Framework for path finding in multi-layer transport networks

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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.

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