Verification of Medical Guidelines
with KIV

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Overview

First tool for interactive verification of Asbru medical guidelines

Features

- KIV is a powerful interactive verification environment
- direct support for Asbru language
- hierarchical specification of guidelines
- intuitive proof strategy based on symbolic execution
- proofs are automated to a large extent
- modular approach for verification of large and complex guidelines
- translation of Asbru to SMV model checker
- special support for living guidelines
Development graph
Interactive proof

[Interactive proof interface with code and diagram]

Variations
- apply induction
- apply VD induction
- weaken VD induction
- VD induction
- cut formula
- constructor cut
- insert spec-lemma
- insert rewrite lemma
- insert elim lemma
- insert proof lemma
- insert equation
- Induction ---
- extract liveness
- generalise
- Complex rules ---
- unwind
- rewrite
- Strategies ---
- simplify
- step
- Asbru ---

var PC0 = init["mcte2", mk-pce(false)]
["sp", mk-pce(false)]
in suspended("mcte", sk, "mcte2"; Tick, Patient)

□ ( (AS"*)["mcte"] = (AS"*)["mcte"]
   ∧ (AS"*)["mcte"] = (AS"*)["mcte"]
   N = N + 1
until (¬ (AS"*)["mcte"] = ac
      → ¬ (PDH[AC]
            ['parameter-mor']
            )
      )
.val)

IND-HYP, AS["mcte2"] = completed, AS["sp"] = completed,
AS["mcte"] = suspended
Demonstration on request