Workshop on SymbolicData Design

Leipzig, 27.–28. August 2013

`http://symbolicdata.org/wiki/Events.2013-08`

The workshop was designed as final milestone of the E-Science Benchmarking Project promoted for 12 month within the *E-Science Saxony Framework*. Unfortunately, the event was completely ignored by the Computer Algebra Communities, so that we had no opportunity to present the results of the project to a larger audience. Instead we had intense discussions with people from the *swmath* project (`http://www.swmath.org`, a project of the *Zentralblatt Mathematik* towards an information service for mathematical software) about trends in Semantic Web Technologies that are suitable to support future common efforts towards a semantic aware IT infrastructure for Computer Algebra.

In a first talk *Hans-Gert Gräbe* presented the state of the SymbolicData project. Note that at the end of September 2013 version 3 of SymbolicData was released, thus finishing a major redesign of SymbolicData, that marks a milestone across the implementation of semantic techniques within Computer Algebra. We strongly use RDF and Linked Data principles in the organisation of the data. These principles are also reflected in the presentation of the data at `symbolicdata.org`. All resources are delivered via `http/rdf+xml` and a Sparql endpoint allows for navigation in the metadata. This can be installed also on a localhost and thus can be integrated into a local benchmarking or profiling infrastructure (best using python as scripting language and a web server at localhost). A more detailed description of the new release is available from the SymbolicData web pages and will be given also in the next issue of the *Computeralgebra Rundbrief*.

Andreas Nareike presented in a second talk his prototypical integration of the Polynomial Systems subproject with sagemath and SymbolicData as a sage package *sdsage* that smoothly integrates both the global SD network infrastructure and a local installation into the sagemath process. One can load data and metadata transparently into sage objects and process them as mathematical objects in the usual way within sage.

Ulf Schöneberg gave a talk about effort at the ZBMath to discover and understand mathematical formulas in Zentralblatt mathematical reviews, mixing classical colocation approaches with semantic enriched opportunities of latex mark-up. This research is part of larger efforts within, e.g., the OpenMath activities.

We discussed in great detail the potential interplay between

- the efforts at ZBMath to organize access to data in well established RDF based formats,
- the SymbolicData intercommunity efforts and experience with Linked Data standards, Sparql endpoints, Virtuoso and Ontowiki based local installations,
- ongoing efforts of the DNB and other libraries (SLUB Dresden, UB Leipzig) to reshape their catalogue data towards Linked Data standards and get them interoperating within the GND project,
- perspectives to join forces with these library projects to strengthen the IT infrastructure for Computer Algebra Communities.

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[1] to be published in „Computeralgebra-Rundbrief“ 53, Oktober 2013