Motion Tracking

VERSION 8.X

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Motion Tracking

Ai can make use of several different types of tracking data straight out of the box via dedicated modules in the Salvation environment. Tracking systems such as Blacktrax, Kinesys or Optitrack generally give out data which relates the current position or movement to a set of coordinates within3d space, generally as an offset from a starting or neutral point, which in turn can be connected to fixtures or models in Ai so that the position and rotation are adjusted accordingly.

If you are connecting your tracking data to a single fixture, the first thing to do is to change the skin of the screen fixture to the one named Dynamic Adjustment – this will expose all of the ports needed to control the position, rotation and scale of the screen in three dimensions.

The next step would be to choose your motion tracking type and add the relevant module into the Stagepatch – the Blacktrax module can be found in the Network section, the Kinesys module can be found in the motion control section and the Optitrack module can be found in the network section listed as NatNet Client.

Each of these three systems has its own benefits:

Blacktrax uses a single unit with an led marker which strobes and using the result of the strobe it can determine the area to track. This system is really quick to setup but can lack some of the finer control required to do complex multi object tracking and morphing.

Optitrack is a multi point tracking device capable of tracking complex point systems and multiple objects such as skeletons or jointed objects. Optitrack gives a very high level of control and detail but can have a more complicated and indepth setup process to get it functioning correctly.

Kinesys is a motor control system generally used to control truss position but is often used for hanging screens or even to control lateral motion. When the motor is used a data signal is also sent so that the whatever is tracking the movement can adjust its position in real time to match the motors output. Kinesys is most suited to lifting and pulling.

Whether you control a single fixture or multiple 3d objects really comes down to the project itself and its requirements – for multiple objects it is best practice to make use of sub patches and separately controlled 3d models all of which are independently connected to your tracking system. Regardless of the chosen approach, if controlling fixtures, you are likely to use the Dynamic Adjustments skin for the screen fixture as this gives access to all of the translation, rotation and scale parameters needed, although a similar set of ports can also be exposed on the Morph Model module.

It is worth baring in mind that the use of Blacktrax and Optitrack will require a reasonable understanding of 3d modelling and working within a 3d environment as each of the systems will involve calibration based on 3d position and will generally need to be reset to a repeatable centre point, where as due to kinesys being used for 2d movement on the whole it requires less complex calibration and centering.

- Blacktraxx is very fast to setup and is the most suited towards a touring production where time for alignment and calibration may be limited.

- Optitrack is capable of very complex tracking but does need to be properly calibrated which can take some time and maybe even some project modification for each new venue.

- Kinesys is great for controlling stage elements and objects which will move along a set path and for these types of object, it is very quick to setup and will only really require recalibration if the trim heights have been changed since the last show.

- We would advise that for any tracking project, to avoid specifying the wrong system and taking a less efficient approach, to get in contact with us so that we can talk you through your options and work out the solution which is best for your show.