Reference Design WG Meeting (08/16/2023) #3740

chishengshih started this conversation in **Working group meetings**

chishengshih on Aug 16, 2023 Collaborator edited

Date: 2023-08-16

Time: 14:00 (UTC)

Administrative

- Previous meeting minutes
- Reference Design project board
- Reference Design Roadmap

Participants:

- [x] Daniel Shih (Tier4/NTU)
- [x] Stephen Li (AutoCore)
- [x] Rahul Razdan (Razdan Research Institute)
- [ ] Mahesh Menase
- [ ] Simon Teng (ARM)
- [ ] Jason Lee (ARM)
- [x] Eddie Liu (ADLink)
- [x] ChenYing Kuo (ADLink):
- [x] Yoshihito Takashima (Tier IV)
- [x] Paul Yeh (Tier IV)
- [x] Armagan Arslan (Hardware/Opening AD Kit WG)
- [x] David Walmroth (Opening AD Kit WG)
- [ ] Chetan (Marvel)
- [ ] David Cole (DanLaw)
- [x] Ryohsuke Mitsudome (Tier4)
- [x] William Yuankai He: (Detrio, MI, Uni. of Delaware (soon))
- [ ] Markus Schratter (Virtual Vehicles Research, Austria)
- [x] Abinesh L (DanLaw)
- [ ] Lucaus Xingang Liu (Autocore)
- [x] Gernot Heiser (seL4)

Category

Working group meetings

Labels

meeting:reference-...

1 participant

- [ ] Nilay Sener
- [x] Mark Jin (PixMoving)
- [x] Rohit Damodar (DanLaw)
- [ ] Tomonori Kaneko (eSol)
- [ ] Akihiko Tsukuda (eSol)
- [x] CJ (Tier4)
- [ ] Bonolo

Agenda:

- Introduction of New Members
- Outstanding action items review
- seL4 Presentation by Gernot file
- TierIV Level 4 Guideline file
- Bus Reference Design (ITRI)

Outstanding Action Items from last meeting:

- [ ] Guideline to set up the reference platform to be a separate section: Rahul, Markus, Laucus, Hiroshi
- [ ] Procedure for testing should be added (From David Walmroth)
- @ALL Please update the wiki for reference platforms and sensors. Request the permission to edit (Email cshih@csie.ntu.edu.tw or drop a line on discord.)

Meeting Notes:

Action Items:

↑ 1

1 comment

Oldest | Newest | Top

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Additional Participants:

- [x] Akinari Yamashita (TierIV)
- [x] Naoyori Tanzawa (TierIV)
- [x] Huei-Ru Tseng (ITRI)
- [x] Samet Kutuk
- [x] oguz
- [x] Armagan Arslan

Notes:

- seL4 micro-Kernel:
  ** Provable security for autonomous vehicles:
  ** Intelligent vehicles: hacker's paradise to control engine, steering, and breaks.
  ** To protect from being comprised.
  ** (P.4) world's first correctness proof of OS
  ** Only protected-mode RTOS with sound and complete WCET analysis (ARMv6) In progress for RISC-V
  ** AArch64 is also in progress, but not x86.
  ** Communication channel is configured among different virtual machines/modules.
  ** (P.9) Microkernel provides the secure communications among the components.
  ** uKernel enforces isolation.
  ** (P.13) much simple code, compared to Linux.
  ** (P.15) Support multiple-core platforms. The transmitter and drivers can be executed on different cores.
  ** (P.19) Autoware on seL4: Sunswift Solar Racing Car
  ** ROS 2 has an OS abstraction layer. The develoment is in progress.
  ** Rahul: what about the performance? seL4 is designed for real-time systems to guarantee timeliness.
  ** Any trial to QNX application to seL4? QNX using POSIX interface. It should be doable.
  ** Q: (P.4) How is the correctness proof related to ISO26262?
  ** Q: (P.5) How to define the module? is the channel similar to network channel?
  ** Q: (P.11) Between components/VMs, should channel or network be used to communicate?
  ** Q: (P.13) What's the key for simple code for same functionalities?
- TierIV Guideline on L4 custom design guideline:
  ** Focus on vehicle design for L4
  ** Guideline link
  **

Action Items:

- discuss using TierIV as the reference