

Seal5 Development & User Meeting

07.11.2024

Agenda (07.11.2024)

- Sync on ongoing work
 - Seal5 Reports (Properties, Status, Test Results, Diff, Times)
 - Test Coverage?
 - CI/CD integration
- Next meeting dates
 - **Internal:** *Thu. 14.11.2024, 11:00 (Skype) → switch to biweekly?*
 - **Public:** Thu. 5.12.2024, 11:00 (Zoom)

Seal5 Reports

- See [here](#) for example
- Artifacts can be used by other CI jobs to combine and visualize the results
- Next steps ([Tracking Issue](#)):
 - Adjust backends to (optionally) output more compact and aggregated tables
 - Join tables to combined DataFrames ([Details](#))
 - Group instructions in meaningful way (SetName, EncSize, EncFormat,...)
 - Generate Final Report
- Report Format:
 - Markdown/PDF (easy) →
 - Excel Sheet with sort/filter (optional)
 - Interactive Website with dynamic Filters (overkill?)

Test Coverage & Generation

- Currently we can just tell that x out of y tests pass for a specific instruction/set
- How do we deal with instructions without any or partially missing tests?
 - Add backend to report number or existing/required/optional tests (depending on instruction type)
- **How do we get more test coverage?**
 - Writing tests for >200 instructions by hand (takes ~30minutes each) is infeasible...
 - DLR will look into generating test cases semi-automatically (template-based)
 - Test types: compiler (mc,inline-asm,intrin,builtin)
 - Later: compiler(cg) and etiss(smoke tests and validation)

CI/CD Evaluation Flow

- Relevant PRs from DLR merged
- GitHub Access Tokens generated
- Limitation: only works for single namespace (needed tum-ei-eda forks of DLR repos)
- For testing full flow, Seal5 develop branch needs to be merged (done)
- Pending tasks (TUM):
 - Enable trigger in etiss repo
 - End-to-End testing
 - Refactor workflows to be part of [PhilippvK/etiss_riscv_test_env](#) (except triggers)
 - Add further (non-S4E) examples