- **TITLE:** A Reproduction Guideline for the Paper “Practitioner Views on the Interrelation of Microservice APIs and Domain-Driven Design: A Grey Literature Study Based on Grounded Theory”
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Paper on Zenodo: https://doi.org/10.5281/zenodo.4493865
- **WHAT:**
For coding processes in the Grounded Theory, we applied text-based coding only initially and then applied UML-based modeling instead (encoded in Python) to develop a precise and consistent theory.
- **WHY:**
The UML-based modeling could precisely encode findings in the Grounded Theory. Concerning the repeatability aspect, it benefits the iterative and incremental constant comparison. It also supports the automated generation of the results. This automation could enhance the traceability in terms of references and assure the variety of results’ format.
- **HOW:**
After initial text-based open coding, we used formal UML-based modelling for axial and selective coding, instead of the often-used text-based coding process, in order to develop a precisely defined and consistent theory. We used the CodeableModel[1] tool for this. Formal modelling also eased establishing an audit trail of the research, and thus enable repeatability of the study.
- **WHERE:**
The grey literature study is applied as the data collection technique for this Grounded Theory. When the new sources are added, the coding-loop is triggered. It also means the coding process is reproduced. Because Grounded Theory does not completely collect the data before it starts the data analysis, but the data collection and analysis are performed in each iterative research step.
- **DISCUSSION:**
As Grounded Theory is mainly concerned with phenomena that have specifically been observed to exist, the coding process with the assist of UML-based modelling could comprehend the phenomenon.
Other researchers might have coded or modelled differently. As our goal was only to find one model that is able to specify all observed phenomena, and this was achieved, we consider this threat not to be a major issue for our study. At any rate, our results are only valid in our set scope.

[1] https://github.com/uzdun/CodeableModels