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Transition to a Digital xReality

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Transition to a Digital xReality

Product

Scale

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

Business Value

Business First

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

Cultural

Change is Hard

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

Health & Safety

Cyber Sickness

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

Application

Lifecycle Examples

- Engineering
- Manufacturing
- Maintenance
- Customer Interaction

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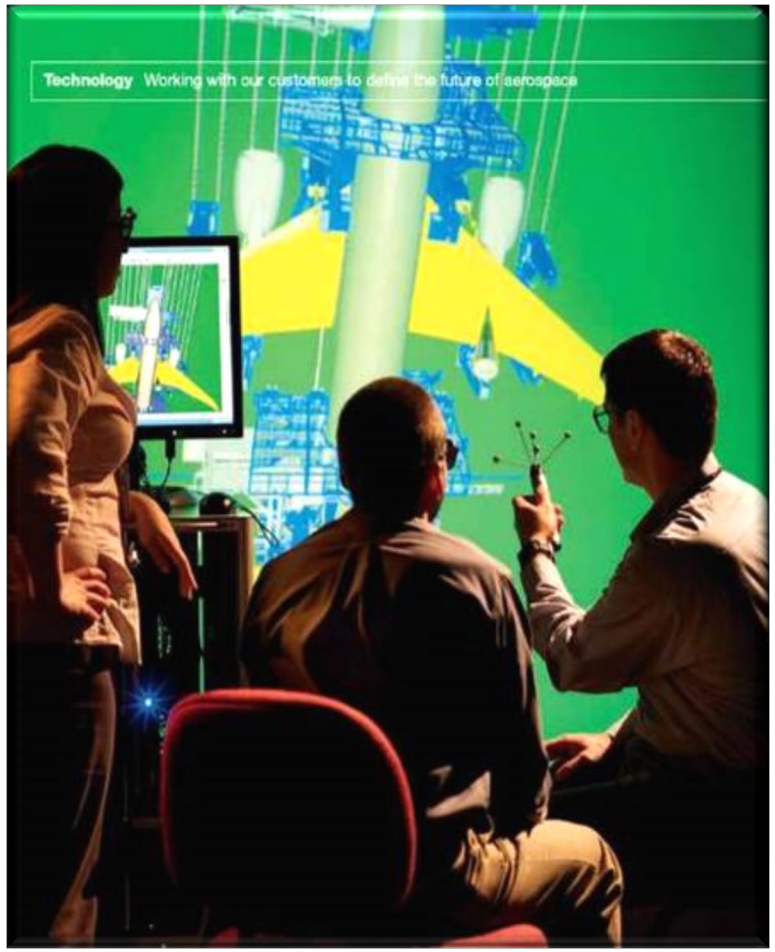
xR Aerospace Application – Engineering Examples

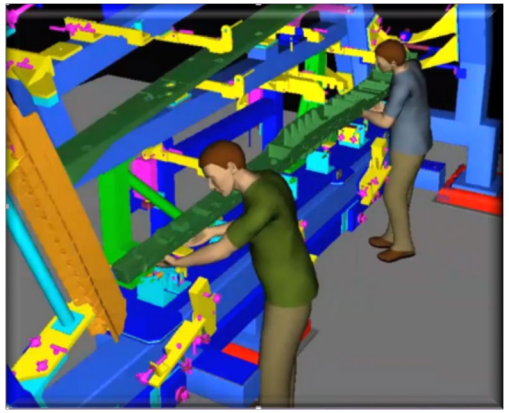
Large Scale Design Collaboration



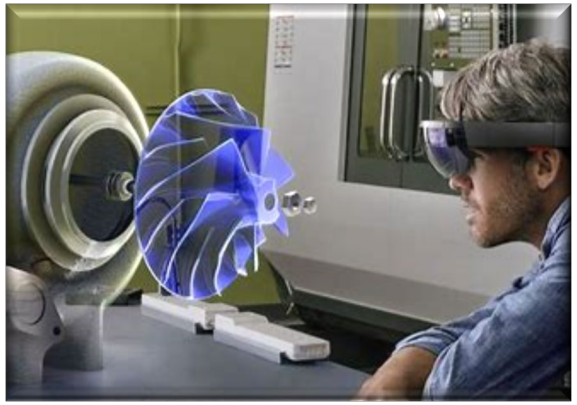
Interactive Human Factors Design

Multi-User Design Collaboration

Virtual Build Simulation



Digital to Physical Evaluation



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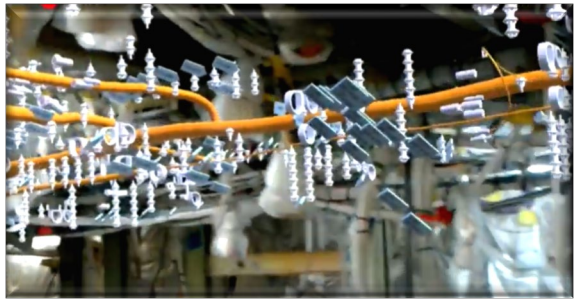
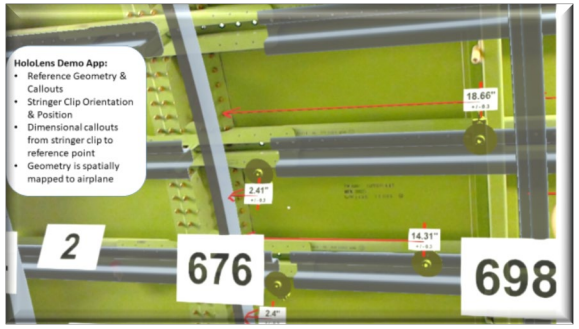
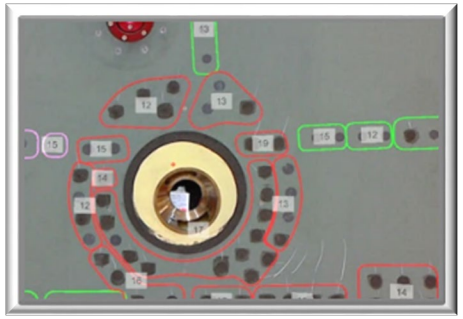
xR Aerospace Application – Manufacturing Examples

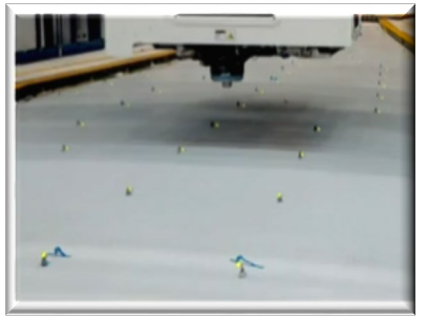
Parts On The Airplane



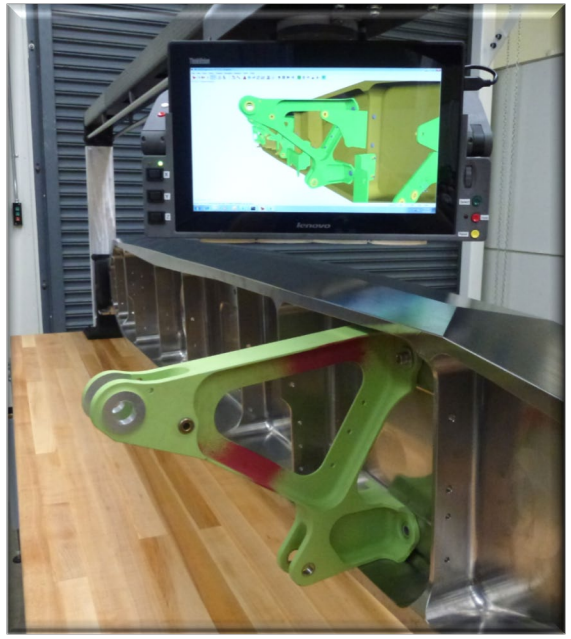


Fastener Identification





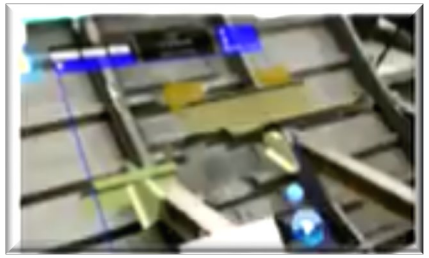
Locating Parts On Assembly



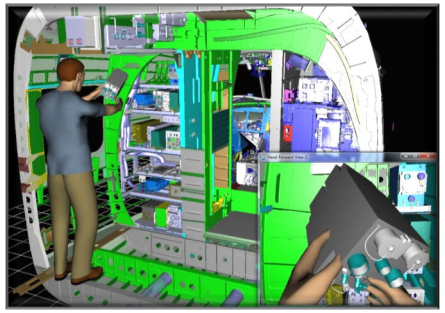
Digital to Physical Window of the Airplane

Design / Build Integration

Chief Mechanic & Stress Engineer building the aircraft virtually



Virtual Training



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xR Aerospace Application – Maintenance Example

- **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**

CH-47D Helicopter Fuel Cell

1. Fuel Cell Orientation for Maintenance

Original Fuel Cell Orientation

Recommended Fuel Cell Orientation

2. Access Door Orientation and Placement

Original Access Door Orientation

Recommended Access Door Orientation

Virtual Reality….Assessing the Fuel Cell Design for Maintenance….Before Prototype Construction

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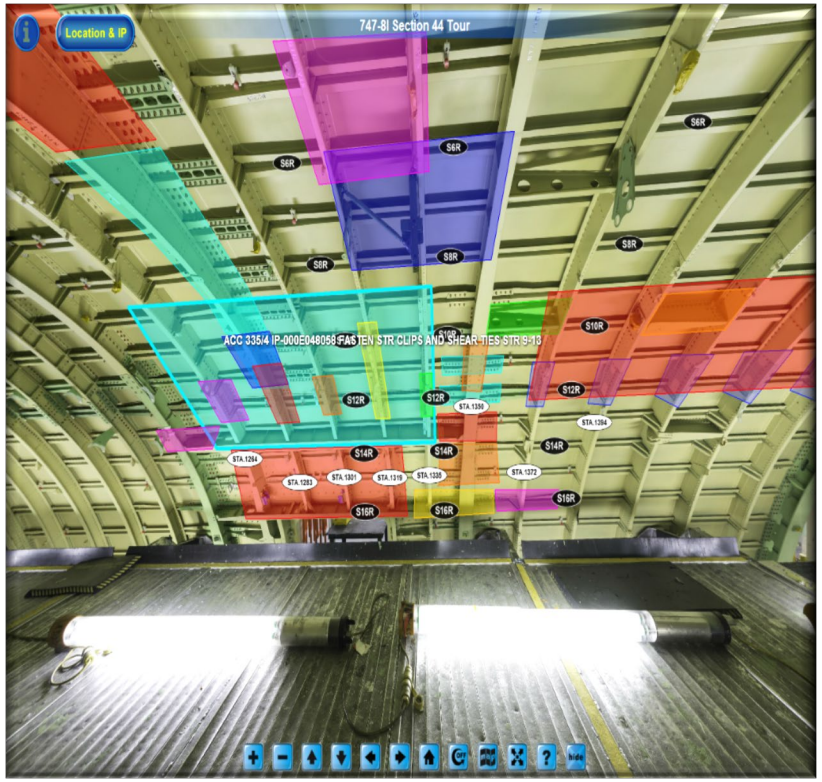
xR Aerospace Application - Customer Interaction Examples

Design/Build Tours



Sales/Customer Tours

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