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PhD (mechatronic engineering)
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Title: Standby-redundant control using Erlang/OTP and JADE for a manufacturing cell

Due to their increasing complexity, the reliability of modern manufacturing systems is a concern. Holonic systems show promise for managing this complexity, but may contain holons that represent single points of failure. The availability of these holons can be improved through standby redundancy. The candidate developed a novel approach for implementing standby redundancy using the Erlang/OTP software platform and evaluated it through a case study comparison with the JADE multi-agent system framework. Using Erlang/OTP, the combination of standby redundancy and holonic control has the potential to improve controller availability for the complex distributed systems envisioned by Industry 4.0 and IIoT.