YicesQS, an extension of Yices2 for quantifiers (SMT-comp 2021)

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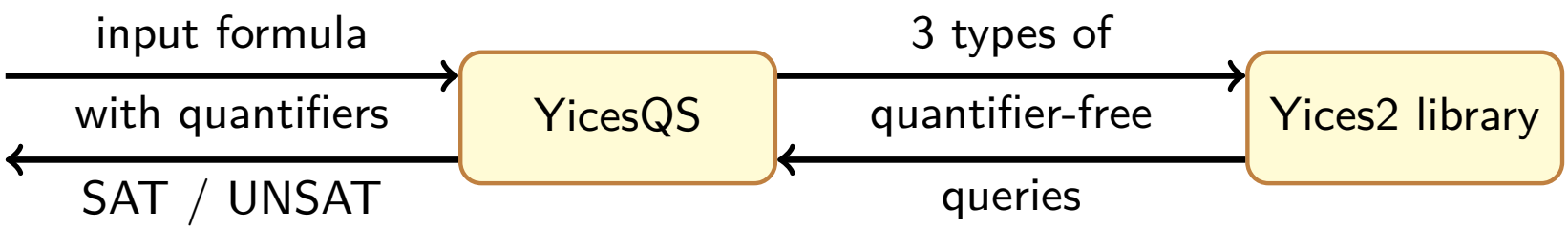
YicesQS implements a 2-player game ($\forall$ player vs $\exists$ player) playing on a quantified input formula F. Our generalization of counter-example-guided quantifier instantiation (CEGQI) produces a quantifier-free satisfiable under-approximation of F or a quantifier-free unsatisfiable over-approximation of F.

YicesQS entered logics *NRA* and *BV* (first entry of Yices in quantified logics), & generally targets complete theories with procedures for answering 3 types of quantifier-free queries:

- *Satisfiability modulo assignment / modulo a model* (here relying on MCSAT)
- *Model generalization* (here using CAD projections for NRA, invertibility conditions for BV)
- *Model interpolation* (here again relying on MCSAT)



YicesQS is written in OCaml, using Yices2 as a library via its OCaml bindings.
https://github.com/SRI-CSL/yices2
https://github.com/SRI-CSL/yices2_ocaml_bindings