Integrating Immersive and Augmented Training into the Metaverse

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C2 Technologies, Inc.
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C²’s mission is to be the best performance improvement company
What are the goals for the Metaverse?

1) Establish a shared, common definition of the Metaverse
2) Examine key features of the Metaverse relevant to training & simulation
3) Establish a descriptive taxonomic framework
4) Discuss key related factors and challenges
What is the Metaverse?

• Not simply a ‘re-branded’ Virtual Reality (VR)

• An interconnected set of digital ‘worlds’
  • Most existing digital worlds are closed and centralized

• Allows for rich, effective, portable content across digital worlds
  • ‘Build it once, deploy it anywhere’
What is the Metaverse?

- Interoperability infrastructure traditionally costly to develop
  - Offers little business incentive to drive profit
- Vision and promise is to be more seamless
- Virtualized content across numerous shared virtual worlds
- Enables whole new implementations of training and simulation capabilities (AAR, JPE)
Key Features Relevant to Training & Simulation

• Metaverse focuses on content, social interactions, shared user-curated content

• Applications don’t necessarily need to utilize AR/VR

• Infinitely scalable digital persistent worlds
Key Features Relevant to Training & Simulation

- Interoperability
- Scalability
- Multi-sensory
- Fidelity
- Persistence
- Decentralization

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Figure 1. Metaverse Learning Technology Integration Taxonomy – Adapted from Park & Kim (2022)
Challenges for Metaverse Adoption in the Training Community

- Virtual embodiment
- High cost of equipment
- Health & safety concerns
- Data privacy & security
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VR Trainings Adapted for Groups

Smart Supply Chain Management

Digital Twins in the Metaverse
Smart Warehouses

VR Trainings Adapted for Groups

Smart Supply Chain Management

Digital Twins in the Metaverse
VR Trainings Adapted for Groups

Smart Supply Chain Management

Digital Twins in the Metaverse
Maintenance Next
(Air Education Training Command and USAF)