



## **Publishing Platform for Scientific Software – Lessons Learned**

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Scientific software has become an indispensable commodity for the production, processing and analysis of empirical data but also for modelling and simulation of complex processes. Software has a significant influence on the quality of research results. For strengthening the recognition of the academic performance of scientific software development, for increasing its visibility and for promoting the reproducibility of research results, concepts for the publication of scientific software have to be developed, tested, evaluated, and then transferred into operations. For this, the publication and citability of scientific software have to fulfil scientific criteria by means of defined processes and the use of persistent identifiers, similar to data publications.

The SciForge project is addressing these challenges. Based on interviews a blueprint for a scientific software publishing platform and a systematic implementation plan has been designed. In addition, the potential of journals, software repositories and persistent identifiers have been evaluated to improve the publication and dissemination of reusable software solutions. It is important that procedures for publishing software as well as methods and tools for software engineering are reflected in the architecture of the platform, in order to improve the quality of the software and the results of research. In addition, it is necessary to work continuously on improving specific conditions that promote the adoption and sustainable utilization of scientific software publications. Among others, this would include policies for the development and publication of scientific software in the institutions but also policies for establishing the necessary competencies and skills of scientists and IT personnel.

To implement the concepts developed in SciForge a combined bottom-up / top-down approach is considered that will be implemented in parallel in different scientific domains, e.g. in earth sciences, climate research and the life sciences. Based on the developed blueprints a scientific software publishing platform will be iteratively implemented, tested, and evaluated. Thus the platform should be developed continuously on the basis of gained experiences and results. The platform services will be extended one by one corresponding to the requirements of the communities. Thus the implemented platform for the publication of scientific software can be improved and stabilized incrementally as a tool with software, science, publishing, and user oriented features.