

Lince software

Quick reference



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1. INSTALLATION

1.1 SOFTWARE REQUIREMENTS

The Lince software requires the following elements to be installed in a PC to operate correctly:

- 32/64 bit Windows XP/7/8 operating system
- .NET Framework 4
- Visual C++ 2005 Redistributable:
 - o <http://www.microsoft.com/es-es/download/details.aspx?id=18471>
 - o <http://www.microsoft.com/es-es/download/details.aspx?id=5638>
- Visual C++ 2012 Redistributable:
 - o <http://www.microsoft.com/es-es/download/details.aspx?id=30679>

The user will have an installer that will copy whatever is required to make the application work onto the PC file system. A shortcut to the application will be created on the desktop.

1.2 SIMULATOR PLUGINS

The software communication with the simulators is done through the API provided by each of the simulators. Some do not require any action by the user, whereas others require files to be copied or configured in a given way.

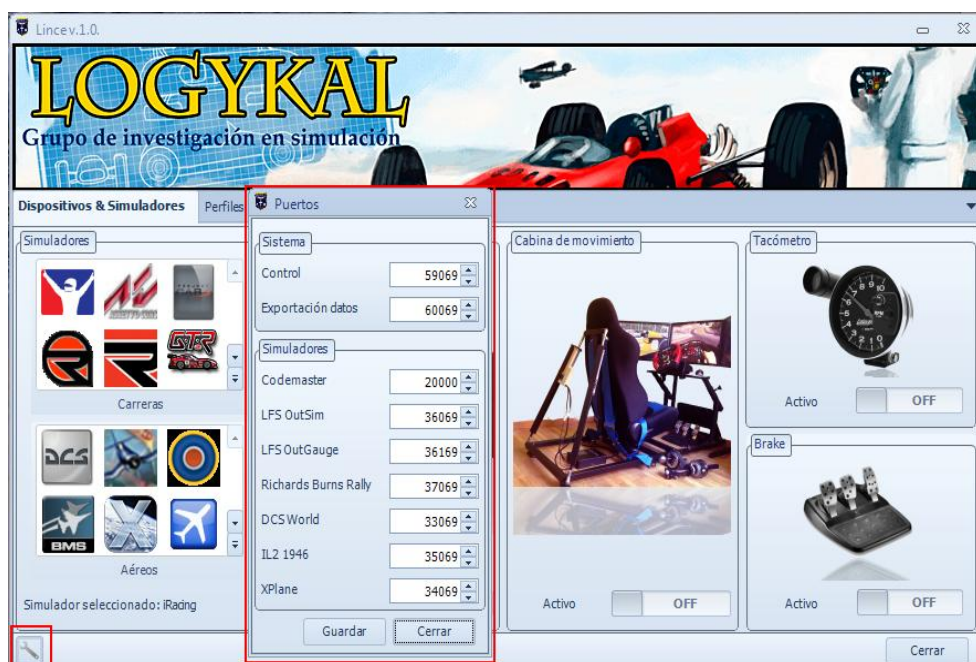


Figure 1-1. Ports Configuration

Lince software

The following list includes the instructions to be followed to operate the API of each simulator:

Simulator	Configuration
iRacing	N/A
Assetto Corsa	Copy from /plugins/Assetto/Lince folder to the next folder in your PC "\$/YourSteamFolder\SteamApps\common\assetto corsa\apps\python"
pCars	Active Shared Memory inside the game-> General Options
Rfactor	Paste the LinceRfactor.dll plugin in the Plugins folder of the simulator.
Rfactor2	Paste the LinceRfactor2.dll plugin in the Plugins folder of the simulator.
Simbin series	N/A, except GTR2. Edit the user PLR: Write Shared Memory="1"
Codemaster series	Edit the hardware_settings_config.xml file of each simulator and include the following line: <motion enabled="true" ip="127.0.0.1" port="20000" delay="0" extradata="1" />
Kart Racing Pro	Paste the LinceKRP.dll plugin in the Plugins folder of the simulator.
Live for Speed	Edit the cfg.txt file in the simulator folder with the following values: OutSim Mode 1 OutSim Delay 0 OutSim IP 127.0.0.1 OutSim Port 36069 OutSim ID 0 OutGauge Mode 1 OutGauge Delay 0 OutGauge IP 127.0.0.1 OutGauge Port 36169
RBR	Run the attached program: RBRRealtimePhysics.exe
Game Stock Car	Paste the LinceGSC.dll plugin in the Plugins folder of the simulator.

ETS2	Read the file Readme.txt included in plugins/ETS2 folder
DCS World	** Instructions at the end of this table
X-Plane	Configure the export of pitch and roll data within the simulator, port = 34069. See picture 1.2
IL2 1946	Add this section to the conf.ini file: [DeviceLink] port=35069
Falcon 4	N/A

** Instructions to configure DCS World:

Modify the export.lua file and include the following parameters in the functions:

function LuaExportStart()

```
package.path = package.path.."; \\LuaSocket\\?.lua"
package.cpath = package.cpath.."; \\LuaSocket\\?.dll"
host, port = "localhost", 33069
socket = require("socket")
ip = socket.try(socket.dns.toip(host))
udp = socket.try(socket.udp())
```

end

function LinceData ()

```
aircraft = LoGetObjectById(LoGetPlayerPlaneId())
MainPanel = GetDevice(0)
local pitch, bank, yaw = LoGetADIPitchBankYaw()
local accel = LoGetAccelerationUnits()
local altBar = LoGetAltitudeAboveSeaLevel()
local altRad = LoGetAltitudeAboveGroundLevel()
local trueSpeed = LoGetTrueAirSpeed()
local motionData = string.format("LinceData:%.4f;%.4f;%.4f;%.4f;%.4f;%.4f;%f;%f;%f", pitch, bank,
yaw, accel.x, accel.y, accel.z, altBar, altRad, trueSpeed)
socket.try(udp:sendto(motionData, ip, port))
```

end

function LuaExportBeforeNextFrame()

```
LinceData()
```

end

function LuaExportAfterNextFrame()

```
LinceData()
```


1.3 LINCE REMOTE

With this new feature, you can control Lince from your Android device. Before the installation, you must check that your Android system is 3.0 or higher. You only need to connect your PC and your Android in the same net (for example, connect the devices to the same router through wifi or link)

1.3.1 PC

Lince accepts any control from our Android/iOS application. You only need to configure a net port in "Ports configuration" window (Figure 1-1). By default, the ports is configured as 59069. Please, check this port is free in your firewall/antivirus.

1.3.2 Android

The installation file is located at "/plugins/Android/LinceRemote.apk" inside your Lince installation folder. You must copy this into your android device and follow the next steps:

1. Check in your devices that you can install applications from unknow sources. In my device, there is a option in: "Settings->Security->Unknow sources", set "ON"
2. Installar LinceRemote.apk aplciation.
3. Unset the first step.
4. Run Lince Remote in your devices. Press Settings icon:



Figure 1-3. Configuración de Lince Remote

5. Enter your PC IP and the ports configured in Lince.

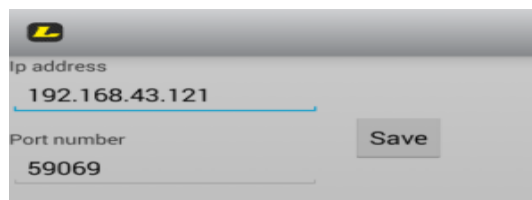


Figure 1-4. IP/Puerto

6. Press Save button
7. Change to Motion tab and test any control.

We are adding new features to this application, like load/save profiles, refresh changes in Lince, etc.

2. MOTION COCKPIT

2.1 GENERAL

Select Motion Cockpit tab. This tab includes all the system configuration, parameter adjustments and tests.

2.1.1 Actuators

This menu allows the hardware configuration of each system to be selected:

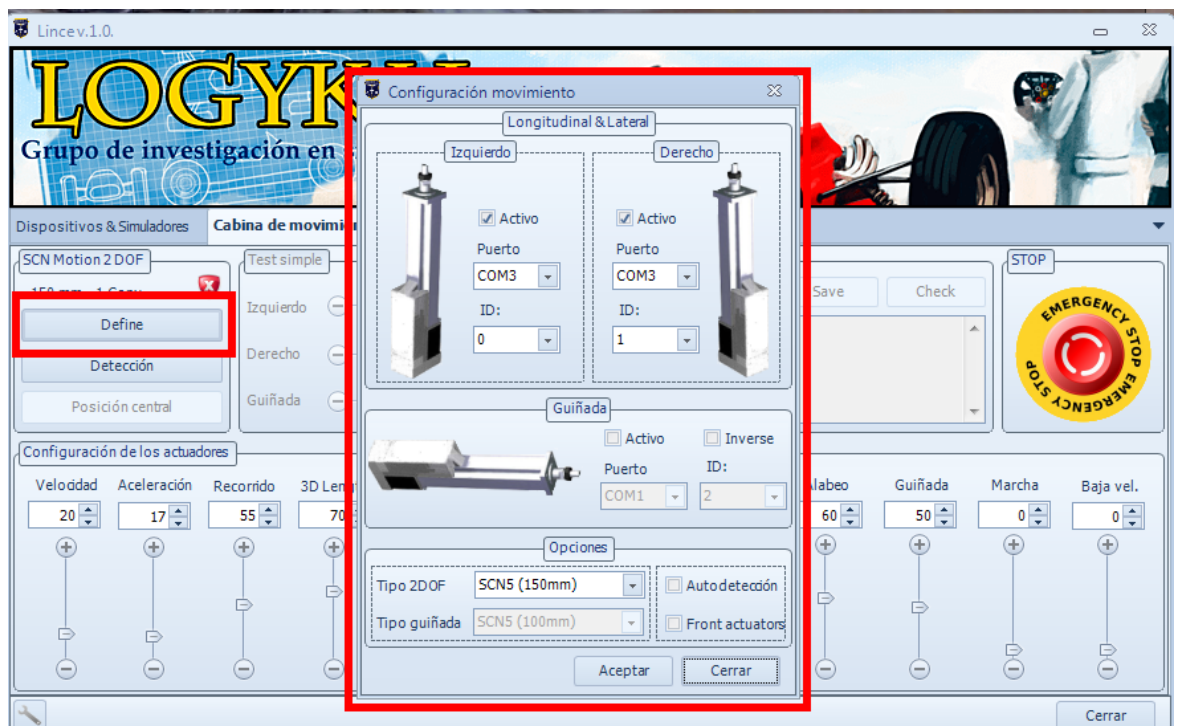


Figure 2-1. List of available actuators

2.1.1.1 1 USB-RS485 Converter

This configuration uses a single USB – RS-485 converter to communicate with two actuators. In this case, each actuator needs to have a different ID. This ID can be changed with the tool provided by the actuator manufacturer.

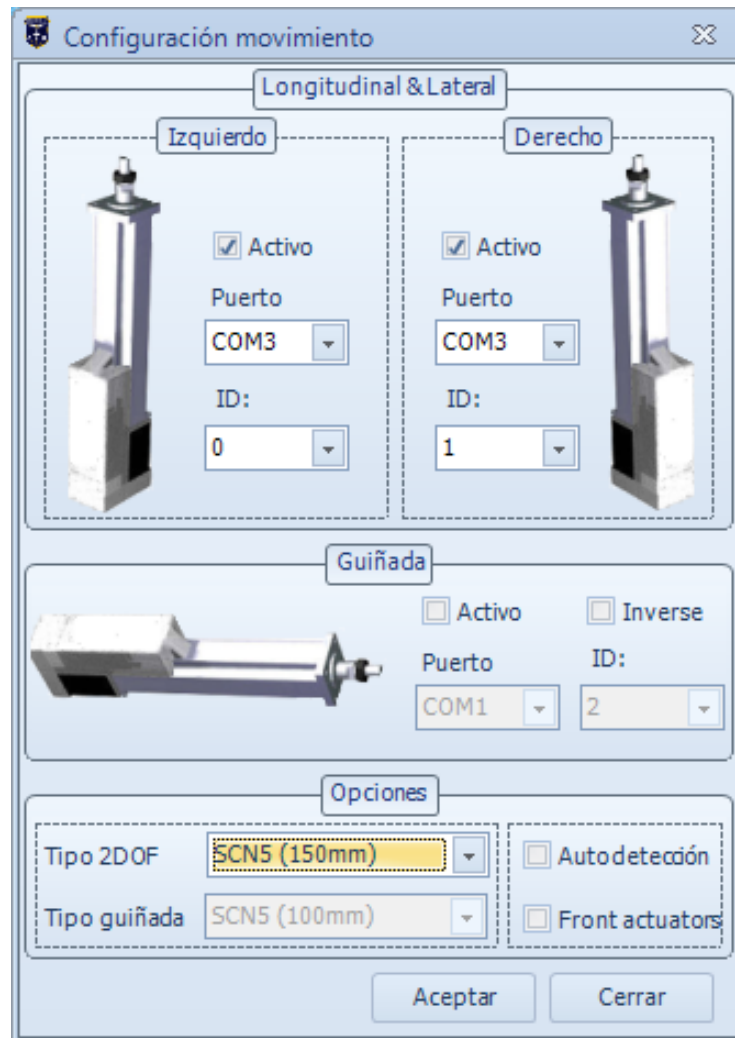


Figure 2-2. Communication with two actuators, one converter

The operation to start the communication with the actuators is as follows:

1. Use the COM selector to select the COM communication port where the converter is connected
2. Use Id Left and Id Right to select the IDs of every actuator
3. After Click Accept Button, then Click the Find button. A confirmation message will appear if the detection was successful or not possible.
4. Once the detection has been successful, the Find button will be hidden and the Calibration button will be available. This button calibrates both actuators.

2.1.1.2 2 USB-RS485 Converter

This configuration uses two USB – RS-485 converters that are connected to a single SCN5 actuator.

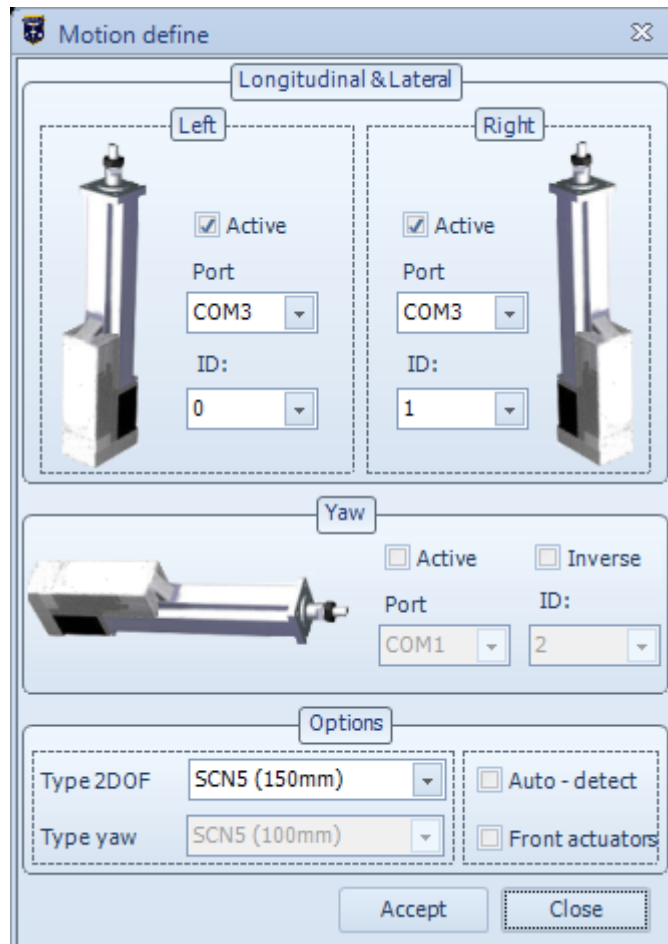


Figure 2-3. Communication with two actuators, two converters

The operation to communicate with two actuators is similar to the SCNX operation. The same steps have to be followed with both COM ports.

2.1.2 Actuator Settings

The application includes a series of settings that provide basic and sufficient control over the actuator operation. These controls affect both actuators simultaneously.

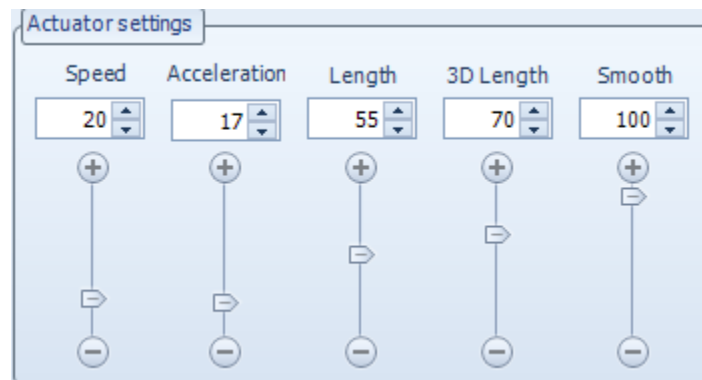


Figure 2-4. Actuator configuration controls

All selectors have a range between 0 and 100 and alter the following configuration:

- **Speed.** Actuators can reach a speed of 400 mm/sec. This control allows the percentage of the maximum actuator speed to be selected.
- **Acceleration.** Actuators have a maximum acceleration of 200 mm/sec². This control allows the percentage of the maximum actuator acceleration to be selected.
- **Length.** This control varies the maximum length of motion of both actuators.
- **3D Length.** This control varies the maximum length of motion of the third actuator.
- **Smooth.** This control varies the motion smooth.

2.1.3 Motion settings

All the simulators that are supported in this software generate motion values. These values are exported through the internal API and are then processed so that a position is generated in the actuators to simulate the motion on the seat position.

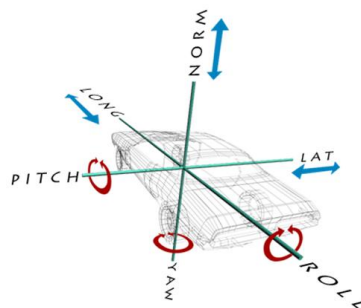


Figure 2-5. Motion axes of a vehicle

The effects provided by every vehicle can be adjusted by means of a series of controls, which range between 0% and 100% of the maximum effects for every simulator.

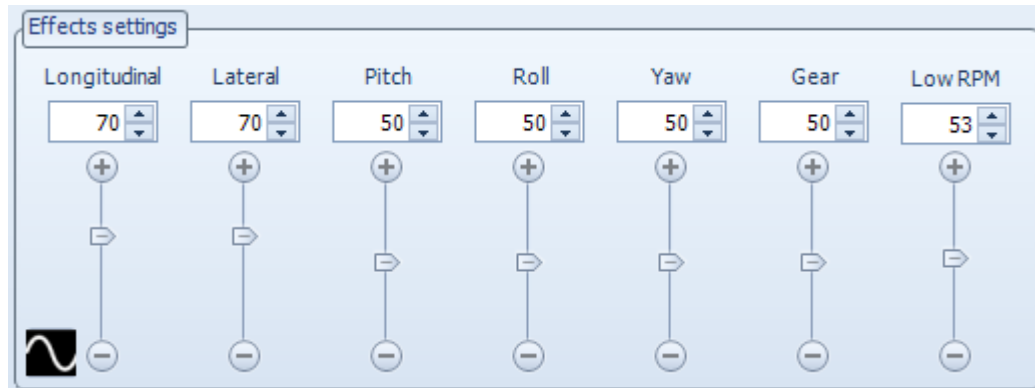


Figure 2-6. Effect configuration controls

- **Longitudinal.** This varies the effect on the seat due to the motion of the longitudinal axis.
- **Lateral.** This varies the effect on the seat due to the motion of the lateral axis.
- **Pitch.** This varies the effect on the seat due to the position of the pitch axis.
- **Roll.** This varies the effect on the seat due to the position of the roll axis.
- **Yaw.** This varies the effect on the seat due to the position of the yaw axis.
- **Gear.** This varies the effect on the seat due to the gear change.
- **Low RPM..** Add a vibration effect at lows RPMs with car simulators. **Be careful!** This mode could damage your actuators. Set value 0 to deactivate.
- **Wave Signal.** Work in progress.

3. PROFILES

You can load, save and delete any profile from the Profiles Tab:

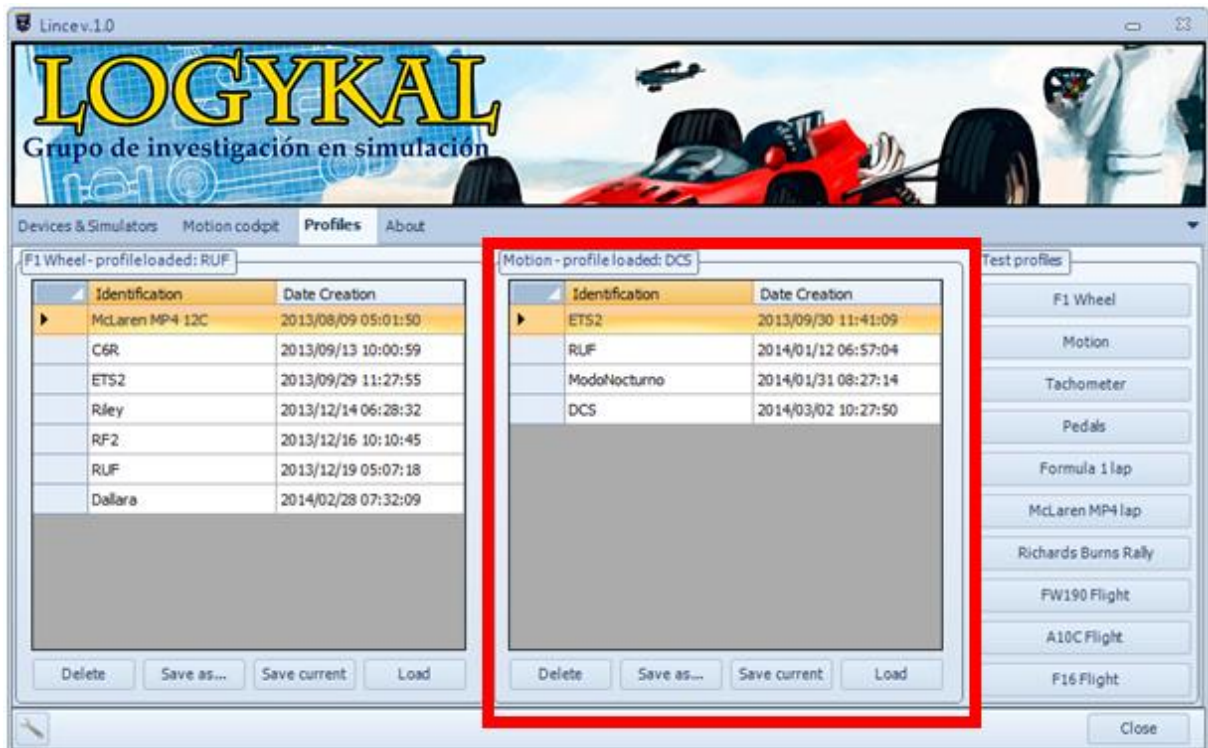


Figure 3-1. Profile Tab

- **Load.** Load the selected profile.
- **Save Current.** Save the selected values of all the parameters with the current profile name. The user will be prompted to confirm the name.
- **Save as.** Save the selected values of all the parameters with a profile name. The user will be prompted to confirm the name.
- **Delete.** Delete the selected profile.