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

Category

Labels

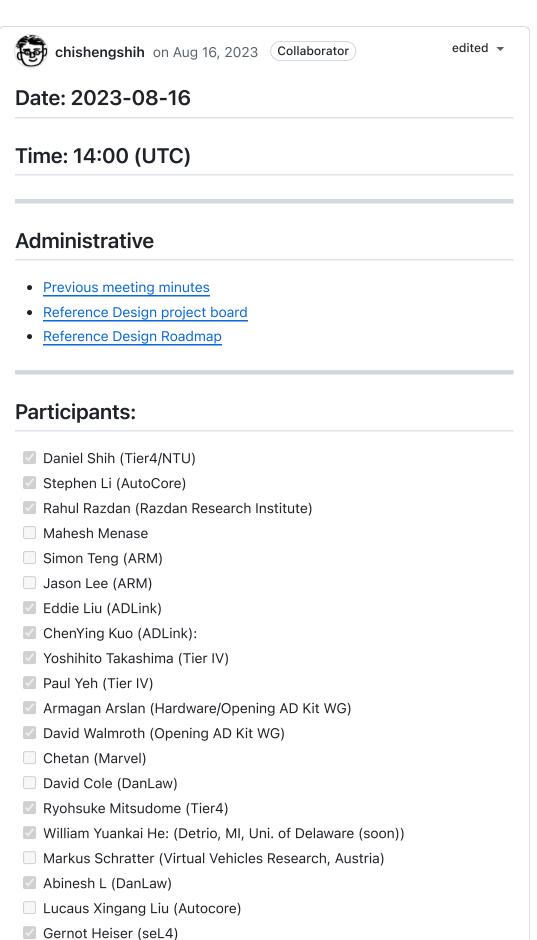
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1 participant

Working group meetings

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chishengshih started this conversation in Working group meetings



Mark Jin (PixM			
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Rohit Damoda			
Tomonori Kane			
Akihiko Tsukud	da (eSol)		
CJ (Tier4)			
Bonolo			
Agenda:			
• Introduction of	f New Members		
Outstanding a	ction items review		
• seL4 Presenta	tion by Gernot <u>file</u>		
• TierIV Level 4	Guideline <u>file</u>		
Bus Reference	: Design (ITRI)		
Outstanding	Action Items	from last meeting:	
		platform to be a separate se	ection:
	, Laucus, Hiroshi	ldad (Fram David Walmrath	
	_	Ided (From David Walmroth	
	•	eference platforms and sen nail cshih@csie.ntu.edu.tw	
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Action Items	:		
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- 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

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Action Items:

discuss using TierIV as the reference

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