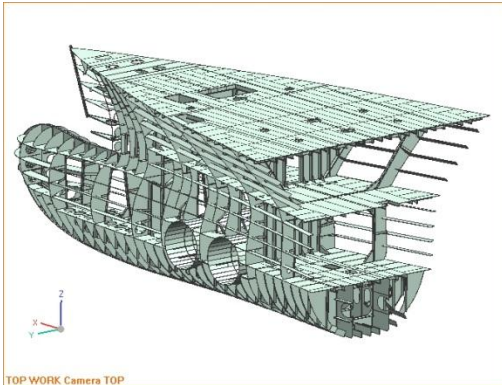


Data Conversion

Due to large number of CAD/CAM/CAE and visualization programs used in industry, one of the most important problems for efficient collaboration is data exchange. It can be solved by usage of common data format or proper conversion to the required one. Data Conversion Center, being a part of DNV Academy in Gdynia, is specialized unit doing it daily, in many ways, showing varying approaches and supplying different functionalities. Although the main activity is strongly tied with 3D geometry, any task related to 2D, text or database conversion can be realized.

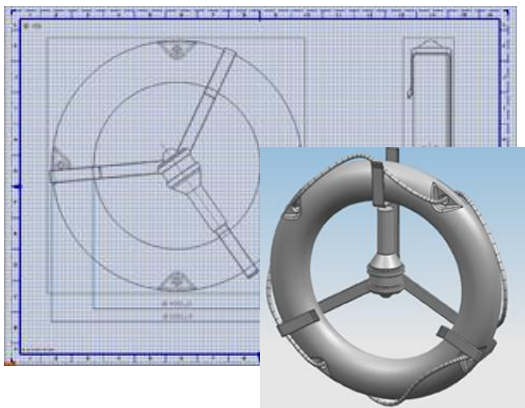
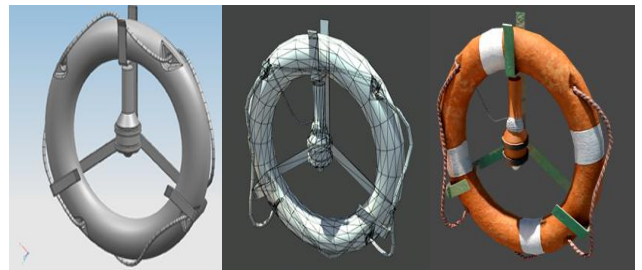


3D models conversion.

Efficient data exchange except of geometry conversion usually requires also control of **assembly hierarchy** and preservation of **components properties**. Integral part of this process is also conversion **quality** control, in term of data completeness, correct shape and usability. Dependently on data purpose they can be converted lossless (usable in external CAD system) or lossy used for visualization and exchange based on Internet or with non-trusted cooperators.

3D geometry conversion

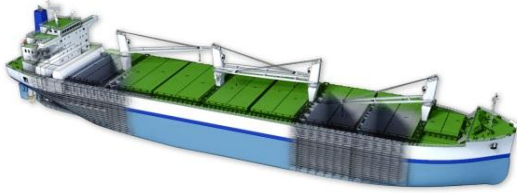
Main part of 3D model is the geometry. Full control of **geometry type** (mesh/nurbs, solid/surface), level of detail (**LOD**), degree of **simplification** and **textures** allows for adjustment of existing models to new functionalities, e.g.: real-time simulation, product lifecycle management, marketing visualizations, etc. In case of corrupted models or legacy data produced with software not used currently, automatic conversion use to be impossible – in that cases quick, **manual re-modeling** based on partial data can be realized.



3D/2D conversion.

Modern engineering approach allows for re-usage of existing data. It covers also change of model types. Generating of **2D drawings** based on 3D models or development of 3D models based on existing 2D drawings in semi-automatic way is the best way for cutting of the cost and time consumption. **Associativity** of both types of data preserves work already performed and allows for quick update of output data in case of input change. Conversion from 3D to 2D can be done very efficiently and in case of repeatable task – automatically.

Data Conversion

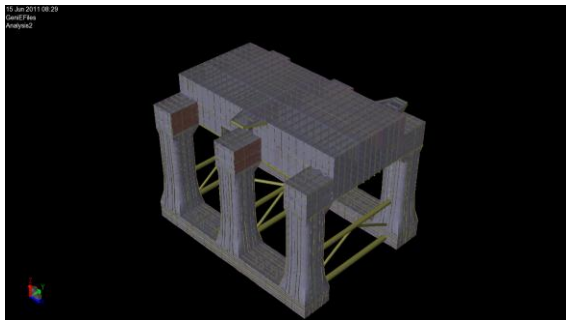
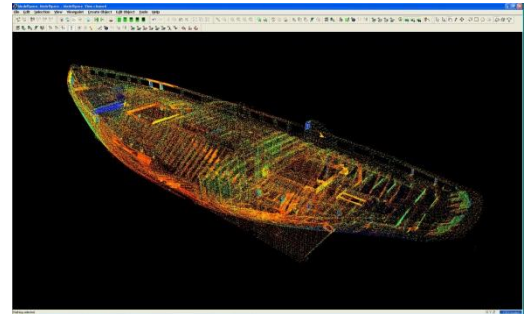


Digitizing and vectoring.

In case of data existing only as the paper documentation, conversion process must be preceded by **scanning** (digitalization). Efficient scanners and modern software for conversion of raster pictures into usable vector drawing (Vectorization) or editable text (Optical Character Recognition – OCR) allows for digital archiving and re-usage of legacy data, important for future project or litigation purpose.

3D scanning.

The most advanced form of product digitalization is reverse engineering based on **3D measurement** techniques. Highly automated process of development of 3D models based on **point cloud** data, is the best way for preparation of “as built” documentation. Input data can be acquired from different types of 3D scanners as well as pictures processed in **photogrammetric** software.



Other data.

Although DNV Conversion Center activity is concentrated on 3D graphics, any other kind of data can be also converted. Long experience in usage of **2D vector/raster** graphics, movies and animations, databases and office documents (including end-user development in Visual Basic for Applications) allows for their quick and high quality processing. Separate line of business services is preparation of **FEM/CFD** models for external solvers, including Ansys, Nastran, Abaqus, LSDyna, Sestra and Sezam.

3D Visualization

Except of data conversion DNV Academy offers business services related to **3D stereoscopic** (movie-like) visualization. It allows for stunning presentations of FEM/CFD results, presales designs on scientific 3D charts. Interactive immersion into 3D data, for 70 visitors simultaneously, can be provided using our standard software as well as the customer’s one.



Tools.

- Powerful hardware, working under 64-bit Windows 7 OS
- Built in CAD/CAE converters for direct import/export (NH, GeniE, Napa, Siemens NX, SketchUp, Rhino, 3DStudio, Aveva Marine, Nastran, Abaqus)
- Specialized conversion software (Okino Polytrans, Hemisphere Deep Exploration, TransMagic, Sycode MeshToSolid)
- Home-built converting applications.

Over 200 supported 3D and 2D formats.