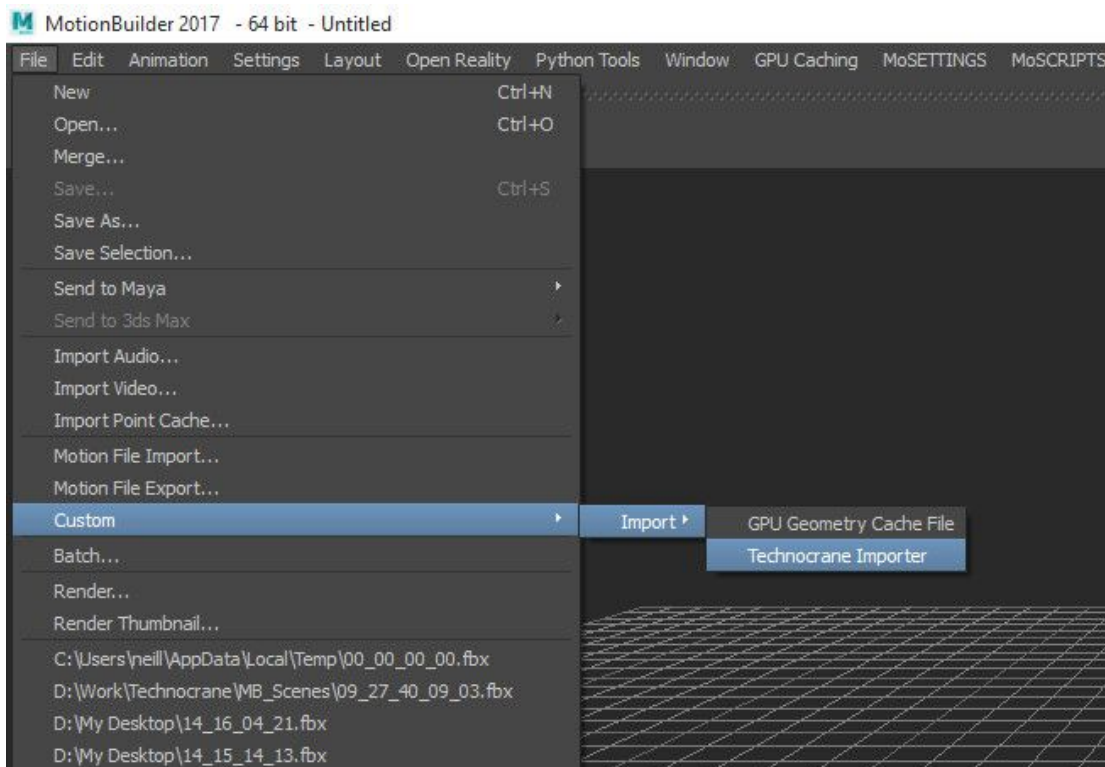# Technocrane Tracker plugin for Autodesk MotionBuilder

User Guide

Content

Installation

Tracker plugin supports MotionBuilder version from 2014 up to 2018 and Windows x64 OS only.
Please use Installation package and follow instructions to setup the plugin.

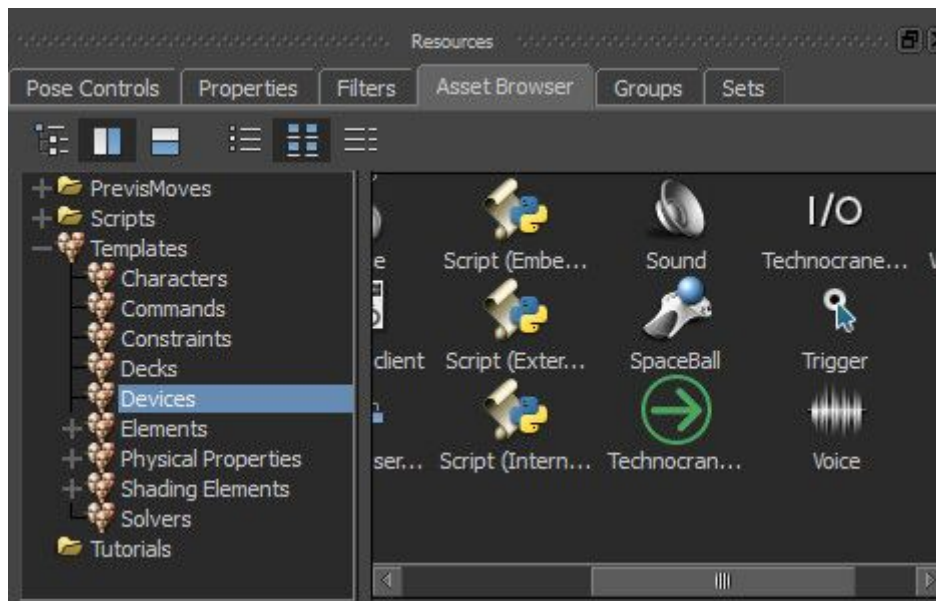# Technocrane Import

Import Ascii or Binary CGI files.
Before doing the file import in Ascii format you should specify the correct time rate in scene timeline settings.
Binary format will use it's own timecode information to put keyframes on a time.

Limitations
- timecode is not supported in Ascii format

Technocrane Solver (Tracker)

 Important Note! Technocrane Device is a Solver plugin. You can find it in Assets Devices as any other device, but when you put it into the scene, it will be located in the Solvers branch instead of Devices in a Navigator Window!

Features

The main features compared to traditional device-look plugins
- special interactive HUD system
- auto-save camera data after each recording
- real-time crane model preview and parametric animation to follow a camera

Before Start

 Important! Before start working with a device, please specify a correct values for a camera sensor width, height. That will help to have a correct calculation of a virtual camera FOV.

 By default, plugin will try to connect automatically when you put it into a scene. And it will create a virtual camera as well with default name - Technocrane:Camera

 After each recording, solver will automatically save a new camera animation into a file. Name of a file is making from the first frame timecode value.

 There is a special HUD system in a viewport top. That helps to see common streaming parameters.
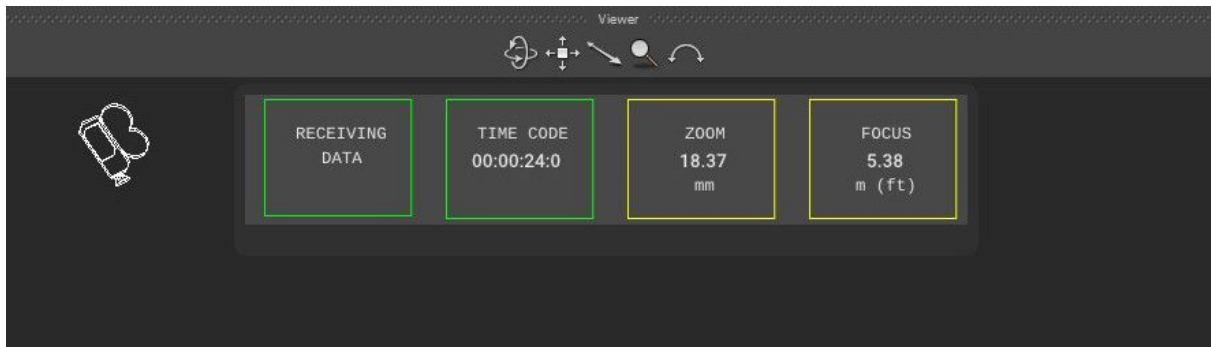
Preview of a crane model is importing as a reference model. The crane skeleton nodes are hidden by default. The crane nodes are driven from Technocrane Tracker.

Preview nodes are driven from camera rotation and translation, and recording operation will put some keyframes. So that, after you turn off your streaming, you should see a crane model movement synced with a camera as well.

Configuration Files

Plugin will store some of user values in a configuration file. You can locate the file in the <My Documents \ MB \ 20xx-x64 \ config \ <PC Name>.TechnocraneTracker.txt >

Crane preview models list and camera frame rate presets are stored in xml configuration file in motionbuilder config directory and called TechnocranePresets.xml

Navigator UI

 Navigator UI is a simple user form of plugin UI. There are only the most interesting properties that could be helpful for making a live preview and recording.
  To get an access to an advance plugin customization, use please Property View window.

Properties

Sampling Options

Use TimeCode Frame Rate - use this option to switch between TimeCode Frame Rate or user specified Camera Frame Rate
TimeCode Frame Rate - read-only property to display incoming frame rate inside the timeCode value of a packet
Streaming Rate - read-only property to show up a number of packets per second received
Camera Frame Rate - user defined camera frame rate
Camera Rate Presets - presets for a user defined camera frame rate

Calibration Options

Zoom Range - 2d vector, interpolate inside the range when technocrane zoom is not calibrated and incoming packet contains value in percentage.
Focus Range - 2d vector, interpolate inside the range when technocrane focus is not calibrated and incoming packet contains value in percentage.
Iris Range - 2d vector, interpolate inside the range when technocrane iris is not calibrated and incoming packet contains value in percentage.

Technocrane Device   V: All

Active	✓
Auto Connect	✓
Avaliable Ports	COM1
Refresh	Refresh
Camera	Technocrane:Ca... ...
Units	Metric System
Sensor Width	23.77
Sensor Height	13.36
Camera Crane Presets	None
Amount Of Tracks	0.00
Packet Has TimeCode	
Data Is Calibrated	
Show HUD	✓

▽ Auto Save Options

Storage Path	C:\Users\neill\AppD...
Auto Save	✓

▽ Sampling Options

Use TimeCode Frame Rate	✓
TimeCode Frame Rate	0.00
Streaming Rate	0.00
Camera Frame Rate	25.00
Camera Rate Presets	Custom

▽ Debugging

Write Packets Log	

▽ Calibration Options

Right Handed Coord Sys		
Space Scale	1.00	
Rotation Order	XYZ	
▸ Mult Rotation	1.00 1.00	1.00
▸ Zoom Range	0.00	100.00
▸ Focus Range	0.00	100.00
▸ Iris Range	0.00	100.00

▽ Streaming Stats

Clear Stats	Clear Stats	
Total Chars Read	0.00	
Total Check Sum Errors	0.00	
Total Missed Syncs	0.00	
Complete Packets	0.00	
Default Keying Group	Default	
Stream Camera	✓	
Plot Crane Animation	Plot Crane Animation	
▸ Camera Pivot Offset	0.00 0.00	0.00
Calibrate Camera Pan	Calibrate Camera Pan	
Show HUD Message Duration	72 (00)	
Record Relative Time	✓	
Use Absolute Time Range	✓	
Help	Help	
About	About	

▽ Property References

Technocrane:Camera.Zoom	K	0	0.00	A
Technocrane:Camera.Focus	K	0	0.00	A
Technocrane:Camera.Iris	K	0	0.00	A
Technocrane:Camera.TrackPos	K	0	0.00	A
Technocrane:Camera.FrameNum...	K	0	0.00	A
▸ Technocrane:Camera.TimeCode	K		0 (00)	A

Crane Calibration Options

Camera Pivot Offset - local camera offset that will be used as a crane attachment point
Roll Pivot Offset - stabilization option, center of roll rotation, that will be used to unrotate camera and keep only physical camera translation for a crane attachment point
Tilt Pivot Offset - stabilization option, center of tilt rotation, that will be used to unrotate camera and keep only physical camera translation for a crane attachment point
Pan Pivot Offset - stabilization option, center of pan rotation, that will be used to unrotate camera and keep only physical camera translation for a crane attachment point
Calibrate Pan Offset - press first time to enter calibration mode and second time to stop it. From receiving samples during calibration process the Pan Pivot Offset will be calculated
Calibrate Tilt Offset - press first time to enter calibration mode and second time to stop it. From receiving samples during calibration process the Tilt Pivot Offset will be calculated

Crane Calibration Reset - reset offset values to default
Crane Calibration Save - save offset values into a xml file
Crane Calibration Load - load offset values from a xml file

Stabilize Crane - turn on/off crane stabilization mode (extracting camera rotation and keep only physical translation)
Stabilize Crane Debug Display - turn on/off some helpful elements for stabilization

Common

Stream Camera - this is advanced option to use camera animation from a scene instead of input device. That could be helpful to animation crane preview.

Plot Crane Animation - use this option to record keyframes for a crane model inside a timeline range. This is useful when camera keyframes are exist and crane model keyframes are missing. Also to use camera animation keyframes instead of real-time input, use please Stream Camera option.

Show HUD Message Duration - this is time of HUD message showing up for the user

Record Relative Time - use this option to switch between absolute keyframe timecode time or relative time from a record start local time
Use Absolute Time Range - set timeline range from writing values in absolute timecode time

FAQ

Q: How do I kill the status window on the screen?

A: To control a visibility of a new HUD, please use a Show HUD property (I've attached a screenshot). Also once you have changed that value to off, next time you add a new device, it will not show you a HUD any more. Your change will be saved into MB config ini file as a default value.

Support and contact

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