Towards a Simple City Driving Simulator Based on Speed Dreams and OSM

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We imported Luxembourg's city OSM data into Blender

Goals summary

I-Gear simulator

→ open-source motor sport simulator
→ forked from the Torcs platform
→ written in C++
→ moving towards networked game

Under the hood...

the simulator's server

Fueled by... Speed Dreams (SD)

→ SD doesn't provide 3D scene of Luxembourg city
→ OSM: Free geographic data
→ OSM2World: convert OSM data into 3D scene

Problem

Large amount of data
Scale problems
No traffic lights, road signs

Solution

Cropping map to the desired area
Reducing polygons number of some objects using Blender 3D scene program.
Working on an automated solution

Visiting Luxembourg

We imported Luxembourg's city OSM data into Blender

Point of view of the driver in the imported Luxembourg city map

Evaluator PC

Acts as control centre for the evaluator and displays various data about simulation. It also allows to trigger events both in the 3D scene and on mobile/embedded devices

Database

Data from simulation are logged in a SQLite database

Dispatcher

Dispatches the data flow through the components of the simulator. This control of data flow is implemented in Python

Mobile/embedded device

Any In-Vehicle Device that could be used for capturing and displaying data (smartphones, tablet PC etc.)

Eye tracker

An SMI head mounted mobile eye tracker is used to track driver’s gaze position, dwell time and eye movements

Under the hood...

eye-tracker data storage

Evaluator

Video feed

Device events

Simulation events

Log all data

Dispatcher

Evaluator

Event types

User

Device

Simulator

Evaluator

Video camera

A video feed of the driver’s cockpit including the 3D scene