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## Design and Implementation of a Digital Twin Platform for AM processes

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### Abstract

Industry's interest in Additive Manufacturing (AM) is rapidly increasing. However, there are barriers in AM in terms of speed, working volumes, and need for post-processing. AM processes are typically optimized utilizing offline modelling and monitoring tools while real-time decision support and adaptiveness offered by Digital Twins are not yet fully achieved. The current work presents a digital-twin-supporting platform gathering existing knowledge and providing optimization services to potentially networked AM producers. Cycle time, energy consumption and connectivity to production planning are taken into consideration. Additionally, the extension of this methodology towards integration of empirical knowledge is demonstrated, utilizing dedicated testbeds.

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