veriT: System Description for SMT-COMP 2017

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veriT is a satisfiability modulo theory (SMT) solver jointly developed by University of Lorraine, Inria (Nancy, France) and Federal University of Rio Grande do Norte (Natal, Brazil). veriT provides an open, trustable and reasonably efficient decision procedure [3] for the logic of quantifier-free formulas over uninterpreted symbols, linear real arithmetics, and the combination thereof. It also handles linear arithmetics over integers, and has quantifier reasoning using trigger- and conflict-based instantiation [2]. Finally, veriT is proof-producing [5, 1]. veriT is written in C and accepts the input formats SMT-LIB 2.6 and DIMACS. It integrates a $CDCL(\mathcal{T})$-based Boolean satisfiability engine with a Nelson-Oppen like combination of decision and semi-decision procedures with propagation of model equalities, and implements simplifications such as symmetry-based reductions [4]. The tool is open-source and distributed under the BSD licence.

Since SMT-COMP 2016, veriT has seen little improvements on what concerns the competition. Most relevant improvements are related to trigger-based instantiation.

veriT participates in the following divisions: ALIA AUFLIA AUFLIRA LIA UF UFIDL UFLIA UFLRA QF_ALIA QF_AUFLIA QF_IDL QF_LIA QF_LRA QF_RDL QF_UF QF_UFIDL QF_UFLIA QF_UFLRA.

References

1. H. Barbosa, J. C. Blanchette, and P. Fontaine. Scalable fine-grained proofs for formula processing. In L. de Moura, editor, *Proc. Conference on Automated Deduction (CADE)*, Lecture Notes in Computer Science. Springer Berlin Heidelberg, 2017.
2. H. Barbosa, P. Fontaine, and A. Reynolds. Congruence closure with free variables. In A. Legay and T. Margaria, editors, *Tools and Algorithms for Construction and Analysis of Systems (TACAS)*, volume 10206 of *Lecture Notes in Computer Science*, pages 214–230, 2017.
3. T. Bouton, D. C. B. de Oliveira, D. Déharbe, and P. Fontaine. veriT: an open, trustable and efficient SMT-solver. In R. A. Schmidt, editor, *Proc. Conference on Automated Deduction (CADE-22)*, 2009.

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4. D. Déharbe, P. Fontaine, S. Merz, and B. Wolzenlogel Paleo. Exploiting Symmetry in SMT Problems. In N. Bjørner and V. Sofronie-Stokkermans, editors, *Proc. Conference on Automated Deduction (CADE-23)*, 2011.
5. D. Déharbe, P. Fontaine, and B. Wolzenlogel Paleo. Quantifier Inference Rules for SMT proofs. In *First Workshop on Proof eXchange for Theorem Proving (PxTP)*, 2011.