Case study

Bespoke software development

THE CHALLENGE

The previous process for transferring geometric data from a 3D CAD model into a format capable of running 2D Lagrangian hydrocodes, involved extracting curve data by hand from 3D CAD drawings. This process was both time consuming, laborious, and required a high skill level to manipulate the geometry files.

OUR SOLUTION

Frazer-Nash developed a Graphical User Interface (GUI) that translates the data from a 3D CAD model and displays it as a 2D cross-section (Fig 1). A geometry file is then produced as a series of lines and curves from which the 2D Lagrangian hydrocode can be run (Fig. 2).

The interactive capability of the software enables the user to perform basic functions such as adding, removing, concatenating or splitting lines and curves. It also allows the user to include more complex features such as the ability to read, edit, define and write out boundary condition definitions.

BENEFITS

In addition to automatically extracting curve information from drawings, this new software enables the user to identify and 'fix' imperfections which may exist within the CAD model – replacing the painstaking process of manually editing complicated geometry files.

The software also enables the user to produce a geometry file from which the 2D Lagrangian hydrocode can be run (Fig 2), and vice versa - previously generated geometry files can be read into the GUI and modified as required.

Client
Undisclosed

Business need
A faster and easier way to extract data from a computer model

Why Frazer-Nash?
Frazer-Nash has extensive experience in developing bespoke software solutions to facilitate a change in business model.
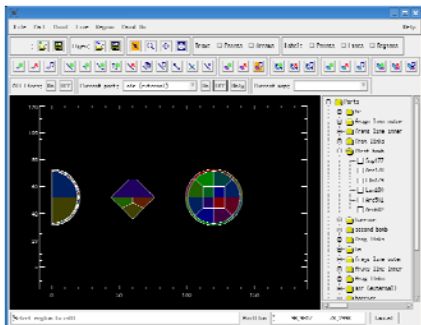

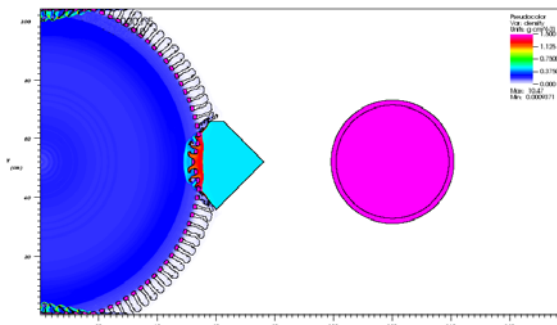Figure 1: GUI application used to generate geometry file from CAD model

Figure 2: 2D physics code run from geometry file model

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