





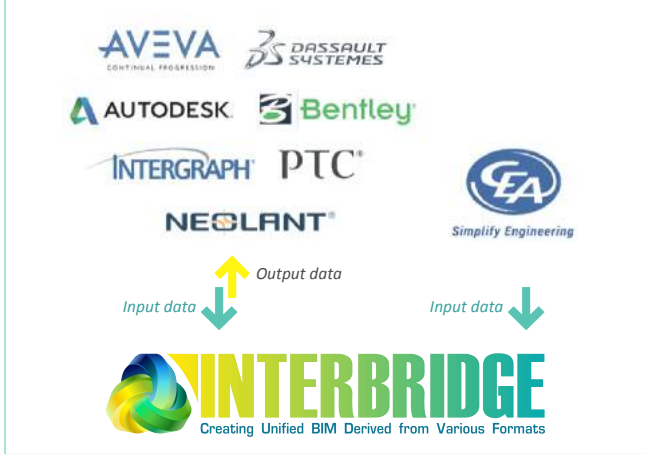


InterBridge performs on-line translations of 2D and 3D models and data between a variety of CAD, BIM, and PLM systems. Our service is designed to assist you in sharing 2D and 3D models as you develop and view large-scale processing facilities. InterBridge is the essential tool for working successfully in heterogeneous CAD/BIM/PLM environments.



Benefits of InterBridge

-  **Shares information models** of facilities in a user-friendly manner:
 - Not specific to any one CAD, BIM, or PLM platform
 - Stores all data related to facilities
 - Saves space through effective compression
-  **Integrates project documents** sourced from many CAD/BIM/PLM platforms in a single data model that encompasses all disciplines and all related data formats
-  **Translates data models between CAD/BIM/PLM systems** without loss of data or components
-  **Translates models in neutral formats** using open standards, including SAT, STEP, and ISO 15926

Flow Chart for InterBridge






Areas of Application for InterBridge

-  **Design, construction management, and operations** management of large industrial plants consisting of hundreds of thousands of elements
-  **Implementation of engineering data control systems** throughout the entire life cycle of facilities

- Customers use InterBridge in a variety of disciplines:**
- Military-industrial complex (micro-electronics): Angstrom-T manufacturing of sub-micron semiconductor elements
 - Nuclear weapons complex:
ROSATOM: JSC FCS&HT SNPO Eleron, FSUE PA Mayak
 - Nuclear industry: ROSATOM: Rosenergoatom Concern JSC:

- Beloyarsk NPP, Bilibino NPP, Kola NPP, Kursk NPP, Leningrad NPP, Novovoronezh NPP, Rostov NPP, Smolensk NPP, JSC ASE, Innovation and Technology Center for the PRORYV Project; Belarusian NPP; NPP Kozloduy (Bulgaria)
- Hydropower complex: RusHydro
- Thermoelectric power facility: Zarubezhenergoeroekt JSC
- Oil and gas extraction: Gazprom Neft PJSC
- Oil refineries: Rosneft PJSC, Bashneft-Novoi JSC, Ryazan Oil Refinery Company JSC
- Petro chemical facilities: SIBUR Holding, ZAPSIBNEFTEHIM
- Civil construction: Multi-purpose Health Center Grand Medica

Competitive Strengths from Using InterBridge

Strength	Implementation Benefit
 Increased value of projects and effective construction operations	Developing and integrating object-based data models by combining projects powered by different CAD/BIM/PLM systems
 Increased speed of technical and managerial decision-making by staff and clients during design, construction, and facilities operations	Visualizing large-scale engineering data in 2D/3D/4D/5D/6D modes
 Increased quality of design documents	Detection and elimination of design and construction collisions on comprehensive BIM models derived from the projects integrated from various CAD/BIM/PLM systems
Meets customer requirements for specific 2D/3D data formats	Converting of 2D/3D models of facilities in required formats

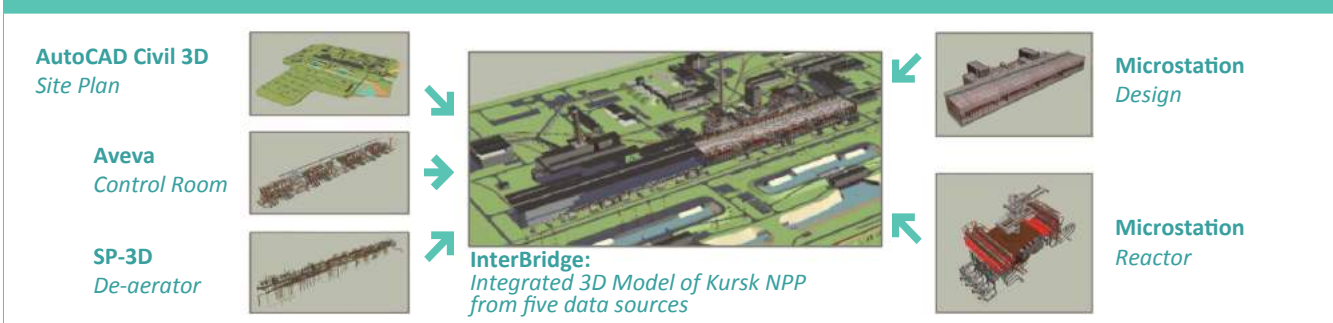
Data Formats Supported by InterBridge

InterBridge converts data between many widely-used CAD/BIM/PLM platforms. On request, we provide data exchange support through proprietary CAD/BIM/PLM formats or through open standards, such as SAT, STEP, and ISO 15926. The list below is not exhaustive.

Vendor	Product Family	Software Products	File Extension	Read	Write	
Autodesk	AutoCAD	AutoCAD 2000-2017	.dwg*			
		Architecture, Plant 3D 2011-2017, and other AutoCAD-based applications				
	Revit	Revit 2012-2017	.rvt*			
	Inventor	Inventor 2011-2017	.iam*, .ipt*			
	Navisworks	Navisworks 4.0-2017	.nwd, .nwc			
AVEVA	Engineering	PDMS/E3D/Review	.rvm, .att, .rvs, .rvz, .txt			
		P&ID	.dwg, Database			
Bentley	MicroStation	MicroStation J/V8/XM/V8i	.dgn (V7), .dgn (V8)*			
		TriForma				
		Architecture				
		InRoads				
		Structural				
	PlantSpace Design Series					
	AutoCAD	AutoPLANT Plant Design	.dwg*			
CEA-Technology	Plant-4D	Plant-4D V7-Athena 3	Database			
Dassault Systemes	CATIA	CATIA V5 R21 x86	.CATProduct*, .CATPart*, .3dxml			
Intergraph	GeoMedia	GeoMedia v.5	Database*			
	PDS	PDS	.dgn (V7), .dgn (V8)*, .drv, .isff, .dri, .zip			
	CadWorx	CadWorx Plant Professional/Review		.vue, .mdb2		
	SmartPlant		3D/Review	.vue, .xml, .mdb2, .svf, .zvf, .sha		
			P&ID	.pid, .sym		
Electrical			.spe			
		SmartSketch	.igr			
NEOLANT	POLYNOM	POLYNOM	.plgm			
PTC	Creo Parametric	Creo Parametric 2.0	.asm*, .prt*			

*The related software product must be installed in order for InterBridge to read these data formats. In certain cases, it is sufficient to install the view-only version.

InterBridge Applied to Nuclear Engineering as an Example

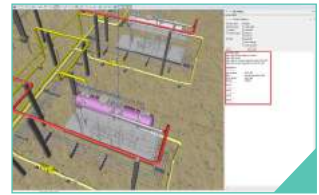


Navigation

- Rotates views (orbit)
- Changes view sizes (zoom)
- Pans horizontally (X,Y)
- Pans vertically (Z)
- Selects and centers elements
- Saves detailed description lists



3D Model Navigation



Accessing Attribute Data

3D Model Operations

- Plots model cross-sections with dynamic cutting planes
- Reveals and manages space and time collisions
- Measures distances with tie-ins, angles, and areas; reads coordinates and dimensions of individual elements
- Imports multiple 3D models on logical layers
- Marks up and redlines
- Coordinates system transformations



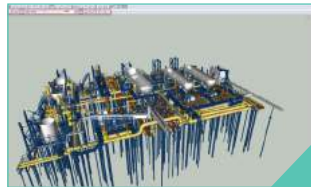
Intelligent Searches



Operating 3D Model Structure

Data and Documents Management

- Views attribute data of selected elements in 3D models and databases
- Searches elements through internal links and database fields on query (query master); searches text
- Views specifications of selected elements quickly
- Links 3D model elements and other documents



Cutting Sections Dynamically



Measuring Geometry



Automatic Collision Detection



Reading Point Clouds from a Laser Scanner

Visual Effects

- Controls transparency and lighting
- Visualizes material parameters and textures inside model files; control layers; handles large-size raster maps; adjusts colors and styles
- Displays 3D wireframes
- Prints and saves selected scenes as high definition, anti-aliased images of up to 24576 x 24576 resolution



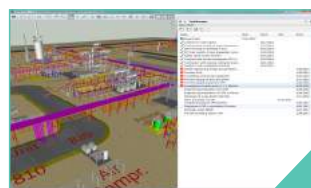
Specifications



Documents Binding

Extras

- Tracks positions on maps through GPS using NMEA protocol; saves routes and specific points in models
- Monitors construction through links to MS Project and Oracle Primavera



Operating 4D Models

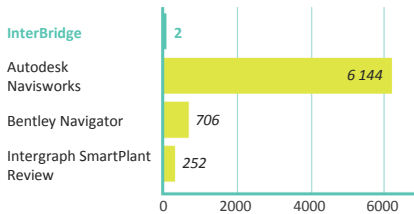


Visualization Control

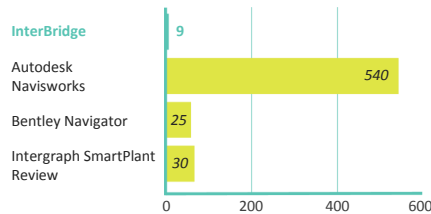
Benchmarking InterBridge's High Performance Technology

InterBridge boasts excellent performances in benchmarks of large-scale projects typical of those found in the oil, gas, chemical, and defense industries. Our benchmarking reported the following results:

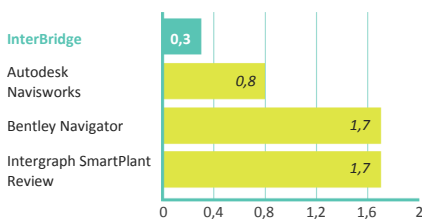
Distribution package size, in MB



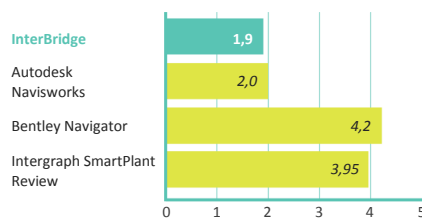
Time to open a 3D DGN model, in sec



3D model drawing speed, in sec



Memory consumption with a large 3D model loaded, in GB



The results come from a comparative analysis carried out by NEOLANT staff using the following hardware and software configuration:

Hardware:

- 3.4GHz Intel Core i7-4770,
- 8GB RAM,
- NVIDIA GeForce GT640 4GB graphics board,
- 64-bit Windows 7.

Software:

- InterBridge 2015.2 2015.828,
- Autodesk Navisworks Manage 2016 (64x) 13.0.1240.5,
- Bentley Navigator V8i (SELECTseries 6) 08.11.09.713,
- Intergraph SmartPlant Review 2015R1 (11.01.00.0101).

3D Model:

- 842MB,
- 131,016 elements.

InterBridge's System Requirements

InterBridge requires no installation or administration. The product has minimal hardware requirements, and so visualizes 3D models of large processing facilities on ordinary office PCs. The minimum requirements are listed below:

32- and 64-bit OS: Microsoft® Windows® 8 and 7, Microsoft Vista®, Microsoft XP® and 2000

Processor: Intel® Pentium®/Celeron® (or compatible), 450 MHz or higher

Graphics board: OpenGL® 1.1 or higher

Memory: 128MB

Disk space: 4MB install size

Learn More About InterBridge

The experts at NEOLANT are happy to consult with you on any issue surrounding the purchase and use of InterBridge. We can help you in the following areas:

You can run InterBridge at your site to examine the system's capabilities at your own pace:

- Download the free demo version from neolant.com/interbridge/demo
- View video tutorials at neolant.com/interbridge/video
- Register for a Webinar through neolant.com/interbridge/webinar

You can consult the experts at NEOLANT about InterBridge's purchasing options specific to your enterprise:

- Call us at +7 (499) 999 0000, ext. 192
- Make your request through our Web site at neolant.com/interbridge/meeting

NEOLANT Group offers engineering and IT solutions for managing complex nuclear and power generation plants. Our solutions are based on the extensive IT experience and industry-specific knowledge acquired by the experienced NEOLANT team.

NEOLANT has software for information modeling, CAD, PLM, BIM, GIS, PDM, and PM. The experts at NEOLANT know how to integrate these systems into one other and into information systems used by customers.

NEOLANT provides the following services:

- Developing industrial facility information and simulation models to support the facilities' lifecycles.
- Developing and implementing systems to manage engineering and plant operations data through integration with CAD, PLM, BIM, GIS, PDM, and PM.
- Researching and developing engineering design aimed at implementing plant-scale processes, systems, equipment, and capital construction projects.

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