Bachelorprojekt: e3value and family: an implementation in ADOxx, and integration potentials with MEMO

Semester: Sommersemester 2019

Sprache: Deutsch / Englisch

Motivation

e3value is a conceptual modeling language dedicated to modeling what is exchanged of value with whom, for example that `Amazon' offers a `Film' to the `Customer', and receives a `Fee' in return. Value modeling is typically used in academic and industry projects for explorative (early-phase) requirements engineering tasks, such as analyzing the value exchanges for different scenarios in the healthcare, electricity, or finance industry (see http://e3value.few.vu.nl).
An important prerequisite for creating syntactically correct e3value models is software tool support, which exists in the form of the e3value editor (http://e3value.few.vu.nl/tools/). However, while forming a good starting point, the e3value editor currently acts as a standalone modeling tool, meaning that it lacks integration with software tool support for other conceptual modeling languages. While this actually reflects the overall lack of integration of e3value with other languages (as noted in (Pijpers et al, 2012), (Derzsi et al, 2007)) the lacking software tool integration prevents one of the key promises of enterprise modeling: to do *cross*-perspective analysis of organizational concerns, thus gaining additional insights compared to when these concerns are regarded in isolation. An example of such a cross-perspective analysis can be how changing the IT application portfolio (expressed in one modeling language) influences the business processes (expressed in another modeling language) that use the various IT applications.

Differently, the MEMO language family offers an integrated set of modeling languages - allowing exactly for cross-organizational analyses as exemplified above. Also, MEMO has dedicated software tool support in the form of MEMO4ADO, which has been implemented using the ADOxx platform. However, MEMO currently lacks a dedicated value perspective.

Given (1) the analysis possibilities that e3value as a standalone language offers, and (2) the cross-perspective analysis possibilities that it lacks, it seems natural to explore how e3value can complement the current MEMO language family. To this end, a first step is an implementation of e3value in ADOxx, to ensure compatibility with the current MEMO4ADO implementation.

Beschreibung

This main objective of this Bachelor project is to (1) implement e3value in ADOxx, and (2) to explore, on the basis of existing proposals and corresponding scenarios, how to integrate e3value with MEMO modeling languages expressing different perspectives on an organization.

Expected outcomes: the e3value implementation into ADOxx, plus corresponding documentation. Additionally, on the basis of extant literature, integration potentials with MEMO should be analyzed, and – on the basis of existing scenarios – one should show how this integration can work prototypically.

Einstiegsliteratur

- Bock, A., & Frank, U. (2016). Multi-perspective Enterprise Modeling—Conceptual Foundation and Implementation with ADOxx. In *Domain-Specific Conceptual Modeling* (pp. 241-267). Springer, Cham.

- Frank, U. (2014). Multi-perspective enterprise modeling: foundational concepts, prospects and future research challenges. *Software & Systems Modeling*, *13*(3), 941-962.
- Gordijn, J., & Akkermans, J. M. (2003). Value-based requirements engineering: exploring innovative e-commerce ideas. *Requirements engineering*, *8*(2), 114-134.
- Pijpers, V., De Leenheer, P., Gordijn, J., & Akkermans, H. (2012). Using conceptual models to explore business-ICT alignment in networked value constellations. *Requirements Engineering*, *17*(3), 203-226.

Personen: 2-3

Bewerbung:

Please apply via email to the supervisor. Please attach a short letter of motivation (app. ½ A4 page) and a recent performance record ('Leistungsnachweis'). You can apply individually or in a group of 2-3 participants (in this case each person should still send a separate e-mail, however point to the other members of the group). In case you are applying also for other projects, please mention it in the email.

Bewerbungsfrist: April, 28th , 11:50 pm