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Development of a supply chain simulation tool in the cloud, taking into account dynamic encryption technologies

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Summary: The use of simulation in the planning of cross-company supply chains offers enormous optimisation potential, since all processes can be tested and optimised in detail before implementation. This implies, however, that all the companies involved are in possession of the data required for the simulation. Transferring data to other companies is, however, frequently undesirable. In addition, existing simulation tools do not offer any corresponding encryption technologies. Using the target software solution, it should be possible to create a common simulation model, although those concerned may only directly view their own data or data which has been explicitly released by their partners. Users are able to authorise the use of their uploaded data; however, the displaying of the simulation results is limited by the system, such that no inference to protected data is made. The proposed solution is to be implemented as a cloud service. In addition to approaches to modelling and presentation of results, encryption technologies need to be specifically developed in the context of the research project, so as to retain the option of dynamically granting read or write permissions to each other.

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