Importing geometry

Open hullscant. As of June 2022, the most recent version is 26.05.22; one can identify the version installed by the 'splash' screen that comes up for a few seconds when launching (shown below). It can be shown at any time by clicking on 'About->Hullscant' in the pull down menu. The Version is shown in the last line of text , followed by a listing of the file version (114.101.3 in this case)
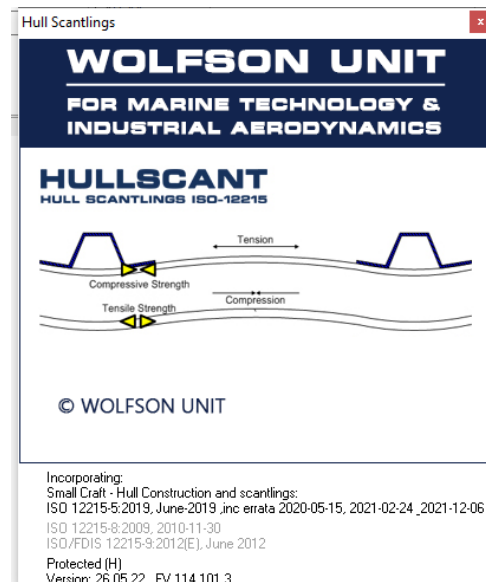

Figure 1 Splash screen

The user will always be shown the 'Assessment' tab when hullscant is opened. To open an already existing hullscant file (.bst extension), click on 'File->Open' or the open file toolbar button . If no hullscant file is already present , and the user is wanting to import an IGES file of the hull / panels , then change to the 'hull definition' tab sheet. The 'Open' file command is only for opening BST files, NOT importing IGES geometry.If no geometry has yet been imported or defined, then when the user clicks on the 'Hull definition' tab sheet they are prompted to import some geometry (see Figure 2)
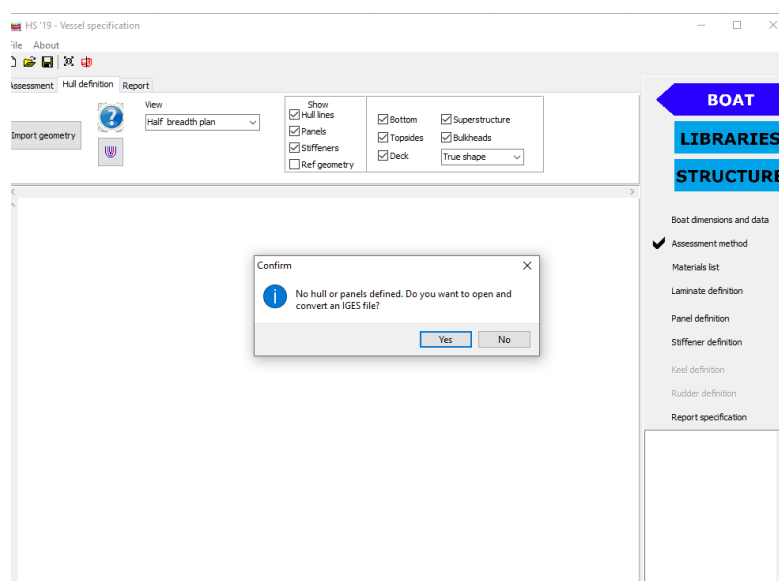

Figure 2 First viewing of the 'hull definition' tabsheet –

Geometry can be imported at any time , even if the prompt is answered 'No', by clicking on the 'Import geometry' button at the top left of the hull definition tabsheet. This will open the standard open file dialog to allow the user to select the appropriate IGES file.

IGES import dialogs

If the native units of the IGES file are anything other than metres a prompt will ask if the user wants to scale the file, otherwise the file will be read and the entities discretised. A second check at this point is on the longitudinal position of the geometry. If the imported geometry extends to negative X values the program asks if it is to be shifted so that X=0 is the lowest X coordinate (the ISO standard has x=0 at the aft end of the waterline). It is the recommendation of the Wolfson Unit that the geometry is manipulated in your CAD package to be in the correct orientation and position for the ISO standard and this 'move' prompt is declined if it appears; it can be useful if everything is imported at one time and a global offset is needed, but if different panels, stiffeners and reference geometry are imported separately it can be very difficult to maintain the correct location (globally and relatively) if some are moved.

The main import dialog will now appear, allowing the user to select if panels , stiffeners or reference geometry is being imported. By default panels and stiffeners are not used to define the hullform (ie the sheer line, keel line, vessel length, beam etc), but the user can over rule this by clicking on the 'Use as part of hullform definition'. The other main options are self explanatory.
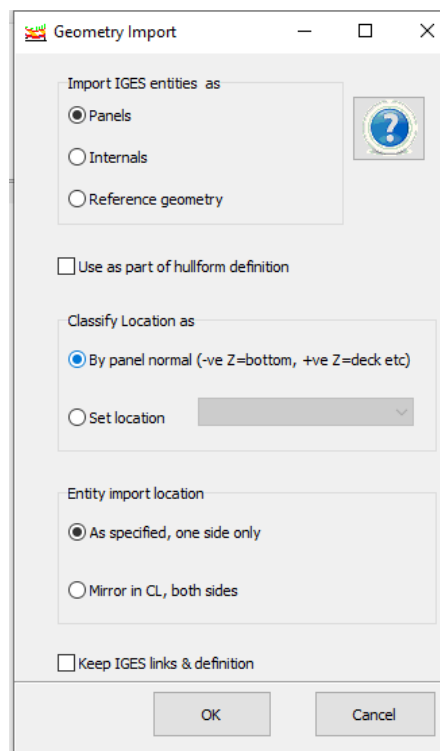

Figure 3 Import geometry dialog

There is a 'Keep IGES links and definition' option (default is no) to allow the user to maintain the full iges surface definition for panels and reference geometry. The default option (no) creates and stores a detailed definition of the panel edge and its centre point, more than enough information for the ISO standard. There is no strong benefit to maintaining the full IGES definition (it can be a large file, and is usually slow to reload), but the option is there if the user so desires.

Reference geometry is imported as curves and surfaces (coloured green if the IGES definition is kept), and converted to hull lines of stations (shown by black dots), panels are shown as red surfaces and stiffeners in light blue.
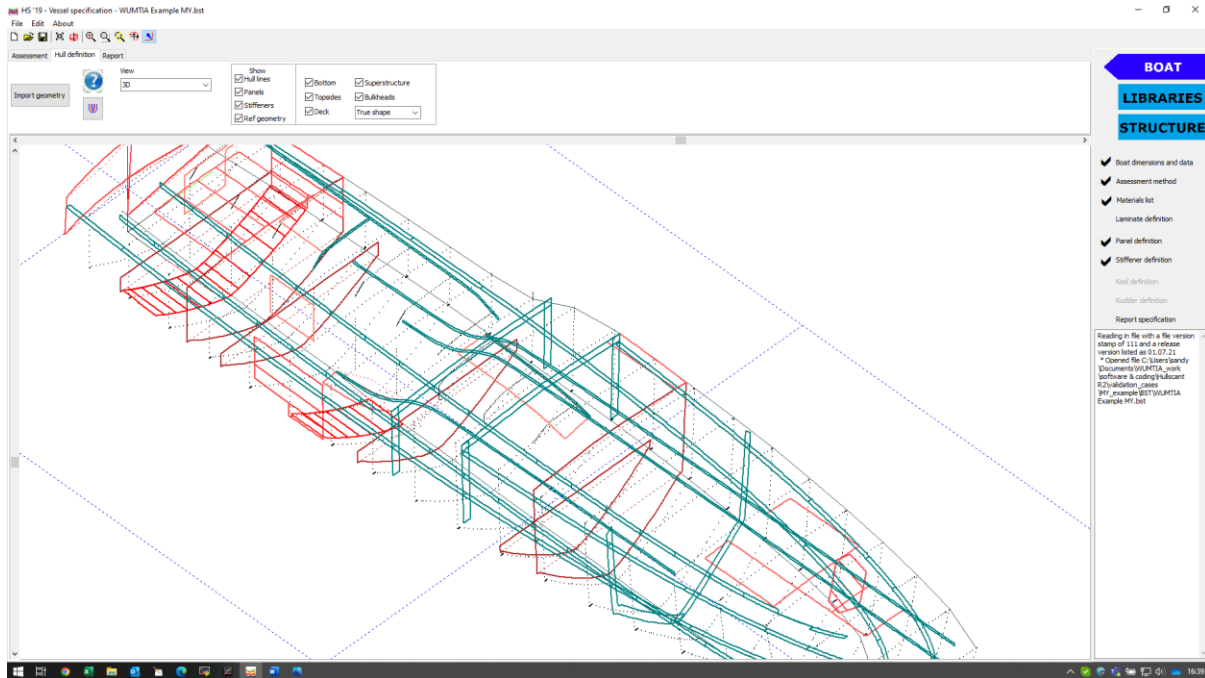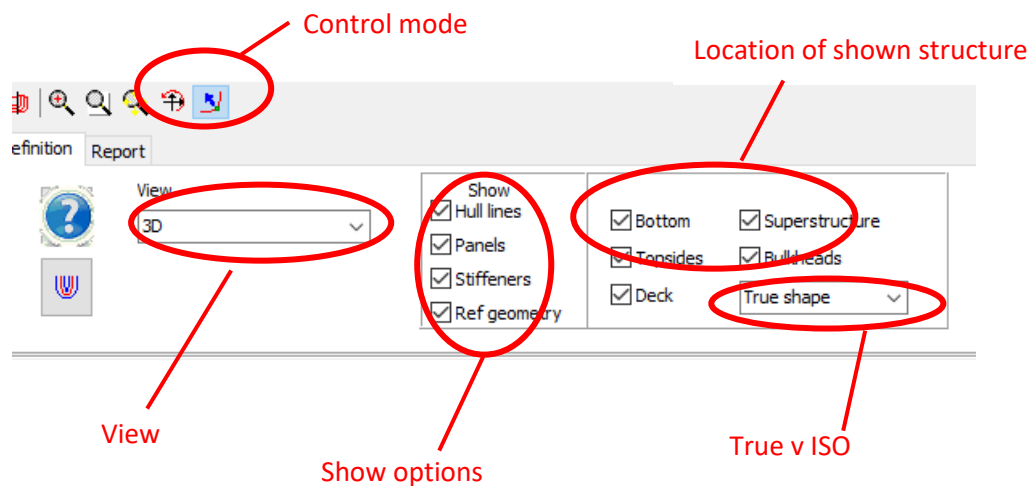
Viewing geometry

Figure 4Viewing geometry

The geometry shown, and the view, is all controlled by options at the top of the screen.

Control mode – Either 'Pan' mode or 'Select' mode. In select (the default), left click of mouse selects the closest structural entity (double click opens the relevant dialog). In Pan mode, mouse movement changes the view. In select mode, 'shift' button allows zoom, pan and rotate, and in pan mode 'shift' allows select.

View – chose between half breadth plan, profile , plan or 3D . In 3D the mouse buttons allow pan , zoom and rotates. In the 3 orthogonal views, they allow pan and rotate

Show options and Location of shown structure allow different entity types and location to be hidden or shown according to the users preference

True v ISO – this allows the user to swap between the actual shape of the structural item and the ISO equivalent rectangular entity, as shown below (note the green panel is the currently selected / active one)
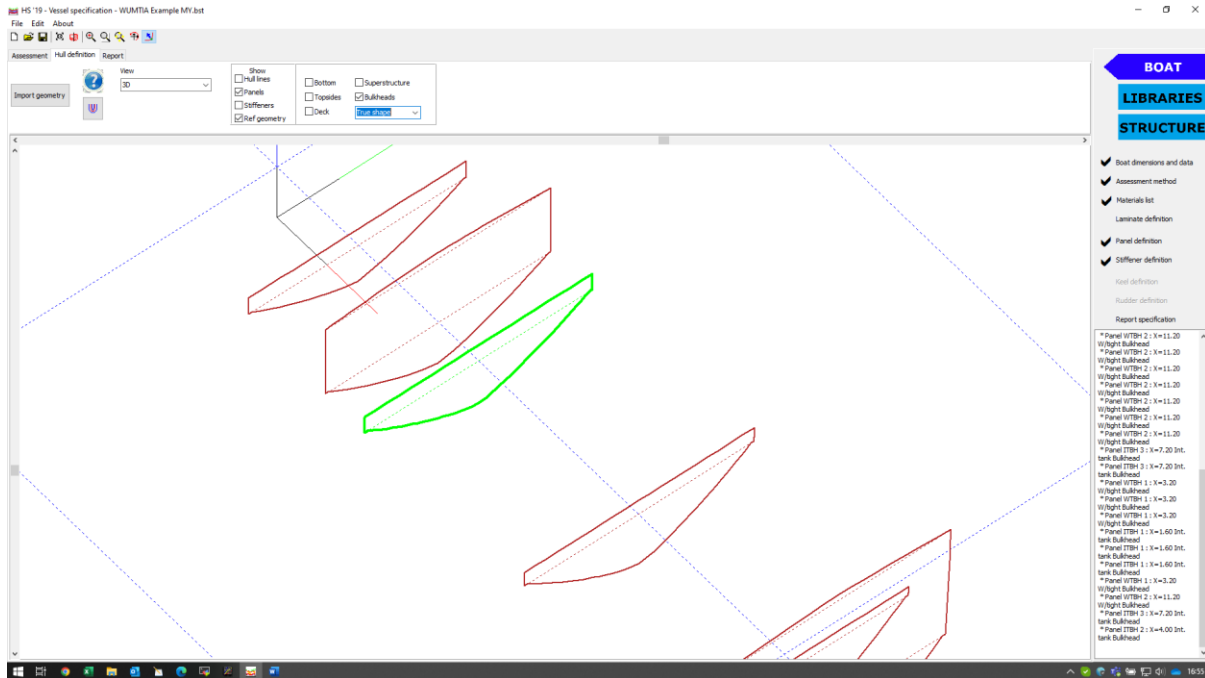

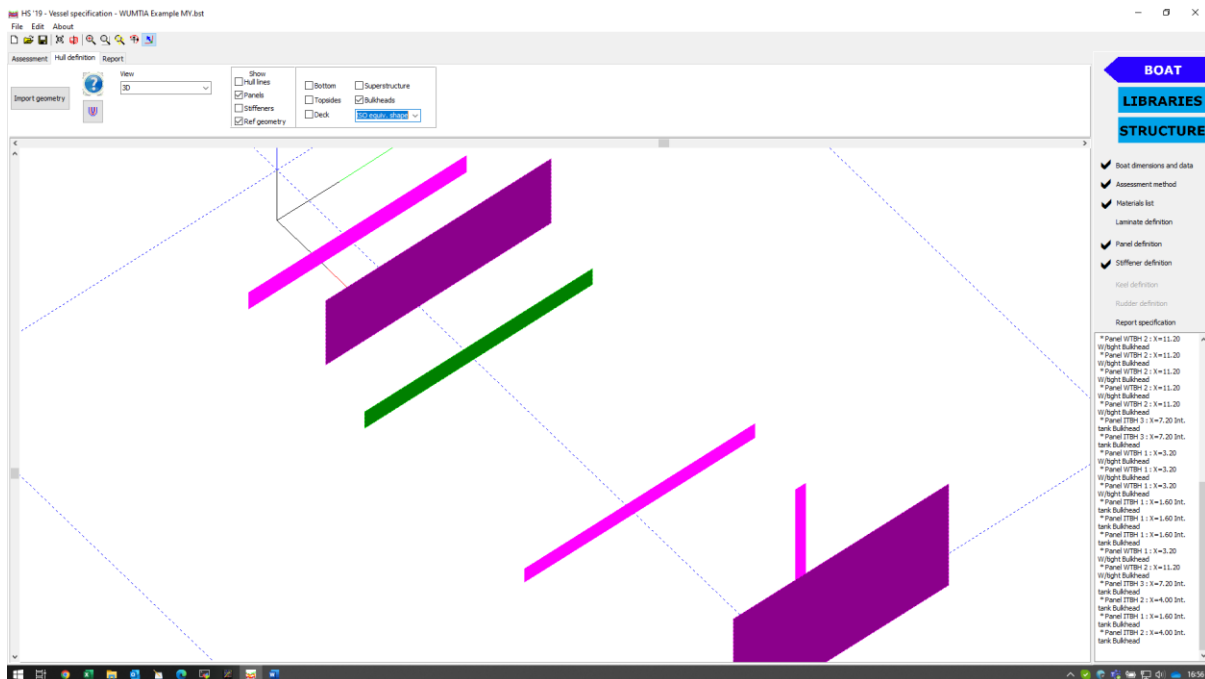*Figure 5 MY example, transverse bulkhead panels, true shape*

Figure 6 MY example, transverse bulkhead panels, ISO equivalent shape

If the user feels that hullscant has not translated from the true shape of a panel to the ISO equivalent correctly, then the user can select the corner locations themselves via the panel dialog, Orientation & Weight tabsheet, and click on 'Edit corner location' as shown in Figure 7.
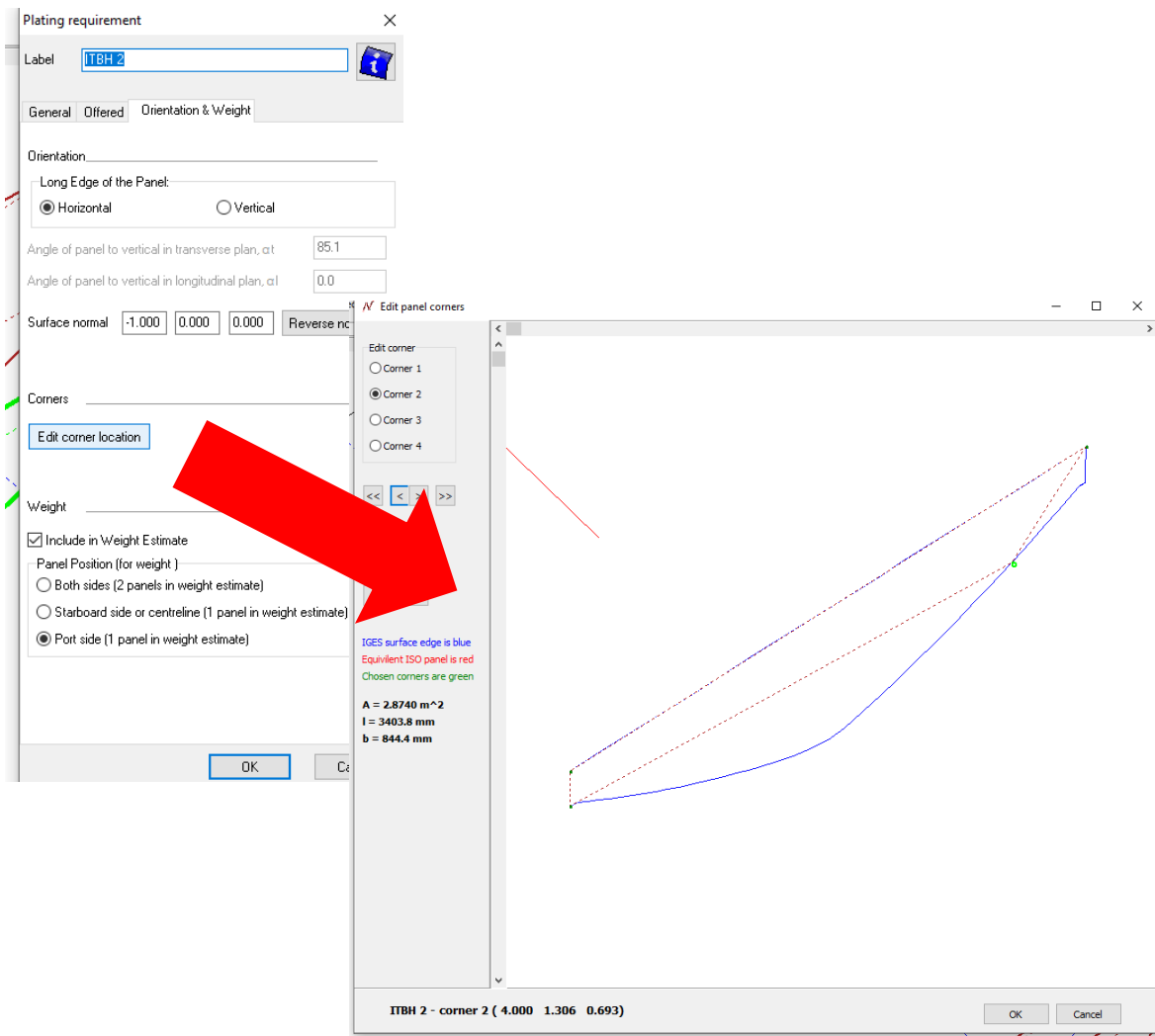
Figure 7 Editing panel corner locations