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Improvement of the software systems development life cycle of the credit scoring process at a financial institution through the application of systems engineering

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2016-10-11
http://hdl.handle.net/10539/21147

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ABSTRACT

The research centred on improving the current software systems development life cycle (SDLC) of the credit scoring process at a financial institution based on systems engineering principles. The research sought ways to improve the current software SDLC in terms of cost, schedule and performance. This paper proposes an improved software SDLC that conforms to the principles of systems engineering.

As decisioning has been automated in financial institutions, various processes are developed according to a software SDLC in order to ensure accuracy and validity thereof. This research can be applied to various processes within financial institutions where software development is conducted, verified and tested.

A comparative analysis between the current software SDLC and a recommended SDLC was performed. Areas within the current SDLC that did not comply with systems engineering principles were identified. These inefficiencies were found during unit testing, functional testing and regression testing.

An SDLC is proposed that conforms to systems engineering principles and is expected to reduce the current SDLC schedule by 20 per cent. Proposed changes include the sequence of processes within the SDLC, increasing test coverage by extracting data from the production environment, filtering and sampling data from the production environment, automating functional testing using mathematical algorithms, and creating a test pack for regression testing which adequately covers the software change.