

# Compliance Task Group Call – Minutes

Weds, June 26, 2019 8am Pacific → Daylight ← Time

See slides 6,7 for summary

# Charter

The Compliance Task Group will

- Develop a framework for RISC-V tests, taking into account approved specifications for:
  - Architectural versions (e.g. RV32I, RV32E, RV64I, RV128I)
  - Standard Extensions (M,A,F,D,Q,L,C,B,J,T,P,V,N)
  - All spec'ed implementation options
    - (incl. MHSU modes, optional CSRs, optional CSR bits)
- Develop a method for selecting and configuring appropriate tests for a RISC-V implementation, taking into account:
  - Platform profile and Execution Environment (EE)
  - Implemented architecture, extensions, and options
- Develop a method to apply the appropriate tests to an implementation and verify that it meets the standard
  - test result signature stored in memory will be compared to a golden model result signature

# Administrative Pointers

- Chair – Allen Baum [allen.baum@esperantotech.com](mailto:allen.baum@esperantotech.com)
- Co-chair – Stuart Hoad [stuart.hoad@microchip.com](mailto:stuart.hoad@microchip.com)
- TG membership- Sue Leininger [sue@riscv.org](mailto:sue@riscv.org)
  - Send email to her - you must have a lists.riscv.org login
- TG Email [tech-compliance@lists.riscv.org](mailto:tech-compliance@lists.riscv.org)
  - Notetakers: please send emails to allen.baum@esperantotech.com
- Meetings -Bi-monthly at 9am Pacific time on 2<sup>nd</sup>/4<sup>th</sup> Wednesdays
  - Location is <https://zoom.us/j/6213886723>
- Documents, calendar, roster, etc. in <https://lists.riscv.org/tech-compliance/>  
see /documents, /calendars subdirectories
- Git repositories
  - <https://github.com/riscv/riscv-compliance/>
  - [https://github.com/rsnikhil/Experimental\\_RISCV\\_Feature\\_Model](https://github.com/rsnikhil/Experimental_RISCV_Feature_Model)
  - [https://github.com/rsnikhil/Forvis\\_RISCV-ISA-Spec](https://github.com/rsnikhil/Forvis_RISCV-ISA-Spec)
  - <https://gitlab.com/incoresemi/risconf> (Shakti framework)

# Attendees

- Allen Baum (Esperanto Technologies)
- Stuart Hoad (Microchip)
- Simon Davidmann (Imperas)
- Lee Moore (Imperas)
- Jeremy Bennett (Embecosm)
- Ben Selfridge (Galois)
- Deborah Soung (Sifive)
- Jacob Chang (SiFive)
- Iilja Stepanov (Syntacore)
- Neel Gala (IIT)
- S Pawan Kumar (IIT)
- Jeffrey Osier-Mixon
- Marc Gauthier

# Meeting Agenda (in order of Priority)

1. Pull Request review (54, 57)
  - Grift support
  - TestSpecFormat (directory structure, new macros, allowing absolute addr)
    - Other “To Be Discussed” sections should be reviewed
2. Review of Zurich meeting (see slide 9)
3. Foundation expectations – getting to a release
4. Licensing issues (see slide 11)

# Discussion

1. Pull Request review (54, 57)
  - Grift support – no issue
  - TestSpecFormat (directory structure, new macros, allowing absolute addr)
    - U vs \_ directories make no sense
    - Should not #include tests for different architectures, make copies
2. Review of Zurich meeting
  - Deal with outstanding pull request before release
  - Defer further priv spec compliance thought/discussion (in short-term)
  - Paid release manager / compliance engineer
    - Where to find such a person? Member company, request to RISC-V board?
    - Responsibilities: Clean-up repository, fork, update docs, version of spec
  - Change Compliance TG from call based meetings to message based?
    - Email? Lists, IM?
    - Need to keep things structured and organized
  - Put a stake in the ground re: what is compliance (re-state?)
3. Tech Committee - see slide 9, Foundation expectations: v1.0 by Dec summit
  - Observation: layers of required macros need major cleanup – doesn't work for many core configs
  - This version will be RV32/64imc only, incomplete coverage (which still needs to be defined)
4. Licensing issues
  - There are 3 inconsistent licensing files used in the compliance repository
  - Need to specify a single license from now on, possibly remove/rewrite code w/problematic versions

# Conclusions & Action Items

## Decisions

- Pull Req 54 merged
- Pull req 57 has objections, specifically directory structure and #include allowed, so postponed

## Action Items

- Allen will modify those specific issues in spec
- Allen/Stuart: start an online discussion to see how well it works
- Allen: will ask board to specify a license
- Stuart (& maybe Simon): outline issues with macros

## Everyone

- review TestSpecFormat !
- Comment / propose RFP for compliance engineer

Backup for discussions



# Foundation Expectations

- Objective: publish compliance test 1.0 and finish the public review **before** the RISC-V summit in Dec. Shorter term is pre-1.0 by EO Q3
- Scope: publish tests and expected results run from the executable RISC-V formal specs -- make sure that all formal specs agree with each other
  - (Note: this approach will not work for priv spec)
- Minimal acceptance criteria is RV32Imc and RV64Imc
- Allen will focus on driving the task group to make this happen
- Nikhil will be tasked to ask all formal spec groups to commit their executable model support in the riscv-compliance repository
- Silviu and Yunsup will make the {compliance manager} CFP happen. They just need to understand what help is needed.

# License Inconsistencies

Ken Dockser writes

In going through the files on git hub I have found inconsistencies in the licenses specified. Based on [riscv-compliance/doc/README.adoc](https://github.com/riscv-compliance/doc/README.adoc), the intent was to use BSD and Creative Commons.

- The top level license ([riscv-compliance/COPYING.BSD](https://github.com/riscv-compliance/COPYING.BSD)) is a 3-clause BSD,
- The [riscv-compliance/riscv-test-env/LICENSE](https://github.com/riscv-compliance/riscv-test-env/LICENSE) specifies a slightly different 3-clause BSD license naming Regents as the copyright holder.
- In [riscv-compliance/riscv-test-env/test\\_macros.h](https://github.com/riscv-compliance/riscv-test-env/test_macros.h) an Apache v2 license is employed. In fact, Apache-v2 shows up in 57 files.

Is there a need to use Apache? Can we stick with BSD as intended?