

# UT3024: The Design Process Simplified from WO to Warehouse

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# sbs

Spatial  
Business  
Systems



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**Northeast  
Nebraska**  
**Public Power District**  
800.750.9277 | 402.375.1360

# About NNPPD

Our Purpose: *“The Northeast Nebraska Public Power District is dedicated to providing reliable and competitively priced electricity to our consumers while maintaining a sound financial position and effective, fair and consistent service.”*

- Formed in 1998 as a result of the consolidation of two smaller power districts:
  - Wayne County PPD and Northeast Nebraska Rural PPD
  - Boards of Directors Determined consolidation would:
    - Hold down overhead costs
    - Improve efficiency and service
    - Keep retail electric rates low
- Serves 14 Villages and Towns with electric service.
  - Approximately 8,500 retail electric customers in 5 Counties in Nebraska.
  - Operates about 3,000 miles of electric lines and over 100 miles of high voltage transmission lines.

# About Spatial Business Systems

*Delivering the power of spatial information*

- Full-services solution provider for geospatial technologies in the utility, telecommunications and government market sectors
- Integrators of major spatial tools and platforms



- Offices in Lakewood, CO and Melbourne, Australia
- Data management, project management and spatial application business strategy consulting
- Spatial integration product solutions

# Autodesk Consulting System Integrator

*“Autodesk has expanded its partner ecosystem to include consulting system integrator (CSI) partners. These partners are world-class consultancies who provide best-in-class technology integration and business process transformation.”*

<http://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=19506053>

SBS selected for their support of the Cooperative and Municipal Market



# Legacy System

- NNPPD staff created drawings on paper and delivered As-Builts to 3<sup>rd</sup> party Engineering Firm.
  - Large projects were contracted out.
  - Material list was on Paper from Finance System screen.
  - Sag, flicker, loading and other engineering calc's typically not done or cam from 3<sup>rd</sup> party firm.
- 3<sup>rd</sup> Party Engineering firm managed base map using Map 3D with links to MS Access database.
- As needed Engineering Firm would produce SHP file that NNPPD would load into enterprise wide MapGuide system.

# Needs

- Bring mapping solution in-house and simplify the process of passing data to MapGuide system.
- Automate Material Ordering.
- Introduce Engineering Calculations.
- Have mapping and design systems integrated.
- Eliminate 3<sup>rd</sup> party engineering costs.
- Control construction decisions and costs by engineering in-house.

# Selection Process

- Preferred a Single Vendor Solution
- Wanted to integrate:
  - New field survey solution
  - Existing AutoCAD knowledge
  - Server based spatial data store for better data sharing with MapGuide
- Limited Learning Curve
  - For designers and engineers
  - For administration of system
- Cost
  - Needed to make sense for an 8000 meter utility
  - Wanted to reduce annual maintenance cost



# Selected Solution



## Autodesk Infrastructure Design Suite

- Autodesk Utility Design
- Map3D with Electric Industry Model
- Civil 3D

SBS DWConnector and implementation services

- Single Vendor
- Integrates Well
- Easy Learning Curve
- Met Cost Requirements

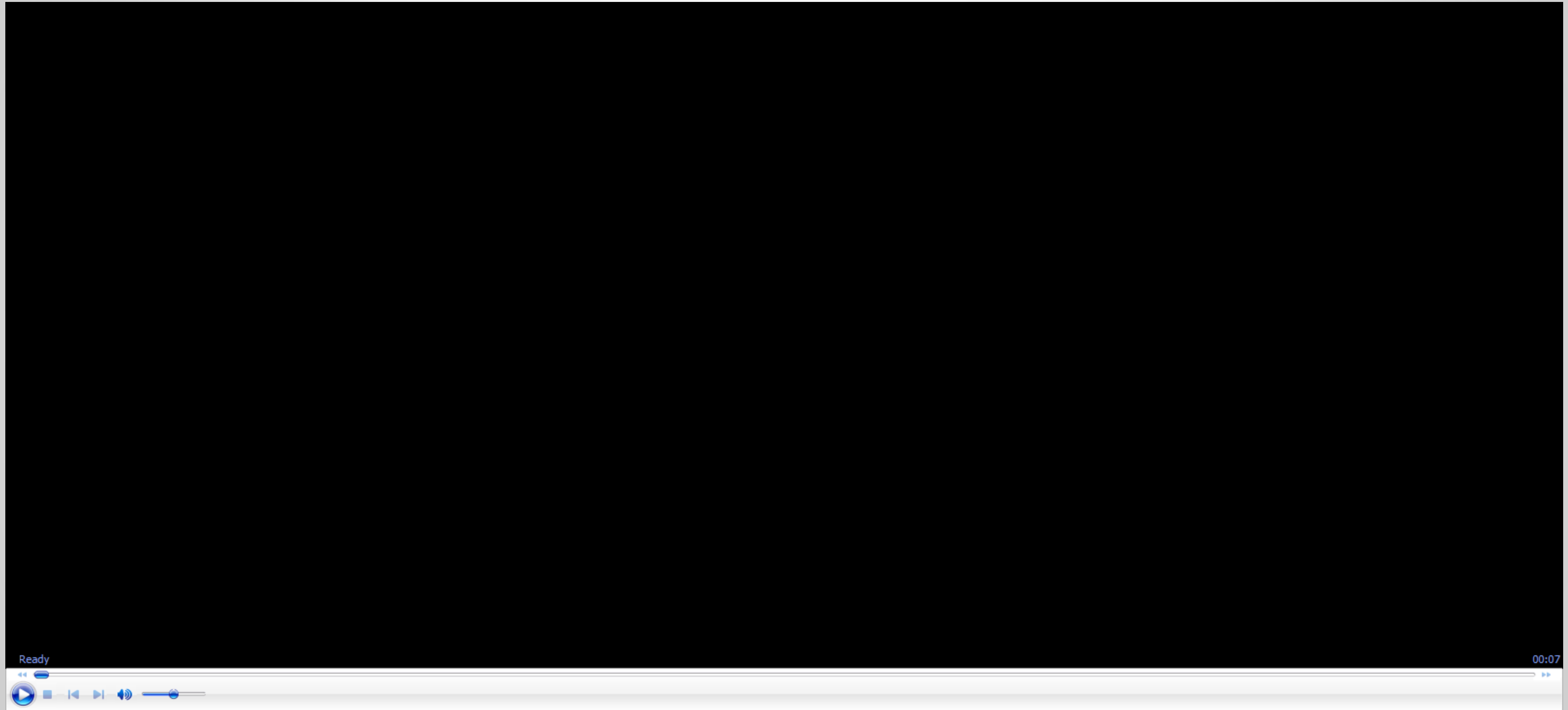
# Old Design Process

- Field Visit, plum and bob for staking
- Design on Paper or send the 3<sup>rd</sup> party engineering firm
- Paper based sag and engineering calc's when needed
- Get current material cost list from finance system
- Create material list in paper/spreadsheet
- Update Work Order in Work Order system
- Wait for check from customer
- Send to Construction
- Send As-Built drawings to 3<sup>rd</sup> party engineering firm to update Map
- Request SHP files from firm and manually load into MapGuide

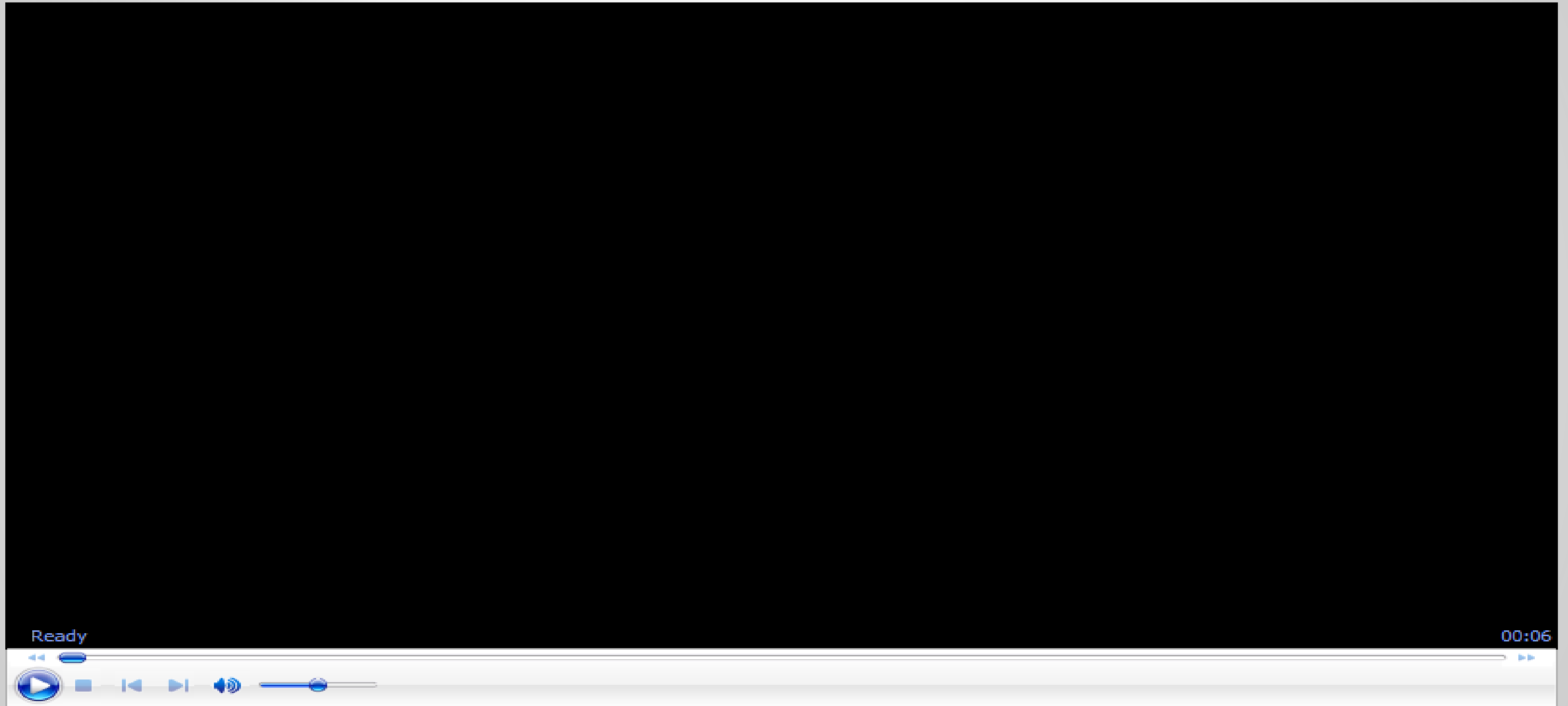
# New Design Process

- Survey Field Collection
- In AUD associate Work Order and Update Material Costs
- Design using Field and Mapping data in AUD
- Profile Creation in C3D
- Finalize Design and Construction Prints in AUD
- Update Work Order in AUD
- Publish Material List to Warehouse from AUD
- Send to Construction
- Publish As-Built data from AUD to Mapping
- MapGuide is automatically updated

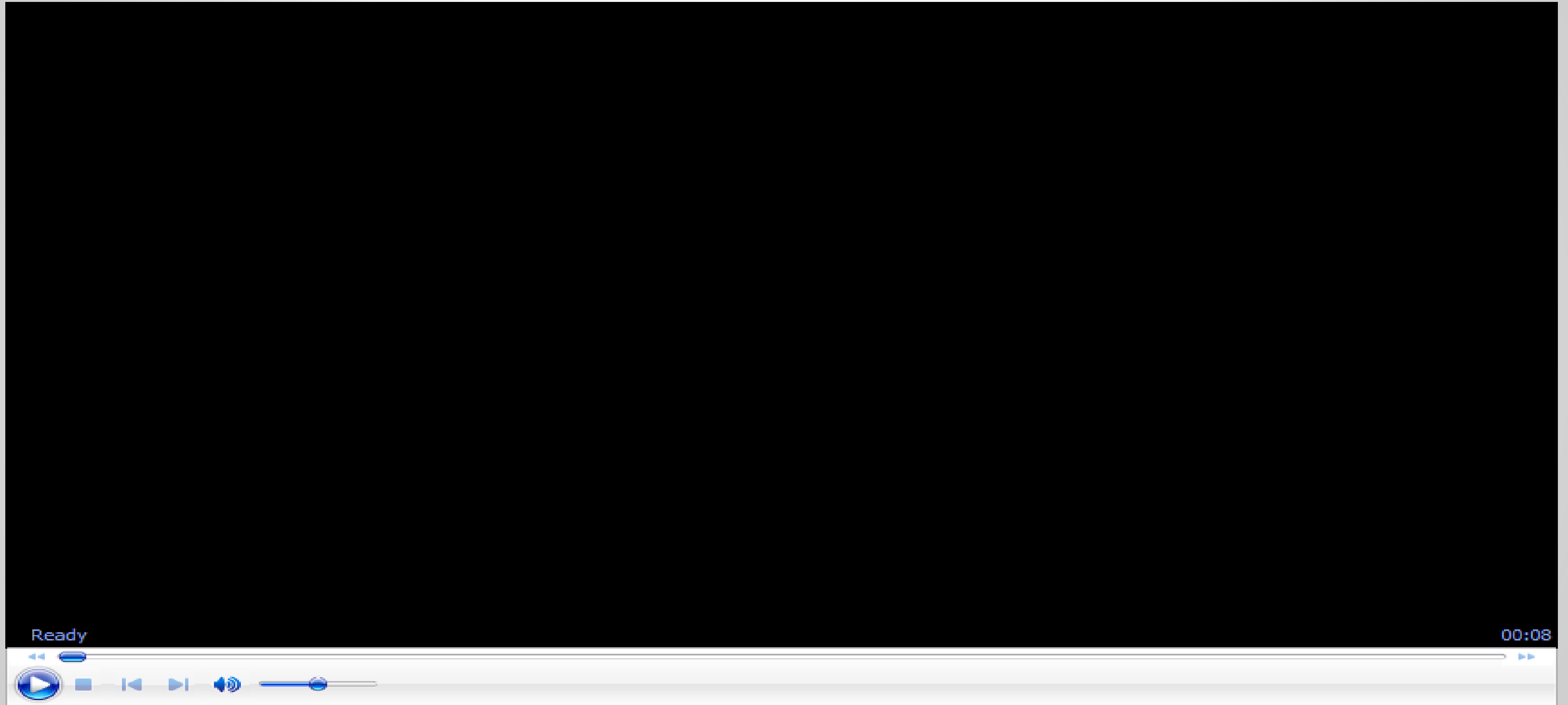
# Preparing Survey Data for AUD



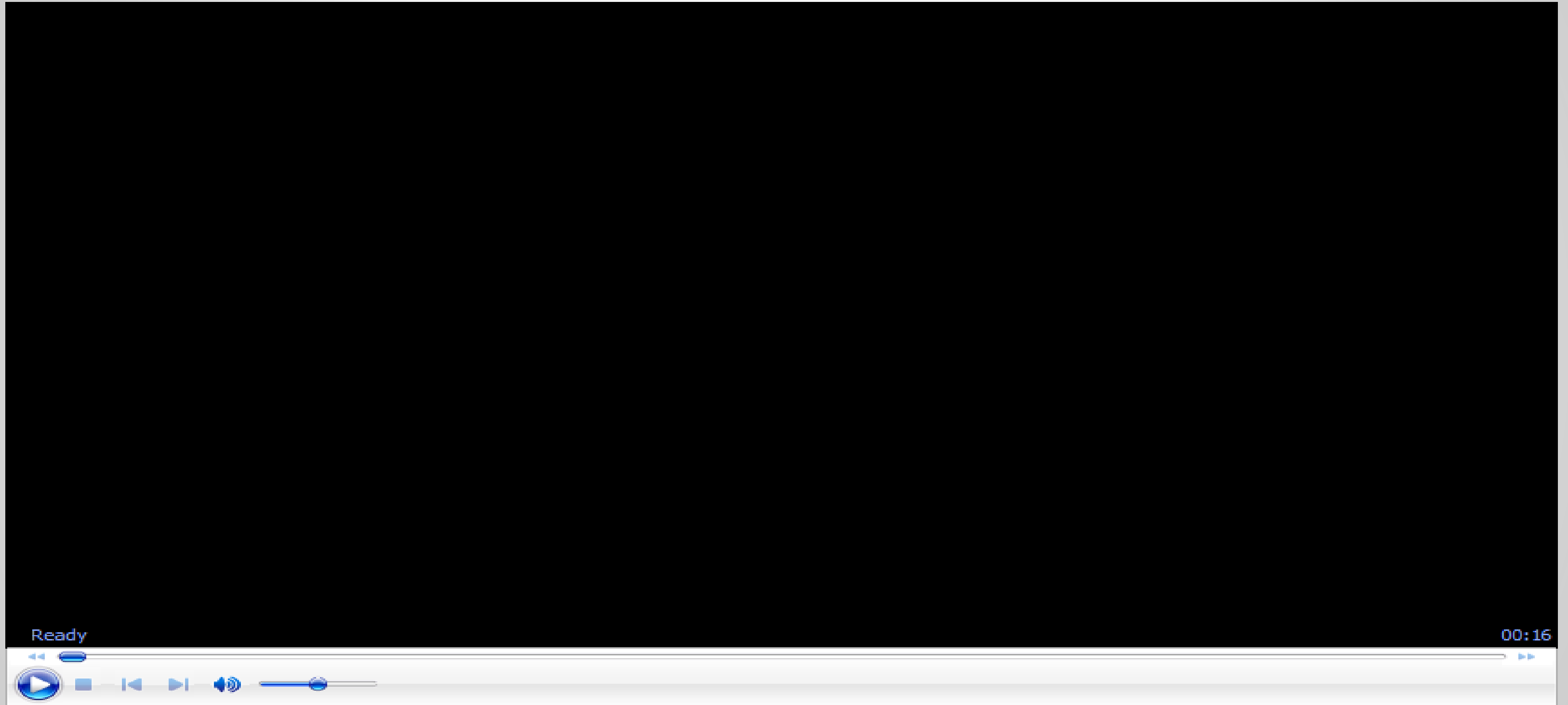
# Add Mapping and External Data



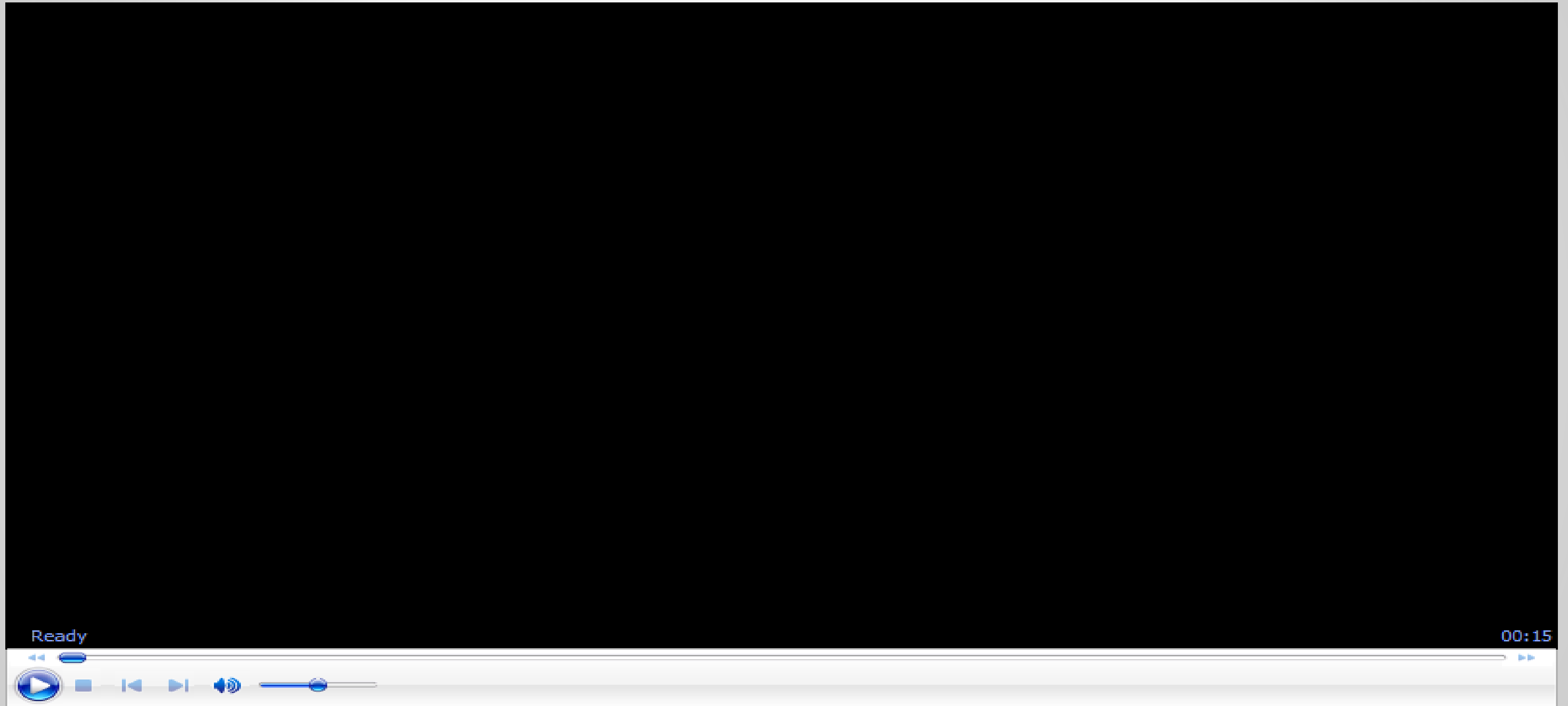
# Associate Work Order and Material Costs



# Design in AUD

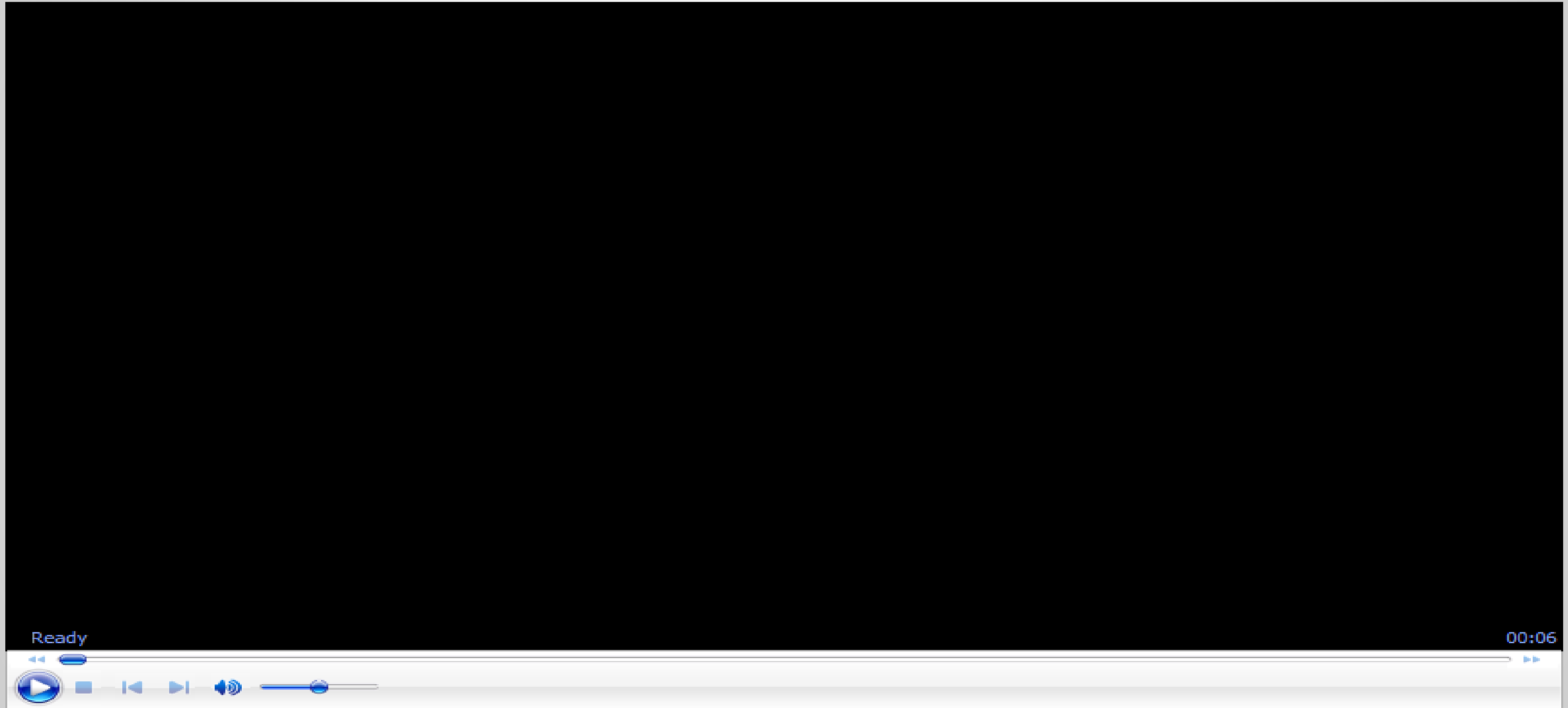


# Validation and Analysis in AUD

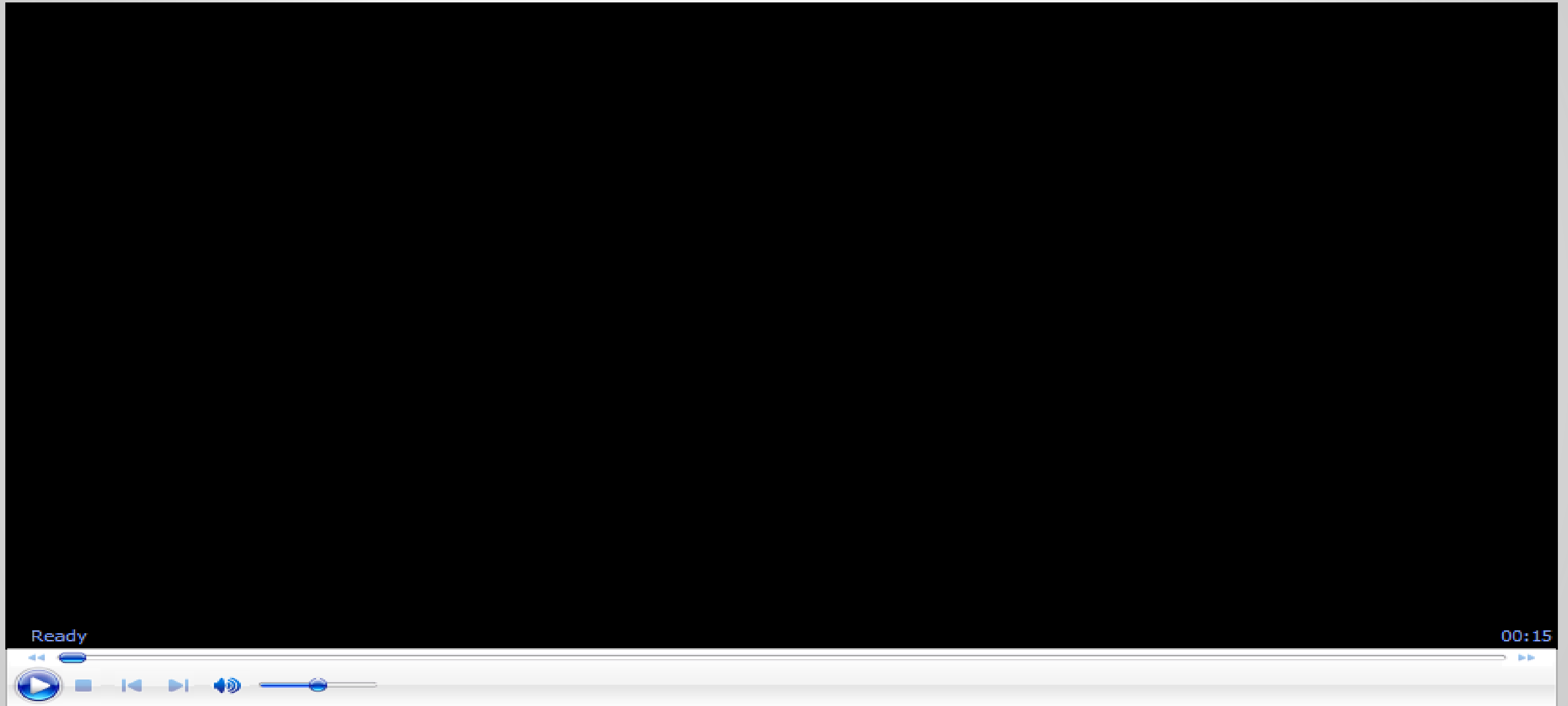




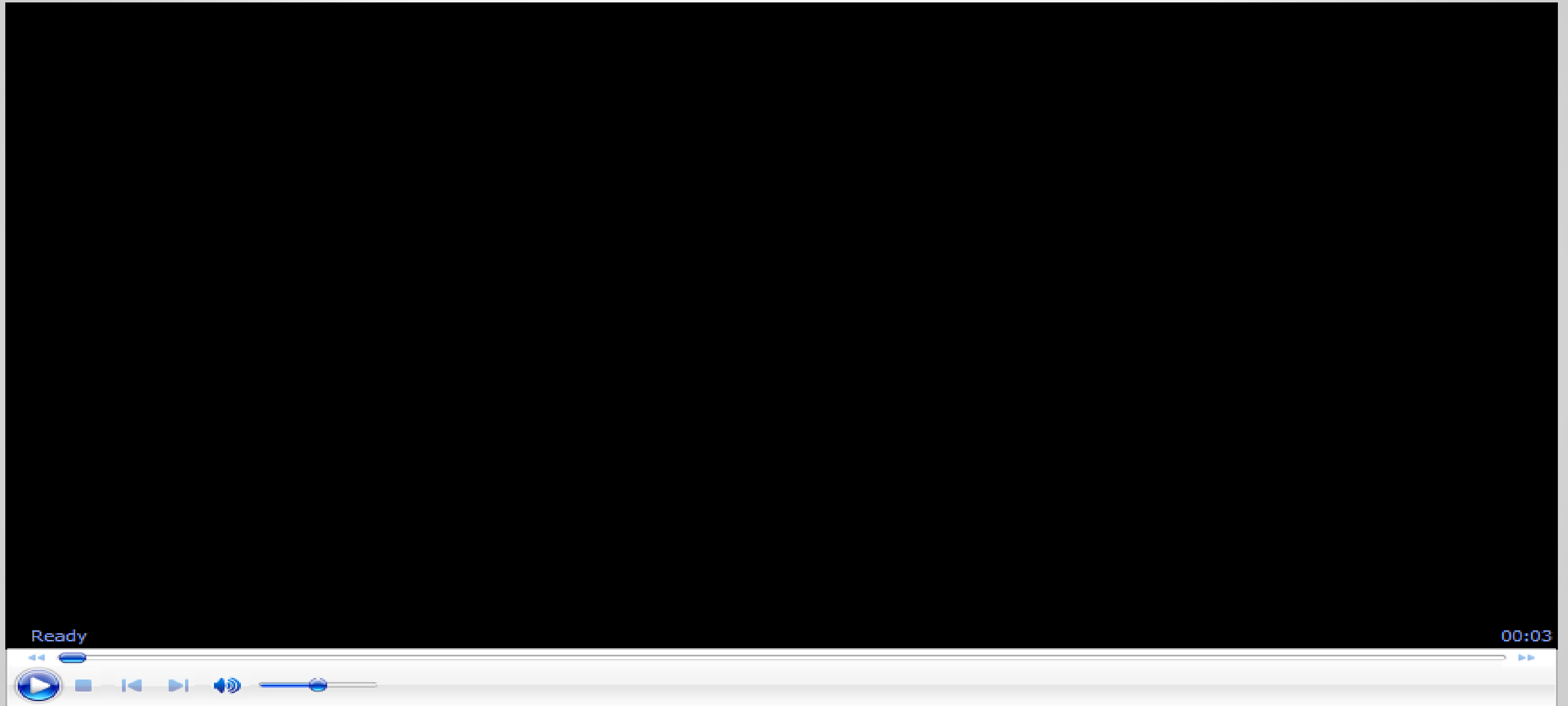
# Creating a profile in C3D



# Finalize and Publish Design



# Update Mapping



# Results of Implementation

- Where greatest time and cost savings have been seen?
- Overall cost in budget, Annual maintenance savings?
- Training time and issues?
- ROI?

# Foundation for Future Needs

- Expanding Mapping Capabilities
  - AMI
  - Outage Response
  - Disaster Recovery
  - Vehicle Tracking
- Reworking existing facilities on new technology
- Integration to Circuit Analysis

An aerial rendering of a city skyline. In the foreground, a multi-lane highway bridge spans across a wide river. The bridge has a rainbow-colored light strip along its edge. A red car is driving on the bridge. To the right of the bridge, there is a green park area with a blue pond and a baseball field. In the background, a dense city skyline with various skyscrapers is visible under a clear blue sky. A semi-transparent white banner is overlaid across the middle of the image, containing the text "Discussion and Questions".

# Discussion and Questions



Spatial Business Systems

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