EDGE 6D INTERFACE SPECIFICATION

1 October 2026

This document describes the interface of the EDGE 6D motion base. For compatibility with your system, please update to the latest firmware version.

The EDGE 6D system supports different network interfaces, including:

- Game interfaces – for direct support of selected games
- Adapter interface – for adapter software (e.g. SimHub, SimTools, FlyPT) for all other games
- Native interface – for directly driving and logging of the platform

PRESET MODES

In addition to the network interfaces described above, the EDGE 6D also supports PRESET modes. With these modes the system will respond to motion input differently. The selected PRESET is displayed at the upper center of the small dashboard display.

The following modes are supported by default:

6DF: default 6DOF operation
6DS: 6DOF operation without shocks
6Sx: 6DOF operation with limited sustained g-forces (x=0: 0%, x=2: 25%, x=5: 50%)
6Gx: 6DOF operation with limited gravity g-forces (x=0: 0%, x=2: 25%, x=5: 50%)
2DF: 2DOF operation (roll, pitch)
3DH: 3DOF operation (roll, pitch, heave)
3DY: 3DOF operation (roll, pitch, yaw)
4DR: 4DOF operation (roll, pitch, heave, yaw)
4DS: 4DOF operation (surge, sway, heave, yaw)

Further, there are the following additional PRESET modes that execute an internal pattern independently of external motion input:

ALL: the system executes in all 64 extreme positions; can be used to determine the workspace
6AX: the system demonstrates the 6 axes (surge, sway, heave, roll, pitch, yaw)

The system preset mode can be selected as follows:

- Ensure the system is in READY mode
- Press and hold the button of the small black/blue dashboard unit for more than 1 second

NETWORK ADDRESS

The IP-address of the EDGE 6D system is acquired through DHCP (IPv4). The acquired IP-address is presented through the dashboard display. If a static IP-address is required, please configure your router to do so.

In addition to its IP-address, the system can be addressed with the following hostname:

EDGE6Dssssss (ssssss representing the system's serial number)

GAME INTERFACES

Most of the leading race and flight simulation games run directly with the EDGE 6D system without the need for adapter software (such as SimHub, SimTools or FlyPT Mover). There is even a subset that runs directly from PS4/PS5/Xbox.

Below you find the required configurations for these games, after which you can run them directly (plug-and-play) with the EGDE 6D system:

- Aerofly FS (PC)
- Assetto Corsa (PC/PS4/Xbox)
- Assetto Corsa EVO (PC)
- Assetto Corsa Competizione (PC)
- Automobilista 2 (PC)
- Beam NG (PC)
- Condor 2 (PC)
- Digital Combat Simulation (DCS) (PC)
- Dirt Rally (PC)
- Dirt Rally 2.0 (PC)
- Dirt 3 (PC)
- Dirt 4 (PC)
- EA Sports WRC
- EPIC Roller Coasters (PC/PS5)
- F1 2018/…/24 (PC/PS5/Xbox)
- FlightGear (PC)
- Forza Horizon 4 and 5 (PC/Xbox)
- Gran Turismo 7 (PS4/PS5 + PC)
- IL-2 Sturmovik Great Battles (PC – NON-STEAM VERSION)
- iRacing (PC)
- Kayak VR: Mirage (PC)
- Microsoft Flight Simulator 2020/2024 (PC)
- Project Cars (PC/PS4/Xbox)
- Project Cars 2 (PC/PS4/Xbox)
- Project Cars 3 (PC)
- rFactor2 (PC)
- SensorLog (iPhone)
- X-Plane 11/12 (PC)
- Military and Space applications (DIS IEEE 1278)

Aerofly FS (PC)

From www.gforcefactory.com/support download and extract the game plug-in package.

If <drive> is your Windows installation directory, and <username> is your Windows user folder name, then copy the appropriate file from the Aerofly FS directory of the package to:

<drive>:\Users\<username>\Documents\<aerofly fs>\external_dll\

…with <aerofly fs> the directory Aerofly FS 2 or Aerofly FS 4, depending on your version.

Assetto Corsa (PC/PS4/Xbox)

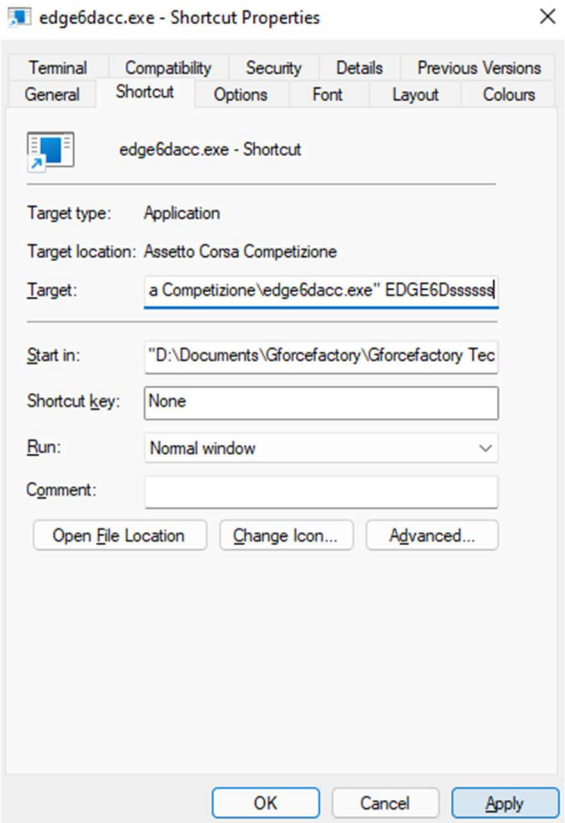
Runs without any configuration.

Assetto Corsa Competizione (PC) / Assetto Corsa EVO (PC)

From www.gforcefactory.com/support download and extract the game plug-in package.

From the Assetto Corsa Competizione or Assetto Corsa EVO folder of the package, copy the .exe-file to an arbitrary directory on your computer.

Create a shortcut to this exe-file and open Properties of this shortcut. In the tab 'Shortcut' and line 'Target' add the hostname of the EDGE 6D system:



...where ssssss is the serial number of your EDGE 6D system. Alternatively you can use the IP-address instead of the EDGE 6D hostname.

Run this shortcut <u>every time</u> you play Assetto Corsa Competizione / EVO.

Automobilista 2 (PC)

From the main menu, select OPTIONS\SYSTEM:

Shared Memory = No
UDP Frequency = 1
UDP Protocol Version = Project CARS 1

Beam NG (PC)

This interface only works if the EDGE 6D is connected to a router. It will NOT work when the EDGE 6D is wired directly to the PC (i.e. has IP address 169.xxx.xxx.xxx).

From the options menu, select OTHER.
Select 'MotionSim UDP protocol'.

IP-address: IP address of your EDGE 6D system
Port: 4444
Max update rate: 100

Condor 2 (PC)

In the install directory: …/Condor2/Settings

Edit the file UDP.ini as follows:

[General]
Enabled=1

[Connection]
Host=<IP-address of EDGE 6D system>
Port=55278

[Misc]
SendIntervalMs=10
ExtendedData=0
LogToFile=0

Digital Combat Simulation (PC)

Find the folder where file Export.lua of your DCS install is located.

For DCS World Steam Edition, this should be:
C:\Users\<username>\Saved Games\DCS\Scripts\.

For non-steam version, this should be in the DCS main folder: …\DCS World\Scripts.

If the folder does not exist on the C-drive, please create it.

Rename the original Export.lua to some other name to backup this file.

From www.gforcefactory.com/support download and extract the game plug-in package.

From the Digital Combat Simulation folder of the package, copy the Export.lua file to the DCS folder (or replace Export_BEH_Motion_Cls.lua in case you installed Brunner CLS2SIM).

Dirt Rally (PC)

Search for the config file:

<drive>\Users\<user>\Documents\My Games\
DiRT Rally\hardwaresettings\hardware_settings_config.xml

Search for the line starting with <udp …> and enable UDP with the IP-address as given on the EDGE 6D display by changing the line:

<udp enabled="true" extradata="1" ip="xxx.xxx.xxx.xxx" port="20779" delay="1" />

Save the file and start the game.

Dirt Rally 2.0 (PC)

Search for the config file:

<drive>\Users\<user>\Documents\My Games\
DiRT Rally 2.0\hardwaresettings\hardware_settings_config.xml

Note there are separate files for use with or without VR headset.

Search for the line starting with <udp …> and enable UDP with the IP-address as given on the EDGE 6D display by changing the line:

<udp enabled="true" extradata="0" ip="xxx.xxx.xxx.xxx" port="20779" delay="1" />

Save the file and start the game.

Dirt 3 (PC)

Search for the config file:

<drive>\Users\<user>\Documents\My Games\
DiRT3\hardwaresettings\hardware_settings_config.xml

Search for the line <motion …> and enable motion with the IP-address as given on the EDGE 6D display by changing the line:

<motion enabled="true" extradata="1" ip="xxx.xxx.xxx.xxx" port="20778" delay="1" extradata="0" />

Save the file and start the game.

Dirt 4 (PC)

Search for the config file:

<drive>\Users\<user>\Documents\My Games\
DiRT 4\hardwaresettings\hardware_settings_config.xml

Search for the line starting with <udp …> and enable UDP with the IP-address as given on the EDGE 6D display by changing the line:

<udp enabled="true" extradata="0" ip="xxx.xxx.xxx.xxx" port="20779" delay="1" />

Save the file and start the game.

EA Sports WRC

Search for the file <drive>\Users\<user>\Documents\My Games\WRC\telemetry\config.json
Make a copy of this file as backup for later.

Within config.json file, search for the text:

```
"schema": 2,
"udp":
{
"packets": [
        {
                "structure": "wrc",
                "packet": "session_update",
                "ip": "xxx.xxx.xxx.xxx",
                "port": ppppp,
                "frequencyHz": -1,
                "bEnabled": EEEE
```

Set xxx.xxx.xxx.xxx to the IP address of the EDGE 6D system
Set ppppp to 20776
Set EEEE to true

Save the file and start the game.

EPIC Roller Coasters (PC/PS5)

From the menu SETTINGS – HARDWARE:

Select:
TELEMETRY: DEFAULT
IP Address: <IP address of the EDGE 6D system> or 255.255.255.255
UDP port: 7701
START

F1 2018/…/24 (PC/PS5/Xbox)
From the main menu, select:

Home\Game Options\Settings\Telemetry Settings\:

UDP Telemetry = On

Either:
Broadcast Mode = On
…or:
Broadcast Mode = Off
IP Address = <IP address as displayed on EDGE 6D dashboard>

Port = 20777

Send Rate = 60 Hz

F1 2018/…/2020:
UDP Format = Legacy

F1 2021/…/23:
UDP Format = 2021

F1 2024
UDP Format = 2024

FlightGear (PC)

Find the directory with name Protocol of your FlightGear installation. This directory should look like:

<drive>:\Program Files\FlightGear <version_number>\data\Protocol

From www.gforcefactory.com/support download and extract the game plug-in package.

From the FlightGear folder of the package, copy the edge6d_protocol.xml file to the FlightGear Protocol directory.

Now, find the fsfg.exe file. This file can be found in a directory similar to:

<drive>:\Program Files\FlightGear <version_number>\bin

Create a shortcut to fgfs.exe on your computer (e.g. on your desktop). Open the Properties of the shortcut (right-click on the icon). Then under the tab 'Shortcut' change the Target attribute to:

"<PATH>\fgfs.exe" --launcher fgfs --generic=socket,out,50,255.255.255.255,50010,udp,edge6d_protocol

…where <PATH> is the directory path where fgfs.exe is located.

From now, use this shortcut to play Flight Gear with the EDGE 6D.

Forza Horizon 4 and 5 (PC/Xbox)
From the main menu, select SETTINGS – HUD AND GAMEPLAY:

DATA OUT	ON
DATA OUTPUT IP ADDRESS	<IP address as displayed on EDGE 6D dashboard>
DATA OUTPUT IP PORT	51010

Forza Motorsport / Forza Motorsport 7 (PC/Xbox)
From the main menu, select OPTIONS – GAMEPLAY & HUD.

DATA OUT	ON
DATA OUTPUT IP ADDRESS	<IP address as displayed on EDGE 6D dashboard>
DATA OUTPUT IP PORT	51010
DATA OUT PACKET FORMAT	SLED

Gran Turismo 7 (PS4/PS5 + PC)

To run Gran Turismo with the EDGE 6D system, you will need a PlayStation 4 or 5 AND a PC.

From www.gforcefactory.com/support download and extract the game plug-in package.

From the Gran Turismo 7 folder of the package, copy the .exe-file to an arbitrary directory on your computer.

Create a shortcut to this exe-file and open Properties of this shortcut. In the tab 'Shortcut' and line 'Target' add after "GT7proxy.exe":

--ps_ip 255.255.255.255 --xsim_ip 255.255.255.255

Run this shortcut on your PC every time you play Gran Turismo on the PlayStation.

IL-2 Sturmovik Great Battles (PC – NON-STEAM VERSION)

In the installation folder, edit the following file: "data/startup.cfg". Then, adjust the following section accordingly:

```
[KEY = motiondevice]
      addr = "xxx.xxx.xxx.xxx"
      decimation = 1
      enable = true
      port = 49001
[END]
```

...with xxx.xxx.xxx.xxx the IP-address of the EDGE 6D system.

iRacing (PC)

From www.gforcefactory.com/support download and extract the game plug-in package.

From the iRacing folder of the package, copy the file to an arbitrary directory on your computer.

Run the .exe file every time you play iRacing.

Kayak VR: Mirage (PC)

From www.gforcefactory.com/support download and extract the game plug-in package.

From a Windows commandline, start:

edge6dUDPfwd 33001 <edge6d>

…where <edge6d> is either the hostname of your system or the IP address.

In the main menu of the game, select:

SETTINGS – GENERAL – TELEMETRY – SIM RACING STUDIO

Microsoft Flight Simulator 2020/2024 (PC)

From www.gforcefactory.com/support download and extract the game plug-in package.

From the Microsoft Flight Simulator folder of the package, copy the files to an arbitrary directory on your computer.

Run the .exe file every time you play Microsoft Flight Simulator. To avoid broadcast, you can add the IP-address or hostname of the EDGE 6D system as the first argument after the executable.

Project Cars (PC/PS4/Xbox)

From the main menu, select: OPTIONS\GAMEPLAY.

Select UDP = '1'.

Project Cars 2 (PC/PS4/Xbox)

From the main menu, select 'SYSTEM – Configure the game's interaction with external apps'.

Set the following:

Shared Memory = No
UDP Frequency = 1
UDP Protocol Version = Project CARS 1

Project Cars 3 (PC)

From the main menu, select the 'SYSTEM' tab, then set the settings below.

NOTE that the main menu may only be accessible after playing your first race after the demo race.

UDP MODE	1
UDP PROTOCOL VERSION	PROJECT CARS 1

rFactor2 (PC)

From the Plug-in package, copy the DLL-file to:

<install directory>\rFactor 2\Bin64\Plugins

Start the game. Within the rFactor 2 game menu:
Content & Settings – Settings – PLUGINS: Set the DLL-file to ON

Ensure that the EDGE 6D and the PC are on the same network segment.

SensorLog (iPhone)

The SensorLog interface on the EDGE 6D system can mirror real-time g-forces from iPhone to EDGE 6D system:

1. Install SensorLog App from App Store.
2. Configure SensorLog app according to the settings below
3. In CONFIGURATION - GENERAL LOGGING SETTINGS: Set 'Log to stream' to 'yes'
4. In main menu: press 'record' button to start logging output

CONFIGURATION

GENERAL LOGGING SETTINGS

Logging rate: 50Hz
Log format: “,”, CSV
JSON pretty print: yes
Fill missing data with previous data: yes
ML friendly data types (csv): no
Device ID: <arbitrary>
Display heading calibration: no
Log to file: no
Log to stream: yes [WHEN STARTING LOGGING]

STREAMING SETTINGS

Mode: client
Protocol: UDP
IP: <ip address of EDGE 6D system> [or use: 255.255.255.255 for broadcast]
Port: 50011, set

HTTP SETTINGS: N/A

SENSORS AND DATA

Raw accelerometer data: yes
Raw gyro data: yes
Raw magnetometer data: no
Unbiase: user acceleration, attitude, gravity, heading, magnetic field, rotation: no
Db peak power, db average power: no
Heading: no

SENSOR SAMPLING RATE UP TO 2HZ: all ‘no’

MANUALLY CHANGED OR CONSTANT DATA: N/A

SENSOR CONFIGURATION: N/A

X-Plane 11/12 (PC)

From the main menu, select: SETTINGS

Then select the tab ‘Data Output’ and ‘General Data Output’.

Here, select ‘Network via UDP’ with the following items:
4. Mach,VVI,g-load
16. Angular Velocities
17. Pitch, roll & headings (optional / to your preference)

Under ‘NETWORK CONFIGURATION’ select ‘Send network data output’, with:
IP Address = <IP address as shown on EDGE 6D dashboard> or 255.255.255.255 (for broadcast)

For X-Plane 11: Port = 49000
For X-Plane 12: Port = 49002

Military and Space applications (DIS IEEE 1278)

The system supports the Distributed Interactive Simulation standard IEEE 1278, as used by simulation software such as Virtual Battle Space. For details, please contact Gforcefactory support.

ADAPTER INTERFACE

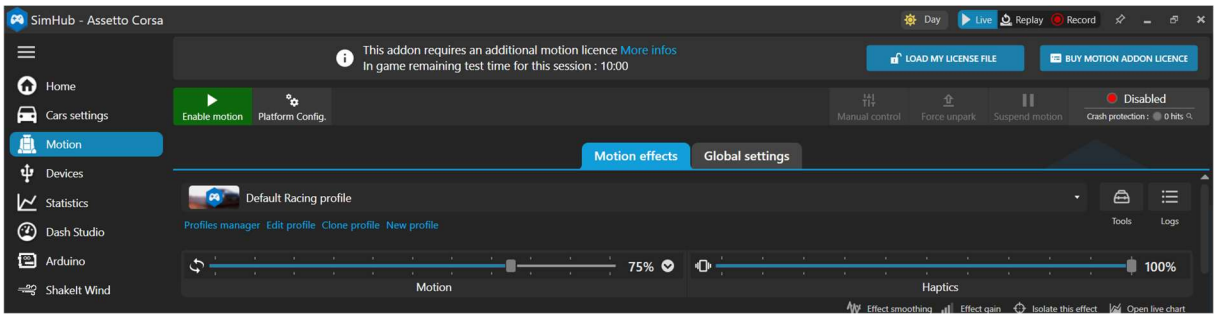
For games that have no native support, the EDGE 6D provides interfaces to connect to adapter software. The following adapter software is supported:

- SimHub
- SimTools
- FlyPT

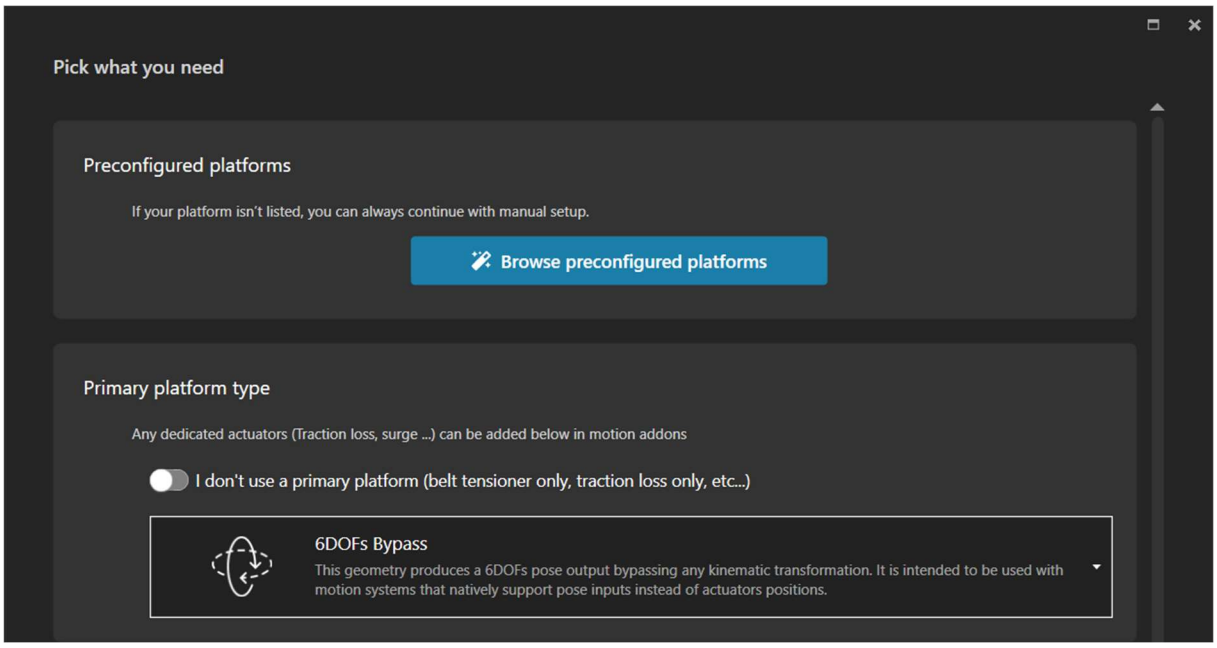
With these adapter software solutions, almost any game can be played with the EDGE 6D system.

<u>SIMHUB</u>
Download and install Simhub from: https://www.simhubdash.com/.

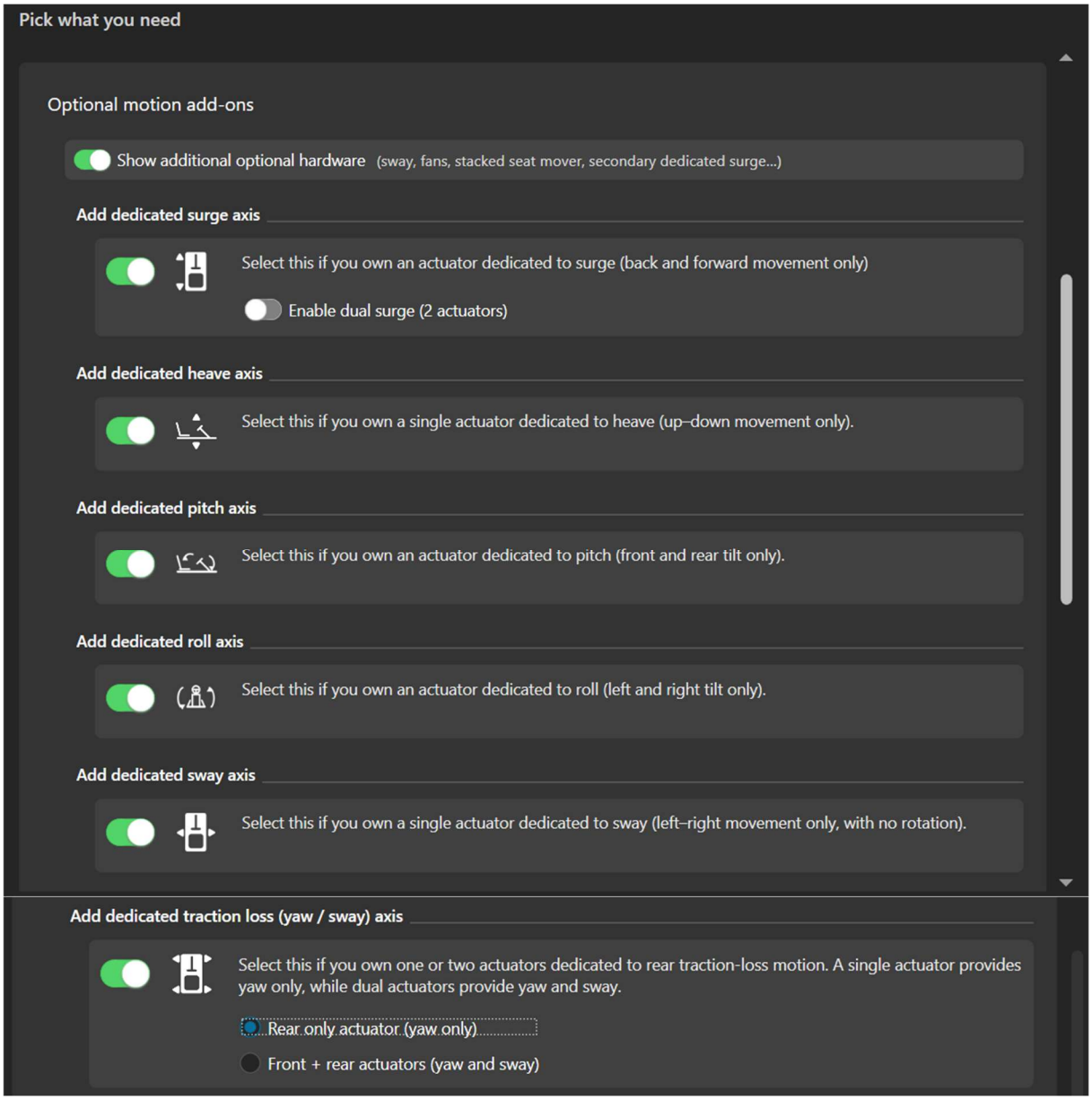
Select MOTION in the left colum and subsequently choose Platform Config.



Then, select Primary platform type and choose 6DOF Bypass



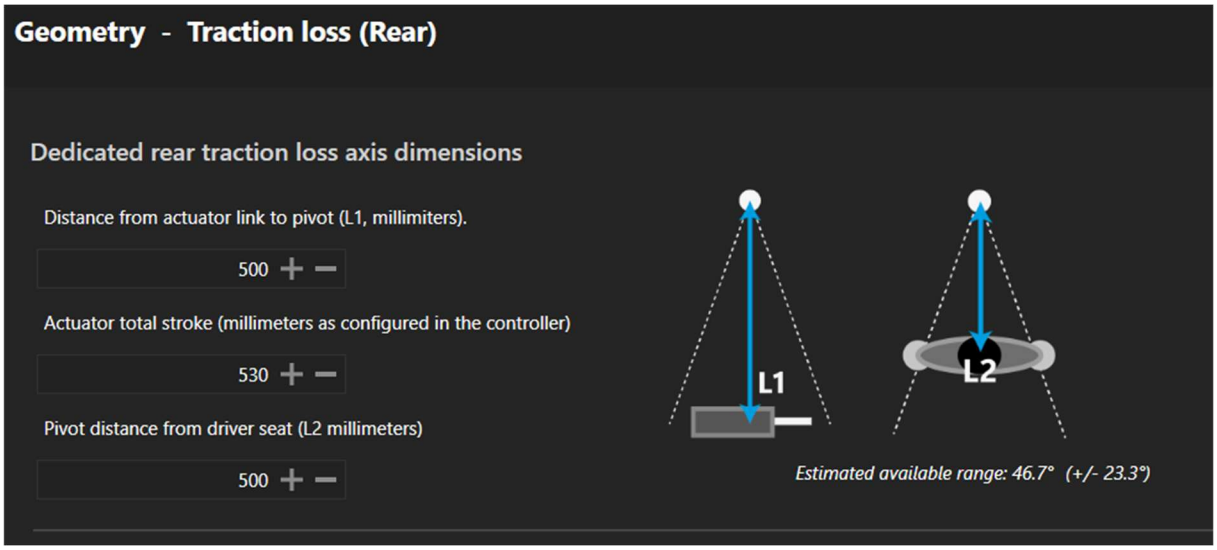
From the menu Optional motion add-ons, select Show additional optional hardware and select surge, sway, heave, roll, pitch, traction loss (yaw)



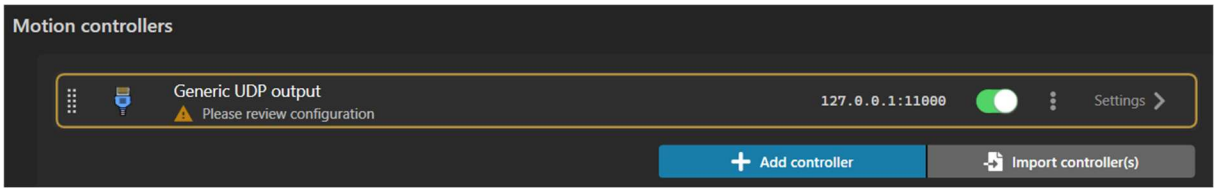
Subsequently, configure the axes as follows:

Surge: 88mm
Heave: 71mm
Pitch: 21.5deg
Roll: 20.5deg
Sway: 96mm

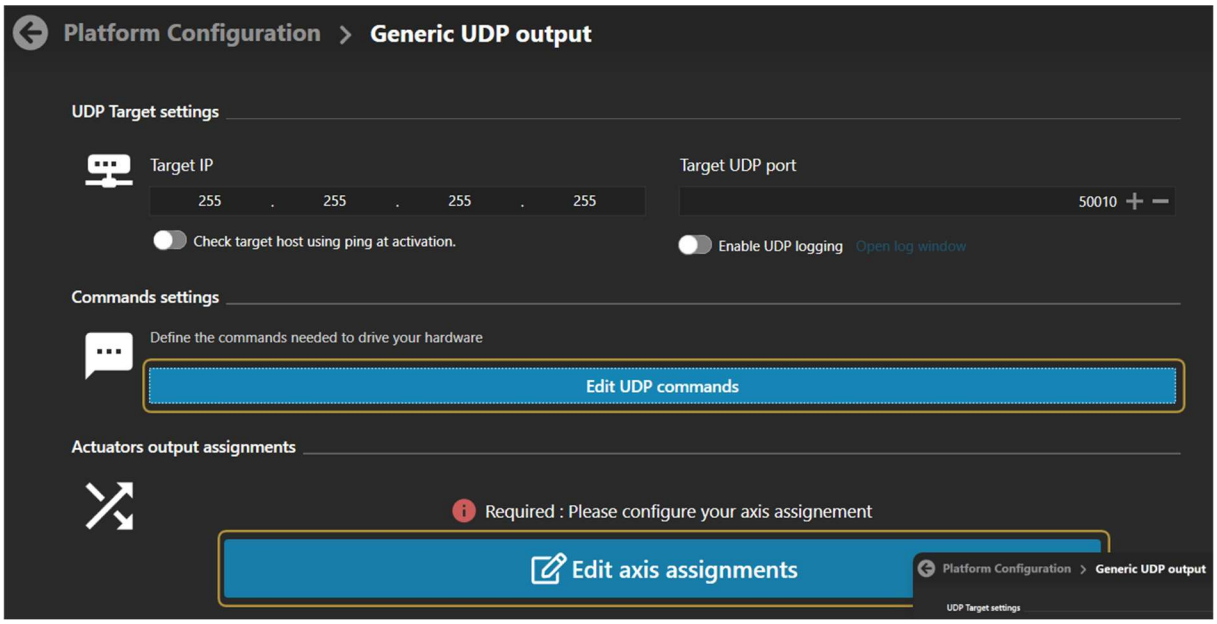
…and Traction loss as follows:



For the platform controller, choose Generic controller and then select Generic UDP output.



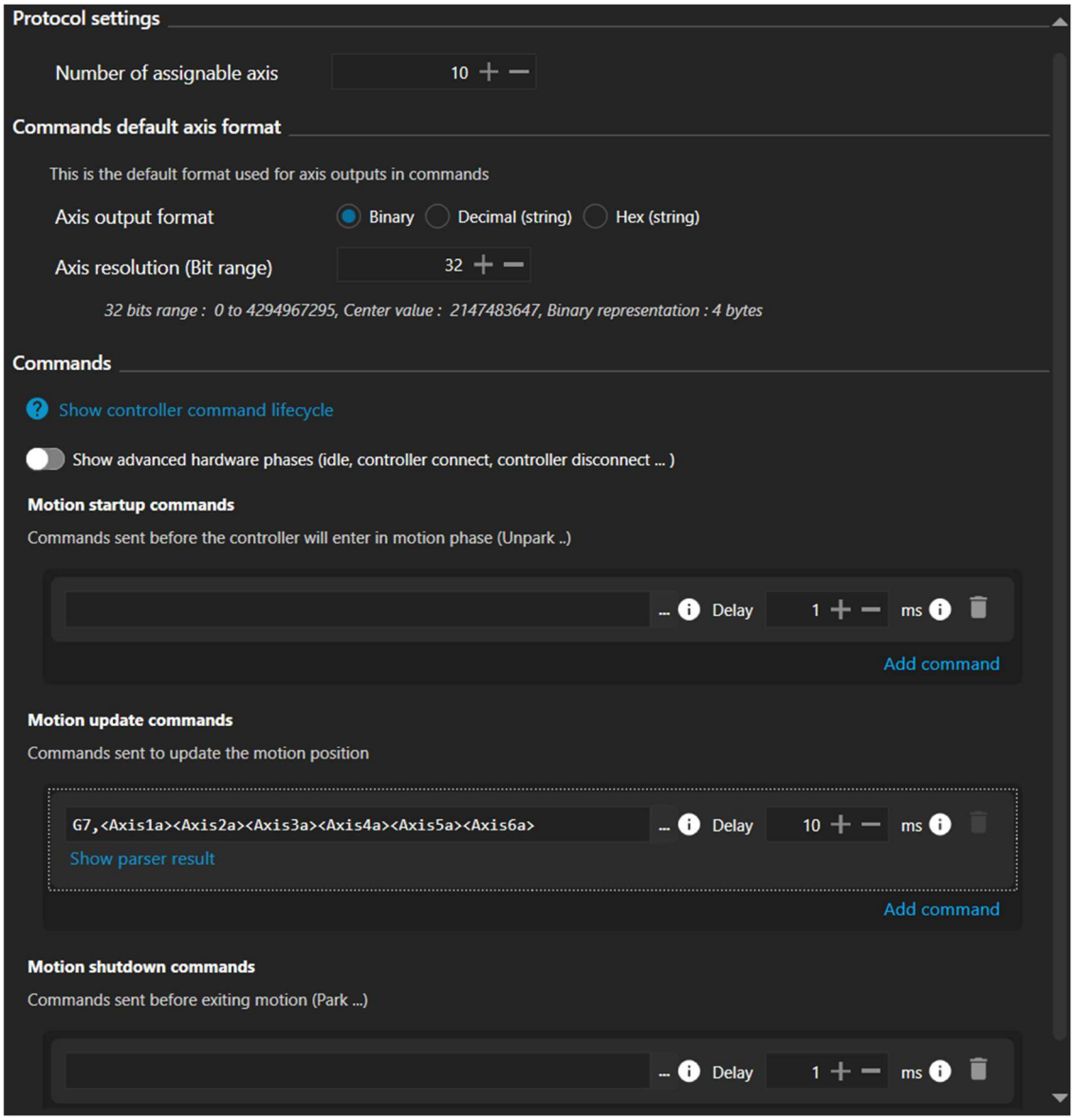
Then, select Settings and enter the IP address of the EDGE 6D system as TargetIP (or use 255.255.255.255 for broadcast), and enter 50010 as Target UDP port.



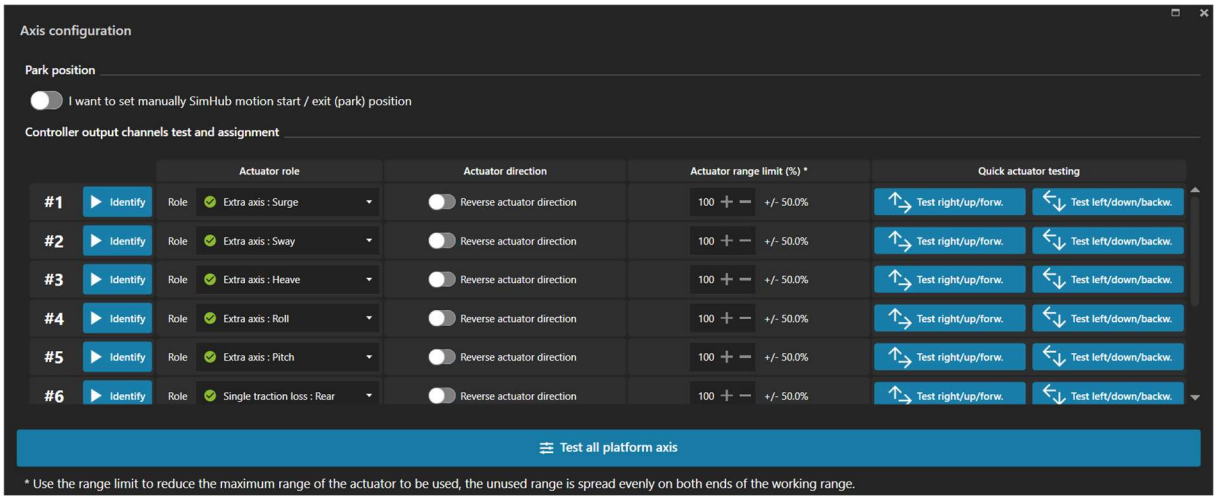
Press Edit UDP commands.

Select Axis output format as Binary, and set the Axis resolution to 32 bit. Further, specify the Motion update command as: G7,<Axis1a><Axis2a><Axis3a><Axis4a><Axis5a><Axis6a>

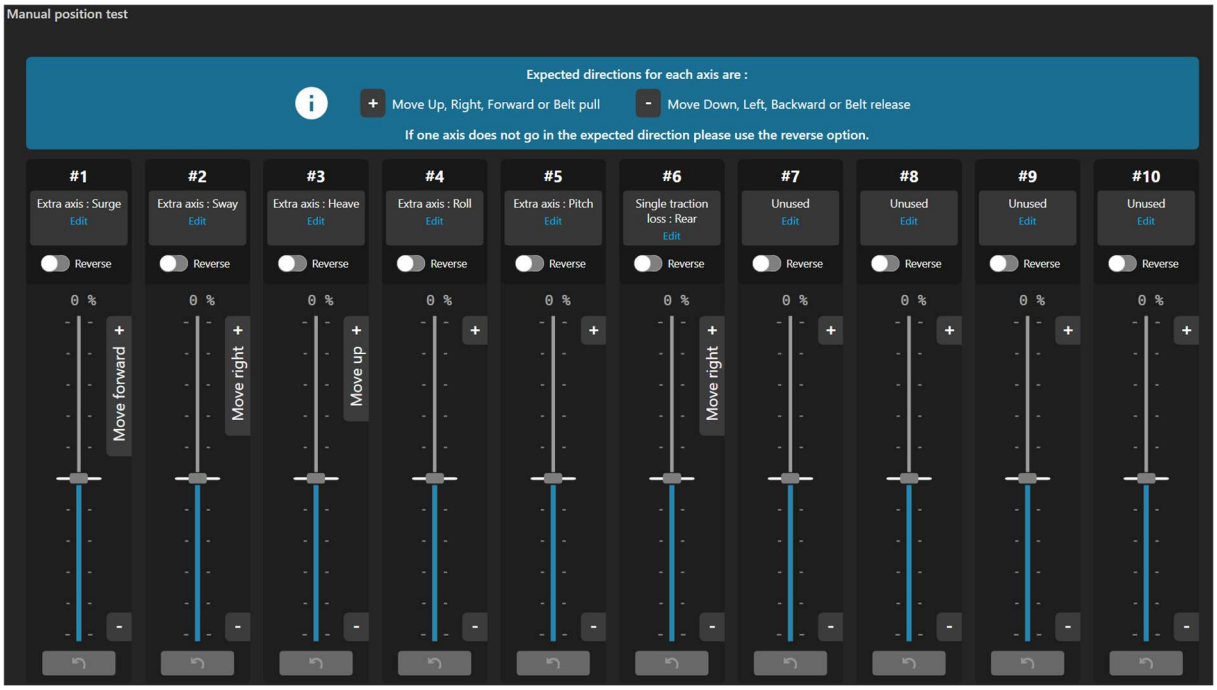
Set delay to 10 ms.



After clicking OK, you select Edit axis assignments.
Assign the six axes to: Surge, Sway, Heave, Roll, Pitch, Traction loss – Rear.



Click on Test all platform axis. Now you can slide each of the six axes. The EDGE 6D should move according to the axis. If the EDGE 6D system does not move (and it shows 0Hz on the small blue/black control dashboard), please verify the target IP-address of the EDGE 6D system.



SIMTOOLS

Simtools can be downloaded from: https://simtools.us

Installation will give you the following applications:

- SimTools GameEngine
- SimTools GameManager
- SimTools PluginUpdater

For downloading plug-ins for games, you need a subscription on the X-Simulator community: https://www.xsimulator.net/simtools-motion-simulator-software/#plugins.

Subsequently, you can download plug-ins from: https://www.xsimulator.net/community/marketplace/categories/game-plugins.2/

Any downloaded plug-in can be installed as follows:

- start SimTools PluginUpdater
- drag the plug-in file onto the PluginUpdater window

After installation of the plug-in, the game should appear in the GameManager.

To verify whether the plug-in was installed correctly, start the game. After starting the game, the GameManager should report 'Connected' and the buttons should change from green color to blue.

For configuring the plug-in, please find instructions below. Please beware that the quality of the plug-ins may differ for each game.

Simtools BASIC interface

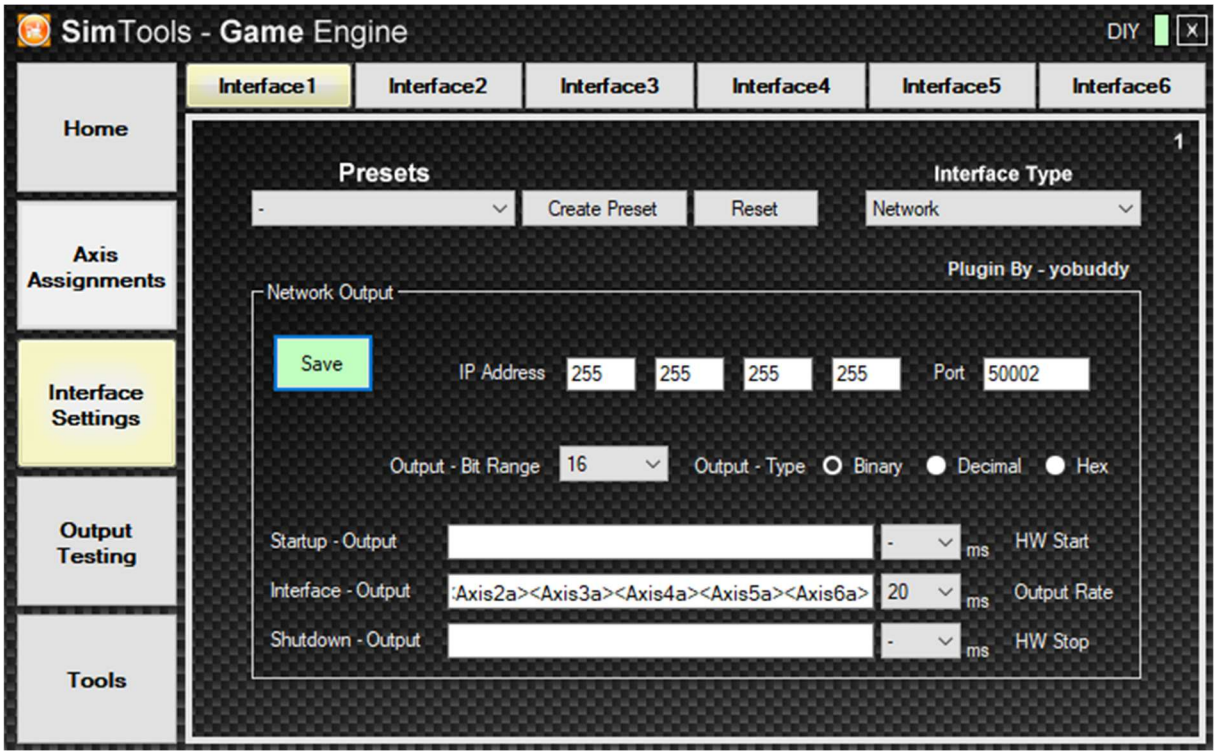
To configure the plug-in you need to configure the Axis assignment and Network interface as follows (see also screenshots):

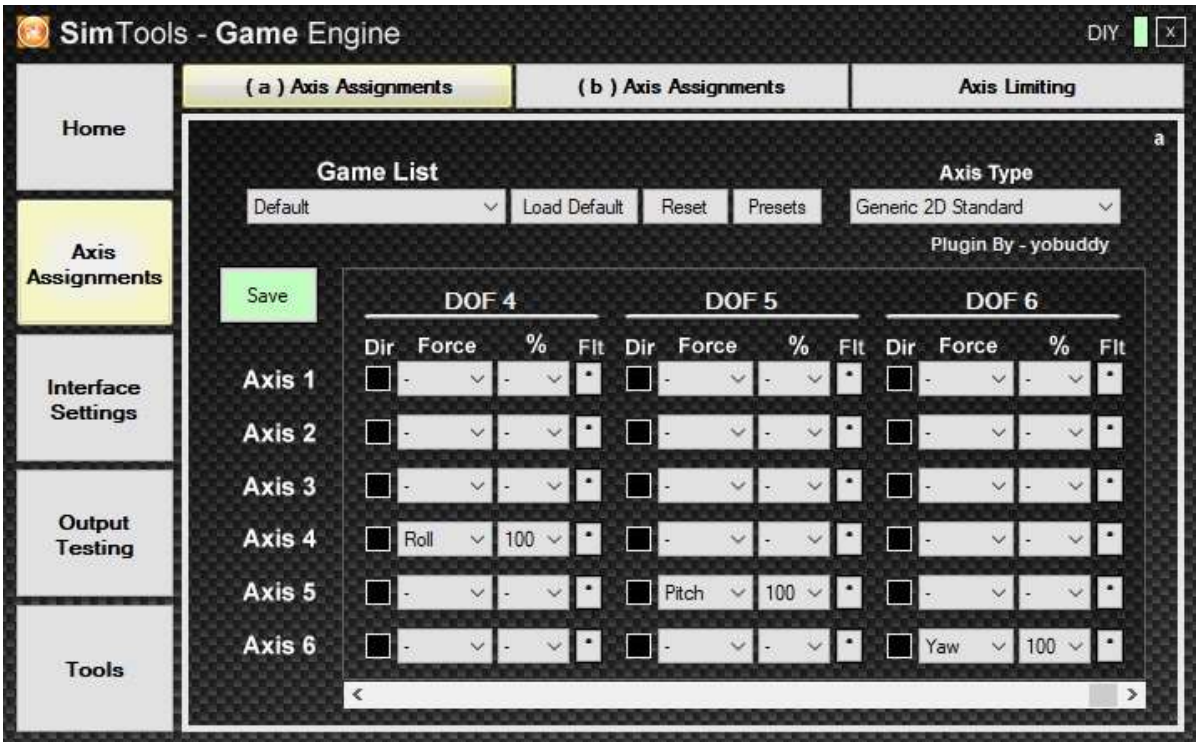
Axis assignment (DOF 1-6): <Surge><Sway><Heave><Roll><Pitch><Yaw>
Network interface: <Axis1a><Axis2a><Axis3a><Axis4a><Axis5a><Axis6a>
Data size: 16 bits
Port: 50002 or 50003 (see below)

Ensure that the <Roll>, <Pitch> and <Yaw> are all set to 100%. This is important, as these dimensions are expressed in angle positions. If you set these dimensions at a lower percentage, anomalies in movements will occur at certain angle positions (e.g. rolling over/looping a plane or cornering a plane/car).

For the port you can either use 50002 or 50003. Using port 50002, the roll and pitch angles are included. In 50003 these angles are not included, so here it is expected that the roll and pitch angles are included in the Surge and Sway as gravity components.

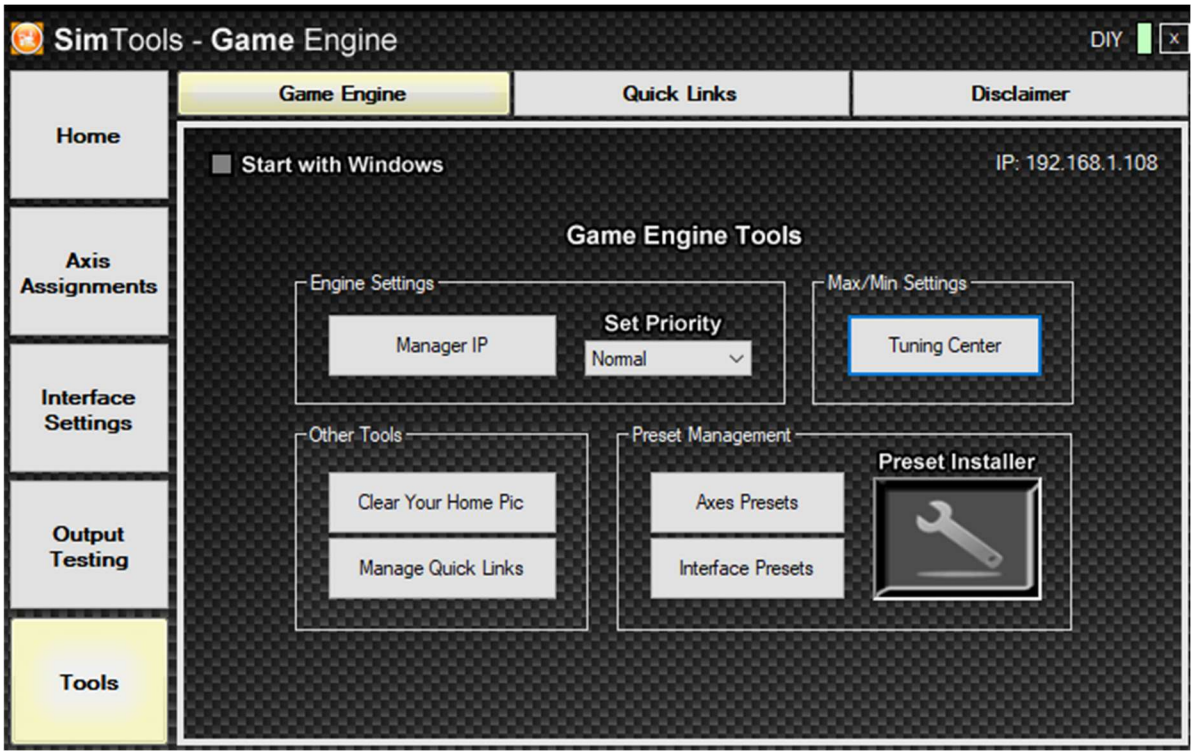
The configuration should look like the pictures below. Note that the Game list must show your game, and the IP address should correspond to the IP address shown on the dashboard of the EDGE 6D system. If your EDGE 6D system is on the same network segment as your PC, you can also configure a broadcast using the IP address 255.255.255.255.

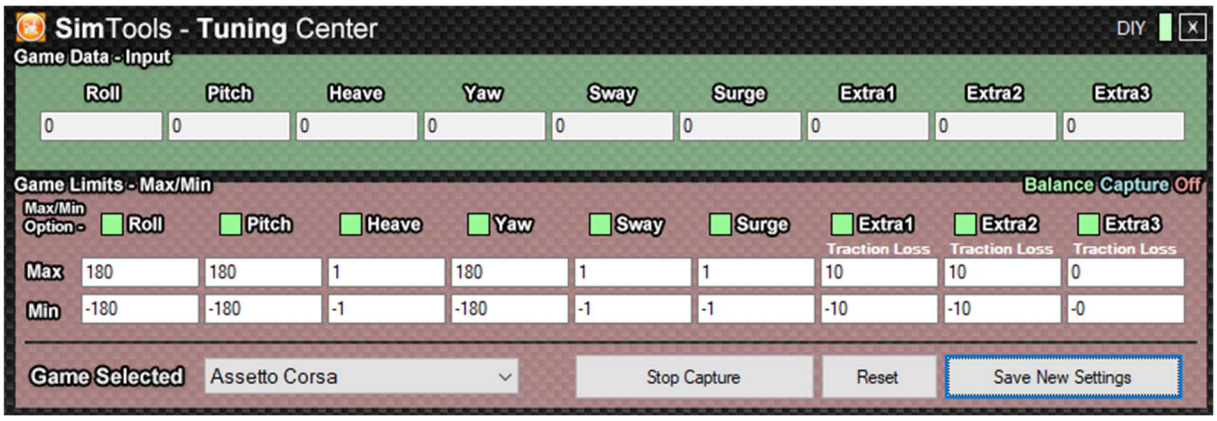




You should now be able to test SimTools with the EDGE6D system through Output testing.

Finally, to further tune the system, be sure to adjust the values in the Tuning Center, accessible through the Tools menu, as follows:





SimTools & FlyPT - ADVANCED interface

The ADVANCED interface can be used to drive both the SimTools and FlyPT Mover adapter software.

For this, please configure the network output as:

IP-address: IP-address of the EDGE 6D system, or use 255.255.255.255
Port: 50004

When using the ADVANCED interface, we strongly advice to use a network cable (not Wifi) from the PC to the EDGE 6D system to avoid jitter and dropped packets.

We recommend using an output frequency between 50 and 100 Hz.

The output string of the ADVANCED interface always starts with:

<71><*version_number*>…

…where <version_number> is 0, 1 or 2.

The remainder of the output string is version dependent, and will be described below.

For all versions: if the output string is NOT well-formed, the EDGE 6D dashboard will display the incoming packet frequency extended with a question mark '?'.

Version 0

This version can be used to drive the EDGE 6D system with SimTools. For this, the output needs to be configured with:

Output – Bit Range: 16
Output – Type: Binary

Interface Output:
<71><*version_number*><*mode_Axis1a*><Axis1a><*mode_Axis2a*><Axis2a><*mode_Axis3a*><Axis3a><*mode_Axis4a*><Axis4a><*mode_Axis5a*><Axis5a><*mode_ Axis6a*><Axis6a>

…where the <*mode_AxisXX*> must be a number, as follows:

0: power offset (Axis 1 represents pod 1, Axis 2 represents pod 2,…)
1: servo angle offset (Axis 1 represents pod 1, Axis 2 represents pod 2,…)
2: pod length offset (Axis 1 represents pod 1, Axis 2 represents pod 2,…)
3: platform offset:

- Axis 1 represents platform surge (+/-)
- Axis 2 represents platform sway (+/-)
- Axis 3 represents platform heave (+/-)
- Axis 4 represents platform roll (+/-)
- Axis 5 represents platform pitch (+/-)
- Axis 6 represents platform yaw (+/-)

4: platform acceleration (Axis 1 = Surge excl gravity, Axis 2 = Sway excl gravity, Axis 3 = Heave, Axis 4=Roll, Axis 5 = Pitch, Axis 6 = Yaw)

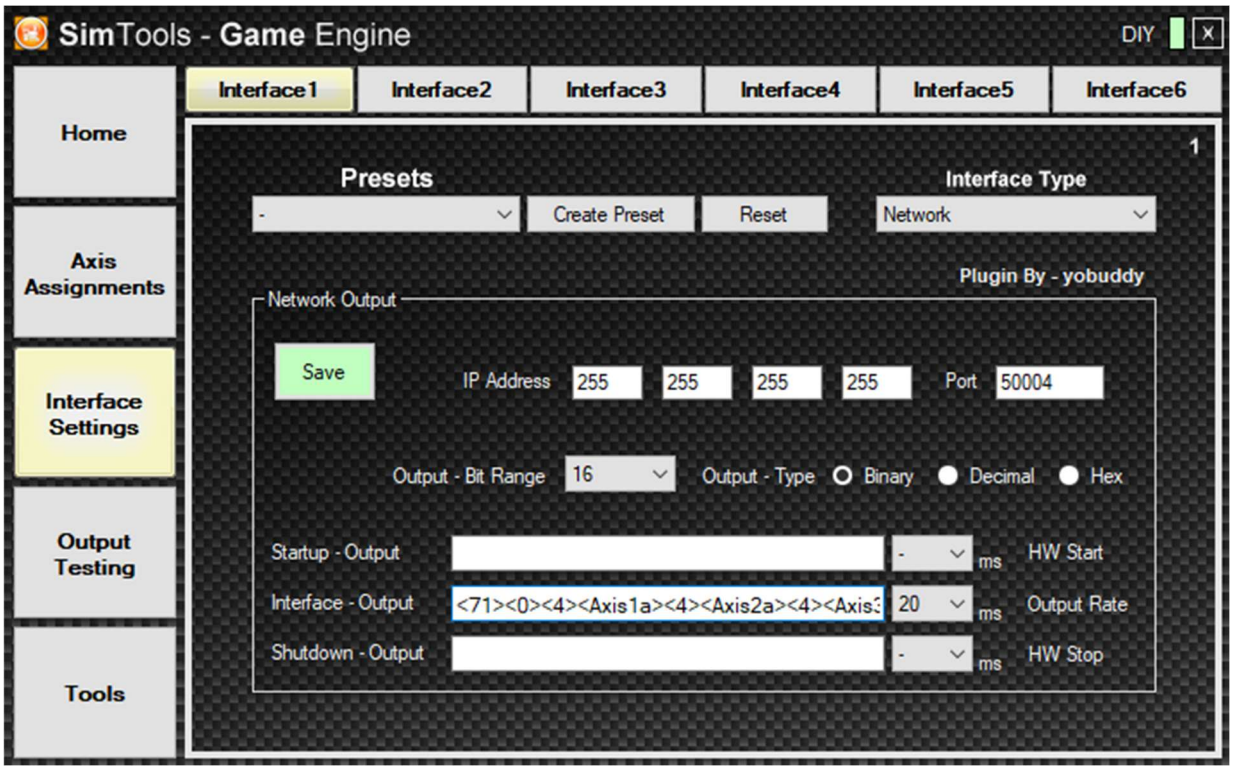
5: platform acceleration (Axis 1 = Surge incl gravity, Axis 2 = Sway incl gravity, Axis 3 = Heave, Axis 4=Roll, Axis 5 = Pitch, Axis 6 = Yaw)

Effectively, the behavior of mode 4 and 5 is the same as the BASIC input, but here it is possible to assign it for each axis individually. This may be useful, if the filter settings of the adapter software do not have the desired result.

The pod numbering starts from the user perspective at the right front and increments clock-wise.

Within SimTools it is possible to assign the game outputs (Surge, Sway, Heave, Roll, Pitch, Yaw) to more than one axis. For example, it is possible to assign the game Surge to the platform surge by assigning Surge to Axis 1, and at the same time assign the game Surge to platform pitch by assigning Surge to Axis 5. For natural behavior we recommend for the Surge on Axis 1 a high-frequency wash-out and for the Surge on Axis 5 a low-pass filter/slow smooth.

As an example, please consider the screenshots below.



The axis assignments are similar to the SimTools BASIC interface.

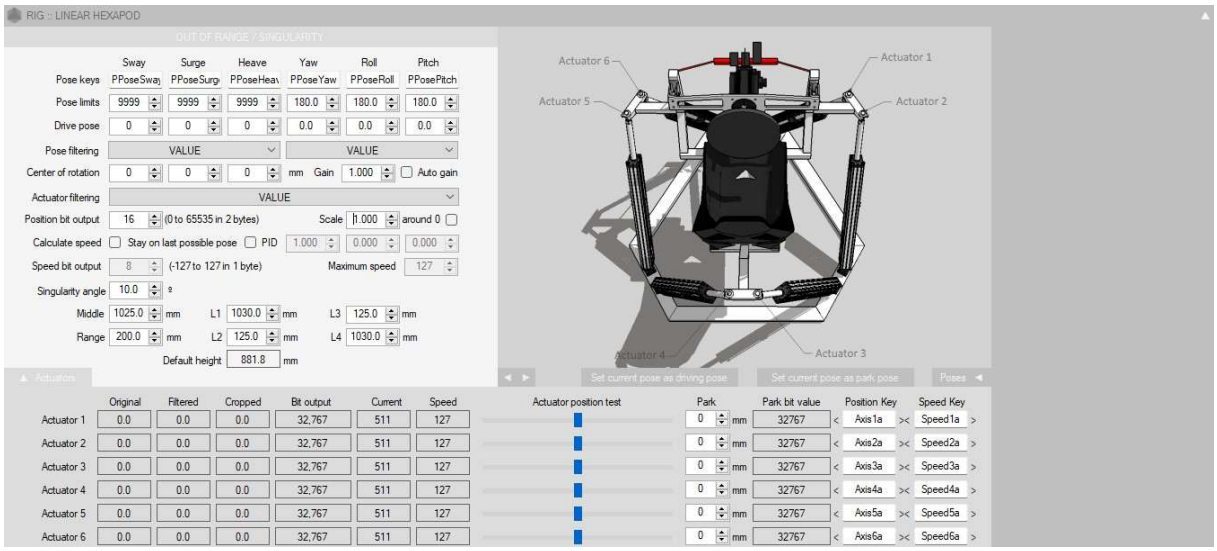
Version 1

This version of the ADVANCED interface can be used to drive FlyPTMover in a basic way. Here we describe only the basics of the FlyPT Mover software. For further details, we recommend reading the FlyPT Mover manual itself.

To configure FlyPT Mover, press the right mouse button on the desktop of the FlyPT Mover application to configure the RIG and the OUTPUT:

RIG
From the FlyPTMover desktop: Add – Rig – Linear hexapod. Then configure as follows:

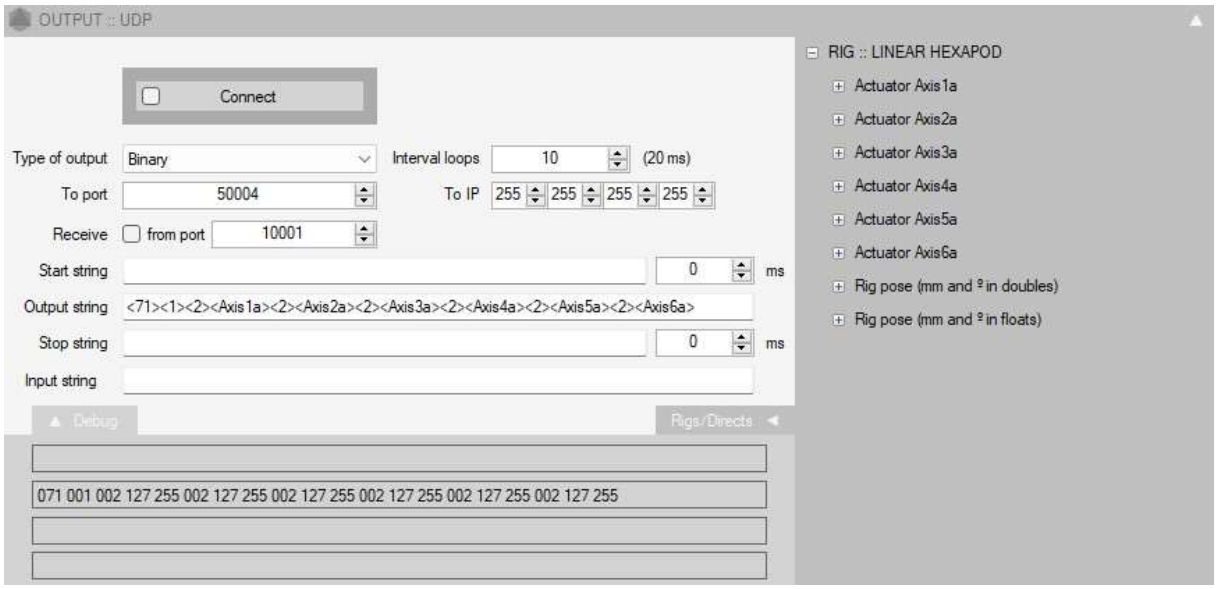
Position bit output: 16



OUTPUT
From the FlyPTMover desktop: Add – Output - UDP. Then configure as follows:

Output String: <71><1><2><Axis1a><2><Axis2a><2><Axis3a><2><Axis4a><2><Axis5a><2><Axis6a>.

With this output string, we effectively define that the actuator positions from the RIG menu are now sent out as 16 bit binaries to the pod positions (mode 2, see descriptions earlier under Version 0) of the EDGE 6D system.



After pressing 'Connect', the EDGE 6D dashboard should now show 50Hz (without question mark).

You can now verify the settings by sliding the 'Actuator position test' in the RIG menu. The corresponding pod should now move with the slider.

As another example, you could also change the output string to:

<71><1><3><Axis1a><3><Axis2a><3><Axis3a><3><Axis4a><3><Axis5a><3><Axis6a>

In this case, the slider of Actuator 1 in the RIG menu will produce a Surge of the EDGE 6D system.

<u>Version 2</u>

This version of the ADVANCED interface can be used to drive FlyPT Mover with more flexibility. For this, you can use the following output string format:

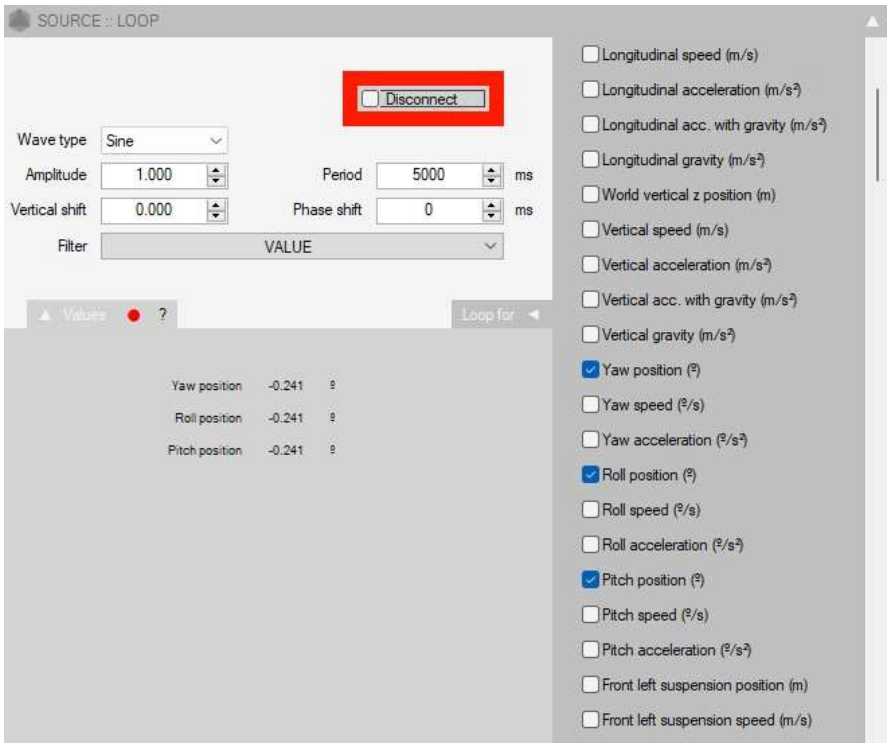
<71><2><*mode_AxisXX*><*AxisXX*><*scale_AxisXX*><*format*><*parameter*>…<0>

…where:
<mode_AxisXXX> [see Version 0]
<AxisXX> the targeted axis of the EDGE 6D (1 to 6)
<scale_AxisXXX> scale to be applied to parameter value (0-255; 100=100%)
<format> the number format of <parameter>:

- 'b' or <98>: 16-bit binary (LSB first) (0-65535)
- 'B' or <66>: 16-bit binary (MSB first) (0-65535)
- 'f' or <102>: 32-bit float (-1.0 to 1.0)
- 'd' or <100>: 64-bit double (-1.0 to 1.0)

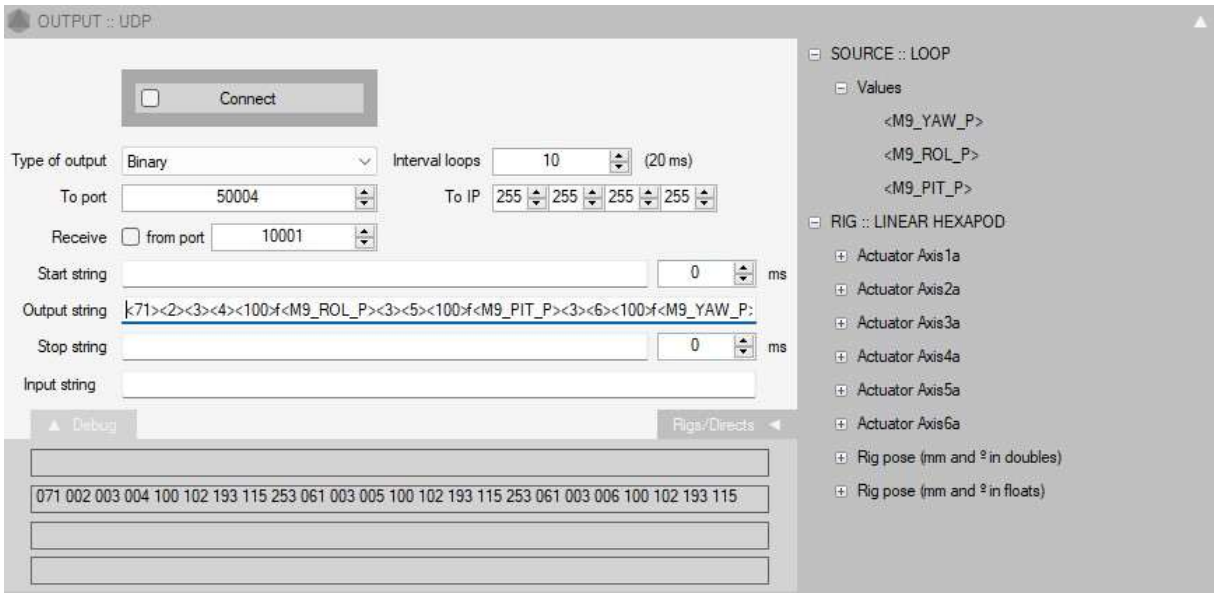
<parameter> output parameter of FlyPT Mover, as available in the right column of the OUTPUT-UDP menu.

For example, we can add SOURCE – LOOP sine pattern as shown below. Note we restricted the Amplitude to match the -1.0 to 1.0 range of floats.



Then, the parameters <M9_YAW_P>, <M9_ROL_P> and <M9_PIT_P> can be assigned to axes 4, 5 and 6 respectively as platform position (<mode_AxisXX> = 3), as follows:

<71><2><3><4><100>f<M9_ROL_P><3><5><100>f<M9_PIT_P><3><6><100>f<M9_YAW_P><0>



After pressing 'Connect', the platform will roll, pitch and yaw according to the sine pattern.

As another example, you could define the output string for rFactor2 as follows:

<71><2>

<4><1><100>f<M12_LAT_A>
<4><2><100>f<M12_LON_A>
<4><3><100>f<M12_VER_A>
<4><4><100>f<M12_ROL_S>
<4><5><100>f<M12_PIT_S>
<4><6><100>f<M12_YAW_S>
<0>

NATIVE INTERFACE
Port: 50001

The NATIVE INTERFACE can be used to drive the platform directly from custom applications (e.g Unreal and Unity). See also the sample code for Unity in the plug-in package that can be downloaded from www.gforcefactory.com/support.

Numbering and coordinate system
From the user perspective, the six pods are numbered clockwise, starting with pod 0 at the front right.

EDGE 6D adopts the ISO coordinate system. The ISO coordinate system means that x is forward, y is leftward and z is upward. Rotations are clockwise, relative to positive direction along the axes.

'World' coordinates refer to the global position/orientation of the user in the simulation world. For example, if a user moves forward, it may be in all directions x, y and z simultaneously, depending on the orientation of the user.

'User' coordinates refer to the (local) position/orientation as experienced by the user. For example, if a user moves forward, it is only in the direction of x.

Platform motion packets
The following motion packets are defined. Packets of different types may be used during the same session, enabling offsets during simulation.

Type	*Meaning*	*Value / Unit*
CHAR	Header	71
CHAR	Packet version	0
CHAR	Motion packet type	77
CHAR	Type 'Servo Power Offset'	0
UINT32	Timestamp of the data	microseconds
FLOAT32	Power Offset 0	-1.0 – 1.0
FLOAT32	Power Offset 1	-1.0 – 1.0
FLOAT32	Power Offset 2	-1.0 – 1.0
FLOAT32	Power Offset 3	-1.0 – 1.0
FLOAT32	Power Offset 4	-1.0 – 1.0
FLOAT32	Power Offset 5	-1.0 – 1.0

CHAR	Header	71
CHAR	Packet version	0
CHAR	Motion type	77
CHAR	Type 'Servo Angle Offset'	1
UINT32	Timestamp of the data	microseconds
FLOAT32	Angle Offset 0	rad (+/-)
FLOAT32	Angle Offset 1	rad (+/-)
FLOAT32	Angle Offset 2	rad (+/-)
FLOAT32	Angle Offset 3	rad (+/-)
FLOAT32	Angle Offset 4	rad (+/-)
FLOAT32	Angle Offset 5	rad (+/-)

CHAR	Header	71
CHAR	Packet version	0
CHAR	Motion type	77
CHAR	Type ‘Servo Length Offset’	2
UINT32	Timestamp of the data	microseconds
FLOAT32	Length Offset 0	m (+/-)
FLOAT32	Length Offset 1	m (+/-)
FLOAT32	Length Offset 2	m (+/-)
FLOAT32	Length Offset 3	m (+/-)
FLOAT32	Length Offset 4	m (+/-)
FLOAT32	Length Offset 5	m (+/-)

CHAR	Header	71
CHAR	Packet version	0
CHAR	Motion type	77
CHAR	Type ‘Platform position’	3
UINT32	Timestamp of the data	microseconds
FLOAT32	Tx – platform position	m (+/-)
FLOAT32	Ty – platform position	m (+/-)
FLOAT32	Tz – platform position	m (+/-)
FLOAT32	Rx – platform orientation	rad (+/-)
FLOAT32	Ry – platform orientation	rad (+/-)
FLOAT32	Rz – platform orientation	rad (+/-)

CHAR	Header	71
CHAR	Packet version	0
CHAR	Motion type	77
CHAR	Type ‘User incl. gravity and centrifugal’	4
UINT32	Timestamp of the data	microseconds
FLOAT32	Tx – acceleration incl. gravity and centrifugal	m/s2 (user)
FLOAT32	Ty – acceleration incl. gravity and centrifugal	m/s2 (user)
FLOAT32	Tz – acceleration incl. gravity and centrifugal	m/s2 (user)
FLOAT32	Rx – rotation speed	rad/s (user)
FLOAT32	Ry – rotation speed	rad/s (user)
FLOAT32	Rz – rotation speed	rad/s (user)

CHAR	Header	71
CHAR	Packet version	0
CHAR	Motion type	77
CHAR	Type ‘User incl. centrifugal’	5
UINT32	Timestamp of the data	microseconds
FLOAT32	Tx – acceleration incl. centrifugal	m/s2 (user)
FLOAT32	Ty – acceleration incl. centrifugal	m/s2 (user)
FLOAT32	Tz – acceleration incl. centrifugal	m/s2 (user)
FLOAT32	Rx – orientation	rad (user)
FLOAT32	Ry – orientation	rad (user)
FLOAT32	Rz – orientation	rad (user)

CHAR	Header	71
CHAR	Packet version	0
CHAR	Motion type	77
CHAR	Type ‘World speed & orientation’	6
UINT32	Timestamp of the data	microseconds
FLOAT32	Tx – speed	m/s (world)
FLOAT32	Ty – speed	m/s (world)
FLOAT32	Tz – speed	m/s (world)
FLOAT32	Rx –orientation	rad (world)
FLOAT32	Ry –orientation	rad (world)
FLOAT32	Rz –orientation	rad (world)

Platform commands

It is possible to send commands to start platform logging or to change the state of the EDGE 6D system.

Platform logging

Platform logging is initiated by sending a log COMMAND UDP packet by the host computer to port 50001 of the system.

The log COMMAND packet has the following format:

CHAR	Header	71
CHAR	Packet version	0
CHAR	Command type	76
CHAR	Packet type	Power = 0 Angle = 1 Length = 2 Platform position = 3 Acceleration and rotation = 4 LOG RESET = 255

Subsequently, the EDGE 6D system will respond to the host computer at port 50001 with corresponding log DATA packets at 200 Hz, with the following structure:

Type	*Meaning*	*Value/Unit*
CHAR	Header	71
CHAR	Packet version	0
CHAR	Logging type	76
CHAR	Number of log DATA packets	0-255

…followed by the corresponding log DATA packets, as specified below:

Type	*Meaning*	*Value / Unit*
DATA		
CHAR	Type 'Power'	0
FLOAT32	Power 0	-1.0 – 1.0
FLOAT32	Power 1	-1.0 – 1.0
FLOAT32	Power 2	-1.0 – 1.0
FLOAT32	Power 3	-1.0 – 1.0
FLOAT32	Power 4	-1.0 – 1.0
FLOAT32	Power 5	-1.0 – 1.0

CHAR	Type 'Angle'	1
FLOAT32	Angle 0	rad (0-2pi)
FLOAT32	Angle 1	rad (0-2pi)
FLOAT32	Angle 2	rad (0-2pi)
FLOAT32	Angle 3	rad (0-2pi)
FLOAT32	Angle 4	rad (0-2pi)
FLOAT32	Angle 5	rad (0-2pi)

CHAR	Type 'Length'	2
FLOAT32	Length 0	m (+/-)
FLOAT32	Length 1	m (+/-)
FLOAT32	Length 2	m (+/-)
FLOAT32	Length 3	m (+/-)
FLOAT32	Length 4	m (+/-)
FLOAT32	Length 5	m (+/-)

CHAR	Type 'Platform position'	3
FLOAT32	Tx – platform displacement	m (+/-)
FLOAT32	Ty – platform displacement	m (+/-)
FLOAT32	Tz – platform displacement	m (+/-)
FLOAT32	Rx – platform rotation	rad (+/-)
FLOAT32	Ry – platform rotation	rad (+/-)
FLOAT32	Rz – platform rotation	rad (+/-)

CHAR	Type ' Acceleration and rotation'	4
FLOAT32	Tx – acceleration	m/s2 (+/-)
FLOAT32	Ty – acceleration	m/s2 (+/-)
FLOAT32	Tz – acceleration	m/s2 (+/-)
FLOAT32	Rx – rotation	rad (+/-)
FLOAT32	Ry – rotation	rad (+/-)
FLOAT32	Rz – rotation	rad (+/-)

State commands

It is possible to change the state of the EDGE 6D system by sending a log COMMAND UDP packet by the host computer to port 50001 of the system. State changes will be forgotten once the system is powered down.

The COMMAND packet has the following format:

Header	CHAR	71
Packet version	CHAR	0
Command type	CHAR	67
Command	CHAR	ToState = 1, SetVolume = 2, SetPreset = 3, SetFilter = 4, ReadState = 5, ReadVolume = 6, ReadPreset = 7, ReadFilter = 8, ReadSeatBelt = 9
<command specific parameters>	<see below>	<see below>

In case the COMMAND is a read command, the following packet will be returned:

Header	CHAR	71
Packet version	CHAR	0
Command type	CHAR	82
Command	CHAR	ToState = 1, SetVolume = 2, SetPreset = 3, SetFilter = 4, ReadState = 5, ReadVolume = 6, ReadPreset = 7, ReadFilter = 8, ReadSeatBelt = 9
<command specific parameters>	<see below>	<see below>

ToState
Sets the EDGE 6D either in MOTION state or in READY state

Command specific parameters:

ToState	CHAR	ToMotion = 0, ToReady = 1

SetVolume
Sets the motion intensity of the system

Command specific parameters:

Volume	CHAR	0 - 100

SetPreset
Sets the EDGE 6D to the preset with the designated number (if available).

Command specific parameters:

Preset number	CHAR	0-255

SetFilter
Configures the parameters in the appropriate EDGE 6D filter. This command can be used for fine tuning the system for specific applications. For more information, please contact Gforcefactory support.

ReadState
Returns whether the EDGE 6D is in MOTION state or not

Command specific parameters to send: NONE

Command specific parameters to receive:

State	CHAR	Off = 0, OffToReady = 1, Ready = 2, Motion = 3, ReadyToMotion = 4, MotionToReady = 5, MotionToUnsafe = 6, Unsafe = 7, MotionToSuspend = 8, Suspended = 9, Calibrating = 10, Paused = 11, Error = 12

ReadVolume
Returns the motion intensity displayed on the dashboard.

Command specific parameters to send: NONE

Command specific parameters to receive:

Volume	CHAR	0-100

ReadPreset
Returns the filter preset that is currently active.

Command specific parameters to send: NONE

Command specific parameters to receive:

Preset	CHAR	0-255

ReadFilter
Returns the filter settings of the corresponding filter. For more information, please contact Gforcefactory support.

ReadSeatBelt
Returns the current state of the active seat belt.

Command specific parameters to send: NONE

Command specific parameters to receive:

SeatBeltState	CHAR	BIT0: seat belt open (0) / closed (1) BIT1: seat belt detected: no (0) / yes (1) (seat belt is only detected after the first close)