Samples Pack

VEHICLE_PLAYER

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1. INTRODUCTION

1.1 Pre-requisites

- Python 2.7
- Pyproj 1.9.6

1.2 Description

Vehicle Player is a feature of SCANeR™ that allows simulated vehicles to follow exactly a recorded trajectory.

📄Documentation for Vehicle Player

Vehicle Player uses its own data format. Data acquired from measurements or third-party software must be converted.

📄 Source data file → 📄📄📄 SCANeR™ Vehicle Player files

The source data contains the position of one or several vehicles over time.

This sample shows how to convert the source data using a Python script. The input format is XML, but the script can be adapted to take other formats as an input.

## 2. USE OF VEHICLE PLAYER

2.1 Convert the vehicle trajectory data

→ Move to the workspace folder
%STUDIO_PATH%\SCANeRstudio_2021\APIs\samples\VehiclePlayer\ConvertFromXML

- The file example.xml contains test data exported from PreScan.
- The script convert.py can read, transform and save the data in the format of SCANeR™ Vehicle Player
- The folder template/ is a dependency of the script

Projection system

The input geographic coordinates will become projected coordinates.

geo : XML   plane : CSV, OSG
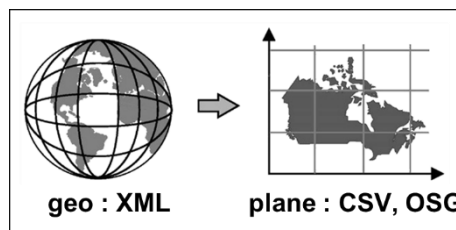
The projection system depends on the region. In the script, the lines below must be changed according to your data location:

```
#Projections
inProj=Proj(proj='latlong',datum='WGS84')
outProj=Proj(init='epsg:28992', towgs84='565.417,50.3319,465.552,-0.398957,0.343988,-1.8774,4.0725')
offsetX = 171338.11
offsetY = 388410.20
```

"EPSG" and "TOWGS84" can be found on epsg.io

→ In a console (cmd), call the script:
Python convert.py example.xml

Output files are in example_vhlplayer/

Terrain

Both files are under example_terrain/ contains the road network associated to the imported data.
- example.osm is the source data
- example.rnd is the SCANeR™ Terrain after import of example.osm in SCANeR™ TERRAIN

2.1 Use the vehicle trajectory data

→ Place the converted files in the SCANeR™ data hierarchy.
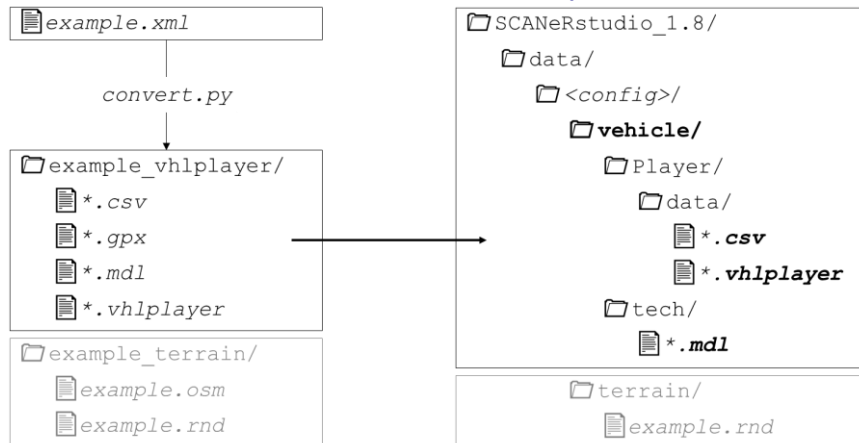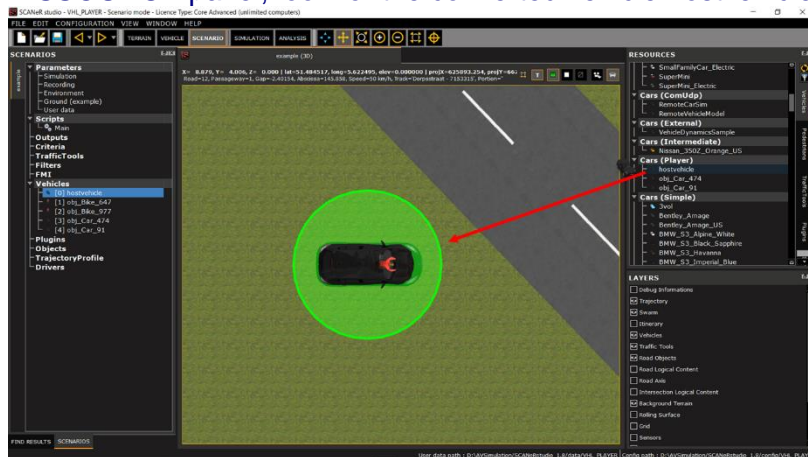

→ Open SCANeR™ Studio

- Load the configuration EVAL_VEHICLE_PLAYER
  CONFIGURATION > Configuration Manager > EVAL_19_VEHICLE_PLAYER

- Refresh the SCANeR™ file index
  TOOLS > Update resources

→ Create the scenario

- Open a new scenario
  FILE > New Scenario

- In the RESSOURCE panel, look for the converted vehicle hostvehicle.

→ Start the simulation

The vehicle moves according to the input data.

3. GO FURTHER

3.1 Multiple Vehicle Player instances

It is possible to import several vehicle trajectories. For example, if there is more than one vehicle trajectory in the input XML, the conversion script will produce several vehicle files. Once drag & dropped into your scenario, you'll have them in the hierarchy:
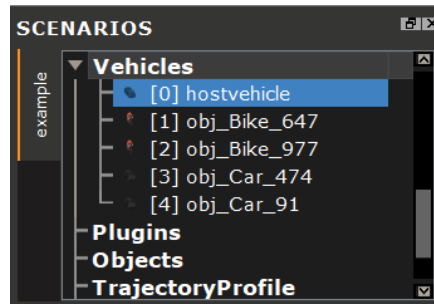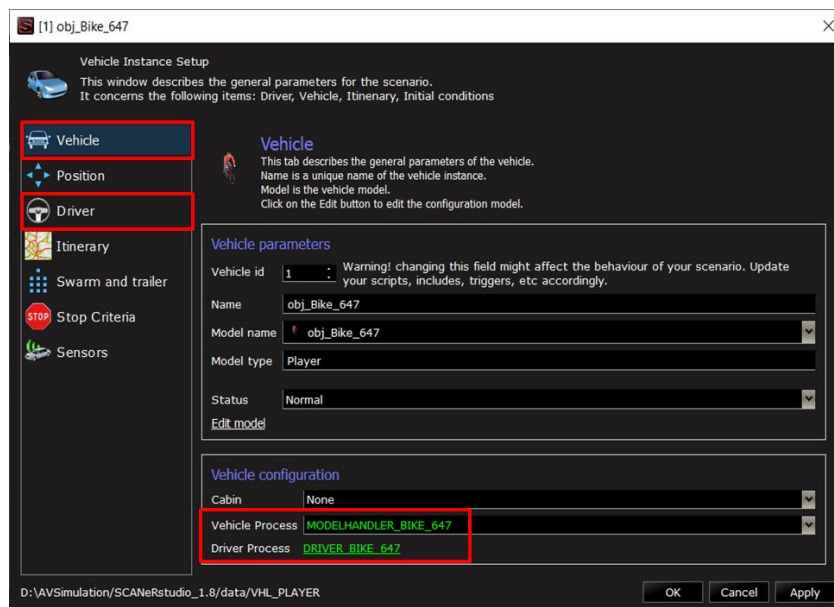

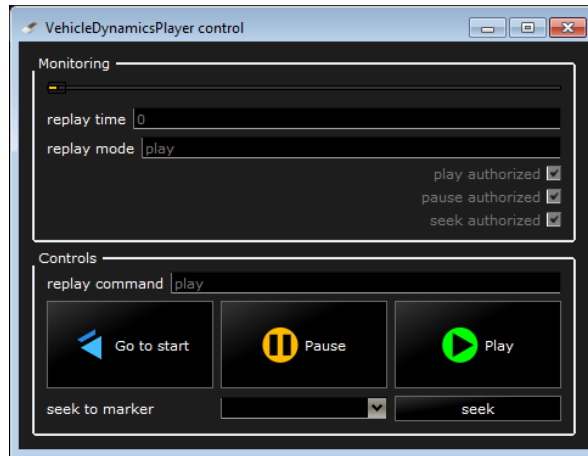Each vehicle will need its own ACQUISITION and MODELHANDLER modules.
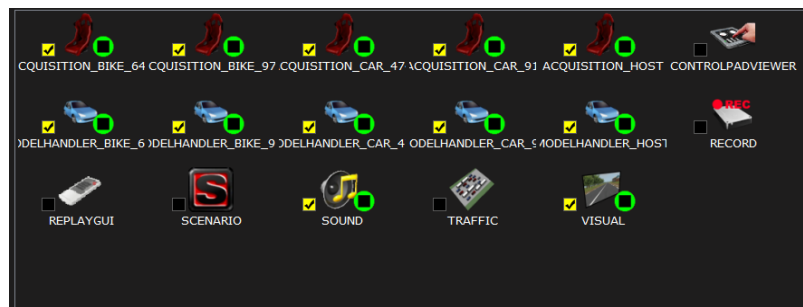
Finally, each vehicle instance can be linked to its dedicated modules in the Vehicle Instance Setup window.

- Vehicle > Vehicle Process

- Driver > Driver Process

3.2 ReplayGUI

The ReplayGUI is a SCANeR™ module that helps the use of Vehicle Player.

Documentation for the ReplayGUI