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Nodus 7.0

Multimodal Freight Transport Network Modeling

KEYWORDS

- Network model
- Freight transport
- Modal choice/assignment
- Transport policy

The UCL software

Nodus implements the "Virtual networks" methodology developed at UCL*, an alternative to the classical "four steps" technique to **model multimodal and intermodal transport flows over networks**, as it combines the "modal-choice" and "assignment" phases of the latter in a single step.

This methodology has already led to numerous **policy-oriented studies** on large scale multi-modal freight transport networks, such as:

- Regional freight transport planning
- Cost benefit analysis for transport infrastructures
- Optimal locations for intermodal terminals
- Impact of climate change on inland waterways transport
- Internalization of external costs and its potential impact on modal choice
- Estimation of market areas of container hubs
- ...

* *Jourquin B. and Beuthe M., Transportation Policy Analysis with a GIS: The virtual Network of Freight Transportation in Europe, Transportation Research C, Vol 4, pp. 359-371, n°6, 1996*

Key figures

- **Compatible with GIS standards:** shape files and web mapping.
- **Parallelized algorithms:** able to handle very large networks.
- **Portable:** Linux-Mac-Windows
- **Open API:** available through scripting or plugin's
- **JDBC:** compatible with most DBMS's. Shipped with HSQLDB.
- **Flexible:** user defined database fields, variables, cost functions, mode choice models...
- **And much more**



Sample multimodal assignment

Technology status

The software has a modern and integrated user friendly GUI. Source code is available on GitHub under the GPLv3 license.

<http://nodus.uclouvain.be>

Preferred partnership

Application project opportunities with a research company, consultant or start-up, including the development of specific plugin's or scripts.

UCL is willing to provide different partnership schemes for interested parties in order to increase the visibility and use of Nodus outside the academic world.

INTERESTED TO DEVELOP OR USE THIS SOFTWARE?

 **UCLouvain**

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