Transition to a Digital xReality

James Fadenrecht – Boeing Visualization Center of Excellence (ViCE)
Transition to a Digital xReality

Boeing I xR In Aerospace

Scale
- Digital Readiness
- Product Size
- Mfg. Process
- Compliance

Business First
- Getting Beyond the Shinny Object
- Infrastructure Costs
- Use Case Validation
- Tech Maturity
- Enterprise Driven Strategy

Change is Hard
- User Inclusion
- Transition Planning
- Pilot to Implementation
- Target Early Adopters
- Communicate Expectations
- Executive Support

Cyber Sickness
- VR Symptoms >50%
- VR Nausea/Dizziness
- AR/MR Loss of Situation Awareness
- Symptoms Last Past Use
- Limits Safe xR Use

Lifecycle Examples
- Engineering
- Manufacturing
- Maintenance
- Customer Interaction

Application

Product

Business Value

Cultural

Health & Safety

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xR Aerospace Application – Engineering Examples

- Large Scale Design Collaboration
- Interactive Human Factors Design
- Multi-User Design Collaboration

- Virtual Build Simulation
- Digital to Physical Evaluation
xR Aerospace Application – Manufacturing Examples

Parts On The Airplane

Fastener Identification

Locating Parts On Assembly

Digital to Physical Window of the Airplane

Design / Build Integration

Virtual Training

Chief Mechanic & Stress Engineer building the aircraft virtually
CH-47 is developing a new fuel cell and maintaining the fuel cell is a concern

1. Fuel Cell Orientation for Maintenance
   • Overhead or side access
   • Height off the ground

2. Access Door Orientation
   • Safest and most efficient way to maintain the baffles and fixtures

Virtual Reality was leveraged to assess several maintenance aspects of the fuel cell
xR Aerospace Application - Customer Interaction Examples

Design/Build Tours

Sales/Customer Tours