



VERSION 8.0.1.XXX - DEVELOPED BY: AVOLITES MEDIA LTD. POWERED BY: SALVATION (TM)
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GREG, ADAM, OLIE, ALL AT AVOLITES AND YOU. SPECIAL THANKS MARK CALVERT. LETS ROCK!

Surface Modelling Page

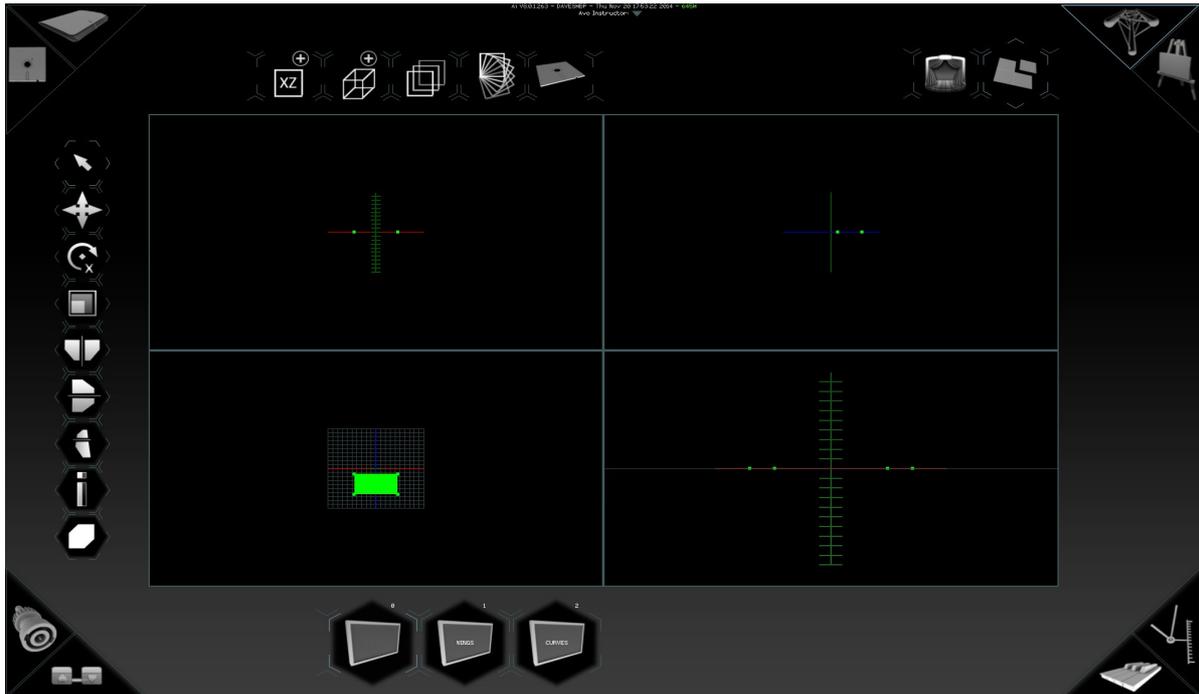
VERSION 8.X

By Arran Rothwell-Eyre December 2014

with Additions by Dave Green & Ciaran Abrams

Surface Modelling Page.

We have for some time been able to see the need for our own 3D editor with the ability to generate primitive geometry within Ai and modify existing model files as well as carrying out some simple functions like cloning and duplication. Whilst we still recognise the advantages of a dedicated modelling package, we decided to give the user access to a set of common functions appertaining specifically to our industry – allowing every Ai user to have greater control over the screen models they use and to be able to generate new and modified geometry when required.



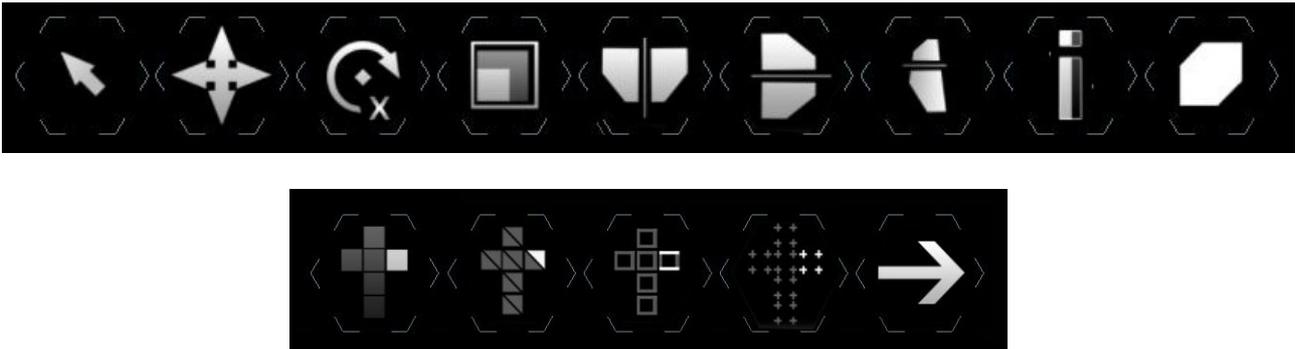
The modelling page itself is a sub window of the Stage Construction page – to access it, first click on the truss icon (Stage Construction page) and then look to the top right of the interface for the icon that looks like a square with one corner cut out and give it a click. Many of the functions and icons on the surface modelling page are carried across from other areas of Ai, so will seem familiar or obvious, but just to be sure, lets run through them all.

By default the surface Modelling page is set up in a four way split view with default camera positions already located for each view. These are set up with 3 orthographic viewpoints viewing the front, side and top respectively. Add in one perspective view and that gives us our four windows. The views are treated in the same way that the stage construction page is. Where shift + click/dragging will rotate your view and alt + click/dragging will pan it. Defaulted viewpoints have been integrated into the surface modelling page and by pressing the number keys, 1 through to 6 will automatically interpolate the camera to the desired position. The positions are as follows:
1 = Front, 2 = Back, 3 = Left, 4 = Right, 5 = Top, 6 = Bottom. In order to change between orthographic and perspective the number 0 key will toggle between the different projection views.

Using the mouse to click and drag will create a selection rectangle that will allow you to

select vertices. Whilst selecting vertices 'A' will append to the current selection. Whilst 'C' will remove/clear from the current selection.

The surface modelling page will show you the geometry of the current fixture selected and supports multiple fixtures. If multiple fixtures are selected then you will be able to edit the models accordingly and it will allow you to save the multiple models into one. The surface modelling page does not update on the outputs live nor does it retain information about models. Changing between fixtures in the surface modelling page will re-load the geometry and therefore any changes that you have made and not saved will be lost. You can not work independently on multiples of fixtures.



The left hand column of icons gives us tools to manipulate our selection. The first icon, that looks like a mouse pointer, is our selection tool. This will allow us to select / deselect vertices within the 3D model. Below this is the translate tool. This will translate based on where you first click the mouse and where you release your click. Next is the rotate tool (right-clicking this icon changes the axis of rotation). Furthermore: scale, mirror on x axis, mirror on y axis, mirror on z axis, invert selection and draw method. The draw method changes the way that the objects are displayed (vertex points, solids, wireframe, bounding boxes or textured objects). For numerical entries you can shift-click on the translate, rotate, scale icons.



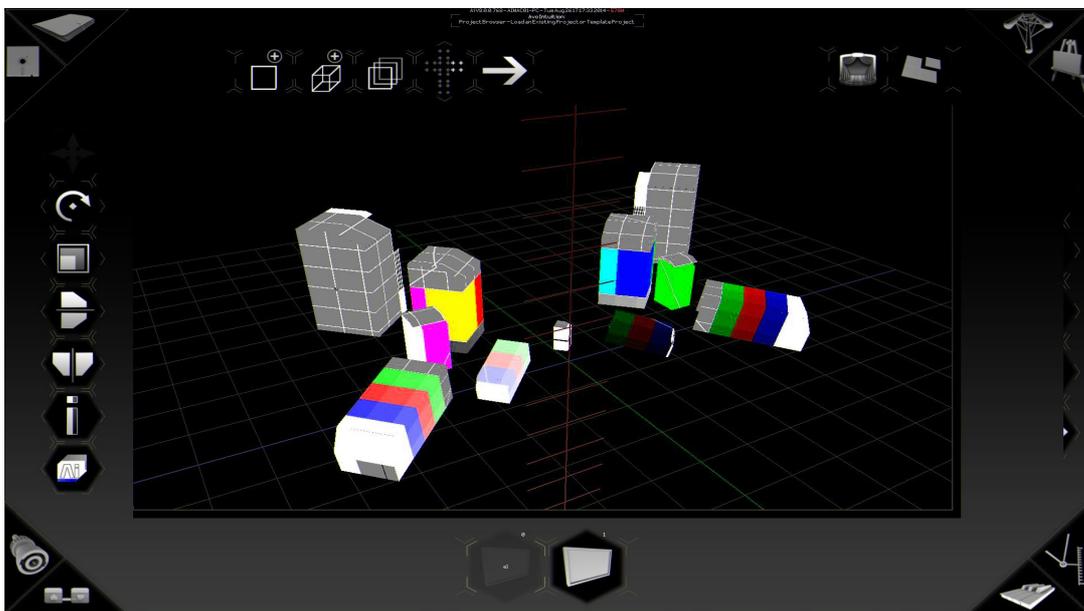
Along the top of the screen we have several more new icons which allow us to generate a plane, generate a cube, create duplicates along a straight line, create duplicates along a curve and finally a button to save the newly edited model as an .obj file – any updates to your screen model are only applied once it has been saved. If multiple fixtures are selected when modelling, the saved model will have all the geometry from the selected fixtures and will load the newly saved model into the first selected fixture. You will have to delete the according fixtures on the stage construction page.

The linear repeat function allows you to set the amount of duplicates you wish to generate and specify the spacing between them, whereas the curved repeat lets you set a centre point to curve around, specify the end angle of the final duplicate and set how many are

within that range.

The interface itself can be switched between a four way view (as traditionally seen in most 3d modelling packages) and a single full screened view – this can be done using the F button on the keyboard. Its worth paying attention to the position of your pointer when changing screen modes as whichever window the mouse pointer is sat within when the F button is pressed will become the view that is maximised. Press F again in a maximised window to return to the four way view.

Additionally the interface of a selected view can be locked by pressing the L button. This will disable panning / rotating but will still allow the selection of vertices and the manipulation of geometry. This is a useful feature if you navigate to a useful viewpoint and don't want to accidentally change that. The view that is locked is dependent on where the mouse is in the same regards as full screening views.



For information on Keyboard shortcuts which can be useful whilst surface modelling please see the keyboard Shortcuts Tutorial.