

RDM4MOD: Working Workshop on Research Data Management in Modelling in Computer Science - Summary

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Abstract: This workshop reflects on science and scientific results in different ways than usual: it looks at the meta level what are the items of research in computer science in the context of models and modelling. Since this needs to be a community effort to agree on the classification and related properties this is a “working” workshop to discuss the challenges in this area to support the research data management in modelling in computer science and related infrastructure for implementing the so-called FAIR³ principles. The main challenge is, to cover the research data management requirements of the modelling activities in computer science in their broad variety. The aim is to sketch a way how to agree on a comprehensible metadata standard and how to evolve it to include also future research directions. There are certain pieces of existing work which we discuss as a starting point in the area of UML-based modelling and artifact evaluation / assessment. The goal is to draft a manifesto for RDM for modelling activities in computer science.

Keywords: Research Data Management, Modelling in Computer Science, FAIR Principles, Nationale Forschungsdaten Infrastruktur

1 Preface

Modelling is an important approach to tackle research problems in computer science. It helps to lower the bar in terms of complexity and to support validation – in some areas also formal verification – to substantiate scientific claims and (published) results. However, to support the reproducibility of such results the basis in form of the used model(s) needs to be available as well. This type of research has also become much more empirical in nature: e.g. for assessing the usefulness of representation schemes and modelling concepts large repositories of models and experiments involving human developers play an important role.

In order to support such research based on empirical data and related publications the so-called FAIR-principles (Findable, Accessible, Interoperable, Reusable) need to be supported. Especially the processes to *find* and *access* the research data needs a community-wide consensus how to define and use metadata. This is a challenge for the still fast evolving discipline of computer science. The workshop builds upon existing experiences from related efforts. An invited contribution on the challenges and

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³ <https://force11.org/info/the-fair-data-principles/>

architectures for empirical research in software architecture brings in the experience of storing a substantial number of model descriptions. A further contribution reflects on assessing research data artifacts. Based on these impulses a discussion will be held to sketch a comprehensive outline of research data management for modelling in computer science in form of a manifesto.

This will initiate the community process to collaboratively define related meta data standards and additional aspects to support the aforementioned FAIR principles. This support will help to coordinate the many efforts not only at the national level.

We are grateful for the support of the team of this workshop to kick off this process which starts an important improvement of research processes in research based on modelling in computer science. The related effort and developments will be documented at the website / portal of NFDIxCs (www.nfdixcs.org).

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