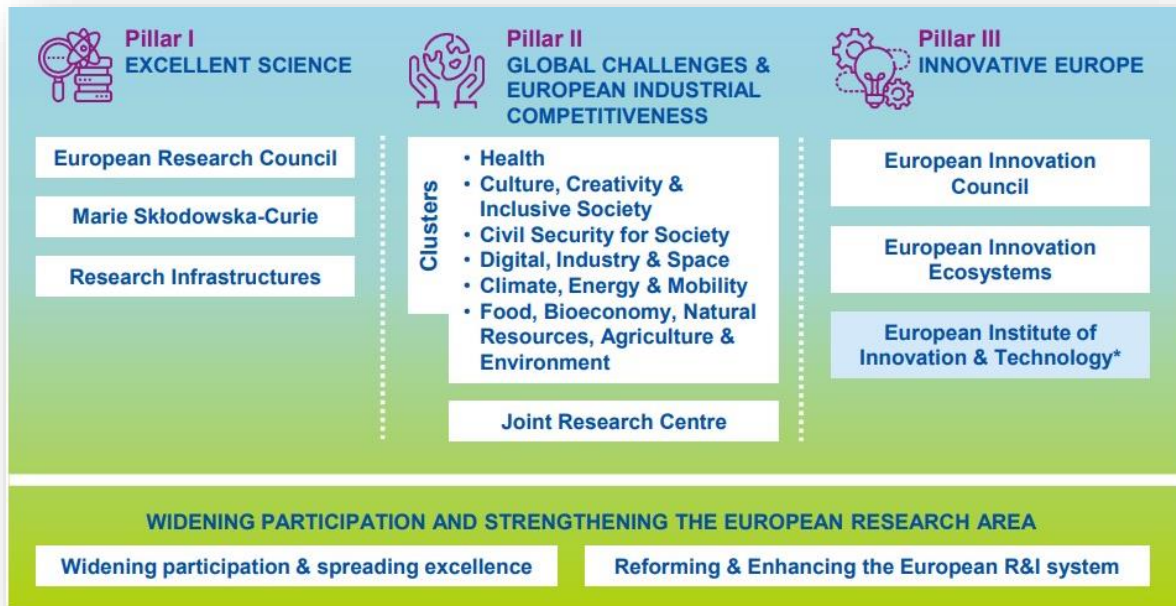
#HorizonEU

HORIZON EUROPE

THE EU RESEARCH &
INNOVATION PROGRAMME

Horizon Europe

Horizon Europe - Structure



95.500 M€

2021-2027



/ Pillars
/ Clusters
/ Destinations
/ Topics



+3 Countries
(12 partners @XR)



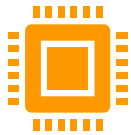
- Research (**RIA**)
- Innovation (**IA**)
- Coordination (**CSA**)

Funding



Research & Innovation
Action (**RIA**)

100%



Innovation Action (**IA**)

70%



Coordination &
Support Action (**CSA**)

100%



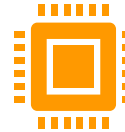
Financial Support for
Third Parties (**FSTP**)

TRLs & Type of project

DEPLOYMENT	9	ACTUAL SYSTEM PROVEN IN OPERATIONAL ENVIRONMENT
	8	SYSTEM COMPLETE AND QUALIFIED
	7	SYSTEM PROTOTYPE DEMONSTRATION IN OPERATIONAL ENVIRONMENT
DEVELOPMENT	6	TECHNOLOGY DEMONSTRATED IN RELEVANT ENVIRONMENT
	5	TECHNOLOGY VALIDATED IN RELEVANT ENVIRONMENT
	4	TECHNOLOGY VALIDATED IN LAB
RESEARCH	3	EXPERIMENTAL PROOF OF CONCEPT
	2	TECHNOLOGY CONCEPT FORMULATED
	1	BASIC PRINCIPLES OBSERVED



Coordination & Support Action (**CSA**)



Innovation Action (**IA**)



Research & Innovation Action (**RIA**)

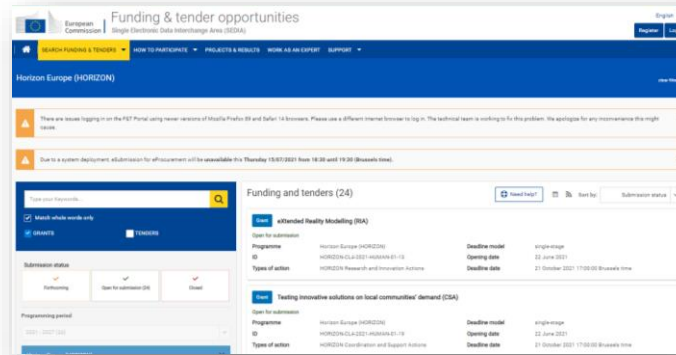
Proposal submission

1 Topic



https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-7-digital-industry-and-space_horizon-2021-2022_en.pdf

2 Participant portal



<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon>

3 Proposal



https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/af/af_he-ria-ia_en.pdf

Proposal structure



Topic structure



SPECIFIC CONDITIONS

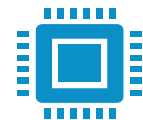
Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of around EUR 4.80 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 14.50 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Technology Readiness Level</i>	Activities are expected to start at TRL 2 and achieve TRL 5 by the end of the project – see General Annex B.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 300 000 to further extend the use-cases and the application domains, address sector specific constraints, ensure reproducibility and demonstrate their integration paths.



EXPECTED OUTCOME

Expected Outcome: Proposals are expected to contribute to the following outcomes:

- Large-scale creation of eXtended Reality models with increased levels of interaction, context awareness, explainable autonomous decisions, human control, privacy and accessibility.
- Methodologies, tools and processes to build eXtended Reality services based on these models.
- Improved human to human and human to computer eXtended Reality interaction, in both offline and real-time context.



SCOPE

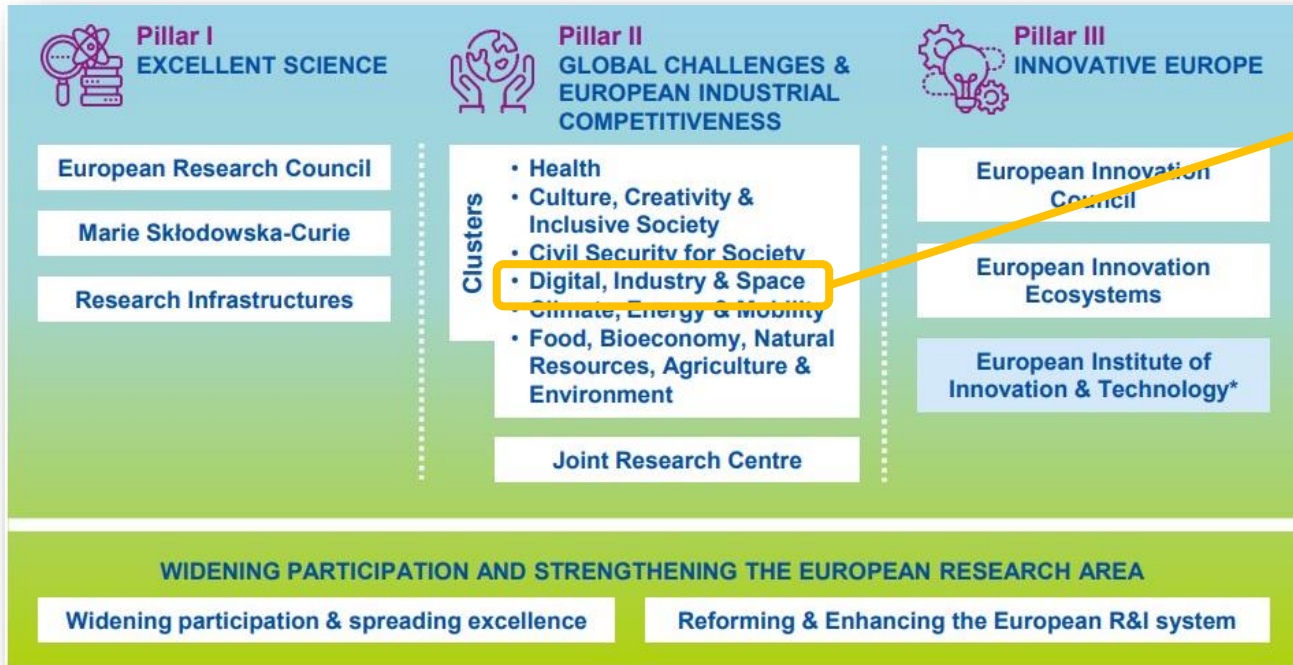
Scope: Recent advances in the field of Artificial Intelligence (AI) giving machines the ability to understand and derive meaning from human languages, have shown that automatic systems can exhibit human-like performance. Machine translation, speech recognition or personal

Drawing on the above-mentioned recent advances, the proposals will:

- Develop pre-trained eXtended Reality models capable of adapting to a large variety of forms of expression, interaction, languages, domains, styles and intent. Taking into account surrounding real or virtual environments, contexts, preferences and abilities of the user, the models will contribute to the general understanding of the environments and users' knowledge, preferences, beliefs, abilities, intent and goals.
- Demonstrate the adaptation and generalisation of the eXtended Reality models, including through the integration of structured knowledge, by developing solutions capable of carrying genuine human-like interaction before, during and after an eXtended



Horizon Europe / cluster 4



Cluster 4 - Destinations



CLIMATE NEUTRAL, CIRCULAR AND DIGITISED **PRODUCTION**



INCREASED AUTONOMY IN KEY STRATEGIC VALUE CHAINS FOR **RESILIENT INDUSTRY**



WORLD LEADING **DATA** AND COMPUTING TECHNOLOGIES



DIGITAL AND **EMERGING** TECHNOLOGIES FOR COMPETITIVENESS AND FIT FOR THE GREEN DEAL



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



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

Cluster 4/Digital - Destinations



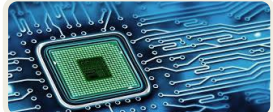
CLIMATE NEUTRAL, CIRCULAR AND DIGITISED **PRODUCTION**



INCREASED AUTONOMY IN KEY STRATEGIC VALUE CHAINS FOR **RESILIENT INDUSTRY**



WORLD LEADING **DATA** AND COMPUTING TECHNOLOGIES



DIGITAL AND **EMERGING** TECHNOLOGIES FOR COMPETITIVENESS AND FIT FOR THE GREEN DEAL

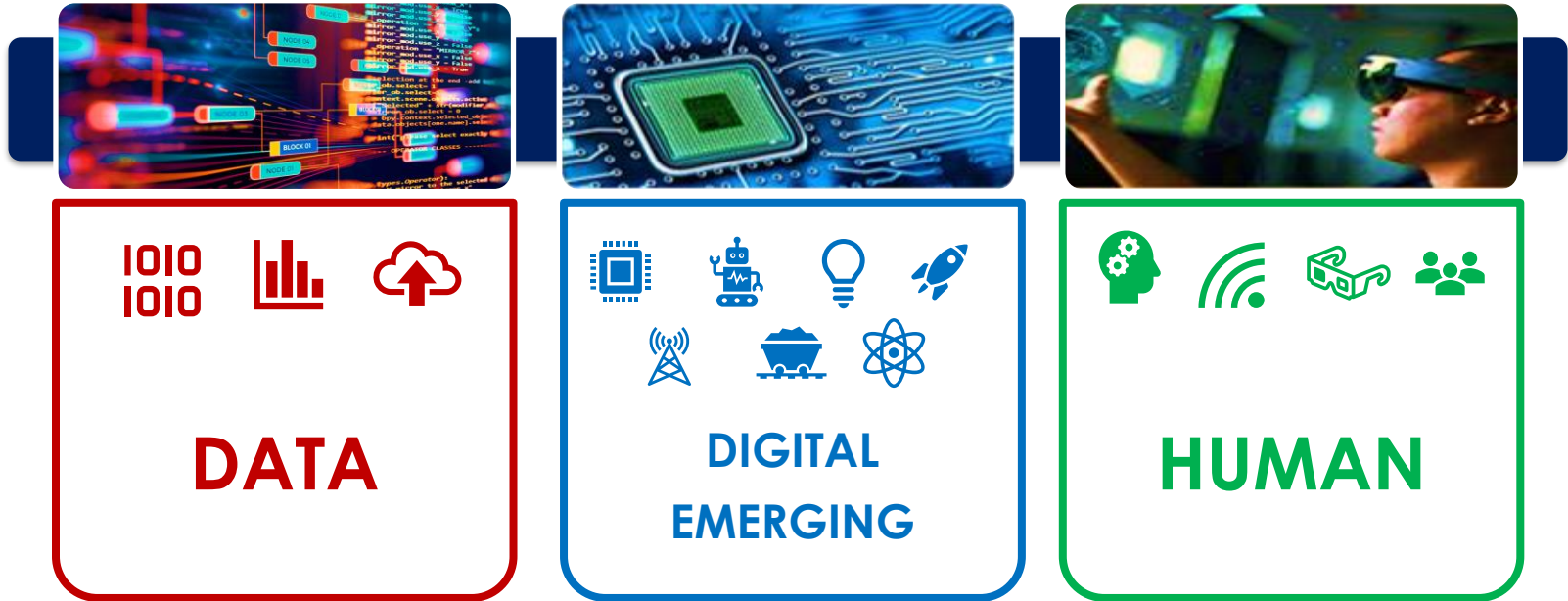


OPEN STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL **SPACE**-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA

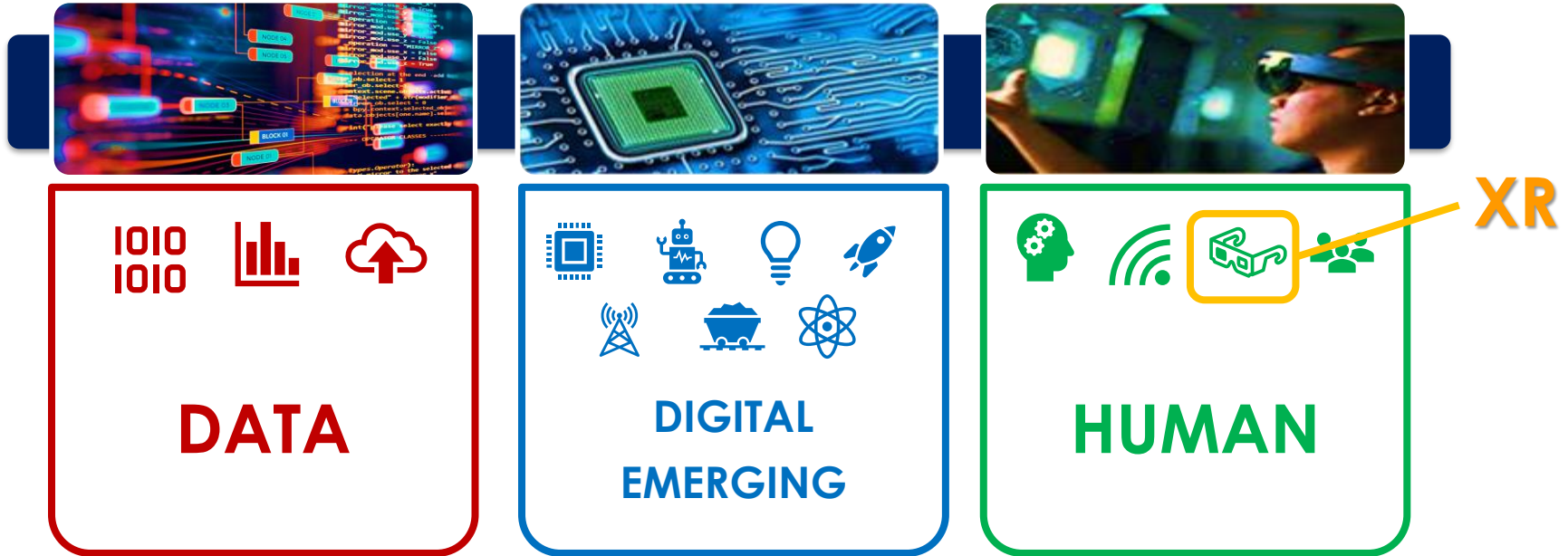


A **HUMAN**-CENTRED AND ETHICAL DEVELOPMENT OF DIGITAL AND INDUSTRIAL TECHNOLOGIES

C4 – Digital / Destinations



C4 – Digital / Destinations



C4 / HUMAN / eXtended Reality (XR)



eXtended Reality (XR)

2021-HUMAN-01-13: eXtended Reality **Modelling** (RIA)

2021-HUMAN-01-14: eXtended Reality for All – **Haptics** (RIA)

2021-HUMAN-01-25: eXtended Collaborative **Telepresence** (IA)

2021-HUMAN-01-06: Innovation for **Media**, including eXtended Reality (IA)

2021-HUMAN-01-28: eXtended Reality **Ethics**, Interoperability and Impact (CSA)

2022-HUMAN-01-14: eXtended Reality **Technologies** (RIA)

2022-HUMAN-01-19: eXtended Reality **Learning** - Engage and Interact (IA)



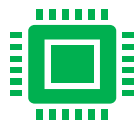
eXtended Reality Modelling (RIA)



- **TRLs:** 2 > 5
- **FSTP grants:** 20%, max 300K€
- **Budget:** 14.5M€, 4.8M€ per project

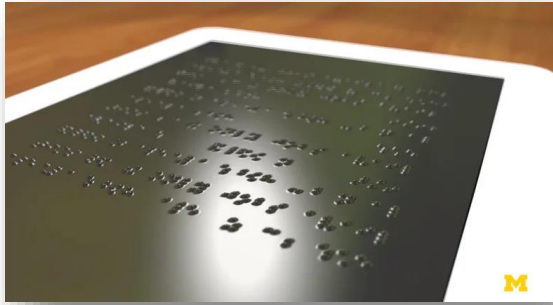


- Large-scale XR models
- Methodologies, tools and processes
- Improved H2H and H2C XR interaction



- Adaptable **pre-trained models**
- **Human like interaction** (before/during/after experience)
- Several **use cases**
 - Large set of languages and modalities
 - Avoid bias, ensure transparency & explainability
 - Energy efficient
 - Open data + standard interfaces for reproducibility

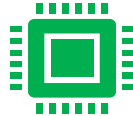
eXtended Reality for All – Haptics (RIA)



- **TRLs:** 5 > 7
- **Budget:** 6M€ (single project)



- Haptic affordable **device** (braille & graphics)
- EU >> **world leader** in accesibility.



- **Braille + Graphs/code/tabular/formulae, ...**
- **Interactive** / usable
- **Affordable**
- People with visual impairments
- Device: Full page/multiline

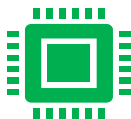
eXtended Collaborative Telepresence (IA)



- TRLs: 4 > 6/7
- FSTP grants: 50%, max 200K€
- Budget: 14M, 5/8 M€ per project



- European industry **leadership in telepresence** (ethics, privacy, security & safety)



- *Cover (Several):*
- Optimal **end-to-end quality**, large number of simultaneous **users**, different I/O **modalities**, additional **services** integration, collaborative **meetings**, open **standard APIs**, real-time and offline **H2H and H2M**, **haptics**, **accessibility**.....

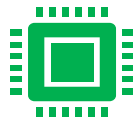
Innovation for Media, including XR (IA)



- **#1:** TRLs: 4 > 8; 9M€ per project
- **#2:** TRLs: 4 > 8; **FSTP:** 70%, max 500K€; 8M€ single project
- **Total Budget:** 26M€



- Advanced **solutions** in immersive media, including XR
- Creation of a European **VR MediaLab**



- **#1:** development of new **modular tools, components** and/or **services** for new media applications:
 - Collaboration industry (new media environments),
 - Collaboration Media Data Space
- **#2: VR MediaLab:**
 - Creative cooperation
 - Focus on entertainment, culture, news, tourism, education

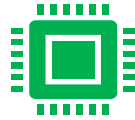
XR Ethics, Interoperability and Impact (CSA)



- **Total budget:** 2.5M€
- 1 project to be funded



- A strong and competitive **XR ecosystem**
- Improved **quality** of XR experiences and application (ethics, privacy, security and safety)



- Responsible **practices** and guidance (XR devs/producers)
- EU cross-industry **code of conduct** for XR
- **Rating** systems for XR users
- Respect of EU **legal framework** (personal data)
- XR industry **standards** for interoperability and integration
- Competitive and sustainable EU XR industry **ecosystem**

XR4ALL - Research Agenda



- XR sensing and feedback
- World capture and understanding
- Social interaction and collaboration
- Open XR ecosystem and collaboration platform
- Support for start-ups and SMEs

https://xr4all.eu/wp-content/uploads/xr4all_finalresearchagenda_2020_public.pdf

Topics Evolution



INTERACTIVE TECHS

ICT-25-2018-2020 (RIA & CSA) Multiuser / HQ Experience
ICT-55-2020 (IA) Authoring tools / solutions (tech. uptake)



LANGUAGE TECHS

ICT-29-2018 (IA) A European Language Grid



ACCESSIBILITY

ICT-23-2017 (IA) Interfaces/neural signals, **ICT-57-2020** (RIA) Mobile
DT-GOVERNANCE-05-2018-2019-2020 (CSA)
DT-TRANSFORMATIONS-23-2020 (CSA)



MEDIA

ICT-44-2020 (IA & CSA) Next Generation Media

Business innovation ecosystems; new user driven and enriched experiences in future media; technology and arts alliance

Key Actors



INTERACTIVE TECHS

EU **XR industry** (both technology and service providers – SW&HW), XR organizations/hubs at EU, national and regional level, SME's, research centers and academia. **SSH experts**, with focus on legal, ethics, privacy, security and standards.



LANGUAGE TECHS

European Language Grid, LT Innovate, National initiatives on Large Language Models, **Language Technology** providers, Research Centres, SMEs



ACCESSIBILITY

Assistive **technology producers** (SW&HW), **accessibility experts**, **people with disabilities** (i.e. blind/deafblind), their representative organisations and the people they interact with (families, carers etc)



MEDIA

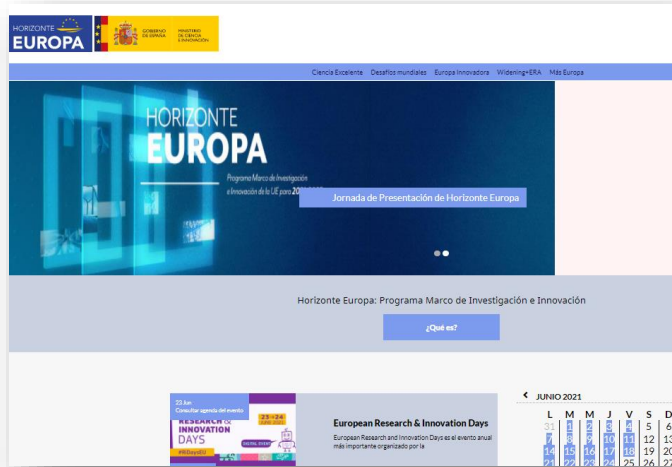
Interdisciplinary cooperation (artists, designers, journalists and media professionals, filmmakers, game designers, programmers, academic researchers) covering as many subsectors as possible.

Additional Information

Webs/links

Horizonteeuropa.es

<https://www.horizonteeuropa.es/>



Eventos CDTI

<https://eventos.cdti.es/>



Infodays



<https://www.horizonteeuropa.es/european-research-innovation-days>

23 Y 24 de junio



<https://www.horizonteeuropa.es/horizon-europe-info-days-2021-cluster-4-mundo-digital-industria-y-espacio>

Clúster 4: 29 y 30 de junio



<https://www.ideal-ist.eu/event/horizon-europe-digital-face2face-brokerage>

24 y 25 de junio

CDTI - Support



National Contact Points - DIGITAL



enrique.pelayo@cdti

fernando.rico@cdti



fernando.martin@cdti.es

HORIZONTE EUROPA

+ info sobre programas y ayudas
para la
internacionalización de la I+D+I española



@HorizonteEuropa - @CDTIoficial