DAVinCI Flight User Guide: v0.08

1   Getting Started

Welcome to DAVinCI Flight! Remember to register the game (instructions packaged with your installation) to receive free updates, fixes, and upgrades. To begin select the "Local Game" option from the menu to the left of your screen.

1.1   To Install the Game:

Double click the setup file after it has finished downloading to run the self-extracting executable. This will install the game files in the proper locations and create a shortcut on your desktop.

1.2   Game Files and Folder Structure:

When the game first runs, a DAVinCI Flight folder is created inside your My Games folder this is where all your saved player data, designs, missions, settings, and vehicles are stored. When you update from an existing installation of DAVinCI Flight your designs and save game information are typically upgraded as well. However large modifications to the game often require that this folder be deleted and rebuilt from scratch. If this is necessary it will be noted in the game release notes packaged with the new installer file. The DAVinCI Flight folder is also where your exported STL files from your vehicle designs are stored.

1.3   To Setup and Play the Game:

When installation is finished double click the DAVinCI Flight shortcut icon on your desktop. You will be presented with the following screen:
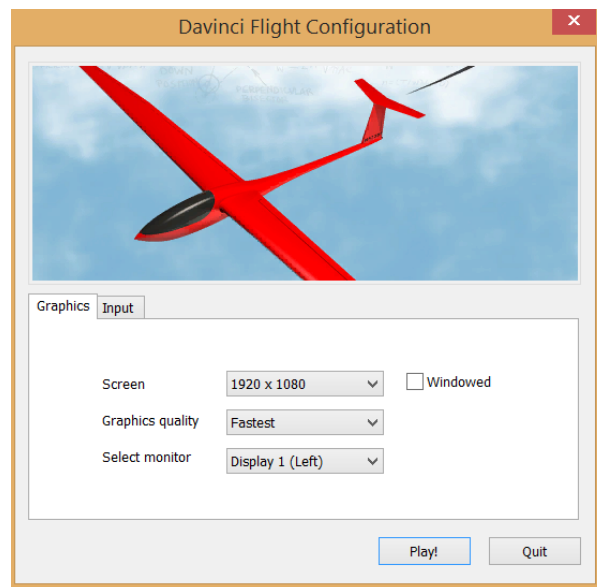
Check your resolution settings and select one that best matches your machines resolution. DAVinCI Flight has been designed to look its best for 16:10 and 16:9 aspect ratios and HD resolution. This is not to say lower resolutions and aspect ratios will not work, however these settings may cause some menus, interfaces, and buttons to appear formatted strangely.

The other tab lets you control the mapping of the various inputs used in the game. This is really only necessary if you want to change things or if you have a custom joystick setup that you want to map.
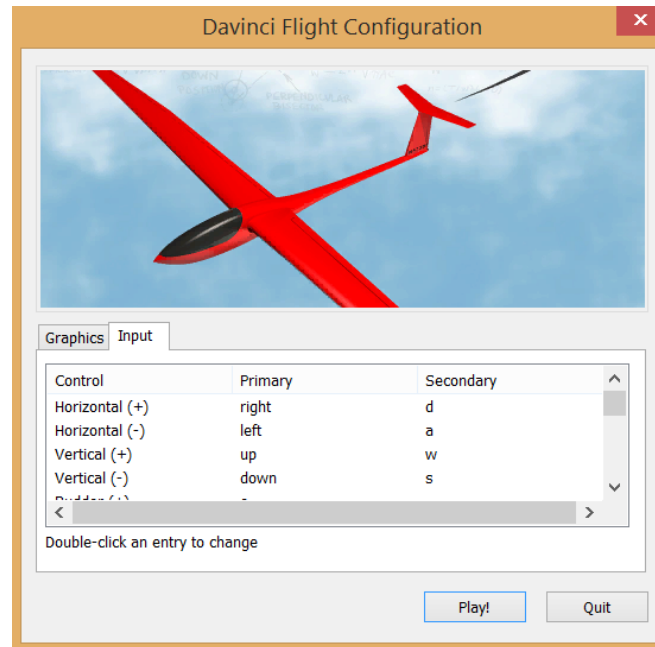
After setting things up hit play to enter the game. Each time you run the game these setting will be remembered from last session so you only need to hit play.

1.4   Start Menu

After the loading animation you will be taken to the start menu. There are only a few active options right now these are "Local Game", "Settings", "About", and "Exit" other options for this release are greyed out and will appear in future upgrades. To keep the package size small tutorial videos are provided external to the game on our website. Your start menu should look like this.


Click on Local game to start a new game. Settings allows you to toggle the use of joystick vs keyboard control in the flight simulator. Additional settings options will be added in future releases.

2   In Game Tutorial (Lab/Hangar)

After selected local game your player will be created and loaded into the DAVinCI Flight game lab environment. Each room in the futuristic lab allows some part of the design process for example: background research "Library", concept generation "Layout", modelling and analysis "Design", simulation "Flight Sim", and so on. The following write up will assist you in learning the player controls, parts of the lab, and hot keys to get you started exploring. This portion of the write up is restricted to the main lab hanger. There is a separate write-up section for each of the rooms that follow this section.

2.1   Navigating the Lab Environment

The player controls in the lab environment are a style common in first person games. To look in a direction move your mouse side to side and up and down to walk in the direction you are pointing use the "w" or "up arrow" key. Left and right lateral motions to the faced direction are accomplished using the "a" and "d" keys respectively (or alternately the left and right arrow keys). Backing up is accomplished through the "s" key or the down arrow. If this control system is new to you take some time to practices using the mouse and the "w" simultaneously to navigate the lab. Another control you can but don't need to use is jump which is the space bar. The diagram below summarizes keyboard navigation controls in the lab.
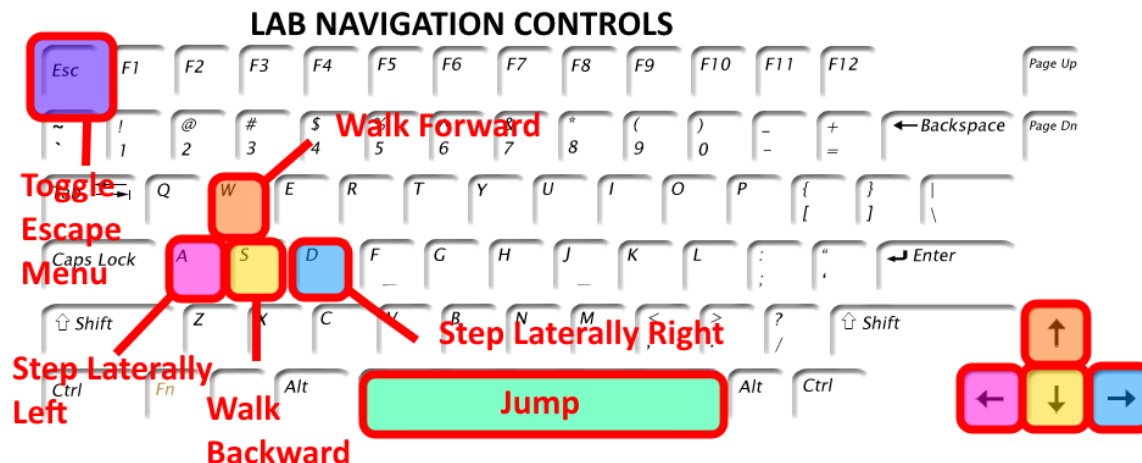
As you walk around the lab some objects like displays, doors, interfaces, and trophy cases will be triggered by walking up to them. Triggered interfaces will prompt you for further keyboard actions which you can ignore by walking away from them.

Finally one last navigation tip in the lab environment is the use of the escape menu.

2.2   The Escape Menu:

An alternate and faster way to navigate the lab, change missions, and control settings are through the escape menu. This may be toggled on and off by pressing the "Esc" key on your keyboard. When you do you will be presented with the following. By default the active menu is the map. It allows you to port to various predetermined locations in the lab and save the time of walking to and from parts of the

lab. To port just select the map button from the menu on the left then click the button for the location you want to go to.

Other key items of the escape menu will now be briefly discussed.

2.2.1 Inventory:
This gives a view and description of the current items you have purchased and hold in your inventory. Right now this is not a critical feature, future updates will use this capability more heavily in the concept generation and prototyping phases of the design process.

2.2.2 Active Mission:
This is a barebones listing of the currently selected mission. Each mission has objectives, sub objectives, and rewards. The progress through the mission will be listed on this interface as well.

2.2.3 Select Mission:

To change the mission you can either access the mission table by walking up to it in the lab or you can select the select mission escape menu item. Missions form the basis of a player's interaction with the game. Currently they can be experienced in any order although missions are grouped in arcs and numbered so that if played in order each mission will build off of the last's activities. Each mission has its own content, flight simulator maps, vehicle templates, design activities, mission guides, and restrictions. There are several flavors of missions:

Educational: These missions are designed to be used to teach a particular stem concept and add an engineering component to it (say for physics). Typically these are structured, targeted, and shorter in duration (~20 min). They are also aligned with specific NGSS or Common Core topics for a variety of grade levels. More of these missions are being added all the time.

Project: These missions are formulated to be used in the context of using DAVinCI Flight to designing, build, and test a vehicle using 3-D printing. The missions are slightly more open, with lots of cross cutting concepts, but the vehicle templates are fixed (i.e. the configuration 1 wing, 1 fuselage, 1 HS, 1 VS is fixed) but the parameters of this configuration are free. These missions also support export of 3-D printer files for physical build test activities. The goal is to design the best vehicle you can to satisfy the design challenge of the mission. The Glider DBT mission arc is an example of this.

Game (arc): These are arcs of missions that build off of each other to be experienced sequentially each unlocking the next mission (level) in the series. These are very informal are very game driven missions. Also the scoring and inventory is not controlled as in the educational and project mission types so players have control over the parts they purchase and add to their creations

Game (standalone): These are individual missions that are not part of an arc. Often times these are racing missions.

To select a new mission click on the select mission button in the left menu of the escape menu and follow the directions in the popup menu

Clicking the select a new mission button in the popup window will bring up the mission control interface
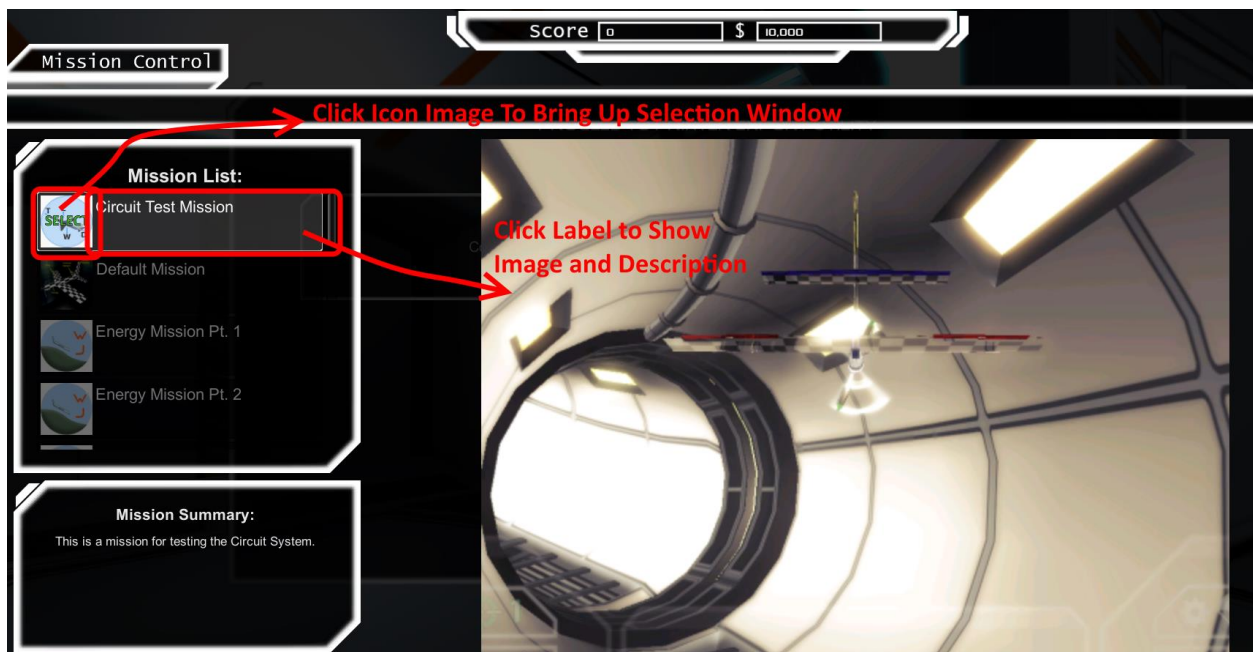
Here list of missions, a graphic, and a summary are displayed depending on the mission selected. To show the image and summary click on the label portion of the list items. To change the mission mouse over the icon portion of the list item and click on it. When it is clickable it will show a green **SELECT** over the icon. Clicking on a list item's icon brings up the accept decline screen and more about the mission.
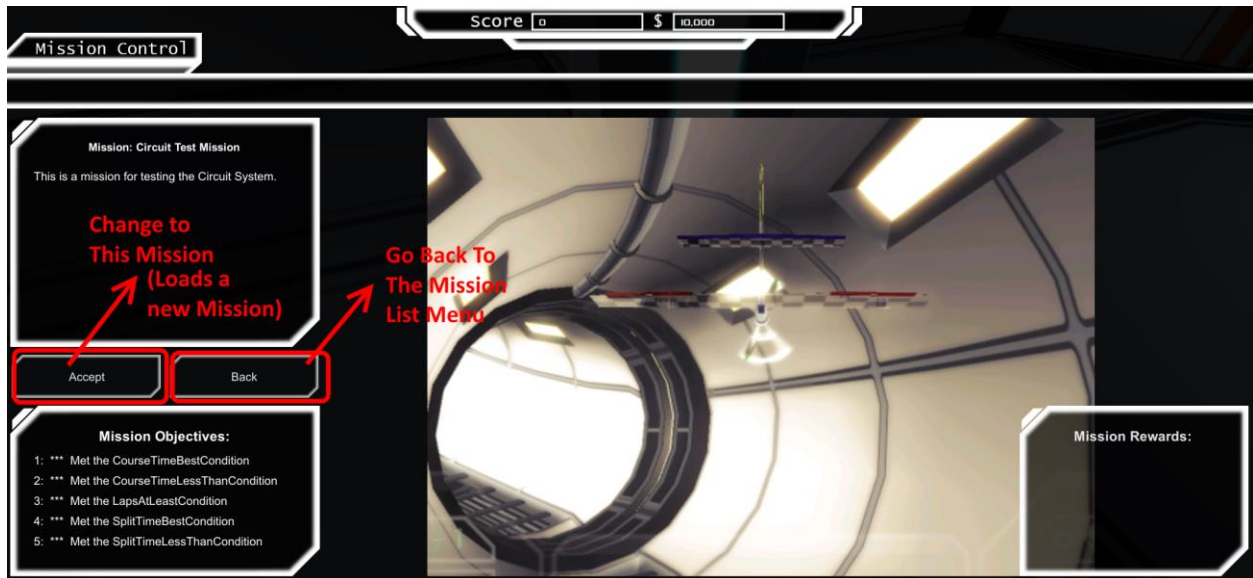
This will display objectives, a longer description, and any rewards. To accept the mission click accept (this will switch your mission and any progress on your current mission will be lost) to go back to the list choose back.

2.2.4   Badges:
This item on the escape menu will display any badges or medals you have won for completing objectives, and missions. These also will appear in the achievements display case in the lab.

2.2.5   Settings:
This item allows you to control user changeable settings. Currently this only allows a player to select the use of joystick for the flight sim, and to enable/disable in game help.

2.2.6   Exit:
This item quits the game

2.3   The Rooms, Tools, Levels of the Lab
This is not an exhaustive list but will be a minimal set of locations and tools in the lab to get you going in DAVinCI Flight.   Each of these will be discussed in greater detail in its own tutorial section. This will simply instruct you how to find and enter these interfaces and rooms.

2.3.1   Library:
The library kiosk is in the center of the hanger bay. It also has a port button in the escape menu. It will look like this.
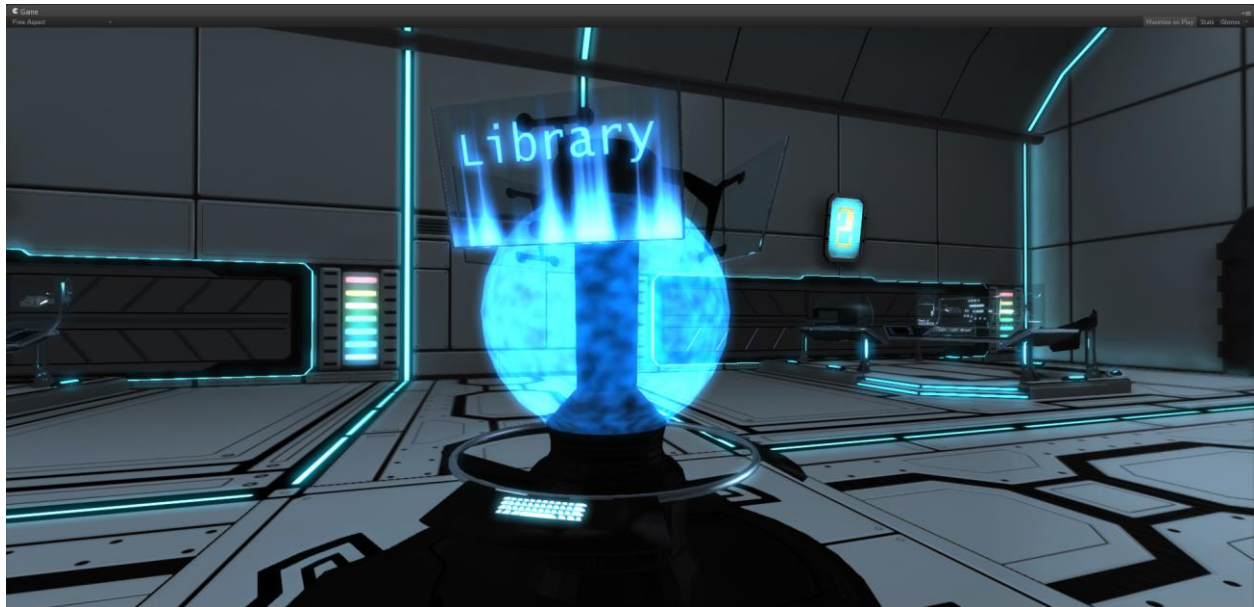
Walk up to it and you will be prompted to enter a selection interface. If there is no book or one book for the mission it will be automatically loaded for you in the library room. However if there are multiple books allowed for the mission you will be asked to select one and press the load button at the bottom of the interface to read it.

2.3.2   Design Room

The design room can be accessed through the hanger bay from the design terminal that looks like this:

Walk up to it and when prompted press the keyboard command to enter it. A more detailed user guide for the design room can be found in a later section.

2.3.3   Prototype Selector and Viewer

This interface lets you select from you list of available prototypes for this mission (geometries and flight models exported from the design tool). It will display small RC scale models on the stand to your left and large vehicles in the hanger bay behind it. To trigger this interface walk up to the bay window like this.
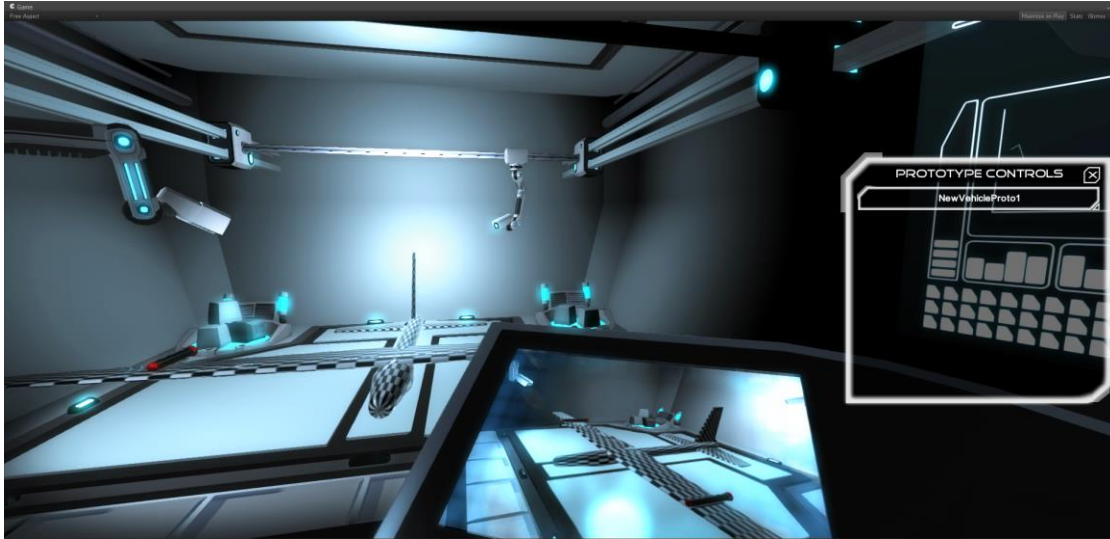

2.3.4   Flight Simulator

After generating a prototype of your design you can take it into the flight simulator. The flight sim will always use the last generated prototype unless you select another one using the prototype viewer. The flight simulator can be accessed by walking up to the following portion of the design terminal and following the popup interface's directions.
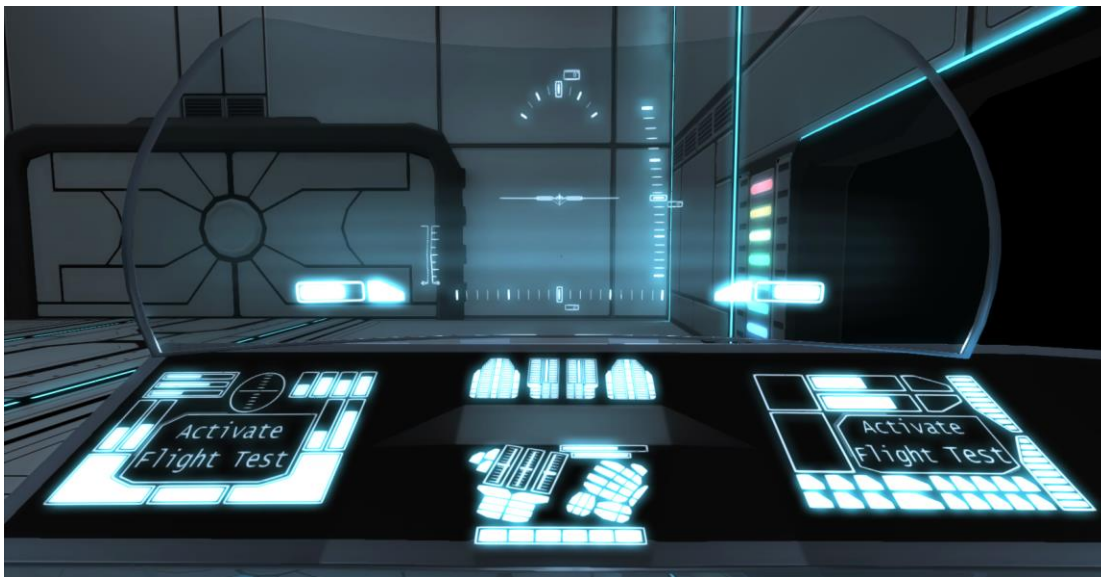
2.3.5   Mission Control

This terminal is found the mission control room of the lab environment. Walk up to it to interact with it and select or explore other available missions (this was covered in the escape menu options above). The control station looks like this.
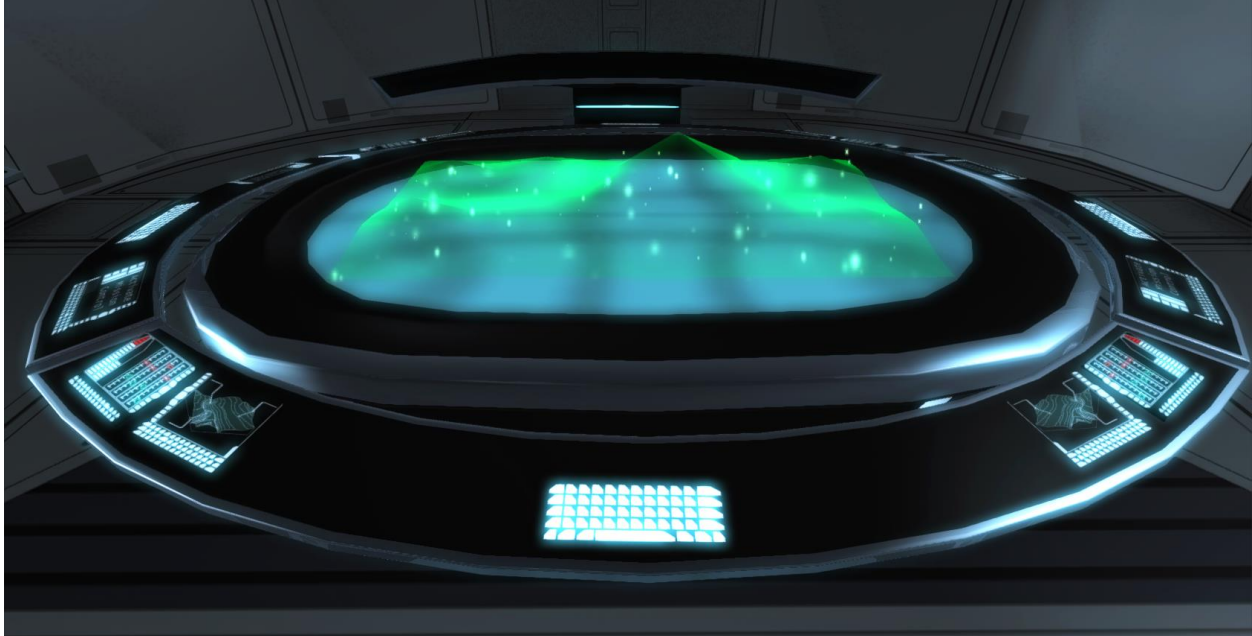
2.4   Other Hotkeys and Menu Items in the Lab:

Currently a basic 3-D printer export tool is packaged in the game (this will be greatly expanded and refined in the coming weeks releases) although you can export any design in the game. The only missions that it is intended to use this with are the project style missions (like the glider DBT arc). To access the export tool press "F10" and then follow the menu buttons. Currently it will export your last saved prototype design, or last selected prototype design (from the prototype viewer interface). Green letters will display when the files are exported. These will appear in your game data folder under

\My Games\DAVinCI\Default User\3DPrintFiles\(YOUR PROTOTYPE NAME)\(TIMESTAMPED FOLDER)

These will be properly formatted and scaled STL files for each structural component to be imported in to 3-D package or printer software of your choosing. Currently low cost filament style printers will yield the best results. A special guide for this tool will be generated with the printer support tool update.

2.5   Help Inside the Game:

Inside the game the help menu for the lab is always available through the hot key "h". If you have chosen to disable in game help it can always be re-enabled by entering the escape menu going to settings and toggling the help menu back on. Then an icon will appear in the top right of your screen letting you know you can access the help with the "h" key. The help menu will list various topics that are also covered in this manual for quick reference. The subjects will be limited to navigation and controls for the current lab environment. Each of the game rooms/levels will have their own targeted help menus.

Tutorials manuals and videos may be accessed outside the game the links below.

2.6   For More Info and Tutorials:

For gameplay instructions, tips, additional information, manuals, and video tutorials please visit our website at:

http://www.davinciflight.com/#!tutorials/c1d28

http://www.davinciflight.com/#!manuals/c9v2