Test-data generation for Xtext
Tool paper* – Appendix

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1 Outline of the tool demo

– Quick classification of grammar-based testing scenarios, overall methods, generation algorithms, and testing hypotheses. Relationship to test-data generation in other technological spaces and areas other than language engineering. Position of Xtextgen in this context.

– Introduction to the FSML example, as discussed in the main part of the paper. Demonstration of Xtext grammar, Xtextgen customization, and Xtend-based post-processors, as they are developed, explorable, and executable through the Eclipse/Xtext-based IDE; see Fig. 1. Generated test-data is used to test various language processing components associated with the DSL for finite state machines.

– Discussion of the post-processing approach realized in Xtextgen. In particular, the object-oriented framework for composable tree-rewriting functions is explained; see Fig. 2. Also, the post-processors in the FSML example are explained thoroughly; see Fig. 3.

– If time permits, the implementation of Xtextgen in terms of Xtext and Xtend will be discussed. The source code for the Xtextgen plugin and a sample suite including the FSML example are available online; see Fig. 4.

* http://softlang.uni-koblenz.de/xtextgen/
Fig. 1. Xtextgen in use on the FSML.

Fig. 2. Post-processing framework and its usage.
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Fig. 3. Detailed XTEND code for the post-processor for state naming
Fig. 4. Source and example repository of XTEXTGEN