



Workshop

**Energy infrastructure
resilience in response
to war and other hazards**

23–26 September 2024

Rzeszów, Poland

DUAL USE OF APPLICATION OF VIRTUAL TECHNOLOGY

Mateusz Salach
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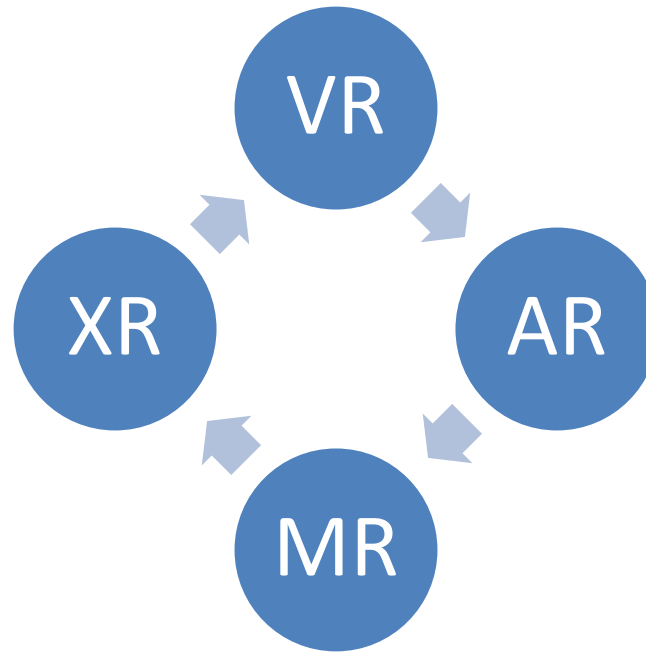
Science for Peace and Security (2024)
Energy infrastructure resilience in response to war and other hazards
Advanced Research Workshop (ARW) supported by NATO

POLAND, Rzeszów, 24.09.2024



*This workshop
is supported by:*

The NATO Science for Peace
and Security Programme



VIRTUAL REALITY (VR)



<https://rankingowyninja.pl/tech/ranking-okularow-vr/>



<https://www.neonet.pl/blog/najlepsze-okulary-vr-ranking.html>

Mateusz Salach
Dual Use of Application of Virtual Technology



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AUGMENTED REALITY (AR)



<https://www.alpinme.com/the-role-of-augmented-reality-in-the-construction-industry/>



<https://www.theverge.com/2017/12/20/16798388/pokemon-go-niantic-apple-iphone-ios-arkit-augmented-reality-ar-plus>

MIXED REALITY (MR)



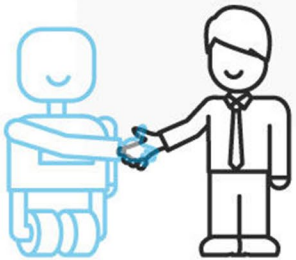
<https://www.drwindows.de/news/thema/mixed-reality>



<https://www.theverge.com/2017/12/20/16798388/pokemon-go-niantic-apple-iphone-ios-arkit-augmented-reality-ar-plus>

EXTENDED REALITY (XR)

AR vs. MR vs. VR



Augmented Reality (AR)

a view of the physical world with an **overlay** of **digital** elements



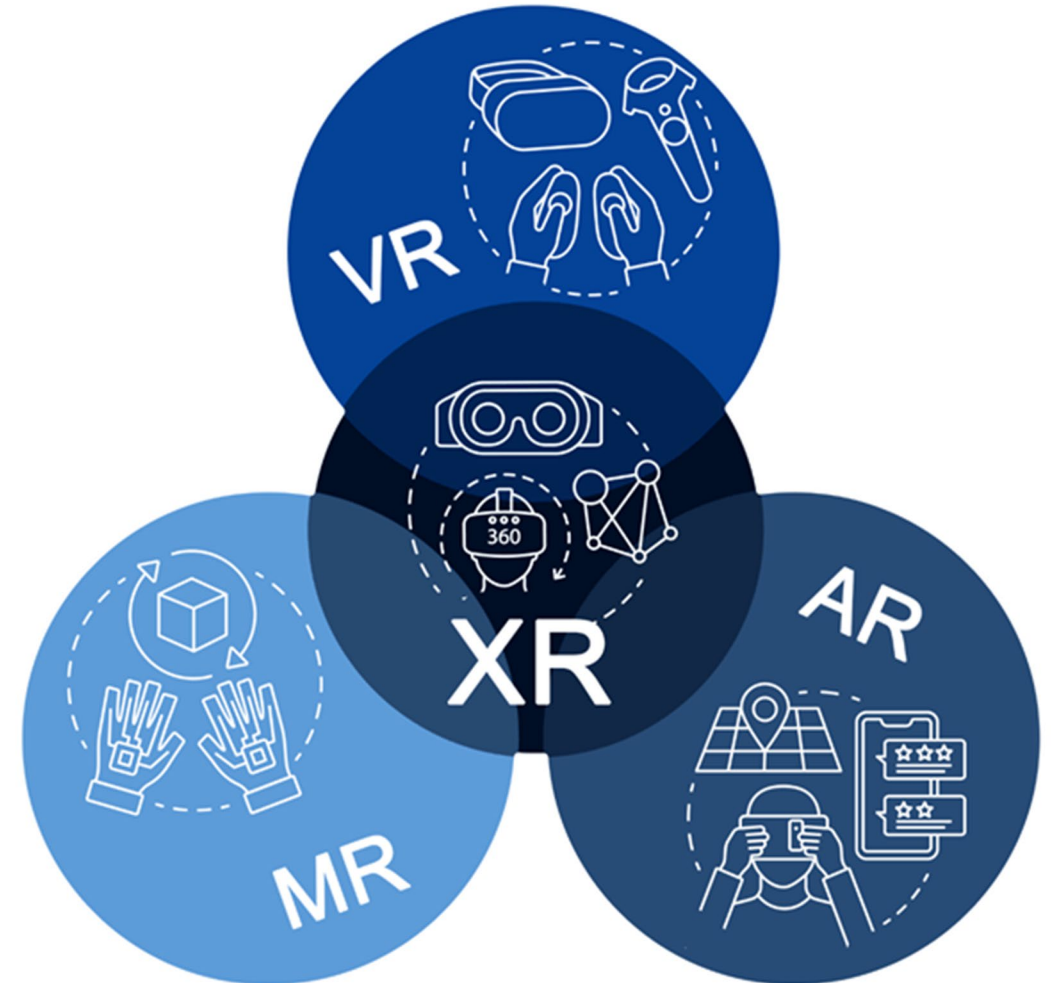
Mixed Reality (MR)

a view of the physical world with an overlay of **digital** elements where physical and digital elements can **interact**



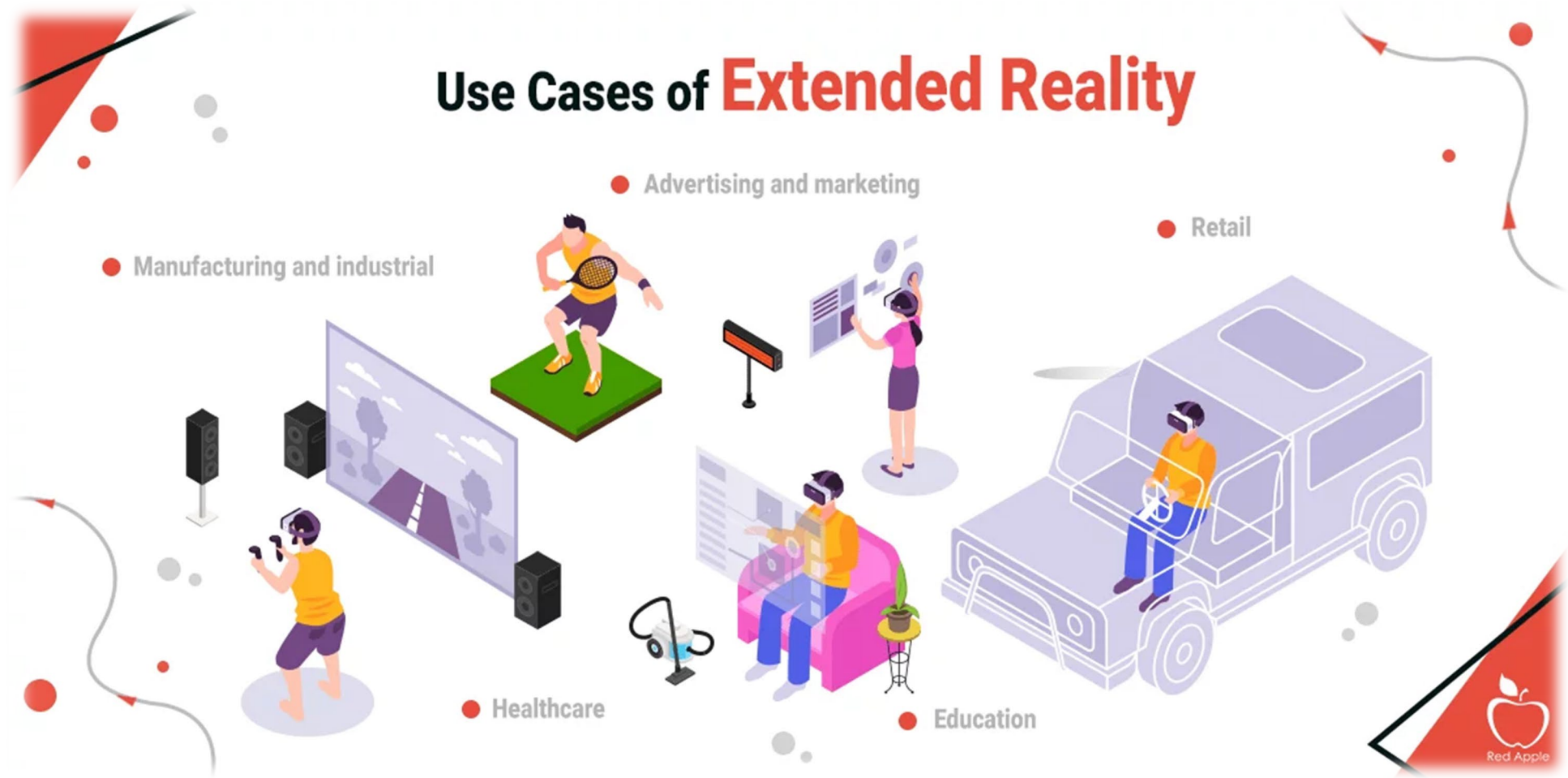
Virtual Reality (VR)

a **fully-immersive digital** environment



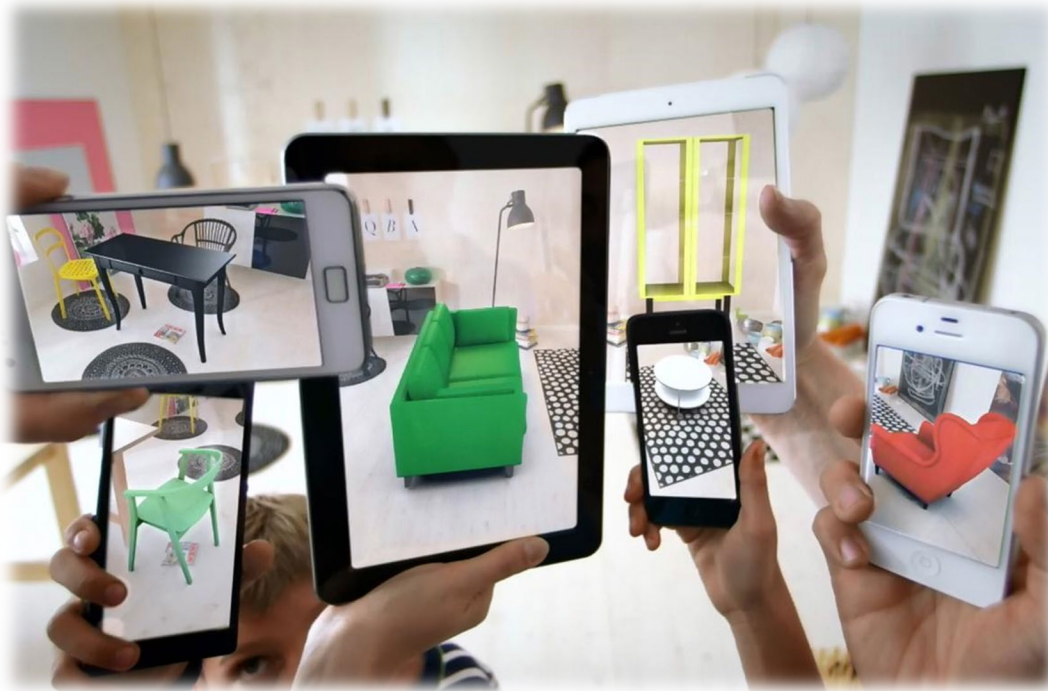
<https://www.interaction-design.org/literature/article/beyond-ar-vs-vr-what-is-the-difference-between-ar-vs-mr-vs-vr-vs-xr>

<https://www.linkedin.com/pulse/ar-vr-mr-xr-abhishek-pandya/>



<https://www.redappletech.com/what-are-the-trending-use-cases-of-extended-reality/>

MARKETING / RETAIL



<https://newatlas.com/ikea-augmented-reality-catalog-app/28703/>



<https://www.campaignlive.co.uk/article/akqa-nike-turn-sky-canvas-creativity-air-max-ar-drive/1682566>

MEDICINE



<https://hitconsultant.net/2024/04/05/osso-vr-and-american-college-of-cardiology-partner-on-cardiac-procedure-training-with-vr/>

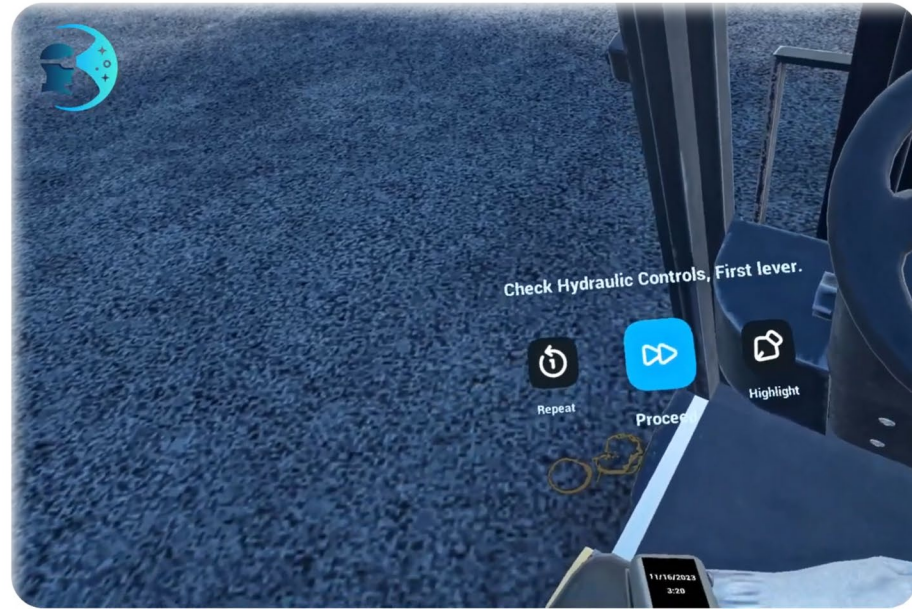


<https://www.dailymail.co.uk/femail/article-4454166/Experts-using-virtual-reality-treat-phobias.html>

EDU & TRAINING



<https://www.youtube.com/watch?v=KKT3UULodMk>



Forklift Pre-use Inspection VR Training
Available at [Metaenga.com](https://www.metaenga.com)

<https://www.youtube.com/watch?v=qdCXJzKqTCs>





WHAT CAN WE USE - VR

Cable – base station



Valve Index



HTC Vive Pro (../Eye/2)

Wireless – camera



Meta Quest 2/3



HTC Vive XR



Meta Quest Pro

WHAT CAN WE USE - VR



Valve Index



HTC Vive Pro (../Eye/2)



HTC Vive XR



Meta Quest 2/3



Meta Quest Pro

WHAT CAN WE USE - AR



XREAL



ANDROID



WHAT CAN WE USE - MR



HTC Vive Focus Vision



Apple Vision Pro



Microsoft HoloLens 2

WHAT CAN WE USE - MR



HTC Vive Focus Vision



Apple Vision Pro



Microsoft HoloLens 2

WHAT CAN WE USE - DEVELOPMENT



WHAT CAN WE CREATE?



IMAGINATION
IS LIMITLESS



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DUAL USE OF APPLICATION OF VIRTUAL TECHNOLOGY Q&A

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