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Technical Advisory Board Meeting
November 8 & December 6, 2021

Website Coming Soon...
https://www.aere.iastate.edu/modelchecker/
The Problem

R2 Scalable Formula Benchmark

- PANDA
- CadenceSMV

FuseIC3: An Algorithm for Checking Large Design Spaces

Model checking 34 formulas over 1,620 models is 5.48x faster

The Problem Continues...

- nuXmv, CadenceSMV, others are **closed source**

- ABC, HWMCC tools are **limited to low-level modeling languages**

- No **open-source, research-enabling connection** between:
  - Rich modeling languages with real-world benchmark models
  - State-of-the-art back-end MC algorithms
SMV model

```plaintext
module main () {
  p: boolean;
  q: boolean;
  <DEFINE MODULE>
  FAIRNESS TRUE; }
```

Timeline

And-inverter graph

Temporal logic

\[ \Box((p U q) \lor r) \]
\[ \Diamond(p \land XXX q) \]

INTERMEDIATE LANGUAGE
Goals for Intermediate Language

- Allow adding a **modeling language** via **translation to/from IL**
- Allow adding an **MC algorithm** via **translation to/from IL**
- IL is efficient/accessible so as to **encourage usage in future MCs**
- IL suitable for on-going **community standard**
Agenda

1. Goals & objectives overview (questions?)

2. Initial proposal for a community model checking intermediate language

3. Moderated discussion