

XR Accessibility

The Art of the Possible

Joshue O'Connor

Emerging Web Technology Specialist W3C / WAI

Intro / 😊

- Working in Accessibility for around 20 years.
- Interested in the humane aspects of technology.
- Design and engineering challenge of accessibility.
- Lots of practical experience with people with disabilities.

CONTEXT

- Much of my work in W3C is done as a part of the Research Questions Task Force.
- The RQTF is a task force of the Accessible Platform Architectures (APA) working group at W3C. The APA works to ensure W3C specifications provide support for accessibility to people with disabilities.
- This work is funded by the EU WAI-GUIDE project.



CONTEXT

- XR or virtual and immersive environments, augmented or mixed reality is becoming more stable and commonplace.
- The use of existing hardware means it may become ubiquitous.
- What does this technology mean for people with disabilities?

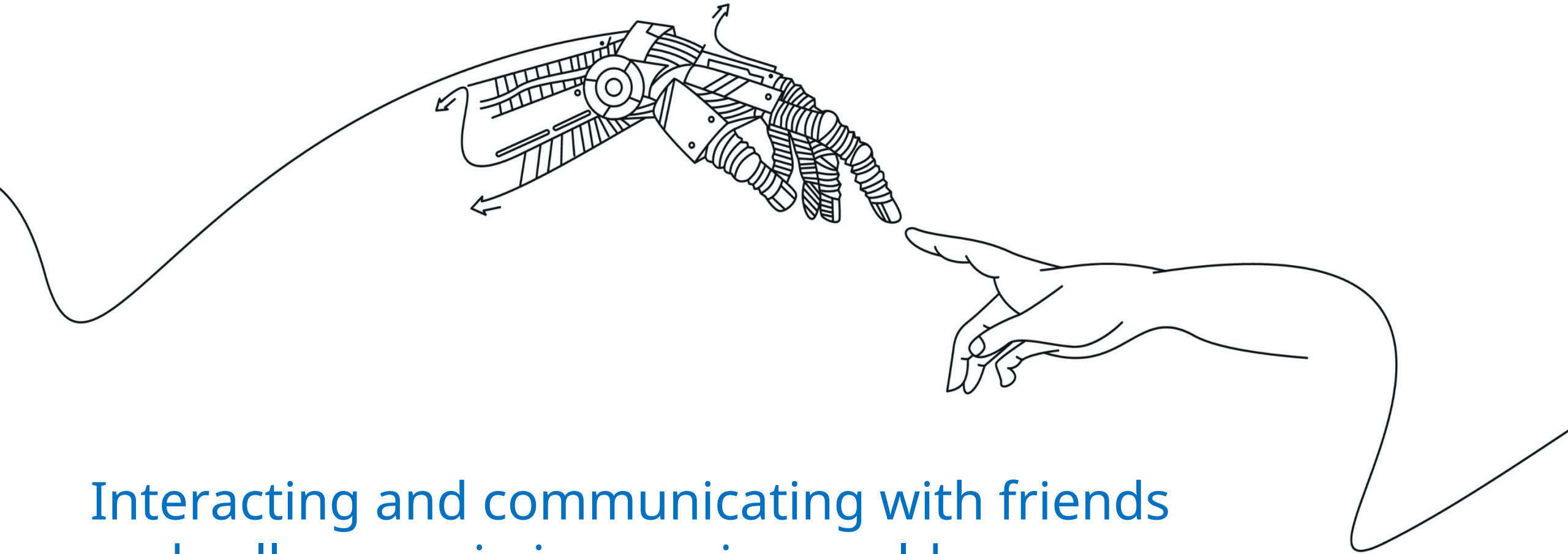
Setting the scene 🛰️



Imagine..

As a blind user being able to navigate a building they will visit tomorrow - by using XR today

Imagine..



Interacting and communicating with friends
and colleagues in immersive worlds

Imagine..

Building and designing together in real time using
immersive environments



Imagine.. Accessing XR using a range of input devices
and multiple devices for output.



Imagine..

Your XR environment learning, changing & adapting as you require.



XR ACCESSIBILITY - Challenges



XR ACCESSIBILITY – User challenges

- Some of these challenges for users include:
- Being able to use Assistive Technology in XR with complex input devices
- A high degree of precision, timing, accuracy may be needed.
- There may be a lack of semantic descriptions for non-visual users.
- Captioning needs to have context.

XR ACCESSIBILITY – User challenges

- There may be tricky routing of input and output devices.
- Interaction and affordances may not be obvious.
- Personalization may be required, this may even be dynamic and dependent on context.

XR ACCESSIBILITY – Technical Challenges



XR ACCESSIBILITY – Technical Challenges

- There are a range of technical challenges in making XR accessible including:
- Identifying gaps in current standards – work is ongoing in this space at W3C.
- What does good look like? In terms of a technical architecture for XR accessibility.

XR ACCESSIBILITY – Technical Challenges

- What about a modular approach to semantics, as they relate to the immersive environment, objects, movement, and interaction accessibility?
- These must be addressed properly –as we don't want 'token' accessibility.

What we don't want..





What we don't want...

Push to lock
door when lit

Push to lock door when lit



Push to close
door when lit

Push to close door when lit



Push to open
door when lit

Push to open door when lit



What we don't want...

Special thanks to
John Foliot..

XR ACCESSIBILITY User Requirements

- To address these challenges we have published 'XR Accessibility User Requirements' (XAUR).



<https://www.w3.org/TR/xaur/>

XR Accessibility User Requirements

W3C Editor's Draft 31 August 2020



This version:

<https://w3c.github.io/apa/xaur/>

Latest published version:

<https://www.w3.org/TR/xaur/>

Latest editor's draft:

<https://w3c.github.io/apa/xaur/>

Editors:

[Joshue O Connor](#) (W3C)

[Janina Sajka](#)

[Jason White](#)

[Scott Hollier](#)

[Michael Cooper](#) (W3C)

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XR Accessibility – User Requirements (XAUR)

- Lists accessibility user needs and requirements in XR.
- Covers navigation, object semantics, interaction, multimodal affordances and more.
- NOTE: XAUR will soon be published as a non-normative working group note.

Addressing these challenges

- Identify where pain point areas and gaps are.
- We need to work out what 'good looks like' in this space - (from an accessibility perspective).
- We can learn from the Gaming industry - taking accessibility very seriously.
- We need broad engagement in XR standards development If you are interested in contributing - Get involved!

Thank you! Questions??

Joshue O'Connor - joconnor@w3.org

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WAI