



Strasbourg, 11.7.2023  
SWD(2023) 250 final

PART 2/2

**COMMISSION STAFF WORKING DOCUMENT**  
*Accompanying the document*

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL  
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**An EU initiative on Web 4.0 and virtual worlds: a head start in the next technological  
transition**

{COM(2023) 442 final}

1.	INTRODUCTION .....	2
2.	GLOSSARY .....	3
3.	CITIZENS' REPORT FROM THE EUROPEAN COMMISSION'S CITIZENS' PANEL ON VIRTUAL WORLDS .....	4
3.1.	The Panel .....	4
3.2.	The Recommendations .....	4
3.3.	Next steps .....	5
	ANNEX 1: FINAL RECOMMENDATIONS OF THE EUROPEAN CITIZENS' PANEL ON VIRTUAL WORLDS .....	7

## 1. INTRODUCTION

This Staff Working Document (SWD) accompanies the Communication “*An EU initiative on Web 4.0 and virtual worlds: a head start in the next technological transition*” and provides an overview of market trends and forecast per selected industrial ecosystem.

The annex provides the final 23 recommendations put forward by the citizens from the work of the citizens’ panel on virtual worlds.

## 2. GLOSSARY

Term or acronym	<b>Meaning or working definition – the proposed definitions are for the sole purpose of this document and its understanding</b>
Augmented reality (AR)	Interactive technology that integrates digital information with the user’s physical surrounding in real-time. It enhances the user's perception of real-world objects and environments by overlaying digital sensory inputs onto them. AR can be experienced through a variety of devices, including smartphones, tablets and smart glasses.
Citizens’ panel	Innovative democratic instrument that puts citizens at the centre of public policymaking. Randomly selected citizens from all 27 EU Member States come together to discuss key forthcoming proposals at the European level and make recommendations that the European Commission will take into consideration when defining its political goals and concrete policies.
Digital identity	Collection of data that uniquely represents an individual or organisation in the digital world. Digital identity is used for authentication, authorisation and verification purposes online. It includes the digital footprints left behind while using digital services.
Metaverse	Interoperable network of virtual worlds
Web 4.0	4th generation of the World Wide Web where physical and digital worlds are seamlessly blending, enabling more intuitive and immersive experiences. Making use of advanced artificial and ambient intelligence, internet of things, virtual worlds and extended reality capabilities, web, real objects and environments are fully integrated and communicating between each other through more collaborative, decentralised and user-centered approaches.
Virtual worlds	Persistent, 3D, real-time, immersive environments, blurring the line between real and virtual, for socialising, working, learning, making transactions, playing and creating.

### 3. CITIZENS' REPORT FROM THE EUROPEAN COMMISSION'S CITIZENS' PANEL ON VIRTUAL WORLDS

Following up on the final recommendations of the Conference on the Future of Europe, in its Communication “Putting Vision into Concrete Action” (of 17 June 2022), the Commission committed to enabling citizens' panels to deliberate and make recommendations ahead of certain key proposals.

The second of these **new generation of citizens' panels** was organised by the Directorate-General for Communications Networks, Content and Technology and the Directorate-General for Communication between 24 February and 23 April 2023 on **virtual worlds**. The panel complements the consultations the European Commission carried out with various relevant stakeholders in view of the initiative on Virtual Worlds announced in the Commission work programme for 2023.

The citizens were asked what vision, principles, and actions should guide the development of desirable and fair virtual worlds in emerging virtual worlds based on the EU Declaration of Digital Rights and Principles<sup>1</sup>. The EU and its Member States are committed to harnessing the potential of digital transformation, while safeguarding the rights of people living in the EU. The resulting recommendations feed into the Communication “An EU initiative on Web 4.0 and virtual worlds: a head start in the next technological transition” and the accompanying Staff Working Document. These recommendations will also be taken into consideration for future initiatives.

#### 3.1. The Panel

The panel was **composed** of 140 randomly selected citizens reflecting the EU's diversity in terms of age, gender, socio-economic background, education, and geography (nationality and urban/rural residency). Citizens met during three weekends to formulate a set of guiding principles and actions for the development of fair and desirable virtual worlds in the EU.

They were **aided** by professional moderators and facilitators, European Commission experts and a Knowledge Committee including external experts.

#### 3.2. The Recommendations

In their work to develop the recommendations, citizens showed a **high level of commitment and engagement** and managed to lay out a future-oriented version for virtual worlds, despite the complexity and novelty of a topic where many variables remain

---

<sup>11</sup> <https://digital-strategy.ec.europa.eu/en/library/declaration-european-digital-rights-and-principles>

unknown. During the first panel meeting, they participated in an exhibition where they could learn more and experience concrete examples and use cases of virtual worlds while the online section was itself conducted through a virtual worlds platform.

The 23 recommendations of this panel – as listed in the annex - take a **broad systemic approach** and address the emergence of virtual worlds more generally. Citizens' recommendations underline that the development of virtual worlds should be based upon EU digital rights, laws, and values, hereby aiming for inclusive, accessible, transparent, and sustainable virtual worlds. For example, they recommend action to ensure accessibility to virtual worlds for all, request user-friendly data consent forms and stress the importance of green energy use in the development process. Citizens also emphasized the need for close collaboration across all relevant stakeholders, including academic, business and legislative actors. Through standard-setting based on democratic values, citizens expressed the clear hope of **Europe becoming a strong global player** on new virtual worlds, hereby contributing to the shaping of global norms.

The recommendations reaffirm the need for an **evidence-based approach** to guide the development of **human-centric** virtual worlds, highlighting the importance of research to evaluate health impacts and inclusive participatory forums to establish common standards. The recommendations equally recognize the importance of **awareness-raising, education and the digital literacy of citizens**.

Citizens' recommendations associate virtual worlds with the need for policies to help grasp opportunities and address challenges. For example, the **labour market should take into account the specificities of virtual worlds** to fully benefit from digital business opportunities. Virtual worlds should be compatible to the wider goal of the **circular economy**, and related actions should both address the responsibility of industry and citizens. At the same time, citizens also spent significant time on discussing safety and security aspects, including law enforcement, privacy and the protection of vulnerable groups. Citizens want virtual worlds that are **properly monitored** for anti-social behaviour and criminality, and not leaving it to very large platforms to self-regulate.

### 3.3. Next steps

Some recommendations reflect the European Commission's **recent and ongoing work** with Member States and stakeholders in relation to digital transformation, reaffirming the need for EU-level action in this area. Recent legislation (such as the Data Governance Act, the Digital Markets Act, the Digital Services Act) as well as proposed legislation (such as the Artificial Intelligence Act, and Data Act) reflect well the needs of safeguards and fair market conditions put forward by the citizens while ensuring a sustainable, human-centric digital transformation is the main objective of the European Declaration on Digital Rights and Principles. Furthermore, the Commission launched the Virtual and Augmented Reality Industrial coalition in September 2022. It facilitates dialogue with stakeholders, helping to inform policymaking and identify key challenges and opportunities for the European VR/AR sector.

Citizens' recommendations also indicate **points for further consideration**, such as, the call for personal data security. Whilst overarching European legislation already exists on the subject (the General Data Protection Regulation (GDPR)), the impact of virtual worlds on the use of new types of data such as biometric one, could be further considered in the Commission's work.

The citizens' recommendations also **reveal some areas of possible future action** by the Commission, Member States and other players. In line with the recommendations from the citizens, the Commission proposes in the **Communication on "An EU initiative on Web 4.0 and virtual worlds: a head start in the next technological transition"**, a number of actions responding to the concerns of citizens.

In view of the competences of the Union and available resources, the actions put forward in the Communication address the following recommendations: Recommendation 4 (Financial support for the development of Virtual Worlds), Recommendation 5 (Participatory forums for joint developments, regulations and standards), Recommendation 10 (Teacher training on Virtual Worlds and digital tools), Recommendation 14 (Virtual Worlds - let's build a healthy future together responsibly!), Recommendation 23 (EU as a strong player/pioneer in the Virtual Worlds). Some recommendations put forward are being developed in different strands of work such as Recommendation 19 (EU needs to develop regulations on digital identity) with the proposal for Digital Identity. The actions announced aim at fostering a joint approach with Member States and stakeholders to further **build awareness** and **support the development of accessible, open, safe and sustainable virtual worlds**; having user-friendly information and tools for citizens to manage **virtual identities**, data and virtual assets when using virtual worlds, supporting European research and development, supporting open standards and better understanding the impact of virtual worlds on health and wellbeing.

The outcome of the panel will support the overarching work of the Commission and can also **serve as a guide to help Member States in developing policy actions related to virtual worlds**. Regarding the European Commission's policymaking, the recommendations complement the results of the public consultation carried out by the Commission and provide a reference point for the Commission's overall approach and future action. The work carried out by citizens is a precious **source of inspiration** and relevant input for the years to come and will **feed into its work and policy proposals** related to emerging virtual worlds. Furthermore, the recommendations provide a valuable basis for actions by the many stakeholders involved in developing new virtual worlds. Citizens will be kept informed of key developments in virtual worlds, such as the adoption of the initiative and new initiatives stemming from their work in the panel.

## ANNEX 1: FINAL RECOMMENDATIONS OF THE EUROPEAN CITIZENS' PANEL ON VIRTUAL WORLDS

**Disclaimer:** The views presented in this report are not the views of the European Commission but of the citizens who participated in the panel. It cannot in any circumstances be regarded as the official position of the Commission or its services.

### Eight citizen values & principles for desirable and fair European Virtual Worlds

1	<b>Freedom of choice</b> The use of Virtual Worlds is a free choice for individuals – without disadvantages for those who are not participating.	2	<b>Sustainability</b> The set-up and use of Virtual Worlds is environmental-friendly.
3	<b>Human centred</b> Technological development and regulation of Virtual Worlds are serving and respecting the needs, rights and expectations of users	4	<b>Health</b> Physical and mental human health as a fundamental pillar for the development and use of Virtual Worlds.
5	<b>Education &amp; literacy</b> Education, awareness-raising and skills on how to use Virtual Worlds are put in the centre of Virtual Worlds' development.	6	<b>Safety &amp; security</b> European citizens need to be kept safe and secure, including the protection of data and preventing manipulation and theft.
7	<b>Transparency</b> 1) Transparent regulations are protecting people, their personal data, and psychological and physical health. 2) The use of data (by third parties) is transparent.	8	<b>Inclusion</b> Equal accessibility for all citizens is granted – regardless of age, income, skills, technological availability, country, etc.



## The recommendations

### Topic: Virtual Worlds in work and job markets

#### Recommendation 1

##### Labour markets in the European Virtual Worlds

###### What

Using Member States' existing labour market legislation as a point of departure, we recommend assessing, and where necessary, adjust and harmonise legislation for the European Virtual World.

###### Who

This recommendation is addressed to those who want access to the European virtual labour market.

###### How

This legislation for example relates to work-life balance, citizens' right to breaks and disconnection, assistance for job loss due to Virtual Worlds, citizen inclusion (i.e., inclusion of disabled persons, those who lack digital skills).

This legislation should limit the access to the EU market for those countries who do not respect EU labour laws. This would mean that they would not be able to provide metaverse services (i.e., operation and monitoring) within the European single market, in order to protect European workers and preserve the single market.

###### Justification

You should support this recommendation because it will secure the European labour market. It aims to defend certain European values and principles regarding labour rights and protections. This will also assure that Europe's high labour standards are respected and exported globally.

## **Recommendation 2**

### **Creation of harmonised training for work in the Virtual Worlds**

#### **What**

With the goal of equality and inclusion for all Europeans, we recommend the provision of Virtual Worlds training and upskilling, that is European-funded and harmonised across the European Union.

#### **Who**

This recommendation is aimed at protecting European workers.

#### **How**

We propose the harmonisation of training across all European Member States. Recognising national contexts, training should aim to include broadly the same content, and should follow the same framework across European countries. There should be a certification and mutual recognition of qualifications.

#### **Justification**

You should support this recommendation because it will guarantee workers' acceptance of the Virtual Worlds. We wish to protect the European labour market and preserve European jobs. Those whose jobs are rendered obsolete by Virtual Worlds should receive sufficient training, support and requalification to adapt to the new reality.

## **Topic: Supporting innovation & development of Virtual Worlds**

## **Recommendation 3**

### **Regular review of existing relevant EU-guidelines to Virtual Worlds**

#### **What**

We recommend a periodic review, and update, of the existing EU guidelines regarding ethical and technological standards, and their adaptation and application to virtual worlds.

#### **Who**

The European Commission, more precisely DG CNECT, is responsible for the review process. Within this process, experts' input must be taken into consideration. Finally, the results are submitted to the European Parliament for approval.

**How**

Step one: defining the responsibility within DG CNECT

Step two: DG CNECT determines which exact guidelines are relevant and important for this process.

Step three: review of these guidelines, taking experts' input into account

Step four: drafting of proposals for adjustments of these guidelines

Step five: submitting the proposals to the European Parliament for approval.

The whole process is repeated regularly, at an interval of no more than two years.

**Justification**

Citizens did not provide a rationale

**Recommendation 4**

**Financial support for the development of Virtual Worlds**

**What**

We recommend establishing European co-financing for the development of a sustainable and user-centered building of -and expansion of Virtual Worlds.

**Who**

European Commission with approval of the European Parliament.

**How**

First step: define criteria for support.

Second step: provision of funding.

**Justification**

Citizens did not provide a rationale

## **Topic: Public & private: rating & registration of Virtual Worlds**

### **Recommendation 5**

#### **Participatory forums for joint developments, regulations and standards**

##### **What**

We recommend that companies, researchers and the EU work together in close collaboration to develop and regulate Virtual Worlds in accordance with the values of the EU.

##### **Who**

The European Commission should take the lead on this.

##### **How**

Different groups of experts (researchers, stakeholders, legislators, officials, but also users) should meet according to topics such as education, mental health, etc. This collaboration should be institutionalised, meaning regular and well-prepared meetings with input upfront, as well as online-exchange on the topics. The collaboration could also entail funding of the EU for start-ups and others to develop Virtual Worlds according to EU values, such as (data) safety & security, health, humanism, transparency, equal access and freedom.

##### **Justification**

Common legislation guarantees fair and secure opportunities for all EU citizens to use and participate in Virtual Worlds.

### **Recommendation 6**

#### **Company and user certification for the Virtual Worlds**

##### **What**

We recommend setting up an EU institution, or body, to issue and verify certificates for Virtual Worlds and individuals, on the basis of EU values, and that should regularly audit the certified Virtual Worlds and users.

##### **Who**

The institution should be set up by the EU and should involve companies and the private sector.

**How**

The certificates would be based on common standards that have to be defined. Certificates could be different depending on the level of usage of a Virtual World. For example, the standards that need to be applied for gaming would be different to standards for online-banking, and thus the certificates would be different. Also, certificates could approve the accessibility, e.g., for blind persons. Experts should be involved in the formulation of such standards, and also define a time frame in which certificates should be reviewed.

**Justification**

An independent body would guarantee that the values of the EU would be adherent to in the Virtual Worlds used by citizens.

**Topic: Data in Virtual Worlds: use & protection**

**Recommendation 7**

**User-friendly 'hallway', or 'gate' in the metaverse to opt-in to selected data usage**

**What**

We recommend a standardized and user-friendly mechanism providing transparency on data (who collects the data, what is it used for, how is it stored, and who is it shared with), through which permission for use is given explicitly.

**Who**

A public body, or a publicly funded body at the EU level, which might exist already: perhaps a body attached to the European Parliament, as a direct form of representation may be preferred.

**How**

There is a need to explain which data is being collected from users on virtual platforms, and how the data will be shared and used. For example, a color-coded 'door' in the 3D virtual world would indicate data usage in clear terms, before entering a platform (a red door would indicate that a high level of sensitive data may be shared). People should have the choice to opt-in on how their data will be used, wherever possible. Such a mechanism should be mandatory and

standardized for companies: to achieve this, we need new regulations, and a model mechanism created by the EU that companies will have to use.

### **Justification**

We cannot prevent data from being used completely: it would dramatically affect the competitiveness of firms. At the same time, we cannot truly refuse to give any information, as all activities in the metaverse can be processed somehow. However, there should be consent. We need clarity on what is used and how it is used, so that we can actively opt-in to such usage.

Challenge: what to do with historical data, that was given to companies willingly, and that is needed for innovation and marketing?

## **Topic: Central agency & police for Virtual Worlds**

### **Recommendation 8**

#### **A police to act and protect in the Virtual Worlds**

##### **What**

We recommend having an international police institution, with specialized and trained agents: it has to be a body cooperating with others, such as Europol and national bodies.

##### **How**

There are three fields of action to distinguish: "classic" crimes like the ones in the real world, undesirable behaviours that have increased in the Virtual Worlds (hate, bullying...) and protection against oneself. For the second category, we should first support the person acting wrong to learn from its mistakes. When behaviours persist, we need to act quickly and gradually. At some point, it should become reprehensible (from suspension to definitive expulsion). For protection, whenever police observe someone with dangerous behaviour against themselves (like addiction), police should advise the person. Police, through this control, will be taking care of and preventing problems. Also, we want to recall our first objective, which is prevention through education (for example to learn a safe use of these tools).

##### **Justification**

Powers should not be all in the hands of one organization. It cannot be done by a private organization - we need public bodies to act as police. The cooperation aspect is crucial for

transparency issues, cross control and respect of national organizations (each country has its own police). The international aspect is also necessary because online tools such as Virtual Worlds have no frontiers, so we must cooperate.

## **Recommendation 9**

### **Artificial Intelligence as a support for the police in Virtual Worlds**

#### **What**

We recommend using Artificial Intelligence in the Metaverse to support the police in preventing, fighting crimes, and controlling what is happening in Virtual Worlds.

#### **Who**

The definition and enforcement of the ethical principles of AI should be established by an independent European public body, such as a constitutional court.

#### **How**

The ethical principles defining this AI should be similar to a constitution in democracy. This constitution will follow ethical principles defined democratically (to prevent any risk of creating a "big brother" - we must prevent AI from influencing behaviours). These principles must be long-lasting and must not be under the direct influence of a party or person in power.

#### **Justification**

It is essential that AI helps the police and does not replace it. As for our other recommendation, it is also important that this AI is publicly financed, owned and managed. No private company can be in charge. If we want to produce it and if we need knowledge from private companies, we can contract them. They will work strictly based on previously defined ethical principles. AI is useful to help the police act quickly and is just one tool amongst others.

## **Topic: Learning & education on Virtual worlds**

## **Recommendation 10**

### **Teacher training on Virtual Worlds and digital tools**

**What**

We recommend teachers within the EU to receive training on (1) the practical use of digital tools, (2) risks, safety, and ethics within the Virtual Worlds, and (3) on new teaching opportunities through Virtual Worlds.

**Who**

The EU targets Member States and schools in order to improve students' education.

**How**

The EU should issue strong guidelines calling Member States to include “Virtual Worlds and digital tools courses” to their national teacher training. Teachers should also receive compulsory “refresher” courses which would lead to an EU certificate (following the language certificate model). These mandatory training sessions should be adapted to all ages and should include the following subjects: ethics, online safety, digital tool mastery and teaching opportunities of the Virtual Worlds. The EU should provide these training programs to the Member States. These tools and teaching opportunities are an addition to the school curricula, not a replacement of other subjects.

**Justification**

Training teachers means that they are able to train their students and to raise awareness among the young from the very beginning. It also helps to reduce the digital gap existing between teachers and students. We believe that providing training on safe online behaviours and on the safe use of Virtual Worlds needs to be taught as early as primary school. Therefore, the EU needs to encourage Member States to include this teacher training and offer incentives via an EU certification. The EU should provide the training program in order to have a standardised system.

**Recommendation 11****Free access to information about digital tools and to Virtual Worlds for all EU citizen****What**

We recommend that the EU guarantees free and easy access to relevant information about digital tools and Virtual Worlds for all citizens.

**Who**

The EU for all citizens.



**How**

We recommend the launching of a communication system through traditional media (TV commercials, billboards) and the creation of a dedicated platform. This European Virtual World Platform should centralize and standardize relevant information regarding digital tools and Virtual Worlds. These informational sources have to raise awareness about the risks of Virtual Worlds and to underline the advantages of these new technologies.

**Justification**

It is important that the EU works towards a standardisation of knowledge and the access to Virtual Worlds and digital tools across the EU. A lot of citizens are still vulnerable when using these platforms and subject to ill-intentioned people.

**Topic: Environmental & climate sustainability****Recommendation 12****For a circular Virtual World: rights and responsibility of citizens and industries****What**

We recommend developing awareness-raising actions on environmental footprint and ensure that Virtual Worlds' equipment is part of the circular economy. Virtual Worlds legislation must oblige industrial actors to produce recyclable/repairable equipment and limit issues regarding obsolescence.

**Who**

- The European Commission (to define the framework)
- Member States/regions (to implement the awareness raising actions),
- European citizens (of all ages since they are the target of these measures),
- Companies producing Virtual World equipment (to integrate circularity principles in their business model).

**How**

More concretely, these awareness-raising actions must start at school. The European Commission must provide a framework to give access to this information on Virtual Worlds and make it more accessible so, the Member States and regions would have to implement these educational programs.

This could be, for example, the establishment of training centres that would provide courses and issue certificates (following a "test" like a driving license) that students would have to pass to prove that they are informed on the environmental impact of Virtual Worlds. People should be trained and those who want to access more information should be given the opportunity to learn more. Therefore, it is necessary to ensure that information is easily accessible.

Awareness campaigns will always be useful, but they must be followed by binding instruments such as regulations. It is necessary to give the time to the industry stakeholders to get ready with a concrete transitional period. Awareness should be aimed at consumers, while binding legislation should be aimed at industry.

### **Justification**

The European Commission should develop awareness raising actions about the recycling of metaverse equipment but also encompassing all the metaverse lifecycle. It is necessary to start very early; from the youngest age (at school in particular), but also for elderly people. This information must be personalized and adapted to the target audience.

These actions should be followed by a coherent legislation to force industry stakeholders to produce recyclable/repairable products and to limit the obsolescence of their products.

## **Recommendation 13**

### **A green Virtual World with renewable and transparent energy**

#### **What**

We recommend establishing a system of penalties and rewards to be imposed on companies working in Virtual Worlds, in order to internalize the environmental cost of their equipment.

#### **Who**

- The European Commission to develop the appropriate regulatory framework.
- Member States providing financial incentives to encourage companies to adopt more sustainable solutions in their business models.
- Companies that operate data centres and store Virtual World related data in the EU single market should comply with the legislation. They would be the first target of the recommendation.

#### **How**

The European Commission should require companies that run data centres and Virtual World-related equipment to offset the energy they use. It could be a similar system than the carbon market to force these companies to pay for the pollution they emit. This solution could be

followed by financial incentives to encourage companies to be more sustainable and energy efficient. A monitoring system should be developed to ensure an efficient implementation.

Greater transparency should also be put forward: consumers must be able to know the environmental footprint of their Virtual World usage and make informed choices. This can be done through a rating system that companies should put on the products they sell to measure their level of sustainability, as well as a traceability system.

#### **Justification**

Citizens did not provide a rationale

### **Topic: Health impact & research agenda for Virtual Worlds**

#### **Recommendation 14**

#### **Virtual Worlds - let's build a healthy future together responsibly!**

##### **What**

We recommend that the European Union sets up an intensive research programme on the impact of Virtual Worlds on our health.

##### **Who**

Each Member State must set-up an experts' committee at the national level, in collaboration with a European body. European institutions and Member States should participate in the funding of these research programs.

Independent experts coming from different fields of knowledge (psychology, neurology, cognitive science, sociology, etc.) could work in close collaboration with experts already working on the topic inside the European institutions as well as key private sector stakeholders. This could take place through a specialised European association that meets on a regular basis.

##### **How**

This research programme will have to grow with the development of Virtual Worlds. It will be mandatory for industrial players, who bring these technologies to market maturity, to work in partnership with it. Industrial players could also have their own research programmes that are monitored and evaluated by the European Union. Access to the results must be available to the public and transparent.

**Justification**

Support this recommendation. We do not need to reproduce the mistakes of the past, we need research to understand the impact of Virtual Worlds on our health.

**Recommendation 15****Indicators for healthy, inclusive, transparent and sustainable Virtual Worlds****What**

We recommend putting in place indicators that can measure the social, environmental, mental and physical health impacts of the use of Virtual Worlds.

**Who**

Experts from different fields would use the results of research programmes to elaborate indicators. A board of experts would elaborate recommendations based on these indicators, responding to European standards for professional and individual use, in order to accompany the European Institutions in translating it into policy.

European Union institutions could use those indicators to elaborate policy directives for Member States to implement regulations at the national level for professional and individual use. These policies could be inspired by what has been done in other policy areas (e.g.: tobacco, alcohol and drugs warnings).

Key stakeholders in the industry (e.g.: companies) must respect these European standards.

**How**

These indicators will need to evolve over time with research and by ensuring transparent dissemination and open access to information. These indicators could help in introducing certification standards for companies to comply with, when providing the services (paying particular attention to health). This is relevant for companies which provide tools for the metaverse and for all other companies to ensure their workers benefit from a safe and professional use of the Virtual Worlds.

**Justification**

Support this recommendation because literacy and awareness might save us from the potential threats caused by the expansion of Virtual Worlds.

## Topic: Information sharing & awareness

### Recommendation 16

#### Virtual Worlds Act on Education and Awareness Raising - 'You, Me and the Metaverse'

##### What

We recommend a guideline on how to be a digital citizen - good rules for how to behave in Virtual Worlds.

##### Who

The EU should make guidelines by appointing a panel of experts, which includes experts from different fields, researchers/universities, companies, national governments and the users of the Metaverse. The role of each actor is the following:

- EU: create a panel of experts to develop guidelines and make a public debate about this, include citizens in the debate
- National governments: needs to make sure that the guidelines are used in education and communicate about them in general.
- Researchers/universities: follow the development and make recommendations.
- Companies: follow the guidelines to ensure the safety of users.
- Users of the metaverse: citizens are responsible to be active in the debate and development of guidelines and policies.

##### How

The guidelines should, among others (to be developed), contain:

- What is the metaverse, and how it could be used
- How not to share data you don't want (cookies, etc)
- Avoid misinformation
- The duties you have to give correct information
- How not to harm the environment
- The rights that you have and how can defend them (what are the possibilities)
- The possible health risks

The guidelines should be disseminated in various ways: through formal education and awareness-raising campaigns.

##### Justification

Citizens did not provide a rationale

## **Recommendation 17**

### **My Data Is Not Your Data Act - ‘The Right Data in the Right Hands’**

#### **What**

We recommend “terms and conditions” for companies on how they guarantee the security of personal data and transparency for citizens.

#### **Who**

The EU should do a framework on Virtual Worlds and data protection and transparency.

- EU: should do a legal act specifically on Virtual Worlds (in the case it is not already covered)
- National governments: should implement the directive and enhance companies’ compliance
- Researchers/universities: legal, economic, ethics and human rights experts should be included to give insights and inputs
- Companies: companies should follow and comply with the current and new frameworks
- Users of the metaverse: citizens should be active in the debate and development of policies.

#### **How**

We need a EU legal act about what kind of personal data the companies can collect and use, and how they should inform about what they do with it.

The companies should inform people about this in a short, clear and understandable (accessible for everyone) way. They should give information on:

- What data is being collected
- How and if it will be deleted
- How long will they keep it
- How and where the data should be stored
- Flexibility about what data you want to share to use the online platforms.

#### **Justification**

Citizens did not provide a rationale

## Topic: Digital identity in Virtual Worlds

### Recommendation 18

#### Digital infrastructure development

##### What

We recommend ensuring equal access to digital technologies, through the implementation of a far-reaching infrastructural development plan. This plan should focus on affordable, financeable accessible development for everyone.

##### Who

We hope that in the future, all citizens of the EU will have access to free and good internet access provided by private companies. If this is not the case, for example in rural areas where it is not profitable for private companies, then the EU should take the initiative and provide an internet connection.

##### How

The EU needs to invest in the education of engineers, so we have the right and necessary labour force to implement and set up internet access for all.

The recommendation needs to be fully implemented by 2031, but we also need to have certain subgoals on the way. For example, a goal for when to have internet in all the big cities, in all education institutions etc.

##### Justification

To create a European Virtual World, the starting point is to ensure equal connection for every European citizen. Therefore, a digital infrastructure development plan is necessary at the EU level.

The main challenge is the sharing of responsibility [between EU and member states]. Should it be the EU or the member states to finance and implement this plan?

Moreover, a strong timeline is necessary to turn wishes into reality, so the group decided to set 2031 as a deadline.

##### Justification

Citizens did not provide a rationale

## **Recommendation 19**

### **EU needs to develop regulations on digital identity and on when to allow and secure citizens' right to be anonymous**

#### **What**

There should be a regulation at the EU-level on when you need to show your identity and when you can be anonymous in the digital world.

When we talk about entertainment, leisure or research, it should be possible to be anonymous. However, when it is crucial to know the identity of someone, it should be mandatory to authenticate yourself with a digital identification. For example, when transferring money, when referring to government services or when buying specific goods where a license or an age limit is requested.

#### **Who**

The EU has to implement a regulation compliant with global trends, and service providers must respect it.

The EU should work at the international and diplomatic level, to share awareness with other regional organisations. Member States will have to oversee this evolution and report on potential infractions.

#### **How**

It is hard to visualise how this important recommendation can be implemented. Therefore, the EU needs to start by supporting research on this topic. Moreover, the citizens need education on what anonymity means, and how our data is being used. Furthermore, it is important that there are some consequences/sanctions if service providers break the regulations.

#### **Justification**

The question of anonymity is crucial to the group. However, anonymity is a very diverse issue, which needs to be translated to a variety of situations. Therefore, a degree of flexibility and adaptability is necessary, in order to preserve freedom, friendliness, and transparency.



## **Topic: Connectivity & Access for Virtual Worlds**

### **Recommendation 20**

#### **Accessibility for all - no one left behind**

##### **What**

We recommend that all EU citizens should be able, technically and procedurally, to access and make use of the possibilities of the Metaverse, in accordance with their needs, wishes, and interests.

##### **Who**

We want the metaverse to be shaped by informed collaboration between public authorities, private entities, and civil society. The EU should take responsibility for guaranteeing equal opportunities for all EU citizens in the Metaverse.

##### **How**

We need institutional and legal frameworks that ensure the safe use and protection of civil rights.

Accessibility is a shared responsibility of public authorities, private entities, and society at large. The three actors should continually explore together the implications of the metaverse to maintain appropriate frameworks.

The EU should work towards ensuring that the metaverse evolves in accordance with the needs of all citizens (including marginalised groups, minorities, etc.).

We recommend that every EU citizen is given access to the appropriate skills and equipment to easily use the Metaverse.

Everyone should have the freedom to decide whether to take part (or not) in citizens' platforms in the Metaverse, without the risk of exclusion.

##### **Justification**

At the core of this recommendation are equity and equality, fundamental values of democratic societies.

This recommendation takes into account several aspects related to accessibility.

## **Recommendation 21**

### **Legal frameworks for transparency and protection of everyone in the metaverse - prioritising vulnerable groups**

#### **What**

We recommend clear legal frameworks informed by ongoing research into the safe and positive use of the Metaverse.

#### **Who**

The EU's legal experts and EU technocrats.

#### **How**

The frameworks should guarantee the protection of vulnerable groups (children, older people, the disenfranchised) against manipulation and threats. These frameworks should be based on the need for legal provisions, identified by the working groups.

The frameworks should include provisions for ongoing research about the positive and negative effects of the metaverse, including but not limited to:

- Fear of addiction
- Impact on health
- Fear of some groups/regions being left out or left behind
- Impact on labour markets

Transparency and protection should be reflected in the investments that are supported by the EU

#### **Justification**

The protection of citizens is immensely important – keeping safe

- ourselves,
- our identities,
- those who are vulnerable

Safety must be our priority.

It is essential that all people's rights are protected. Especially when it comes to vulnerable people.

Good rules minimise the risk of criminal and harmful activity in the metaverse.

The EU's regulation has the potential to set a global example\standard.

**Justification**

Citizens did not provide a rationale

**Topic: International cooperation & standards****Recommendation 22****EU labels/certificates on Virtual World applications****What**

We recommend to the EU to introduce easily understandable, and accessible, labels/certifications for Virtual World applications, to ensure that they are secure and reliable.

**Who**

The EU, in cooperation with stakeholders such as researchers, experts, businesses/companies and local governments.

**How**

Introduce standardized labels/certifications for Virtual World applications across the European Union to protect users. Through the labels/certifications, people should be informed about the safety, security and reliability of the application.

The label/certification should be easily understandable (e.g., smileys, letters: A-B-C-D). It is important that every user is informed about the label/certification of an application before they use it. The label/certification should serve as guidance for people, based on which people should be free to choose whether they decide to use the application or not. We should make the labels/certifications sector specific if necessary.

**Justification**

Citizens did not provide a rationale

## **Recommendation 23**

### **EU as a strong player/pioneer in the Virtual Worlds**

#### **What**

We recommend the EU Member States to be united to become a strong common player/pioneer in controlling, overseeing and regulating Virtual Worlds, in order to maintain our democratic values and disseminate them to other countries.

#### **Who**

European Commission in cooperation with stakeholders.

#### **How**

The EU should become a pioneer by setting the framework for Virtual Worlds based on our democratic values. By creating a framework that creates prosperity in the EU, it will serve as a model for other regions and countries. The EU should create incentives to support and stimulate sustainability and growth. The EU should be working together in unity to become an example for other countries and regions. Additionally, the EU should remove obstacles to participation in Virtual Worlds, such as creating sufficient and reliable infrastructure.

#### **Justification**

Citizens did not provide a rationale

## Assessment of recommendations

The citizen assessed all recommendations on a scale between 1 – 6. The value 1 meaning “I don’t agree/I do not support the recommendation” and 6 meaning “I highly agree/I strongly support”

nr.	Recommendation	Average
1	Labour markets in the European Virtual Worlds	5,0
2	Creation of harmonised training for work in the Virtual Worlds	5,0
3	Regular review of existing relevant EU-guidelines to Virtual Worlds	4,8
4	Financial support for the development of Virtual Worlds	4,8
5	Participatory forums for joint developments, regulations and standards	4,8
6	Company and user certification for the Virtual Worlds	4,8
7	User-friendly 'hallway', or 'gate' in the metaverse to opt-in to selected data usage	5,0
8	A police to act and protect in the Virtual Worlds	4,8
9	Artificial Intelligence as a support for the police in Virtual Worlds	4,1
10	Teacher training on Virtual Worlds and digital tools	5,5
11	Teacher training on Virtual Worlds and digital tools	5,3
12	For a circular Virtual World: rights and responsibility of citizens and industries	4,8
13	A green Virtual World with renewable and transparent energy	4,8
14	Virtual Worlds, let's build a healthy future together responsibly!	5,3
15	indicators for healthy, inclusive, transparent and sustainable Virtual Worlds	5,0
16	Virtual Worlds Act on Education and Awareness Raising - ‘You, Me and the Metaverse’	5,1
17	My Data Is Not Your Data Act - ‘The Right Data in the Right Hands’	5,3
18	Digital infrastructure development	5,3

19	EU needs to develop regulations on digital identity and on when to allow and secure citizens' right to be anonymous	5,4
20	Accessibility for all - no one left behind	4,9
21	Legal frameworks for transparency and protection of everyone in the metaverse - prioritising vulnerable groups	4,9
22	EU labels/certificates on Virtual World applications	5,2
23	EU as a strong player/pioneer in the Virtual Worlds	5,0