



## UvA-DARE (Digital Academic Repository)

### Framework for path finding in multi-layer transport networks

Dijkstra, F.

**Publication date**

2009

**Document Version**

Final published version

[Link to publication](#)

**Citation for published version (APA):**

Dijkstra, F. (2009). *Framework for path finding in multi-layer transport networks*. [Thesis, fully internal, Universiteit van Amsterdam].

**General rights**

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

**Disclaimer/Complaints regulations**

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

The GLIF community operates hybrid networks that provide scientists with dedicated network connections throughout the world. *Framework for Path Finding in Multi-Layer Transport Networks* investigates the problem of finding shortest path in these computer networks. This PhD thesis proves that technical incompatibilities in these multi-layer networks can lead to very complex shortest paths, which may include loops. Since graphs cannot adequately describe these multi-layer networks, it proposes a model and syntax for describing these networks, the multi-layer *network description language*. Since this is a technology-independent model, a path finding algorithm can be created that has no a-priori knowledge of the different technologies, but is still capable of dealing with their constraints.

This PhD thesis is the accumulation of the work by Freek Dijkstra at the University of Amsterdam between 2003 and 2008, under supervision of dr. Paola Grosso, dr. ir. Cees de Laat and prof. dr. Peter Sloot.



ISBN 978-90-814160-1-6