MARIN

Challenging wind and waves

Linking hydrodynamic research to the maritime industry

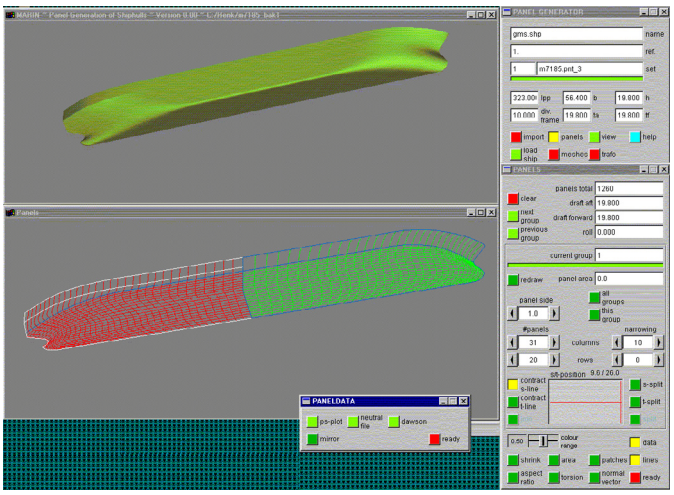
Panel generator

FACET

The computer program FACET is a dedicated tool to generate panels on surfaces. The panels can be adapted interactively and they automatically satisfy the needs of MARIN panel codes, such as RAPID, DAWSON, DIFFRAC, AND PRECAL. Other MARIN tools are being adapted to use these file formats as well.

Applications

Panels can be generated on hull geometries including bulb, skeg, struts, gondolas, etc. All additional geometrical features are taken into account, such as knuckle lines.
Furthermore, panels can also be generated on offshore structures and propellers, provided they are specified in a true 3D surface description.
An important feature of FACET is that panels can locally be refined. This can be done by applying stretching to the panels, or by dividing the ship into segments and generating panels per segment.



Input

The panel generator FACET takes the hull geometry as input. This geometry must be specified in a true surface description using splines. The program can read IDF, IGES, and STEP formats. These formats are common to all major CAD systems, including NAPA, AUTOCAD, FASTSHIP, AUTOSHIP and TRIBON.

Since the panel generator uses a true 3D surface description of the geometry, only a subset of the wide variety of geometry descriptions, supported by neutral formats, is suitable. If a file is in IDF format, it must be generated using the NURBS option of IDF. In case it is in IGES format, entity 128 (B-spline surfaces) must be used. For STEP format, use AP 216 (B-spline surfaces for ships).

Output

The output of FACET consists of a file containing the panel information needed for the appropriate MARIN program. The program can also save a file containing the exact geometry and all user-supplied panel data for restarting FACET at a later stage. In addition, transformations applied to the ship (e.g. rotations, scaling from millimetres to meters) can be saved and reloaded.

Hardware requirements

No specific hardware is required.

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