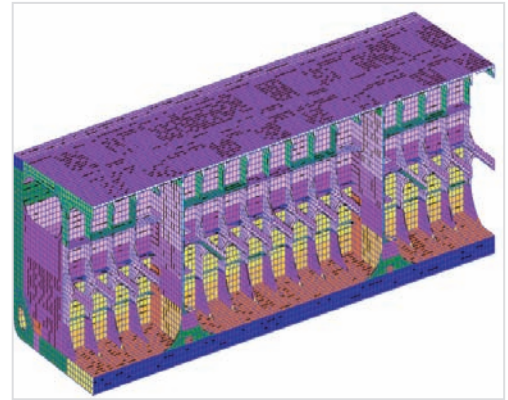
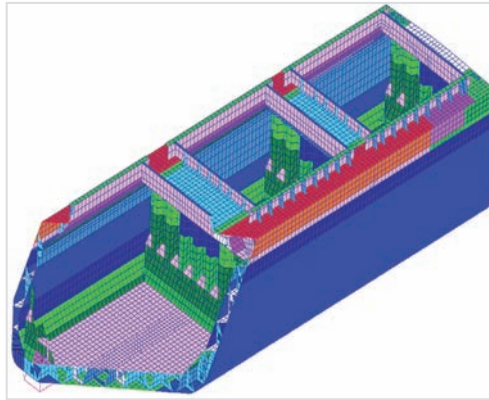
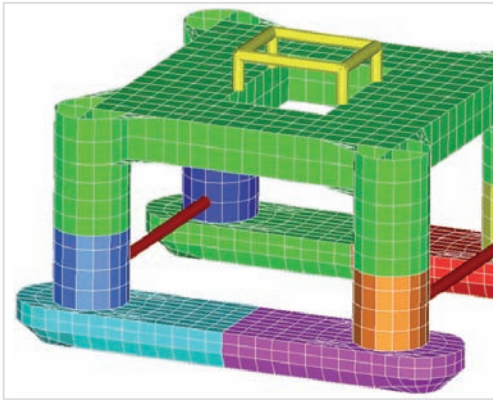


Sesam

Patran-Pre



CAE modelling and FE pre-processing

Patran-Pre lets you model and develop Finite Element models to reduce or eliminate costly prototyping and testing.

Major design companies around the world use Patran-Pre in their product improvement process, to save time and to reduce costs.

Patran-Pre is customised for a seamless integration with the sesam modelling analysis and results program modules

Designers can use the advanced geometry modelling features or import CAD parts to build the structure. A variety of meshing algorithms and a customized Sesam preference enables seamless submit of models for structural and hydrodynamic analysis and capacity checking

Patran-Pre gives you:

- Intuitive and Windows based user interface
- Interactive and context sensitive help system
- Advanced and easy-to-use features for geometry creation and modifications
- Loads and other properties may be applied to both geometry and finite element model
- Powerful command language for development of customised model generation
- Powerful command language for development of customised model generation
- Robust, high quality mesh generation of beams, plates, and solids
- Automatically generated command session files that may be modified and re-used for parametric studies
- Extensive functionality for model verification using colour graphics
- An optional preference allows users to export models to Abaqus



MANAGING RISK

Patran-Pre

The user interaction

The user interface is a forms-based, mouse-driven menu system for the operation of all tasks. It is designed to be easy to learn and use.

The help system provides a context-sensitive hyper-text mechanism enabling the user to quickly navigate through the entire on-line documentation to find information on requested topics.

Patran-Pre contains strong features for graphics visualisation for verification prior to analysis, including local view manipulation, local shading, multiple light sources and transparency.

The user input may be given using the mouse, dialogues, spaceball or keyboard. The programming language PCL may also be used for input purposes.

Finally, there are many flexible ways of object selection and entity identification (e.g. rubber-band selection, cursor picking).

Creating geometry

Patran-Pre comes with an advanced set of geometry creation tools in addition to the direct CAD access capabilities for generating finite element geometry for all types of offshore and maritime structures.

The library of commands is used for creation and manipulation of geometric entities like points, curves, surfaces and solids; and creation options like translate, rotate, scale, mirror, glide, normal, extract, fillet, extrude, revolve, decompose and intersect.

The local coordinate systems may be in any location and orientation – cartesian, cylindrical or spherical.

Loads and properties

These may be applied to the geometry model or the finite element mesh in several ways like continuously, concentrated, along an edge, within a plane/cylinder/sphere, across a surface, or through a solid.

The loads may be of type force/moment, pressure/traction, or temperature based. Load variation may be obtained through fields which may contain expressions like mathematical functions and others.

Patran-Pre will automatically produce a mass model for subsequent dynamic or hydrodynamic analysis.

The material model supports among others isotropic, orthotropic, anisotropic and composite elements.

Finite element modelling

The finite element modelling system permits the user to directly access model geometry and to quickly develop and modify FE meshes by using an automatic surface or solid mesher, mapped mesher or mesh sweeper.

The element library includes linear, quadratic and cubic order elements (bars, triangle, quadrilateral, tetrahedral, hexahedral). There are also special elements that include mass, spring, damper, and spring-to-ground.

The Sesam preference

All data will automatically be exported to a Sesam formatted finite element model for further usage in other Sesam modules (modelling, analysis, results processing).

Similarly, the user may import existing Sesam finite element models to continue modelling or perform other modifications.

Patran-Pre is a subset of the Patran software by MSC.Software. Patran-Pre encompasses all the modelling capabilities of the Patran preprocessor.

