

VR/AR industry coalition Virtual Worlds Partnership

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VRT / NEM

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VR/AR industry coalition

Founded in 2020 - Part of Audiovisual Action Plan

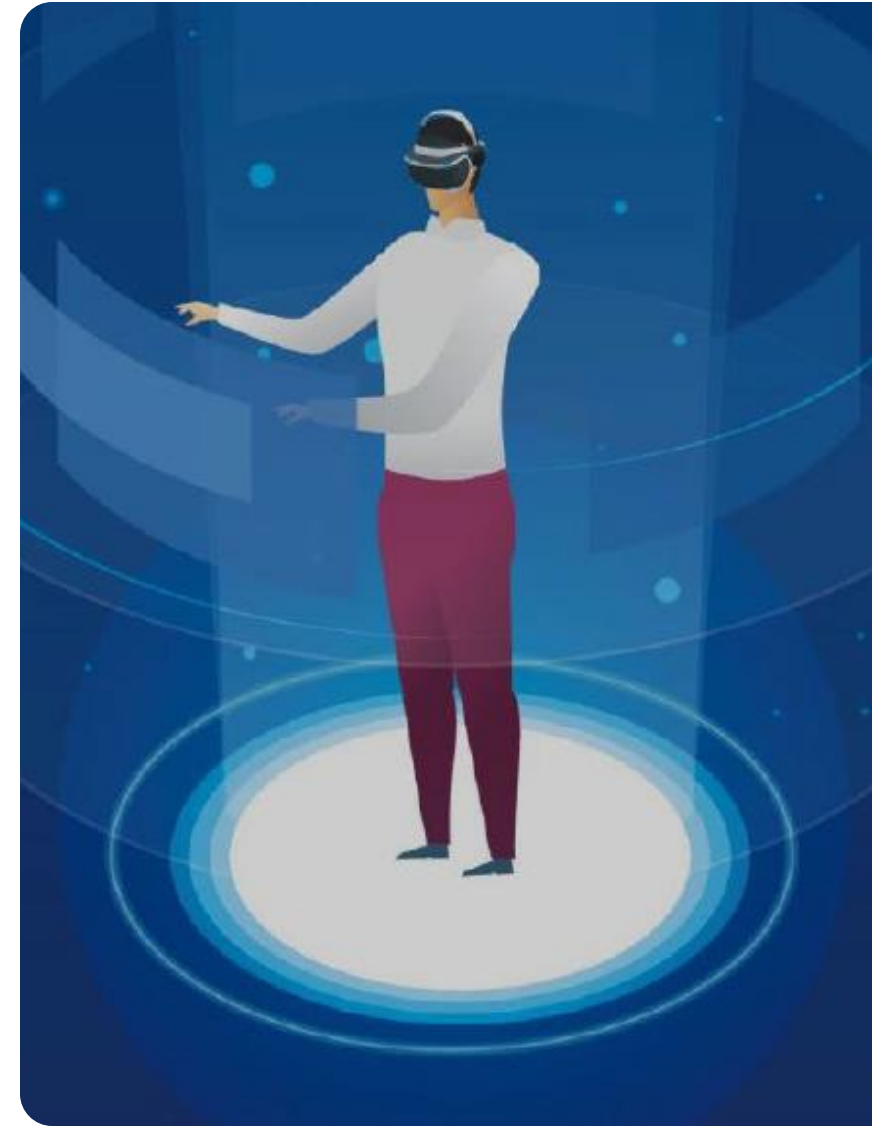
Events

- Organisation of stakeholder workshops
- Physical meetings once per year
- Information webinars

Actions

- Strategy papers and roadmaps
- Over 200 members
- Preparation of Virtual Worlds partnership

<https://digital-strategy.ec.europa.eu/en/policies/virtual-and-augmented-reality-coalition>



Virtual Worlds Partnership

- PPP under Horizon Europe
- Since end 2024 under construction
- Siemens takes the lead on request of EC

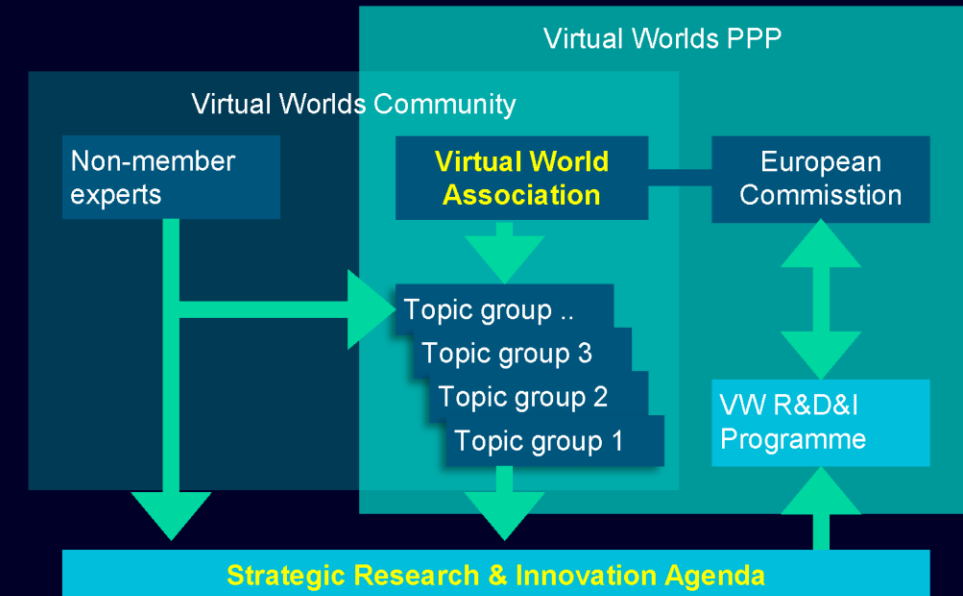
Objective

- Create the partnership
- Write a SRIA (urgent)
- Open partnership to members (expected Q4/2025)



The set up of the partnership

1. Creation of the **Virtual Worlds Association**
 - Representation of industry, public services and academia
 - Open for European entities contributing to the Virtual Worlds research agenda to become members (200-350 expected)
 - Will organize yearly conference
 - Signing the partnership with the EC
2. Initiating the **Strategic Research & Innovation Agenda** (SRIA)
 - Captures the research gaps in the Virtual Worlds domain
 - Underpins the 2026 calls (estimated budget €150M)
 - Collects inputs from the Association community and beyond
 - See SRIA skeleton on next page



Driving the European research agenda for the (industrial) metaverse

Milestone Plan



Candidate Founding Members

Germany highlighted



Penholders – Chapters

Master Deck	Siemens
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Application	Industry& logistics	Healthcare & Social Inclusion	Media & Entertainment	Arts & Culture	Education & Research	Security & Defence	City & Public Administration
Penholders	Fraunhofer / Siemens	CNR	VRT / Brainstorm	CERTH	KU Leuven / Poznań University of Economics and Business	CS GROUP	Universidad Politécnica de Valencia

Technology	Immersion, Devices, Sensing, Visualization	Intuitive Real-time user interaction & user centricity	Authoring & experience design	Interoperability & Standarization	Digital Twin, People & Assets	Applied AI for VW
Penholder	EssilorLuxotica / VoxelSensors	CNRS	... / PopuLAR	SAP SE	Siemens / KU Leuven	DFKI

Context	Infrastructure, networks & compute	Data governance, analytics & processing	Socio-economic chapters
Penholder	Fraunhofer		imec

Use case description template

Domain chapters as collections of use cases

Use case template:

- 1. Scenario
 - a. Include User Story statement: As a ..., I want ..., such that ...
- 2. Users and stakeholders
- 3. How is it done now? Key challenges
 - a. What is the adoption rate of VW solutions by end users already today?
- 4. How is it done in a Virtual World? Added values
- 5. Required functionalities / technologies / research
- 6. Keywords
- 7. Relevant publications on the topic
- 8. Relevant technology/context/socio-economic chapters in SRIA structure

Application domain chapters – capturing key use cases

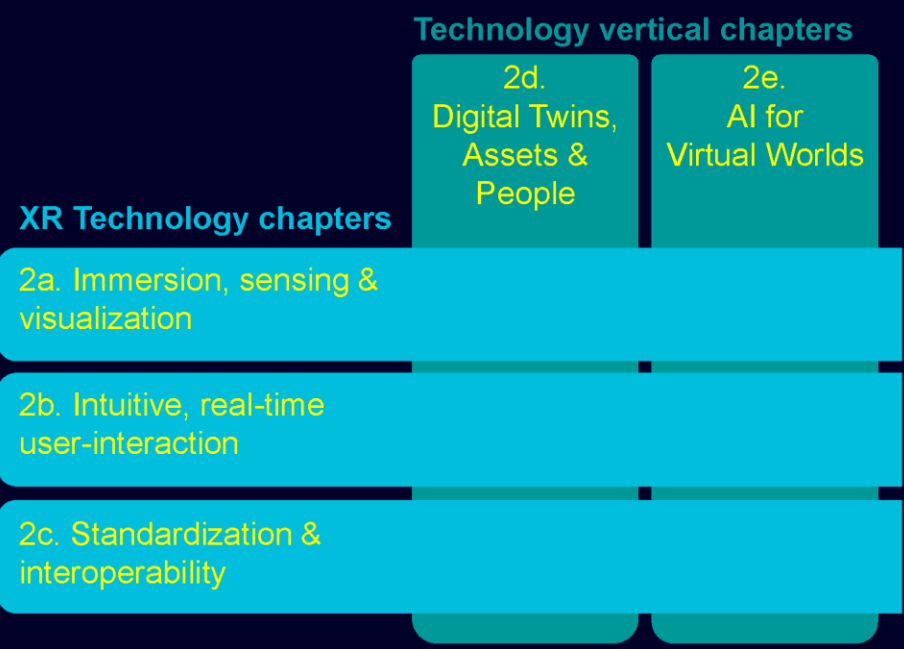


Technology block template

Technology chapters as topic roadmap (building blocks, no timelines).

Building block template:

- 1. Research topic
- 2. Users and stakeholders
- 3. Why is it important, what problem does it solve?
- 4. What is the problem definition or research gap?
 - a. What is the current TRL / current state of work?
 - b. What is the current adoption rate by end users?
- 5. Technology outline / solution direction
- 6. Methodologies
- 7. Keywords
- 8. Relevant publications on the topic
- 9. Relevant chapters in SRIA structure



DRAFT VW SRIA — Use cases media & entertainment

Use Case	Objective	Challenge	Enabling Technology
Generative AI for Virtual Set Design	Automatically generate environments consistent with scripts	High dependence on manual 3D design work	Multimodal generative models (text-to-image, text-to-3D)
AI for Super-Resolution in Virtual Production	Increase real-time visual quality	Native resolution limitations in immersive environments	Convolutional neural networks for synthetic and photorealistic video
AI for Free Viewpoint Video	Interpolate intermediate virtual camera views	High cost of multi-view capture setups	NeRFs and volumetric interpolation with deep learning
Volumetric Teleportation of People	Enable real-time presence of people in virtual spaces	High bandwidth and low latency requirements	Volumetric capture + 3D reconstruction + adaptive streaming
Gaussian Splatting for Rendering	Render complex 3D scenes with cinematic realism	Limitations of traditional mesh-based rendering	Gaussian point cloud rasterization rendering



DRAFT VW SRIA — Use cases media & entertainment (2)

Use Case	Objective	Challenge	Enabling Technology
Automatic Color Grading	Automate chromatic adjustment of real actors in virtual sets	Visible mismatches in color and lighting in composites	GANs and transformers for chromatic style transfer
AI Virtual Assistants in Virtual Production	Reduce operational complexity through intelligent assistance	Complex coordination in multidisciplinary virtual production teams	Domain-specific LLMs with voice/gesture interfaces and studio software integration
Volumetric Capture for Sports Gesture Analysis	Enable detailed real-time analysis of sports gestures	Need for biomechanical precision and dynamic tracking	Gesture recognition AI + performance Digital Twins
Evolution of XR Stages	Scale and standardize XR production stages	High costs and lack of interoperability in current XR setups	Modular XR architectures with standardized integration and cloud-based workflows



DRAFT VW SRIA — Use cases media & entertainment (3)

Use Case	Objective	Challenge	Enabling Technology
Interactive Virtual Concert Experiences	Live virtual concerts; interaction with artists, dynamic stages, global connection	Fragmented adoption of hardware limits accessibility. Low user engagement due to static, non-personalized experiences.	Real-time 3D rendering engines. AI for behavioral analysis and dynamic content generation. Blockchain for secure, interoperable ticketing.
Immersive Virtual Film Festivals	Immersive 3D film experiences, interaction with directors, global networking	Limited social interaction, high cost and technical barriers, platform fragmentation	Volumetric video capture, spatial audio, blockchain for rights management

Thank you

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