

ACCESSIBLE 360° IMMERSIVE VIDEO STORYTELLING

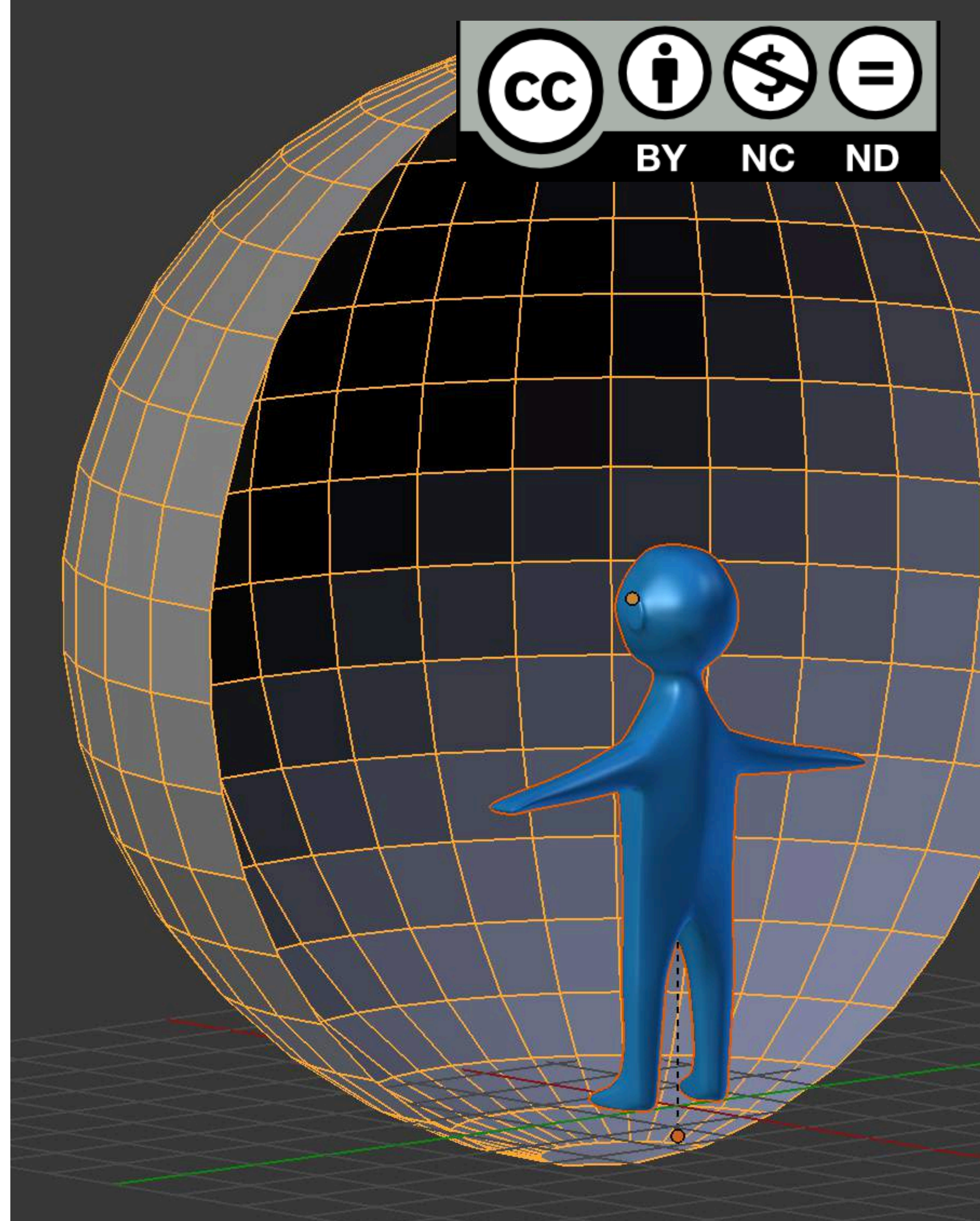
A prototype

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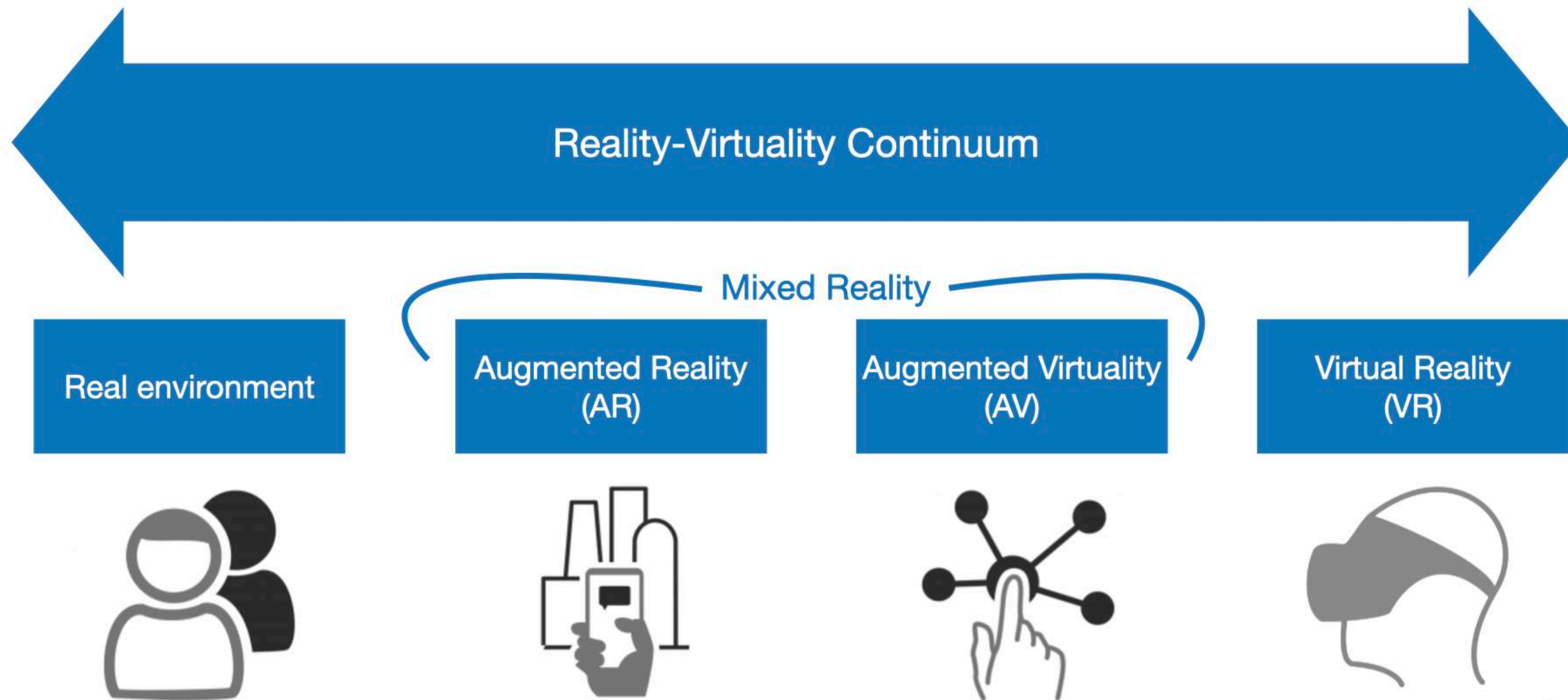


IN THIS PRESENTATION

1. WHAT IS XR (EXTENDED REALITY)?
2. CONVENTIONAL VS NEW MEDIA ENVIRONMENTS
3. CONVENTIONAL VS INTERACTIVE STORYTELLING
4. IMPLEMENTING ACCESSIBILITY IN NEW MEDIA ENVIRONMENTS
5. CREATING ACCESSIBLE CONTENT: FADER
6. GETTING DOWN TO WORK!
7. CONCLUSIONS

WHAT DO WE TALK ABOUT WHEN WE TALK ABOUT XR?

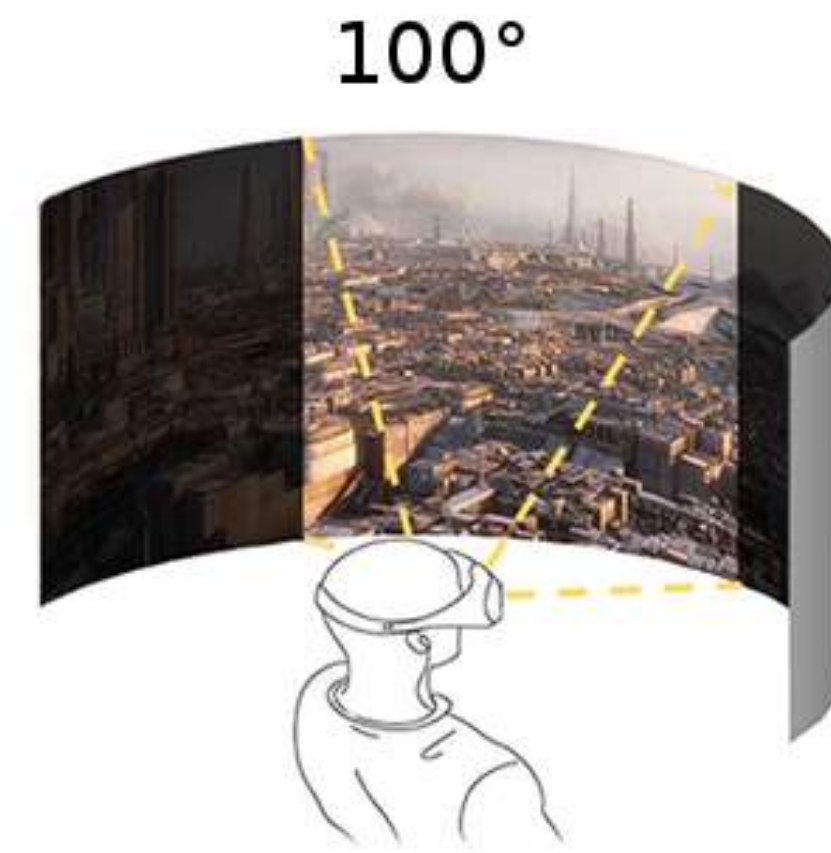
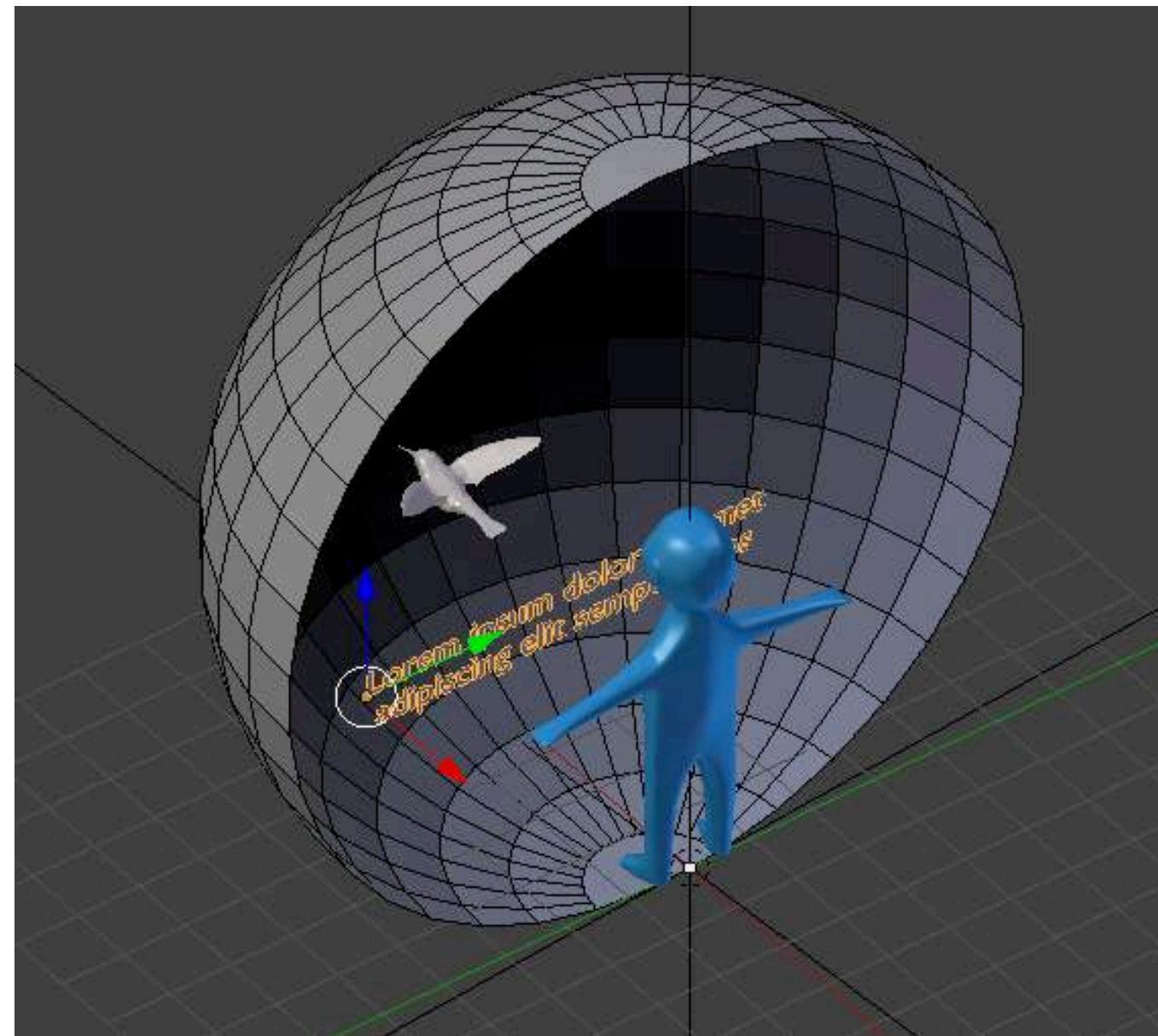
THE REALITY-VIRTUALITY CONTINUUM



Adapted from "A taxonomy of mixed reality visual displays", by P. Milgram, and F. Kishino, 1994,
IEICE TRANSACTIONS on Information and Systems, 77(12), pp. 1321-1329.

360° VIDEO

TIME... AND SPACE!



COMFORT & READABILITY



Image quality falls off
towards the edges

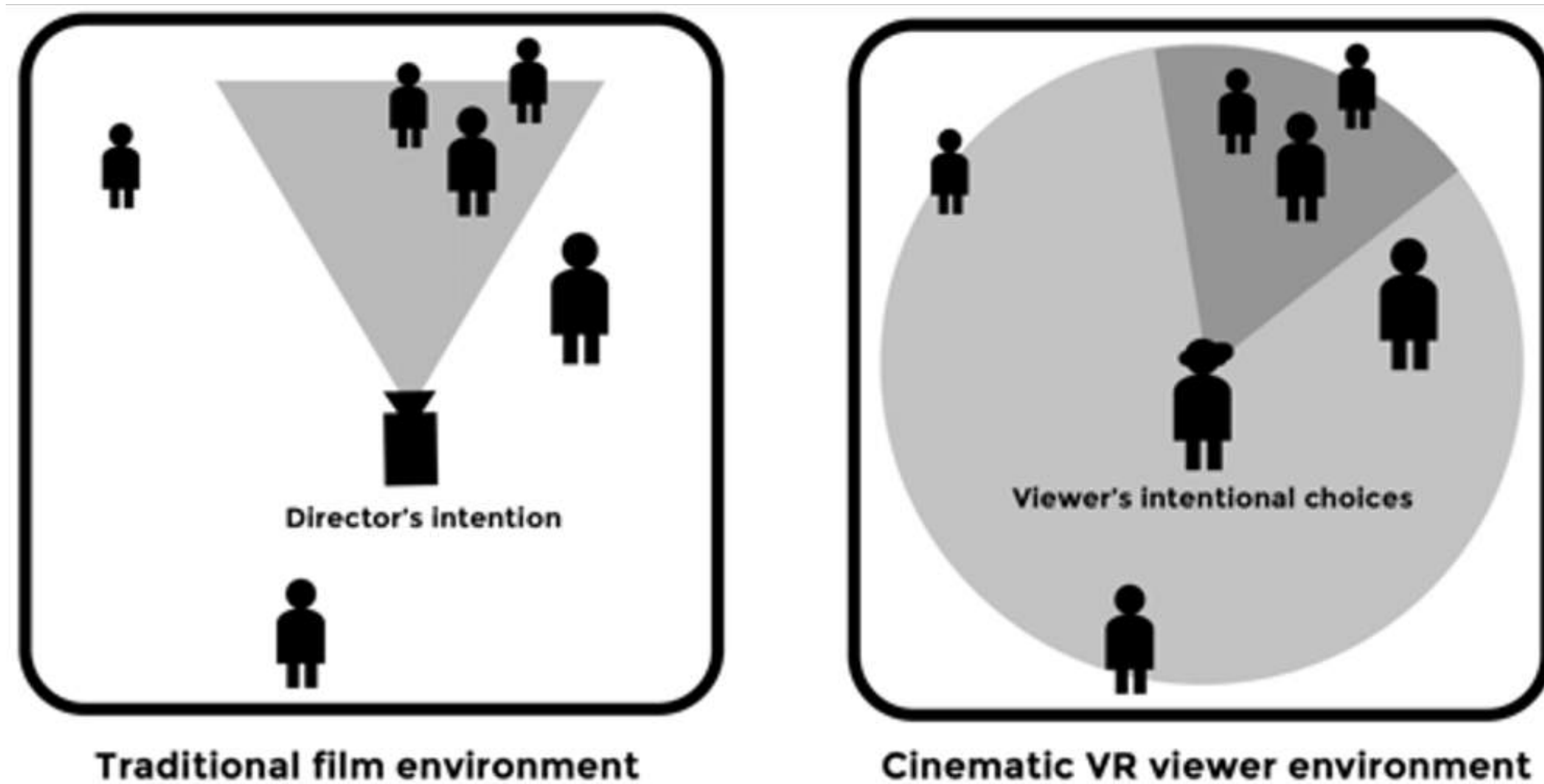
(Only exemplary, does not
represent real image
quality)

Photo through lens of the Oculus Go

CONVENTIONAL VS NEW MEDIA ENVIRONMENTS

CONVENTIONAL VS NEW MEDIA ENVIRONMENTS

FIELD OF VIEW



Traditional film environment in comparison to a XR environment (Ko et al., 2018)

CONVENTIONAL VS NEW MEDIA ENVIRONMENTS

AREAS OF INTEREST



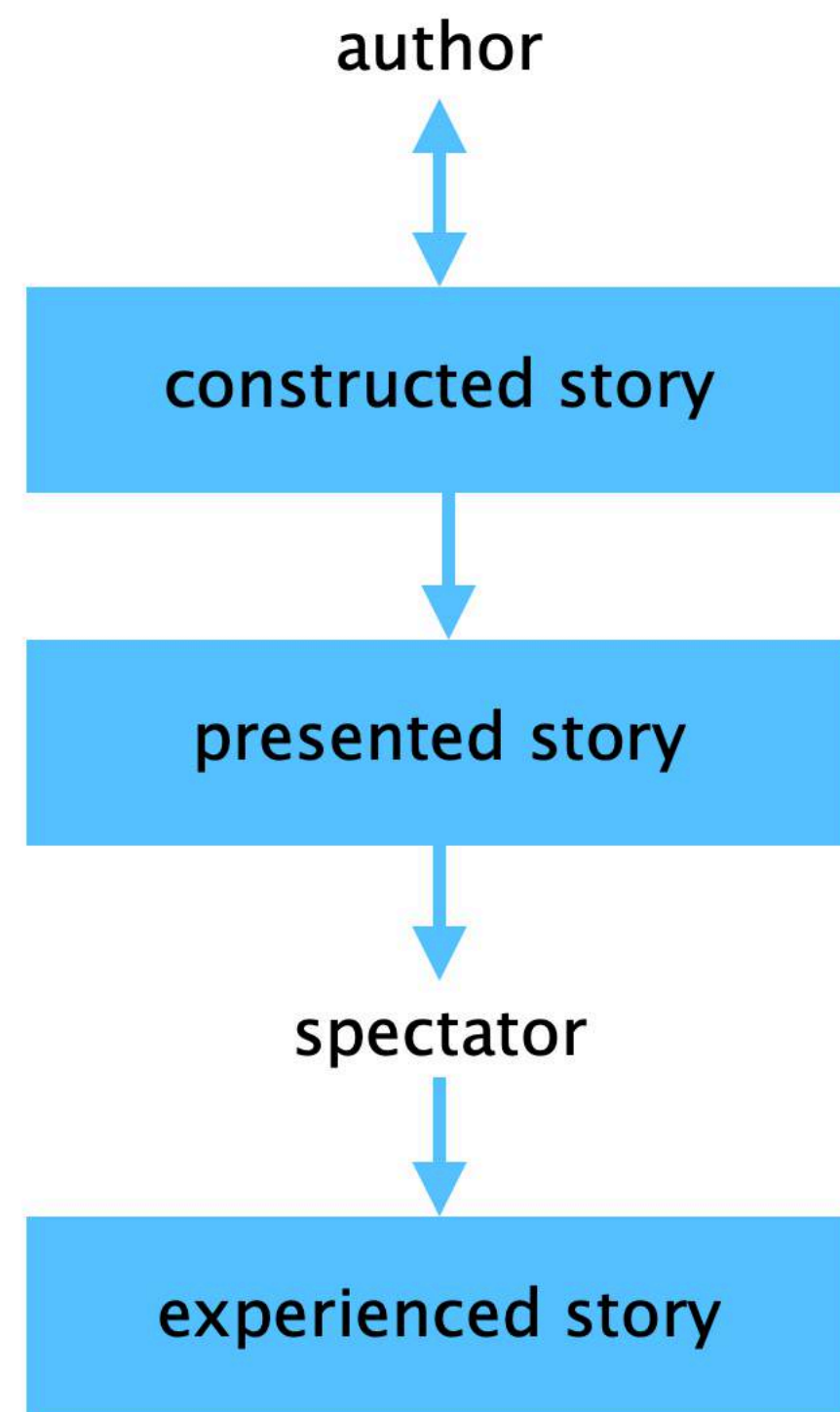
Enhancing subtitles (BBC, 2015)

CONVENTIONAL VS INTERACTIVE STORYTELLING

CONVENTIONAL VS INTERACTIVE STORYTELLING

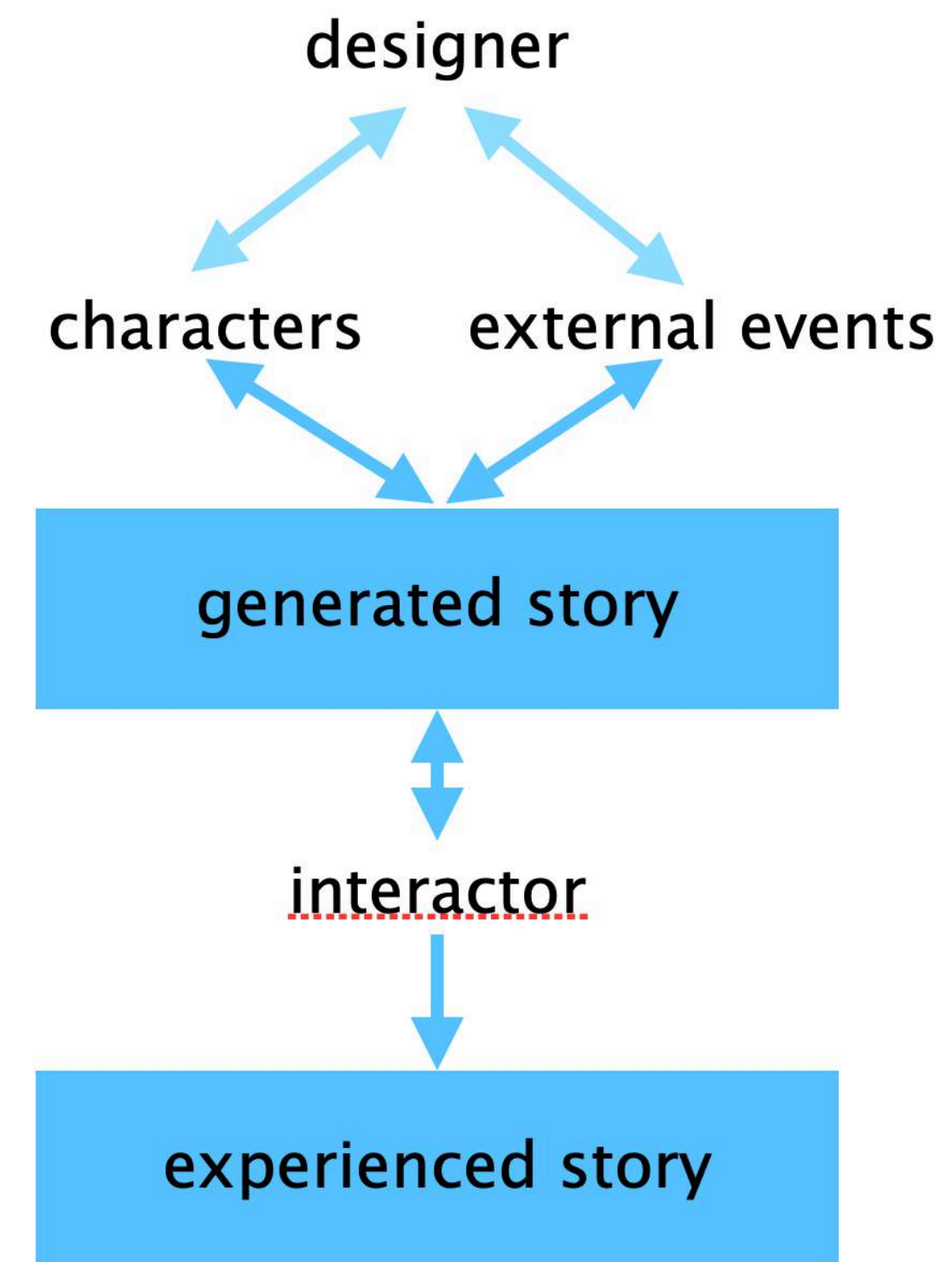
CONVENTIONAL STORYTELLING

The interaction receives the information as a separate entity from the story setting



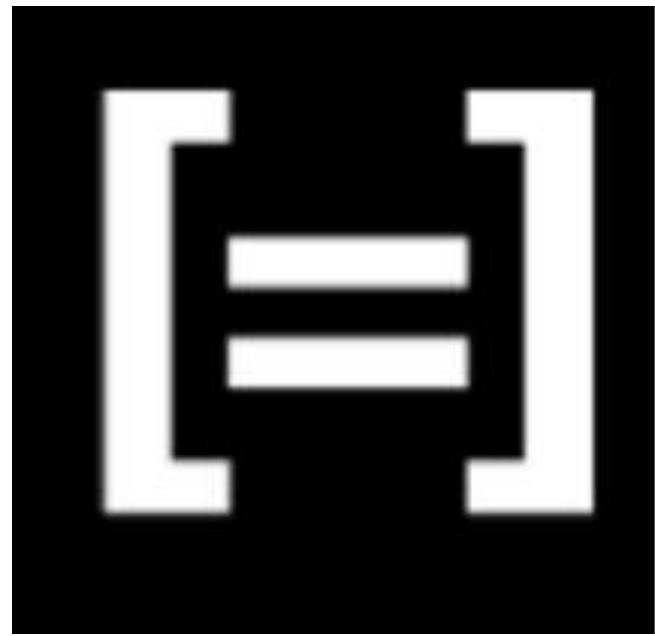
INTERACTIVE STORYTELLING

The interaction becomes an active part of the story world



IMPLEMENTING ACCESSIBILITY IN NEW MEDIA ENVIRONMENTS

CONTENT ACCESSIBILITY



Subtitles for the
Deaf and Hard of
Hearing



Spoken subtitles /
Audio subtitles



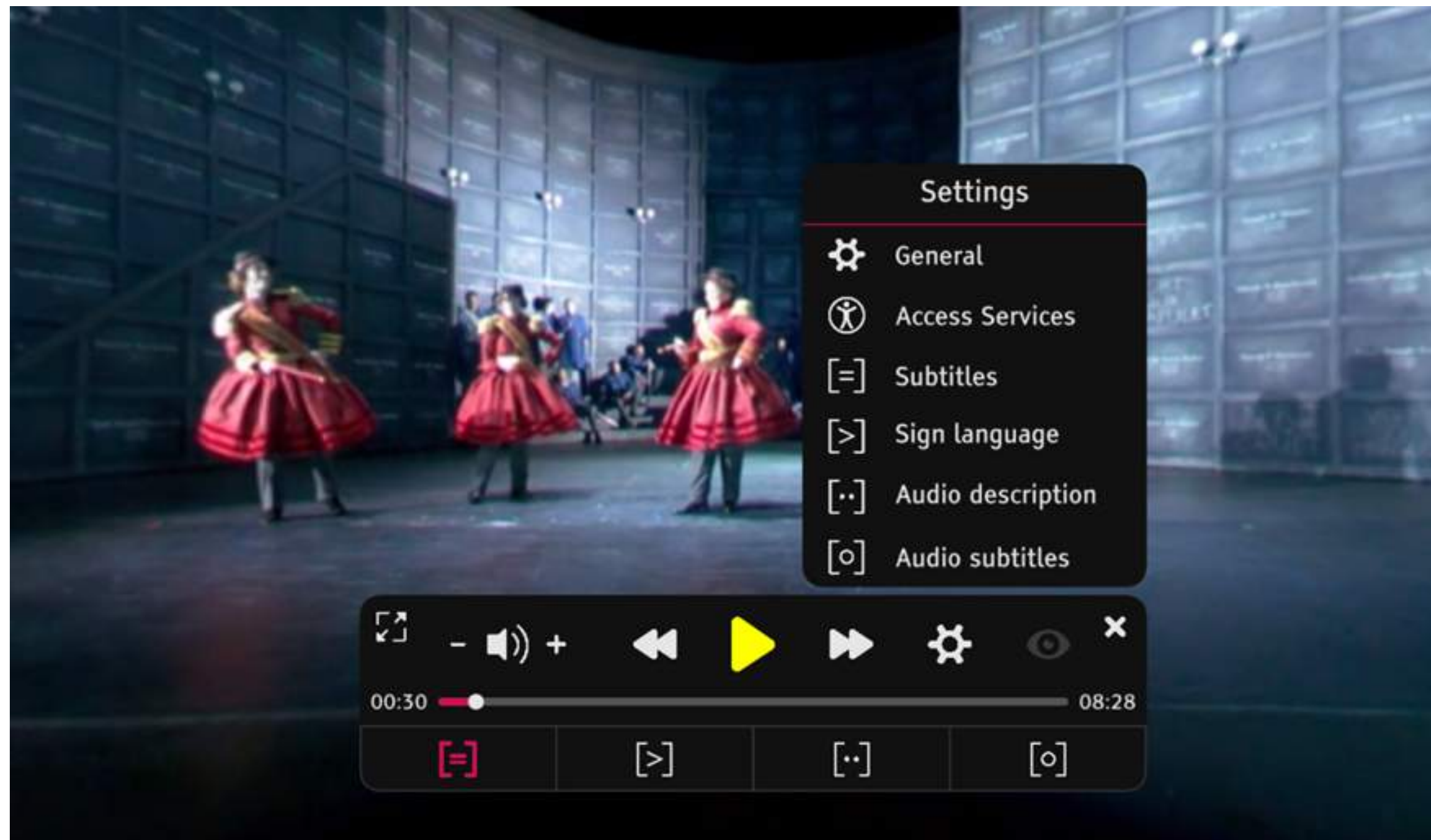
Audio description



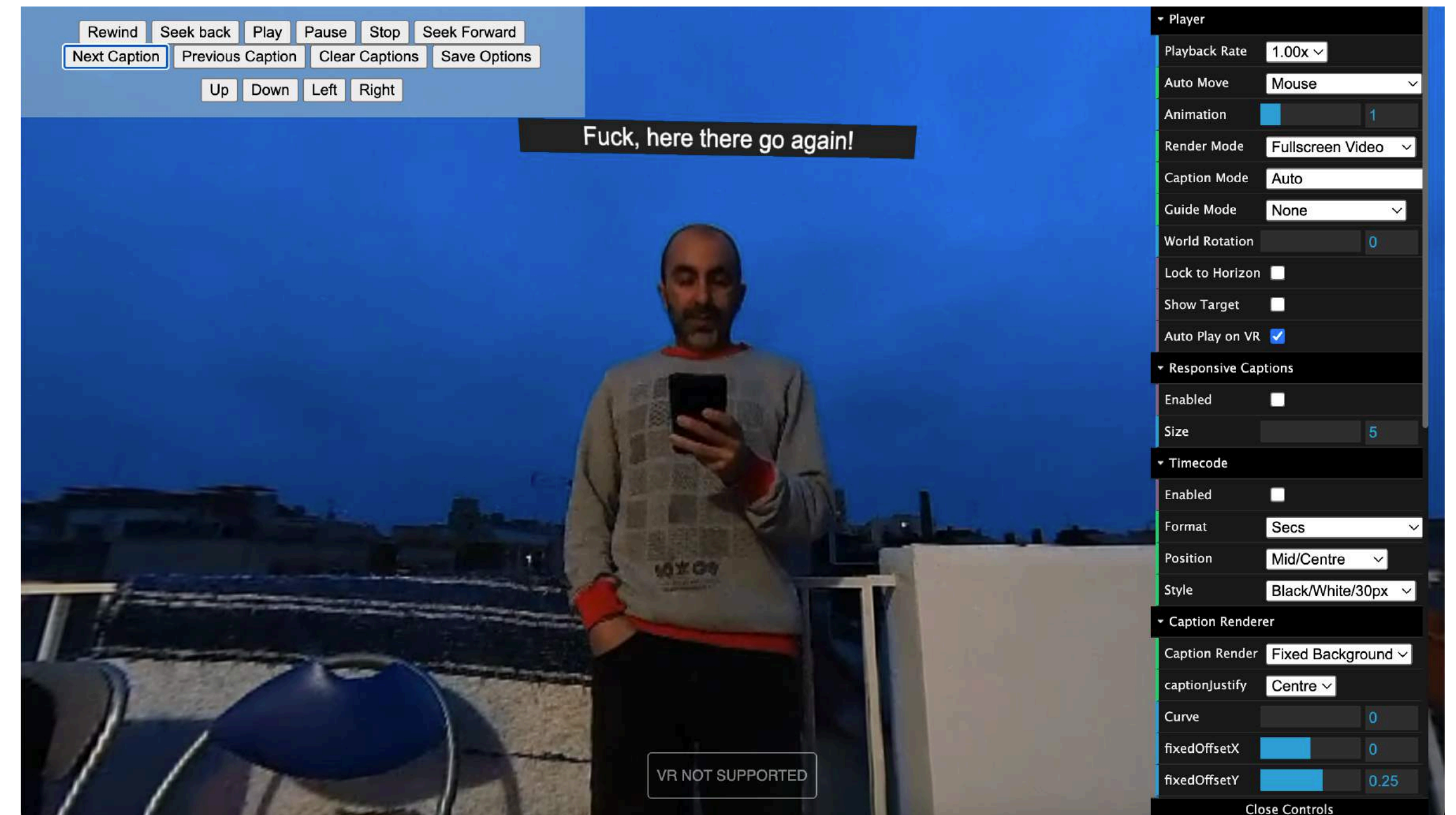
Sign language

And many more: Easy-to-read, web accessibility...

ACCESSIBLE PLAYER

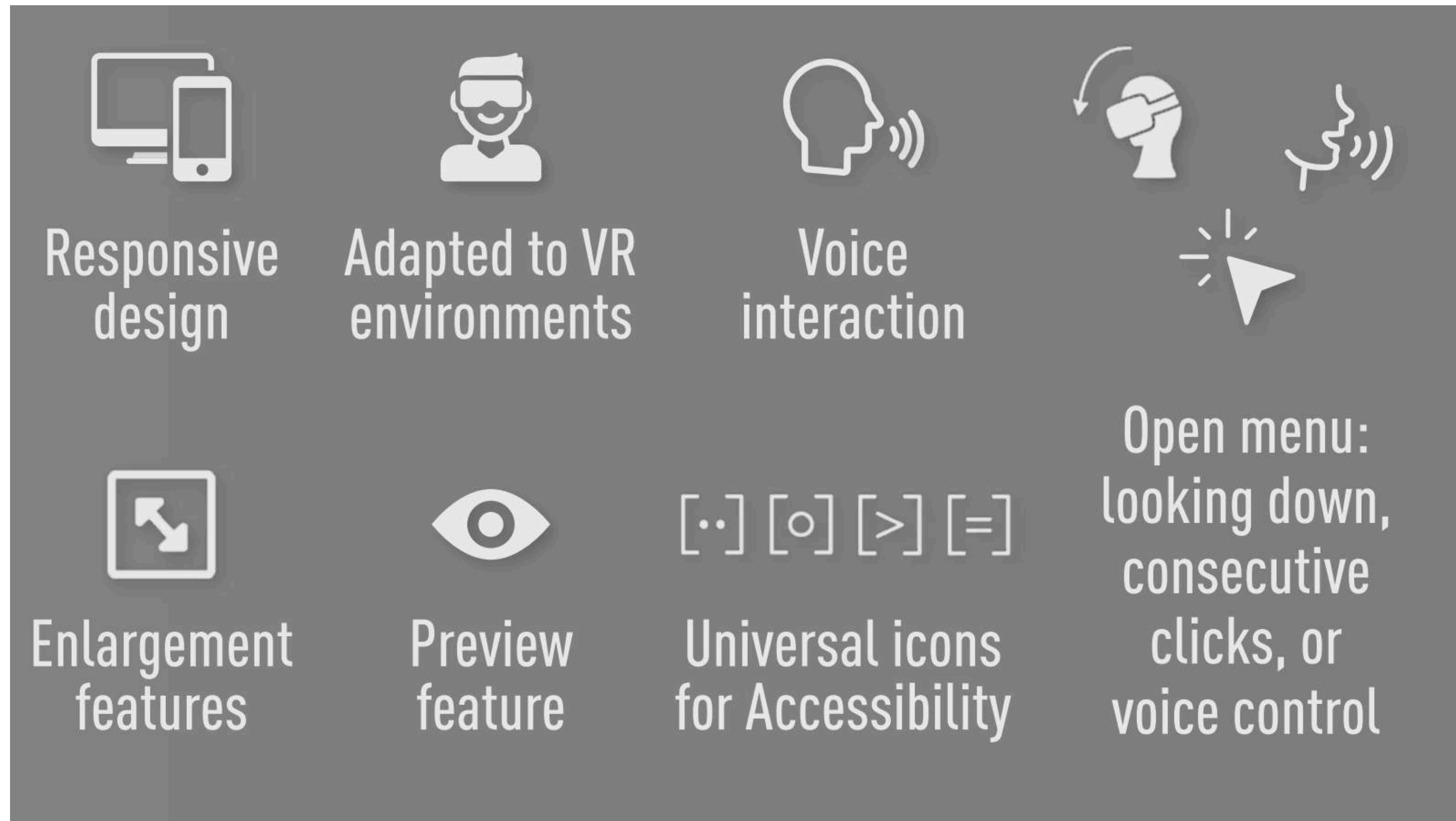


I Mac player settings



Fully customizable player

USER INTERFACE ACCESSIBILITY



DEVICE ACCESSIBILITY



CREATING ACCESSIBLE CONTENT: FADER



VR AUTHORING TOOL FOR ALL

User driven
+
Immersive
+
Accessible



Media authoring for non-experts in
programming



I want to design a VR experience, not a game, and I am not a programmer but a teacher / cultural expert!

SO WHAT?

90% of XR application are done with:



	High Quality Experiences	Easy	Comments
Graphic Engines Unity, Unreal	✓	✗	<ul style="list-style-type: none">➤ Suitable for programmers➤ C# and C++ coding➤ High-end PCs
WebGL editors Cospaces, Tinkercad, etc	✗	✓	<ul style="list-style-type: none">➤ Suitable for schools➤ Scratch MIT coding➤ Low-end PCs
?	✓	✓	?

HOW TO IMPROVE THIS SITUATION?

1. Make Web editors that can configure Unity projects
 - A. Web interfaces
 - B. Templates for basic applications: Museum, chemistry lab, wind-energy lab
 - C. Unity Server
2. Make web format more appealing
 - A. Provide multiplying capabilities
 - B. Incorporate AI libraries for fast computing on the educator PC

THE EDITOR INTERFACE



A screenshot of the Fader editor interface. The central area shows a 360-degree panoramic view of a cobblestone street in Riga, Latvia, with a red "BACK" text overlay. The interface includes a top navigation bar with "Fader", "Example_1", and "Add Media" buttons. On the left, there's a menu for "Environment" and "Contact". On the right, there are controls for "Rotation" (Vertical: 1.5, Horizontal: 0, Tilt: 0) and "Position" (Vertical: 210). Below these are icons for "360", "Video2D", "Image2D", "Audio", "TextCard", and "Interactive". At the bottom, there's a "Your scenes: 1" section with a scene thumbnail, a "Play" button, and a "Name" field containing "Riga9.jpg", a "Duration" field with "13 s", and an "Allow jump to" checkbox checked.

GETTING DOWN TO WORK...

WHO IS WORKING ON IT?

H2020 EUROPEAN PROJECTS



Opera co-creation
for a social
transformation



MediaVerse

A universe of media assets
and co-creation opportunities

Benvinguts
a
Som | Fundació



Clica
per començar
el tour 360°



Global Accessibility Awareness Day 2021

CONCLUSIONS AND FURTHER STEPS

UNDER RESOURCED ACCESSIBILITY SERVICES

- Whats about **easy-to-understand** language?

(Including different varieties ranging from Easy Language to Plain Language?)

- What about **web accessibility**?

(Ensuring users can perceive, understand, navigate, interact with and contribute to online content?)

WHAT IS NEXT?

1. The integration of accessibility services within immersive environments is a work in progress

XR Accessibility User Requirements

W3C Working Group Note 25 August 2021



2. Towards **fully personalized** media experiences
3. Need to promote the **Universal Design** and **Born accessible** concepts

**QUESTIONS?
COMMENTS?
THOUGHTS?**

