

Virtual Worlds and Web4.0 EU Strategy: The Road So Far and the Road Ahead

25/02/2026

*Artificial intelligence in Horizon Europe calls:
an interdisciplinary challenge*

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The Virtual Worlds partnership

Memorandum of Understanding

private side



Virtual Worlds
Association



public side



https://research-and-innovation.ec.europa.eu/system/files/2023-07/ec_rtd_candidate-list-european-partnerships.pdf

<https://www.virtualworldsassociation.eu/>

Signed
10/12/2025

A strong and multi-disciplinary Partnership, to develop and promote a thriving industrial and end-user ecosystem, covering all aspects of the Virtual Worlds value chain, while actively engaging with people and society

Industry (large companies, SMEs, start-ups, spin-offs)

Academia (universities, innovation and research organisations)

Policy makers (national, regional, local levels) & regulator

End-users (unions, customers associations, sectoral applications users,



HEurope Work Programme 2026-2027

TOPICS	TYPE OF ACTION	BUDGETS (MEUR)	EXPECTED EU CONTRIBUTION PER PROJECT (MEUR)
HORIZON-CL4-2026-04-HUMAN-01: Developing and demonstrating core technologies for Virtual Worlds and Web4.0	IA	30.00	4.00 to 5.00
HORIZON-CL4-2026-04-HUMAN-02: Web 4.0 architectural framework and Open Internet Stack applications for virtual worlds	RIA	16.80	3.00 to 9.00
HORIZON-CL4-2027-04-HUMAN-01: Advanced and Innovative hardware components for Virtual Worlds	RIA	39.00	5.00 to 6.00
HORIZON-CL4-2027-04-HUMAN-02: Create A thriving and competitive Virtual Worlds and Web4.0 ecosystem	CSA	3.00	3.00 MEUR



Cluster 4
+ Digital, Industry
and Space

Destination:
Digital and
industrial
technologies
driving human-
centric
innovation

HORIZON-CL4-2026-04-HUMAN-01: Developing and demonstrating core technologies for Virtual Worlds and Web 4.0 (IA) (Virtual worlds Partnership)

- Contribute to bringing the full integration of VW and Web 4.0 technologies to the next level
- Prepare the next generation of VW technologies, which will
 - propose a **deeper & closer-to-real immersion**, by multisensory simulation
 - **capture & interpret user movements and environmental data**, while providing realistic multimodal tactile and kinesthetic interactions, and feedback for engaging and lifelike experiences
 - improve **real-time user interactions** by minimizing latency and increasing responsiveness and naturalness
 - **dynamically respond** to users' inputs and environmental changes
- **Involve SSH expertise to produce meaningful societal impact of the project research activities**

Open

Close date: 15/04/2026

HORIZON-CL4-2027-04-HUMAN-01: Advanced and Innovative hardware components for Virtual Worlds (RIA) (Virtual worlds Partnership)

Next generation of engaging and lifelike immersion

- Stimulation of all senses (sight, hearing, feel, touch, smell), for a fully immersive close-to-reality experience.
- Users will be submerged with realistic sensations making the experience as immersive as possible
- Proposals covering
 - novel scientific approaches or push the limit of existing ones to improve the synchronization and integration of the **different modalities**
 - Integration of various components in fully tested devices, demonstrating the usefulness and efficiency of their system in **illustrative scenarios** in the industrial and societal contexts.
 - focus on **performant, reliable, miniaturised, interoperable advanced and innovative** technologies, **with inclusivity, energy** consumption and energy efficiency at the centre of concerns.
- **effective contribution of SSH disciplines and the involvement of SSH experts**, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities

Opens: 17/11/2026 (tbc)

Closes 18 /03/2027 (tbc)

The Virtual Worlds partnership

Strategic Research & Innovation Agenda



Virtual Worlds
Association

Technology vertical chapters

Application domain chapters



Technology chapters

- 2a Visualisation, sensing, devices & immersion
- 2b Intuitive, real-time user-interaction
- 2c Authoring & experience design
- 2d Interoperability & standardisation

Socio-economic chapters

- 3a Human rights, safety, participation & societal values
- 3b Governance & law enforcement
- 3c Economics & innovation
- 3d Sustainability, health & environment
- 3e Trust & human oversight

Context chapters

- 4a Data governance, analytics & processing
- 4b Infrastructure, networks & compute
- 4b Optics & photonics

XR4HUMAN

Responsible development and uptake of XR technologies



D2.1: Mapping of the ethical Issues in XR-overview of Ethical Frameworks: A Scoping Review
Authors: Shereen Cox (UoI), Ellen Sparverud (USN), Jonathan Adams (UoI), Alina Kadubsky (GASIS EU), Rosemarie DLC Bernabe (USN/UoI), Rigmor C. Baraa (USN)
Project title: The Equitable, Inclusive, and Human-Centered XR Project
Project acronym: XR4Human

D3.2: Regulatory gap analysis
Authors: Ritos Ladikas, Octavia Madeira, Julia Hehn (KIT), Marco Correa Pérez, Pascal Ivay Somayajula (ISEE) Editors: Ritos Ladikas (KIT), Marco Correa Pérez (ISEE)
Project title: The Equitable, Inclusive, and Human-Centered XR Project
Project acronym: XR4Human

D7.2: XR Stakeholder's needs, requirements, and experiences from an ethics perspective
Authors: Lucas Stephaer (IFE) & Sathya Kumar Ranganayagalu (IFE)
Project title: The Equitable, Inclusive, and Human-Centered XR Project
Project acronym: XR4Human

Code of Conduct for the Human-Centered and Ethical Development of Immersive Technologies

Co-authors: Rosemarie de la Cruz Bernabe, Rigmor C. Baraa, Michael Barngrover, Shereen Cox, Lene A. Hagen, Alina Kadubsky, Panagiotis Kavvouras, Ieva Krastina, Mitos Ladikas, Melissa Amoros Lark, Marco Correa Pérez, Lucas Stephane, Oliver Schreier

Contributors: Leon Kester, Faisal Mushtaq, Franziska Sörgel, Cristiana-Anca Voinov, Eleni Spyrikou

Reviewers: Subject to several iterative reviews informed by consultations with XR experts (developers, policymakers, researchers), the Consortium, and the public.

This document is aspirational in scope and created to provide guidance for developers of XR technologies. While some provisions may interact with legal considerations, the document itself does not carry legally binding force.

2025

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Guidance and tools to ensure Equitable, Inclusive, and Human-Centered development of XR Technologies

<https://xr4human.eu/>



Thank you



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