seL4® Foundation

Overview, Update and Vision

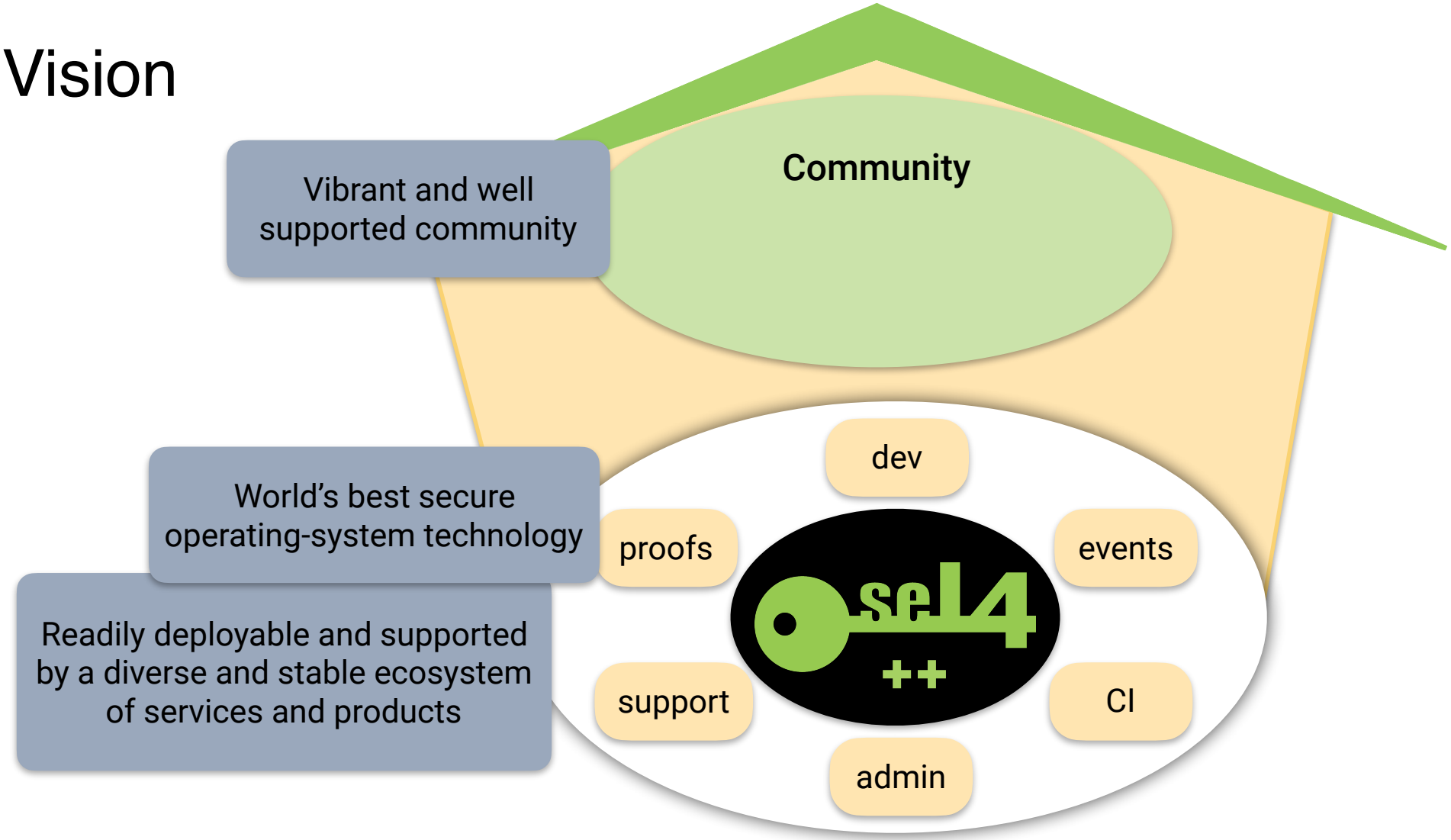
June Andronick

Overview

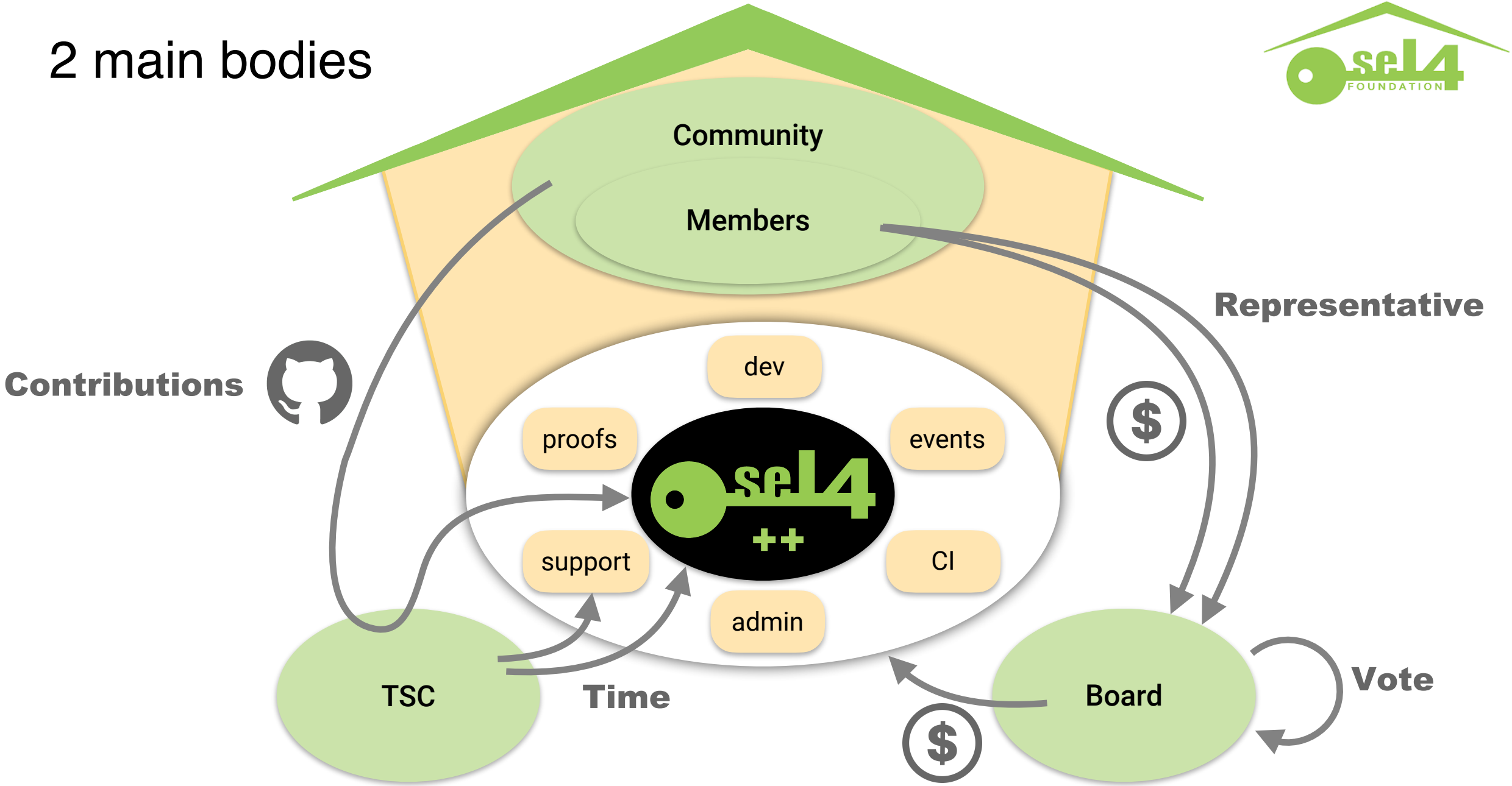
Home to an ecosystem of software, developers and adopters for safety- and security-critical systems based on seL4

https://sel4.foundation

Vision


Vibrant and well supported community
Community
World's best secure operating-system technology
Readily deployable and supported by a diverse and stable ecosystem of services and products
dev
proofs
events
seL4 ++
support
CI
admin

2 main bodies



TSC: principles & news

TSC overview

TSC

- decides on the technical direction
- sets processes, guidelines, etc

- TSC meetings are public
- announced on seL4 dev list

Gerwin Klein (chair)	Proofcraft
Kent Mc Leod	Kry10
Ihor Kuz	Kry10
Matthew Brecknell	Kry10
Kevin Elphinstone	UNSW
Gernot Heiser	UNSW
Rafal Kolanski	Proofcraft
Corey Lewis	Proofcraft
June Andronick	Proofcraft
Yanyan Shen	NIO

Multiple roles to help with contributions

TSC	• decides on the technical direction • sets processes, guidelines, etc	• TSC meetings are public • announced on seL4 dev list
Committers	**can merge pull requests** (direct write/push access to the repositories)	**2 new voted:** **Indan Zupacic & Ivan Velickovic**
Reviewers	**can approve reviews on pull requests** (can be assigned issues, without full commit rights)	**1 new voted: Alwin Joshy**
Contributors	Anyone who contributes code, documentation, issues, etc via pull requests or otherwise	

https://docs.sel4.systems/processes/roles.html

Established processes for contributions

Accepting contributions	✓ need 1 review approval ✓ need 2 reviews if nontrivial ✓ need to pass style, DCO, license, and regression tests ✓ […]

In verification target repositories	✓ can only be merged into the master branch if
	  ✓ either the proof is updated at the same time
	  ✓ or there is no proof impact

Contributions involving significant changes	✓ **need RFC**
If you have kernel changes necessary for your product	✓ **Start engagement with the community early**

https://docs.sel4.systems/processes/contributing.html

TSC News

Chair re-elected

Term until Dec 2024

3 SIGs set-up, chairs approved

- **VMM** (Everton de Matos)
- **Multicore/user-level verification** (Matt Brecknell)
- **Drivers** (Yanyan Shen)

5 RFCs approved

- **RFC-5**: **seL4 Microkit** (formerly seL4 Core Platform; in implementation)
- **RFC-10**: more generic AArch64 page table API (implemented now)
- **RFC-9**: SMC calls (implemented now)
- **RFC-11**: MCS API tweak for timeout handler parameters (in implementation)
- **RFC-13**: MCS API tweak for grant on reply (in implementation)

Official support for Rust on seL4

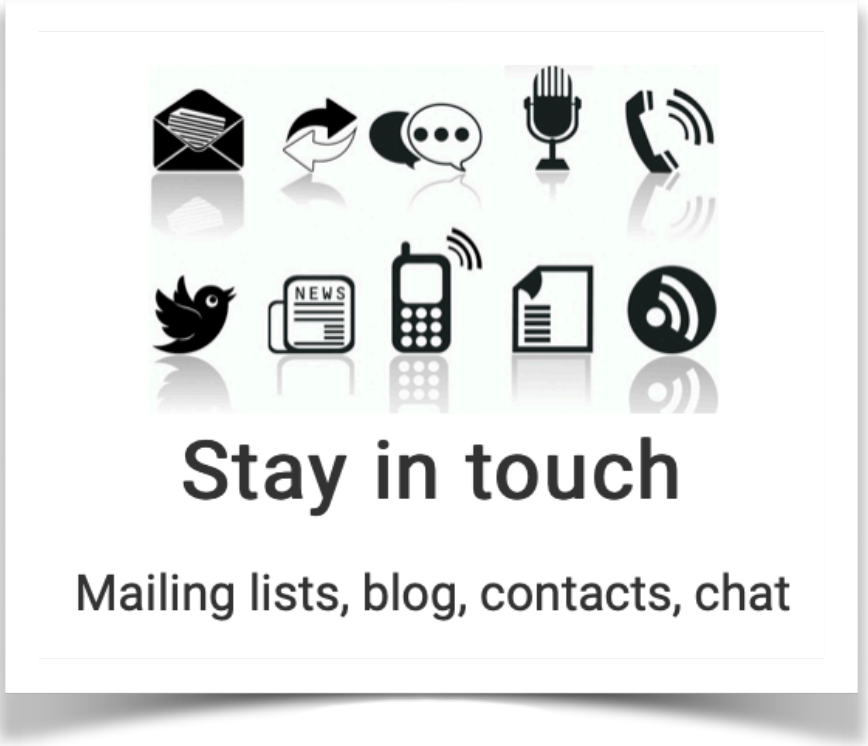
https://github.com/seL4/rust-sel4

Aiming for a new release this year (without Binary Verification)

Reminder: hangouts

seL4 hangouts:

- Open video chat hangout
- No strict agenda
- Anybody can join
- Every two weeks (calendar feed available)



Board: investments & membership

Update on investment

IT & Infrastructure

- critical to maintain seL4's quality and assurance levels
- runs the whole set of seL4 tests at each code change

- increased set of supported hardware boards
- facilitated external contributions
- ongoing maintenance
- AWS

Update on investment

seL4 summits

2022:

- Great success
- 70 people
- Sponsors: 3 bronze
- Foundation invested $65k of total cost (64%)

2023:

- 70 people
- Sponsors: 3 gold, 1 silver, 1 dinner, 1 reception
- Foundation invested (estimate) $25k of total cost (26%)

Update on investment

Support & Projects

Verification:

- 2022: proof infrastructure improvements (eg NumDomains)
- 2022: start of MCS CRefine
- 2023: Automated tests for verification platforms

Support:

- Rust support (Nick Spinale)
- Community support (Indan Zupancic)

Update on investment

Leadership & Coordination

CEO (June Andronick)

- executes the seL4 Foundation's vision and strategy

Project Coordinator (Birgit Brecknell)

- supports CEO & Board Chair in day-to-day coordination

- Coordinate seL4 summit
- Keep community informed (website, mailing lists, social media)
- Do financial planning & tracking, contracts, interface to LF
- Prepare BM and AGMs
- Execute outreach plan (flyer; discussion w existing members…)
- Implement exposure actions for members (e.g. endorsement)

Update on investment

Pooled funding

Co-funding opportunity for:

- Completion of MCS verification
- Completion of AArch64 verification
- MC verification

Update:

- donation from member XCalibyte
- towards MCS verification
- contracted to Proofcraft

Update on Membership

- Membership: 23
  - Premium Members: 4
  - General Members: 13
  - Associate Members: 6

Premium Members

Horizon Robotics

Jump Trading

NIO

UNSW Sydney

Founding member
Endorsed Service Provider

"New"

New

General Members

Cog Systems Inc

Founding member
Endorsed Service Provider

DornerWorks Ltd

Founding member
Endorsed Service Provider

Galois Inc

Google LLC

HENSOLDT Cyber GmbH

Founding member
Endorsed Service Provider

Kry10 Limited

Endorsed Service Provider

Lotus Cars

Penten Pty Ltd

Proofcraft Pty Ltd

Endorsed Service Provider

Raytheon Technologies

SpacemiT

Technology Innovation Institute

Xcalibyte

Associate Members

Autoware Foundation

ETH Zurich

Kansas State University

NCSC

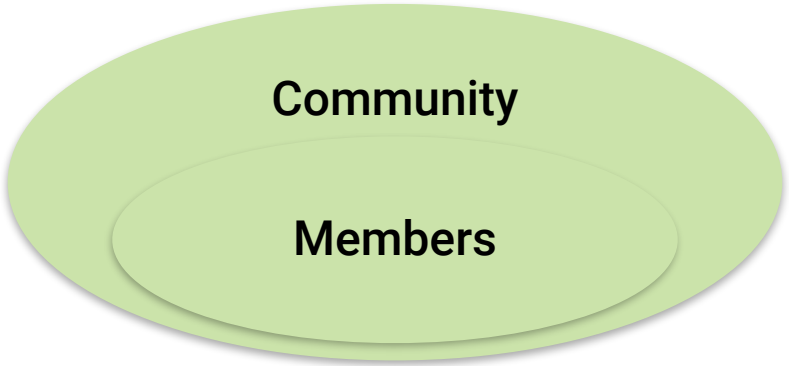
RISC-V International

TU Munich

Endorsed Service Providers

- Endorsed Service Providers:

Joining



seL4 is open-source, free to use by everyone

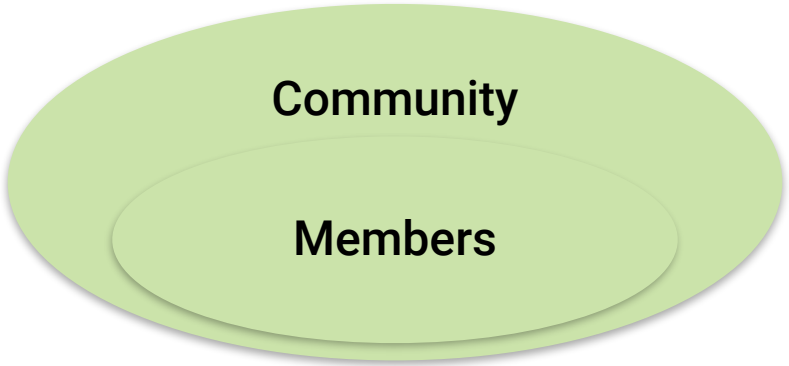
It needs to be supported by its users and adopters

Joining

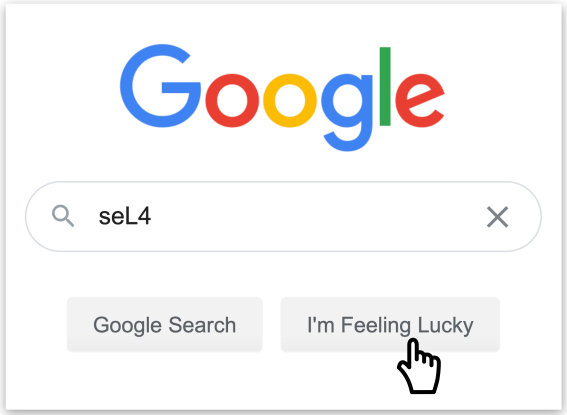
Being a member means that:
- your membership fee is providing the required funding to support seL4
- you have a voice in deciding what investments are made to support seL4

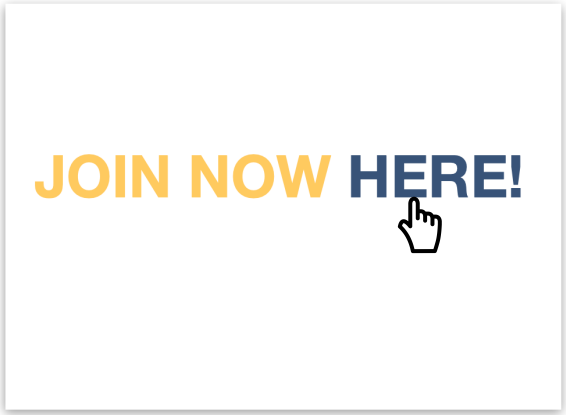
Premium	General	Associate
$ 100K	$30K (5000+) $20K (500-4999) $10K (100-499) $3K (0-99)	Free
Guaranteed board seat	One seat as a class	Non-profits, gov…

Joining

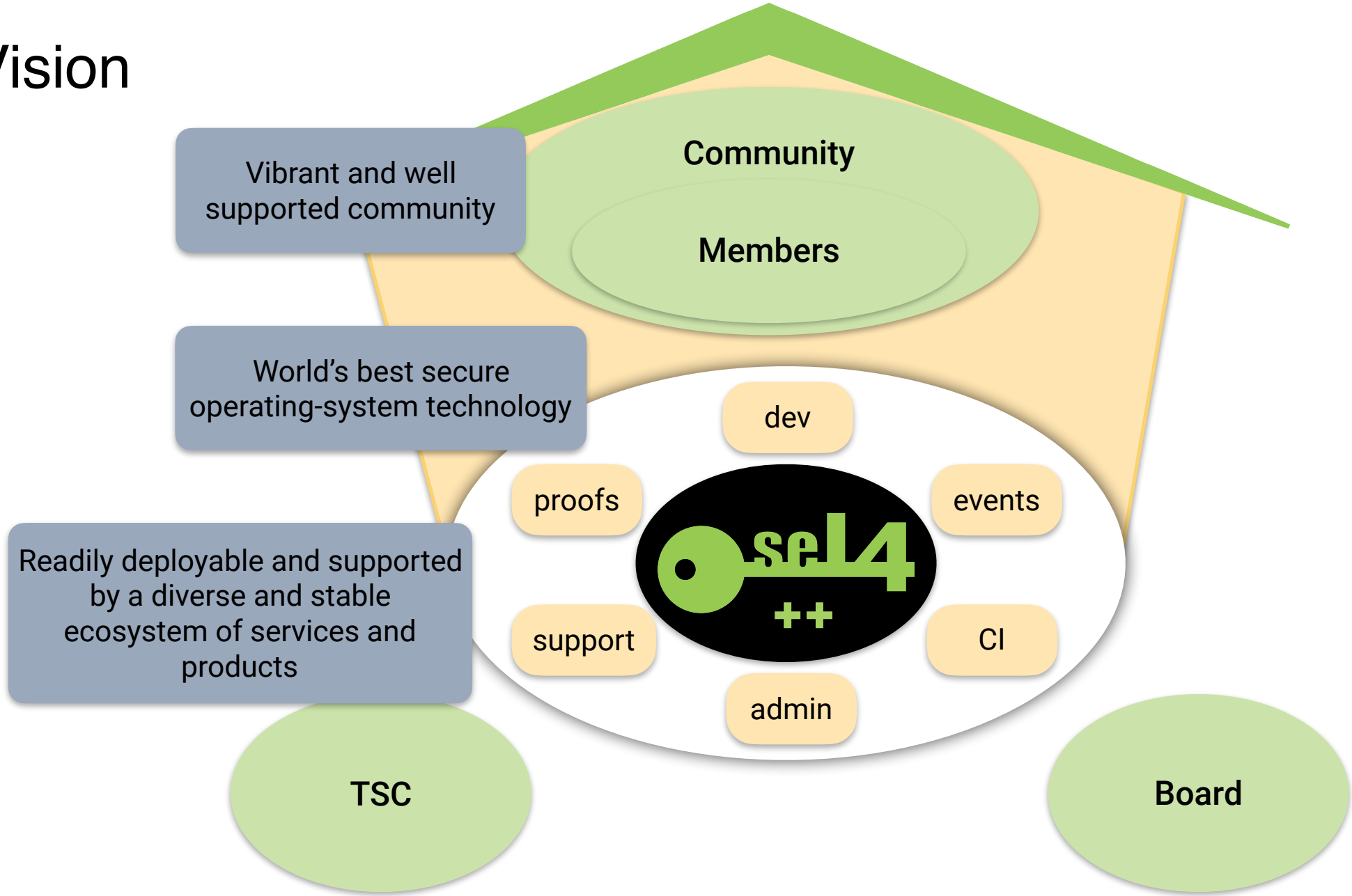


Join in!





Vision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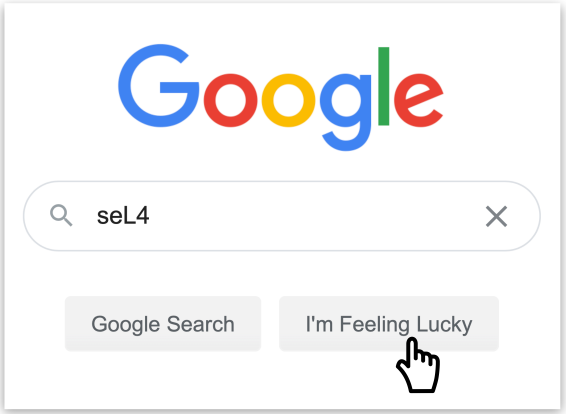
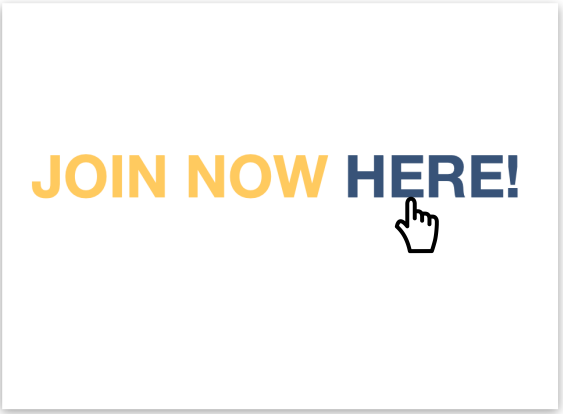

Google
seL4
Google Search
I'm Feeling Lucky

seL4 FOUNDATION
seL4 Foundation
Open source foundation for seL4
and its ecosystem. Want to join?


JOIN NOW HERE!