

Experience It Before It's Real

3-B | 10:30 - 11:45 am

Instructor: Shibai Bagchi

Autodesk Navisworks

This session will give you an overview on how to create & visualize 3D factory layouts using Autodesk® Navisworks® Manufacturing software and demonstrate the potential benefits of using your 2D factory layout drawings and point cloud scans as a starting point for creating your 3D layout. See how you can combine together product data, tooling and fixture data, layout, and facilities data from different CAD formats, and create a single 3D digital model of your factory. Experience a virtual flythrough and walkthrough of your factory environment. Analyze the digital factory model to check for collisions and identify space constraints. Create 4D simulations of your factory models to simulate the installation of equipment on the factory floor. Experience your machine and production line layout virtually before they are real.

Key Capabilities

Multi-CAD Data Aggregation

The aggregation of 3D data from different CAD systems brings design, manufacturing, factory, and supplier information into a single digital model. This process enables stakeholders to use the 3D model to validate the design, eliminating the need to maintain or access different CAD systems. Navisworks is compatible with all major native design and laser-scan file formats, so data from various sources can be combined to create one digital model for review, regardless of the size of the project.

Large-Scale Visualization

Navisworks software for manufacturing enables interactive visualization and smooth, real-time walk-through and fly-through of factory models, so you can explore even the largest and most complex 3D models. Visualize products, tooling, fixtures, machines, and plant layouts and discover potential issues before a factory is built—or during production-line reconfiguration projects. You can also validate design performance, streamline workflows, and reduce waste.

3D Digital Review

Autodesk Navisworks software for manufacturing provides a complete set of 3D digital review tools to help you experience your factory models, including:

- The ability to measure distance, area, and angles in detail
- Detailed inspection tools for cross sections and section planes
- 4D simulation that links model geometry to project times and dates for playback of installation or demolition sequences on the factory floor

- Simulation of the movement of material and machinery handling equipment

Interference Checking

Interferences are common when multiple models come together for the first time. Creating factory floor layouts can involve a combination of product, tooling, jig, fixture, machinery, equipment, layout, and facilities data—all potentially from different CAD systems. Since these components may have been created in isolation by different design teams, the probability of component interference can be relatively high. Navisworks software for manufacturing allows you to check for interferences in the factory model, so you can detect potential issues, such as space constraints and equipment collisions, early—and save time and reduce costs. Perform clash detection on laser scan point clouds, to detect interferences between the as-built point cloud and a new digital model.

Team Collaboration

Autodesk® Navisworks® Freedom is a free* viewer you can use for both Autodesk Navisworks NWD and 3D DWF™ file formats. Easily share these highly-compressed, lightweight file formats with suppliers and partners, giving all stakeholders access to the complete factory model. Quickly communicate more reliable information, accelerating design and review cycles and helping you to deliver projects on time and on budget.

Speaker Bio

Shibai Bagchi is the Product Manager for Navisworks Manufacturing in the Factory Simulation team at Autodesk. He holds a Bachelor's Degree in Mechanical Engineering and a Master's Degree in Computer Integrated Manufacturing from Rochester Institute of Technology, New York and has a wide range of experience on design and manufacturing software.