

- **Regan Robertson** Mod • 14 days ago

Good Morning,

The video will start on this page at 10:30am, and you may have to hit play or unmute. As a reminder this site works best in a Chrome Browser. You can write in comments through this feature to continue the conversation or ask questions. Please login or sign up for a Disqus account to participate in the discussion boards.

- 
- •
- Reply
- •
- Share ›

○

- 
- 
- 



**Paul Pazandak** • 14 days ago

Looking forward to this next session on assured systems - some really interesting talks coming up!

- 
- •
- Reply
- •
- Share ›

○

- 
- 
- 



**Renato Levy** • 14 days ago

Welcome back! The video will be starting momentarily.

- 
- •
- Reply
- •
- Share ›

○

- 
- 
-



**Noah Evans** • 14 days ago

Can you talk a little bit about your RISC-V design?

- 
- •
- Reply
- •
- Share ›



**Sascha Kegreiß** Noah Evans • 14 days ago

I love to :)

although i here focus on the Software aspects of our products.

If you want to know more, feel free to contact me.

- 
- •
- Reply
- •
- Share ›



**Renato Levy** • 14 days ago

That was exactly our feeling was we were developing the introduction training for this year. The course that will be offered by the CoE will be much more comprehensive.

- 
- •
- Reply
- •
- Share ›



○

- 
- 



**Sascha Kegreiß** Renato Levy • 14 days ago

Good to hear that we share those experience. Seems i have to have a look at the CoE courses.

- 
- 
- 
- 
- 

•  
Reply

•  
Share ›

- 
- 
- 



**Renato Levy** Sascha Kegreiß • 14 days ago • edited

They are not quite out there yet. Become a member and stay connected.

- 
- 
- 
- 
- 

•  
Reply

•  
Share ›

- 
- 
- 



**Renato Levy** • 14 days ago

Did you fix the problem that Qemu has with Raspberry Pi 3. It only supports Raspberry 2

- 1
- •
- Reply
- •
- Share ›

○

○

■  
■



**Sascha Kegreiß** Renato Levy • 14 days ago

We upstreamed some fixes to Qemu (e.g. one for timer behaviour). Honestly, im unsure if they are included in main branch yet. However, in Qemu we use a Zynq platform.

■  
■ ·  
■ Reply  
■ ·  
■ Share >

■

■  
■  
■



**Renato Levy** Sascha Kegreiß • 14 days ago

Would you mind sharing these modifications with the CoE? This is a major issue that we must fix in order to create the Raspberry PI distro

■  
■ ·  
■ Reply  
■ ·  
■ Share >

■

■  
■  
■



**Sascha Kegreiß** Renato Levy • 14 days ago

You mean the timer fix? That should definitely be possible.  
Simply write me an email (should be possible via the summit pages), we can discuss this further in direct contact.

- 
- ·
- Reply
- ·
- Share ›



**Fabrizio Bertocci** · 14 days ago

Why implement a new OS framework (Trentos) and not reusing an existing one like Genome (that also have support for seL4 microkernel)?

- 
- ·
- Reply
- ·
- Share ›



**Sascha Kögler** · Fabrizio Bertocci · 14 days ago

If you want to mention "Genode" this is an excellent question.  
There are two large components of Genode which need to be added to the TCB.  
And we are very sceptical people (although the Genodians are doing a great job!) focussing on using security guarantees provided by formal verification.  
However, we work together with the Genodians and are looking forward to next year where we can tell more about that.

- 
- ·
- Reply
- ·
- Share ›



**Stuart Card** Sascha Kegreiß • 14 days ago

Yes, some of the Genodians are talking about rewriting Init & Core (essential Genode TCB components) in SPARK Ada, facilitating formal verification of Genode. This is something I eagerly await & plan to use in the open platform to be described in our talk this afternoon.

- 
- 
- .
- Reply
- .
- Share ›



**Sascha Kegreiß** Stuart Card • 14 days ago

I like that idea and share your interest in that version of Genode.

- 
- .
- Reply
- .
- Share ›



**Ihor Kuz** Fabrizio Bertocci • 14 days ago

Genode is awesome. One of the differences between Genode and a CAMkES-based OS framework is that Genode is dynamic, while CAMkES is static. This has some significant implications on how you can formally verify the user-level system running on seL4. We

know how to do it for CAMkES (and have significant progress on that), but not yet for dynamic systems like Genode.

- 1
- ·
- Reply
- ·
- Share ›

- 
- 
- 



**Sascha Kegreiß** Ihor Kuz · 14 days ago

"Genode is awesome" - Totally agreed.

- 
- ·
- Reply
- ·
- Share ›

- 
- 
- 



**Carl Nerup** · 14 days ago

Well done. A true seL4 SDK. Congrats.

- 
- ·
- Reply
- ·
- Share ›

- 
- 
- 



**Sascha Kegreiß** Carl Nerup • 14 days ago

Thank you so much. I will forward this to the team!

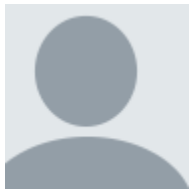
- 
- 
- Reply
- 
- Share ›



**Aleksey Nogin** • 14 days ago

<https://hensoldt-cyber.com/...> wants a password, does not let me see it :(

- 1
- 
- Reply
- 
- Share ›



**Sascha Kegreiß** Aleksey Nogin • 14 days ago

This page will be openly available soon, if you want more details, feel free to contact me.

- 
- 
- Reply
- 
- Share ›





**Sascha Kegreiß** Aleksey Nogin • 12 days ago

Hi Aleksey,

if you want to have access to the shop, simply drop me a mail via

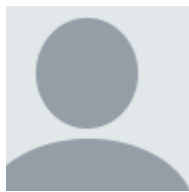
[Sascha.Kegreiss@Hensoldt-cyber.de](mailto:Sascha.Kegreiss@Hensoldt-cyber.de)

We have started our early access program.

- 
- •
- Reply
- •
- Share ›



- 
- 



**Paul Pazandak** • 14 days ago

Hi Sascha, the link <https://hensoldt-cyber.com/...> requires a password. Will you provide that?

- 
- •
- Reply
- •
- Share ›



- 
- 



**Sascha Kegreiß** Paul Pazandak • 14 days ago

This link should work in the coming days. Sorry for not having it up and running now.

- 
- •
- Reply
- •
- Share ›



- 
-



**Nathaniel Husted** • 14 days ago

Are there plans to push improvements to the seL4 ecosystem back out to the seL4 foundation community -- similar to the more traditional \*nix based F/OSS business models?

- 
- •
- Reply
- •
- Share ›



**Sascha Kegreiß** Nathaniel Husted • 14 days ago

There are, we are in the moment discussing intensively how this can be done and which parts are of most interest (ofc having commercial interests in mind as well).

We are happy to be active members of the foundation.



- 
- Reply
- •
- Share ›



**Stuart Card** • 14 days ago

What can you tell us about your OS support for VMs/VMMs & components?

- 
- •
- Reply
- •
- Share ›



○

■

■



**Sascha Kegreiß** Stuart Card • 14 days ago

In the moment, we are working on that. This will be included in TRENTOS further versions.

■

■

•

Reply

■

•

Share ›

■

●

○

○



**Paul Pazandak** • 14 days ago

Sascha, This is really good news to see a solution that will help people ramp up quickly on seL4 projects! What is the cost for Trentos and the eval kit?

○

○

•

Reply

○

•

Share ›

○

○

■

■



**Sascha Kegreiß** Paul Pazandak • 14 days ago

Thanks! We agree :)

Be patient - as soon as the homepage is up and running you will be able to get that information. And no worries - it will be purchasable for anybody!

■

- .
- Reply
- .
- Share ›



**June Andronick** • 14 days ago

Great to see such effort for adoption

- 
- .
- Reply
- .
- Share ›



**Sascha Kegreiß** June Andronick • 14 days ago

Thanks June!

- .
- Reply
- .
- Share ›



**Lennart Beringer** • 14 days ago

Is there a plan to build on the seL4 proofs and verify some of the components ?

- 1

- •
- Reply
- •
- Share ›



- 
- 



**Sascha Kegreiß** Lennart Beringer • 14 days ago

Yes, we are currently working on verifying the most critical components (acc. to our view), the boot code and the key storage.

- 
- •
- Reply
- •
- Share ›



- 
- 



**Regan Robertson** Mod • 14 days ago

Please join us for the next session that starts in 2 minutes. You can either go back to agenda to get to the next session or at the bottom of the page there is a next session button.

- •
- Reply
- •
- Share ›



- 
- 



**Robbie VanVossen** • 14 days ago

Sascha, thanks for the presentation. I hope to get my hands on one of these dev kits soon. What are your plans for supporting/developing drivers for new platforms? Do you expect that to be mostly done by partnering or is that something Hensoldt wants to provide?

- 
- •
- Reply
- •
- Share ›

○

○

- 
- 



**Sascha Kegreiß** Robbie VanVossen • 14 days ago

In the moment, we perform those tasks. But we are open for collaborations.

- 
- •
- Reply
- •
- Share ›

▪

•

- 
- 



**Sascha Kegreiß** • 14 days ago

Thanks to all. It was fun and an honor to be able to present here!

Looking forward to closer collaboration

- 1
- •
- Reply
- •
- Share ›

○

•

- 
-



**Carl Nerup** • 14 days ago

Let me guess - you tried to do it on Qualcomm?

- 
- •
- Reply
- •
- Share >



- 
- 



**Carl Nerup** • 14 days ago

What was the chip?

- 
- •
- Reply
- •
- Share >



- 
- 



**Jason H Li** • 14 days ago

Great work Sascha!

- 
- •
- Reply
- •
- Share >





**Sascha Kegreiß** Jason H Li • 14 days ago

Thank you Jason; I will forward it to the team.  
Your last years slide was quite inspiring!

- - •
- Reply
- •
- Share ›



- —
- 



**Todd Carpenter** • 14 days ago

Sascha, great presentation! We demonstrated working embedded hardware with a similar platform architecture to what you showed on slide 14, with a similar set of OS components with genode running on seL4 a couple years ago at the very first seL4 Summit. It's great to see others running with the idea and turning it into a supported product. I look forward to seeing your evaluation board and sdk!

- 
- •
- Reply
- •
- Share ›

