



Policy Brief

Enhancing EU legal frameworks for Digital Extended Reality

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TECHETHOS

FUTURE ◦ TECHNOLOGY ◦ ETHICS

Highlights



To protect and uphold ethical, legal and fundamental rights considerations in the development and deployment of Digital Extended Reality (XR), the Horizon 2020-funded [TechEthos](#) project encourages European Union (EU) policymakers to:

- Promote **EU fundamental rights** and encourage the adoption of ethics-by-design approaches;
- **Broaden the scope of Article 9 General Data Protection Regulation (GDPR)** by removing the purpose requirement for biometric data to be classified as special category personal data;
- Develop appropriate instruments to **tackle and regulate harmful online content** in XR technologies;
- Consider **specific use cases** in the classification of XR technologies under the proposed Artificial Intelligence (AI) Act;
- Promote the **effective enforcement, monitoring and compliance** with EU laws related to XR technologies, such as the GDPR, Digital Services Act (DSA), Digital Markets Act (DMA) and the proposed AI Act.

Who is this for?

This brief is primarily aimed at EU institutions, such as the European Commission, European Parliament, the Council of the European Union, and the European Council. This brief seeks to inform EU policymakers and officials involved in the preparation of legislative or policy initiatives related to **XR, virtual reality (VR), augmented reality (AR), mixed reality (MR), the metaverse, natural language processing (NLP), privacy and data protection, and AI systems.**

Introduction

XR technologies combine advanced computing systems (hardware and software) that can change how people connect with each other and their surroundings and influence or manipulate human actions through interactions with virtual environments. The emergence of this technology family poses certain risks and regulatory challenges, such as those related to privacy and data protection, the regulation of AI and harmful online content, freedom of expression, non-discrimination, and the protection of special categories of persons, especially children.

This policy brief sets out the regulatory priorities identified through an analysis of EU laws and policies as part of the TechEthos project. In particular, these regulatory priorities are considered in the context of the Charter of Fundamental Rights of the European Union (CFREU), the GDPR, the DSA, the DMA and the proposed AI Act.





Recommendations



Promote EU fundamental rights and encourage the adoption of ethics-by-design approaches

- In implementing a rights-based approach to the regulation of digital technologies through appropriate legislative and policy instruments, the EU should more robustly protect and promote the **right to disconnect** – as described in the **European Declaration on Digital Rights and Principles** – as a health and safety measure for the protection of workers.
- The EU should encourage the **adoption of ethics-by-design approaches** to mitigate against the possible risks associated with the development of XR applications, such as by including a requirement for ethical and human rights impact assessments in the proposed AI Act.

Broaden the scope of Article 9 General Data Protection Regulation (GDPR) by removing the purpose requirement for biometric data to be classified as special category personal data

- XR technologies are capable of collecting a large volume and type of biometric data that may be used for a variety of purposes. For that reason, the EU should remove the requirement under Article 9 GDPR for biometric data to be used “for the purpose of uniquely identifying a natural person”. Doing so **expands the scope of the biometric data category** to include other purposes, such as inferring user preferences or tracking workplace performance, and brings it in line with the more context-based approach to defining special category personal data.

Develop appropriate instruments to tackle and regulate harmful online content in XR technologies

- The EU should evaluate appropriate and effective ways to protect special category groups, in particular, from the effects of harmful online content, including online violence, (sexual) harassment, hate speech, and the spread of mis- and disinformation. Possible interventions to improve the protection of fundamental rights in the development and use of XR technologies may involve measures to **verify user and/or machine identity, promote user empowerment** through self-reporting measures, and extend the responsibility of providers to monitor and moderate online content, such as through the provisions of the **DSA**.
- In placing an obligation on online platform providers to moderate harmful online content through the provisions of the DSA, the EU should develop and provide guidance to online platform providers to identify and assess harmful online content, particularly in the context of hate speech, and the spread of mis- and disinformation.
- In addition to the **Code of Practice on Disinformation**, the EU should encourage the adoption of similar **industry-led self-regulatory codes** addressing issues associated with harm to XR users, including hate speech, online violence, (sexual) harassment, and mis- and disinformation.
- The EU should recognise that the immersive and increasingly realistic nature of XR technologies may exacerbate the risks and impacts of harmful online content consumed through XR, particularly by special category groups such as children.





Consider specific use cases in the classification of XR technologies under the proposed AI Act

- The classification of XR technologies under the AI Act will impact the ways in which such technologies may be developed and deployed in the EU. In determining the general purpose of an AI system, EU should consider different types of **use cases** to enable the appropriate risk classification of AI-enabled XR and NLP technologies in the proposed AI Act, including **non-manipulation, education, workplaces, use by children, healthcare provision**, and use in the **administration of justice**.
- The inclusion of measures to support innovation in the proposed AI Act, such as regulatory sandboxes, can help identify and assess possible harms and potential biases in a controlled testing environment. Furthermore, measures such as **watermarks**, can help identify AI-generated online content, including avatars, voice, text and video.
- The protection of fundamental rights, such as the **right to dignity**, the **right to autonomy**, the **right to non-discrimination**, the **right to privacy**, and the **right to freedom of expression**, should be a central consideration in assessing the risk factor of AI-enabled XR technologies.
- The EU should recognise that the **immersive nature of XR technologies** may exacerbate the risk of harms experienced by victims and ensure this is taken into account in the risk classification of AI systems in XR technologies.
- The Council should clarify the reference to VR in recital 16 of its General Approach on the proposed AI Act to elaborate whether all 'cases' of VR are subject to a prohibition under Article 5.
- In addition to the exception for the use of VR in the context of medical treatment, the Council,

in negotiation with the European Parliament, should consider whether there are other use cases of VR that should be exempt, such as research.

Promote the effective enforcement, monitoring and compliance with EU laws related to XR technologies, such as the GDPR, DSA, DMA and the proposed AI Act

- In promoting the proper functioning of the internal market and in encouraging EU-wide compliance with the regulation of XR technologies, AI systems and harmful online content, the EU should work towards the **harmonisation of EU rules and standards** as far as possible within the EU's competencies.
- The EU should collaborate closely with Member States to support the enforcement and monitoring of compliance in line with EU values and principles.





Final take-aways



A key takeaway is that the proposed AI Act will significantly impact the development and deployment of XR and NLP technologies in the EU. The **immersive nature of XR technologies** should be considered in the risk classification of such technologies. In identifying and assessing XR and NLP use cases and determining the appropriate risk classification, the **protection of fundamental rights** should be a central consideration.

The following would further strengthen the rights-based approach to the regulation of XR:

- Expand the scope of the **biometric data category** under the GDPR;
- Adjust and promote the more effective enforcement of **existing legal frameworks**;
- Assess different types of XR and NLP use cases **in relation to the AI Act**;
- Encourage the adoption of **ethics-by-design** approaches to XR development through **consultation and stakeholder engagement**;
- Provide appropriate **guidance** to better regulate and moderate potentially harmful online content.

Further reading



- Adomaitis, L., Grinbaum, A., Lenzi, D. (2022). TechEthos D2.2: Identification and specification of potential ethical issues and impacts and analysis of ethical issues of digital extended reality, neurotechnologies, and climate engineering. TechEthos Project Deliverable. Available at: www.techethos.eu; and <https://doi.org/10.5281/zenodo.7619852>.
- Bernstein M.J. and Mehnert E.W. (2022) Policy note: Analysis of expert scenarios addressing ethical implications of the selected technologies. TechEthos Project Deliverable to the European Commission. Available at www.techethos.eu; and <https://doi.org/10.5281/zenodo.7615250>.
- Santiago, N., et al. (2022). TechEthos D4.1: Analysis of international and EU law and policy. TechEthos Project Deliverable. Available at: www.techethos.eu; and <https://doi.org/10.5281/zenodo.7650731>
- Vinders, J., et al. (2022). TechEthos D4.2: Comparative analysis of national legal case studies. TechEthos Project Deliverable. Available at: <https://www.techethos.eu/national-legal-cases-on-emerging-technologies/>.

This policy brief is based on the results of the legal analysis of the TechEthos project. Further policy briefs on wider ethical project results will be provided at www.techethos.eu.

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