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## Master Thesis

### Design of a Blockchain Platform for Mobility as a Service

Digitalization has redefined many aspects of our daily lives. Increasingly, it is also redefining how we perceive and experience mobility and transportation. Future mobility will largely be predicated on one basic desire shared by passengers: To get from their preferred point of origin to any desired destination - with a single booking and billing for all means of transport used (Seamless Mobility as a Service - Seamless MaaS).

As part of the OMOS initiative<sup>1</sup>, we are exploring an innovative means to meet this Seamless MaaS need: an open and decentral digital platform. Phase I of the project is geared towards identifying and evaluating requirements of end customers and mobility service providers as well as developing a business model for an eponymous OMOS-platform. The objective of phase II and this master thesis is to design and evaluate a Proof-of-Concept of the OMOS-platform based on Blockchain. Depending on your background, the design may range from purely conceptual to a detailed IT-architecture. The thesis may be written in German or English, although English would be preferred.

#### Recommended reads:

- Yaga, Dylan, et al. "Blockchain technology overview." Draft NISTIR 8202 (2018).
- Masuch, N., Lützenberger, M., Keiser, J., 2013. An Open Extensible Platform for Intermodal Mobility Assistance. *Procedia Computer Science* 19, 396–403. <https://doi.org/10.1016/j.procs.2013.06.054>
- Callegati, F., Giallorenzo, S., Melis, A., Prandini, M., 2018. Cloud-of-Things meets Mobility-as-a-Service: An insider threat perspective. *Computers & Security* 74, 277–295. <https://doi.org/10.1016/j.cose.2017.10.006>
- Cledou, G., Estevez, E., Barbosa, L.S., 2018. A taxonomy for planning and designing smart mobility services. *Government Information Quarterly* 35, 61–76. <https://doi.org/10.1016/j.giq.2017.11.008>

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<sup>1</sup> <https://www.fit.fraunhofer.de/de/fb/cscw/blockchain/digitale-infrastruktur-seamless-mobility-as-a-service.html>