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Automated Functional Size Estimation using Business Process Models with UPROM Method

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Abstract

Estimating functional size in early phases of software projects is essential for accurate effort and cost planning. When an organization requires its business processes to be automated by a business application software, business processes are analyzed in the initial phases and utilized in various ways through software development life cycle. In previous studies we presented a unified business process modeling methodology, UPROM for the practices of business process and user requirements analysis, COSMIC based functional size estimation (FSE) and process documentation. Applying UPROM notation, process and guidelines to implement these practices in an integrated way, a set of models are developed that can be used to generate related artifacts. As one of the artifacts, UPROM tool is used to automatically estimate the early COSMIC functional size conforming to UPROM FSE method. The procedures and rules of UPROM FSE method are described in this paper. The results of multiple case study and validation activities indicate that UPROM can be used to achieve reasonably accurate size estimation results in early phases and decreased subjectivity without significant extra work for estimation.

Keywords—business process modeling, requirements analysis, early functional size estimation, COSMIC

The full paper should be available from IEEE Explore www.ieeexplore.ieee.org/Xplore

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