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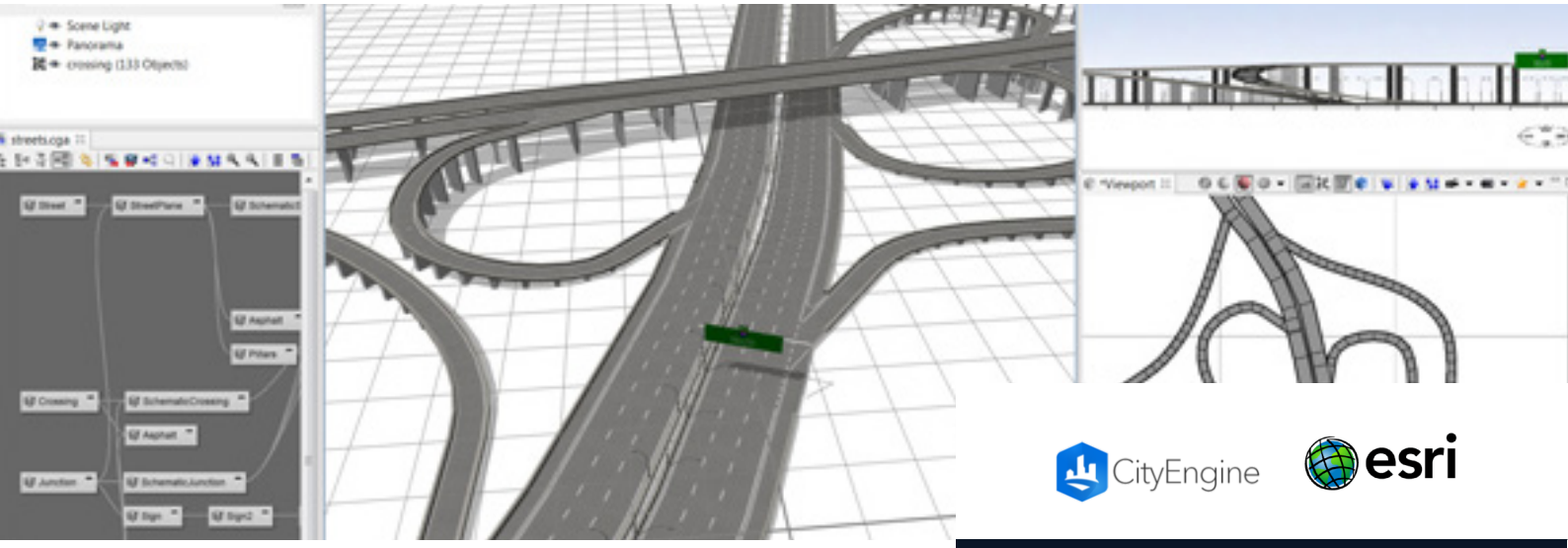
Mobility by Technology

Success Story

Université Gustave Eiffel

LABORATOIRE PICS-L
PERCEPTIONS, INTERACTIONS, COMPORTEMENTS ET SIMULATIONS DES USAGERS DE LA ROUTE ET DE LA RUE

3D SIMULATION OF URBAN ENVIRONMENTS AUTOMATION SOFTWARE TOOL



CityEngine esri

CHALLENGE

In order to make the most of its investment on the CityEngine platform, Université Gustave Eiffel (the largest public research center for transport and mobility in France) wishes to develop a tool to convert 3D databases of districts and cities modeled with CityEngine to a file format compatible with its new simulation platform developed under Unity. The chosen format is the OpenDrive format.

CityEngine is a 3D modeling software application developed by ESRI and specializes in the generation of 3D urban environments. OpenDrive is an open file format for the very precise description of road networks. Unlike other formats typically used in navigation systems, it is particularly suitable for simulation applications which require an fine description of the geometry of the roads, and of their logical characteristics (type of lane, direction of traffic, etc.) …

The PICS-L research laboratory of Université Gustave Eiffel called on **Neovya** and its mobility experts to develop the conversion software tool.

3D digital models and virtual reality are strategic tools for the work of the PICS-L research laboratory and more generally for the various laboratories of the Université Gustave Eiffel using our simulators. For us, it is essential to be able to simply use our CityEngine 3D urban environments databases with our SILEX simulation software .

Thanks to Neovya's technological expertise and software know-how, we are able to simplify this complex interaction process and deploy very quickly an operational solution to automate conversion operations

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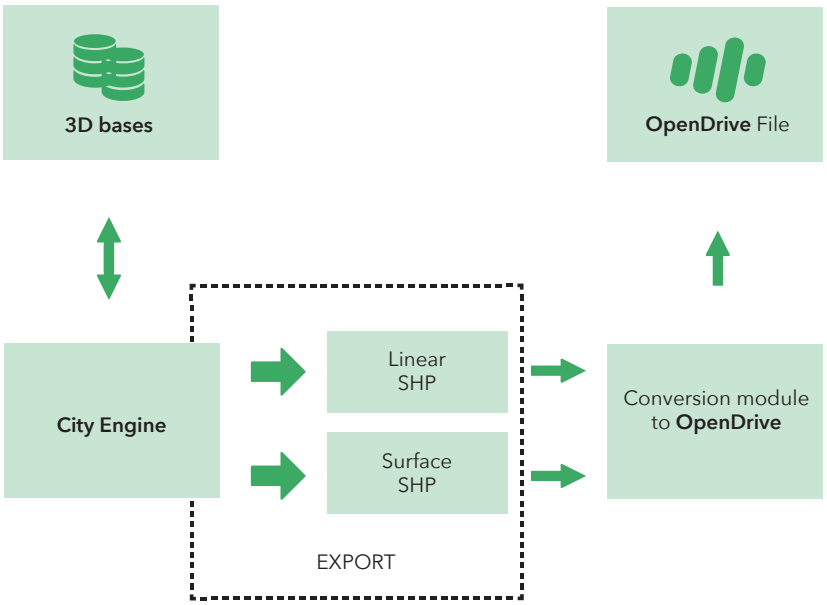

ABOUT PICS-L LABORATORY

PICS-L research laboratory is working on perceptions, interactions, behaviors and simulation for road and street users.PICS-L is managing multi-disciplinary researchs anddeveloping knowledge and software tools to study, understand, improve and evaluate the mobility of road and street users depending of their level of of assistance and automation.

SOLUTION

- Automated software module for file conversion from CityEngine to OpenDRIVE.
- A simple methodleading to the result in two-step:
  - Export of shapefile files from CityEngine.
  - Conversion to OpenDRIVE format.
- Populate all OpenDRIVE fields with the best level of accuracy and completion depending of the information available in the source database.
- Converted data:
  - Longitudinal profile split into lines, arcs of curves and splines
  - Section (number of lanes, width and types of these lanes)
  - Intersections (potential change of direction for each lane at a junction entrance)
  - Integration of information from specific objects such as pedestrian crossings

BENEFITS

- Availability of the software in less than 3 months.
- Easy to use tool.
- Scalable : easily adaptable to evolutions in CityEngine and OpenDRIVE.
- Significant time savings by automating an extremely time-consuming manual process.

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