YicesQS, an extension of Yices2 for quantifiers (SMT-comp 2023)

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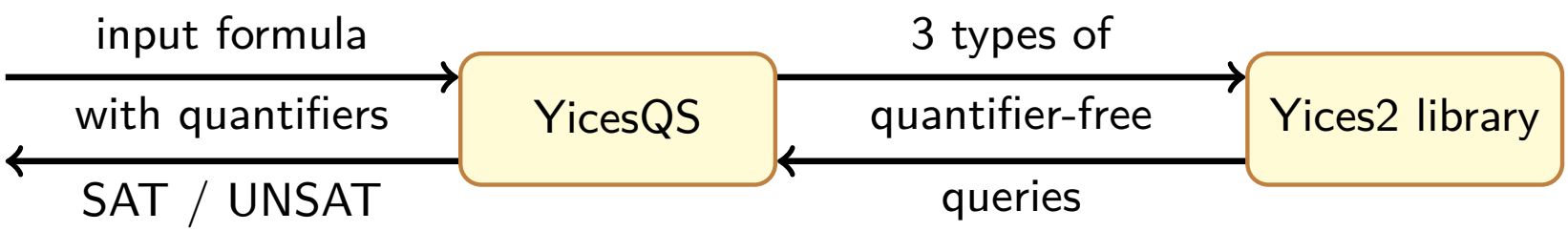
Same solver as in the 2022 SMT-comp.[1]

YicesQS implements a variant of the QSMA algorithm presented at CADE'2023:
https://www.csl.sri.com/users/sgl/Work/Reports/CADE2023.pdf
Lazy approach to quantifier elimination based on Model-Based Over-approximations (MBO) and Model-Based Under-approximations (MBU). YicesQS is written in OCaml, using Yices2 as a library via its OCaml bindings.

2023: YicesQS entered *NRA*, *NIA*, *LRA*, *LIA* and *BV* (single-track), & generally targets complete theories with procedures for answering 3 types of quantifier-free queries:

- *Satisfiability modulo assignment / modulo a model* (here relying on MCSAT)
- *MBU* (here using invertibility conditions for BV, CAD projections for arithmetic)
- *MBO* (here again relying on MCSAT, incl. CAD for arithmetic)



[1] YicesQS-2023 (Starexec solver 45053, too late for 2023 SMT-comp) is way better at BV, solves 805/970 instances out of the 2022 single-track BV selection.