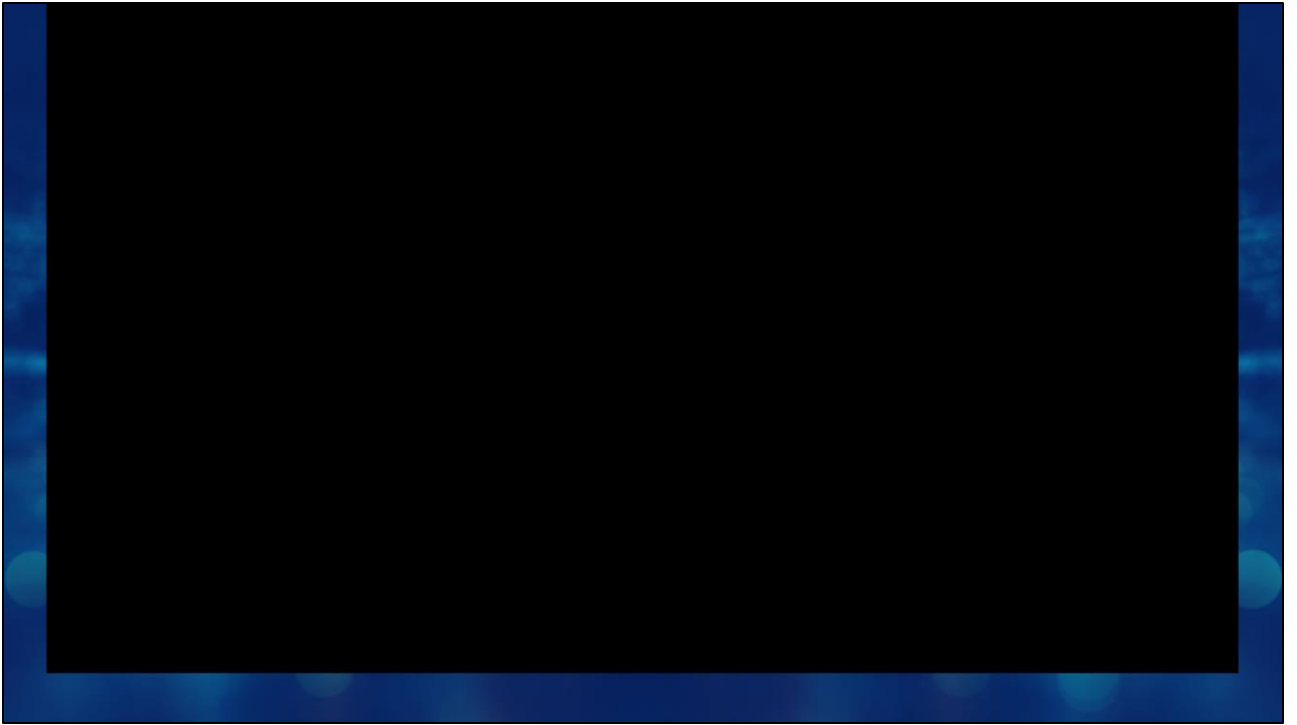




# DTPM SIG E-Trace-Encap TG

08/09/2023

**Meeting minutes are in the speaker notes for the relevant slide**



# Agenda

- Disclosures
- eTrace packet encapsulation
- Maintenance
- Competitive Analysis
  - Secure Debug – RTI SIG
- AOB

- PD** Paul Donahue (Ventana) (Me)
- IR** Iain Robertson (Siemens)
- DL** Dean Liberty (SiFive)
- N** Nicholas.Wood@imgtec.com
- RC** Robert Chyla (SiFive)
- AJ** Amit Jain (Qualcomm)
- BA** Bruce Ableidinger (SiFive)
- G** Gokhan.Kaplayan@imgtec.com
- JG** Jay Gamoneda (NXP)
- MS** Michael Schleinkofer(Lauterbach)
- NP** Niranjan Prabhu (Intel)



Attendees: see screenshot on the agenda slide

# eTrace Packet Encapsulation

- Acting chair: Iain Robertson, acting vice-chair: Paul Donahue
- Reflector: [tech-e-trace-encap@lists.riscv.org](mailto:tech-e-trace-encap@lists.riscv.org)
- githubs: <https://github.com/riscv-admin/e-trace-encap>, <https://github.com/riscv-non-isa/e-trace-encap>
- DTPM SIG and E-Trace-Encap meetings will co-exist
- Adoc spec created. 1<sup>st</sup> draft: <https://github.com/riscv-non-isa/e-trace-encap/blob/main/e-trace-encap.pdf>
- Out for review since yesterday – thanks Michael for initial feedback



- RC: Can srcID be a multiple of 8 bits so timestamp is always byte-aligned?
- IR: Large systems may need to be more than 8 but less than 16. Small systems may want to save bandwidth and use less than 8. Things are packed. The internals of the payload are not byte-aligned so you have to be pulling out misaligned things anyway. If you want to make srcID a multiple of 8 for simplicity then you can do that.
- IR: Please take a look at the spec. We'll have another chapter to discuss how it relates to trace control.

# Maintenance (E-Trace)

- Clarification on push/pop support for data trace
  - Examples added to section 4.3 and pull request made
- Proposal to change description of tail call itypes to 'jumps'
  - Beeman generated pull request
- Typo spotted in data trace packets: *index\_width\_p* should be *lrid\_width\_p*
  - Iain generated pull request
- Update control section to reference common control document
  - Not started yet
- Proposal following discussions with SoC HC: Iain to generate pull request for control section updates. SoC HC will review/approve pull requests to include in 2.0.1 spec.
  - Will determine at that time whether to include common control updates, or whether to defer to a follow-on revision

# Competitive Analysis

- Template spreadsheet created (format stolen from Beeman):
  - Located in *for risc-v members/Workgroups/Debug Trace Performance Monitoring* RVI Google Drive
  - <https://docs.google.com/spreadsheets/d/1l0N-E-hTjF3jkPrsLitso4hACDajayNwh35F4KUfs/edit#gid=0>
- Review secure debug proposal from Runtime Integrity SIG
- Still need input from others with knowledge of other architectures



- There has been work happening in the Runtime Integrity SIG about secure debug. There is overlap with DTPM SIG focus.
- NW: Problem: Debug Mode has higher privs than even M mode even if the thing you're debugging is lower than M mode. There needs to be finer grain control over debug permissions.
- There is a presentation from Nvidia that does gap analysis and compares with ARM.
- RC: This is being driven by the RTI group which has a SW focus. There needs to be a complete solution driven by the debug group that includes JTAG, SW, debugger, etc.

- IR: The gap analysis is done. There needs to be a TG but it will be a separate group from the debug TG since that will terminate when the spec is ratified.
- NW: It makes sense to write this as an extension to the debug spec rather than weaving it into the debug spec.
- DL: Security side of the house should present requirements and why. Then the debug group should come up with the solution with input from the security people.
- NW: Next step is to invite Joe and Nick to present here.
- NW: The proposal is in Joe's personal github area so it doesn't really belong to RTI or RISC-V. It can change.
- IR: The timelines were too compressed to get the right people together in today's meeting.
- NW: Weekly RTI meetings cover a wide range of topics. It's a very active group but the agenda isn't posted.
- We don't have to wait until the next DTPM meeting. We can have a special meeting with the RTI group to discuss the proposal.

# Future Meetings / AOB

- 2<sup>nd</sup> Wednesday of each month
- Will follow up with Nick Kossifidis from Runtime Integrity SIG on debug security.
- AOB



- IR: Debug tab in the gap analysis spreadsheet is sparse. It will probably be filled out more as we discuss things with the RTI SIG. But please add your thoughts in the meantime.
- RC: N-Trace spec is in ARC review. There were some suggestions from someone but they probably won't be included because there would be some ARC review churn.
- Status of adoc conversion of debug and trace? The tech writer doing it will theoretically start on non-ISA specs this month.
-





# Thank You

