Design Trade-Offs, Suitability and Viability of Scientific Information Management Applications on Distributed Ledger Technology

While design decisions determine the quality and viability of applications in general, in Distributed Ledger Technology (DLT), the decision for a suitable DLT design (e.g., Ethereum, IOTA) is of particular relevance because the retroactive change of the underlying DLT design is currently very hard and often even impossible. Extant research has revealed several trade-offs between DLT characteristics (e.g., availability vs. consistency). Such trade-offs inhibit a one-size-fits-all DLT design that suits the requirements of scientific information management applications on DLT. For an appropriate assessment of the suitability of DLT designs for a particular application on DLT, researchers and developers require a systematic and holistic overview of the functioning of different DLT designs, including their configuration of DLT characteristics as well as dependencies and resulting trade-offs between DLT characteristics. In this talk I will first summarize and reflect the design trade-offs, suitability and viability of scientific information management applications on DLT. Second, I will present the DLT-projects for scientific information management we currently work on.

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