CHERI

Introduction to the CHERI Alliance

Why / What / How?

Unite industry leaders, system developers, users and security experts to **drive and promote CHERI** as an efficient security standard

CHERI Alliance's mission

CHERI

○ Why a CHERI Alliance?

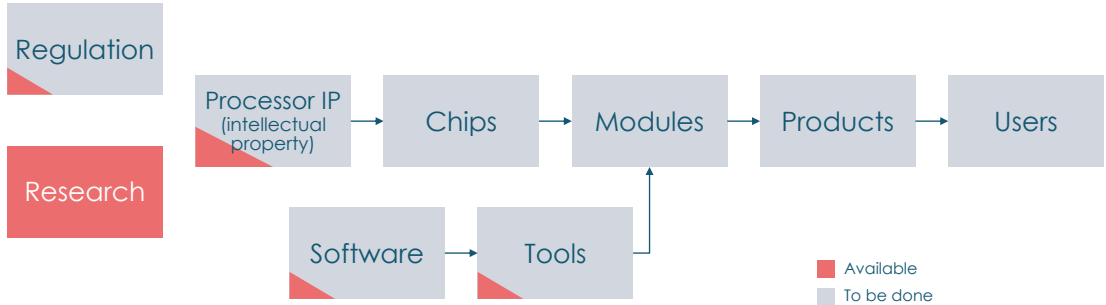- **Accelerate adoption!**
- CHERI cannot just be a specification
- Need to go further
  - Bring an ecosystem together – industry, users, government and academia
  - Promotion of security (and CHERI in particular)
  - Technical alignment
  - Demonstrate industry adoption
  - Manage communication / branding
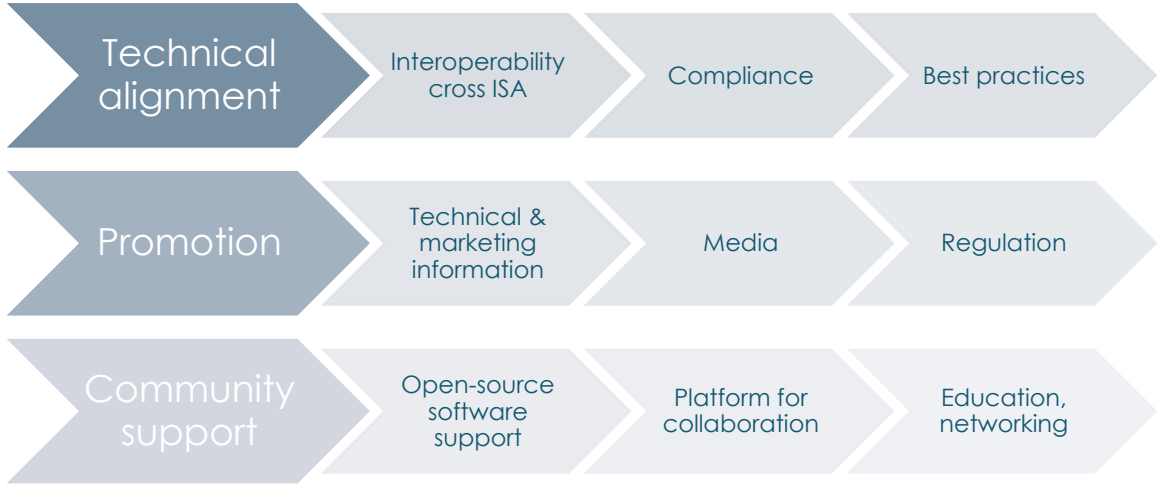 - Educate, support community
  - Network

CHERI

Getting CHERI adopted

How to stimulate the industry?

Show benefits
Make it easy to adopt
Highlight risks (lack of security / upcoming regulations)

Regulation

Research

| Processor IP (intellectual property) | → | Chips | → | Modules | → | Products | → | Users |

| Software | → | Tools |

■ Available
■ To be done

CHERI

Role of the CHERI Alliance

Technical alignment	Interoperability cross ISA	Compliance	Best practices
Promotion	Technical & marketing information	Media	Regulation
Community support	Open-source software support	Platform for collaboration	Education, networking

An independent entity

- ISA-agnostic
  - CHERI could be added to Arm, x86, MIPS, RISC-V, …
- Country-agnostic
  - Initially driven by UK/US, but security is not country-dependent
- Not just one company
  - Need broad industry adoption
  - Need a community
- Manage CHERI brand

Feb 2024	May 2024	Nov 2024
Start the company	**Sign-up first members**	**Launch!**
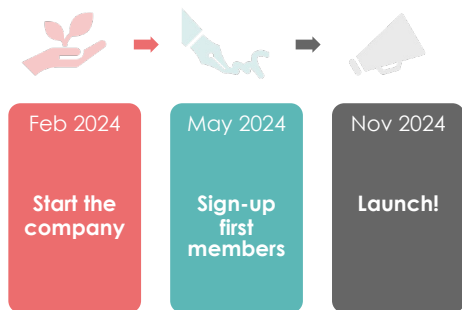
Hosting structure

- CHERI Alliance [Community Interest Company](#)
  - Limited company – no shares
  - Defined / audited purpose
- Founding Directors of the CIC

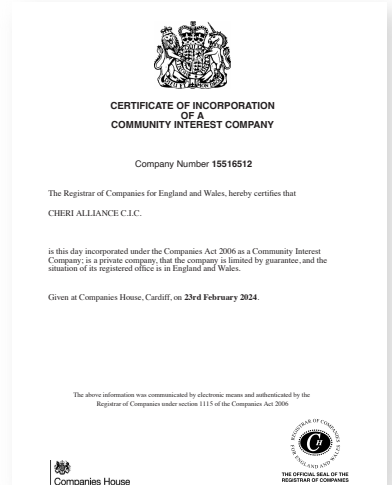**Mike Eftimakis**
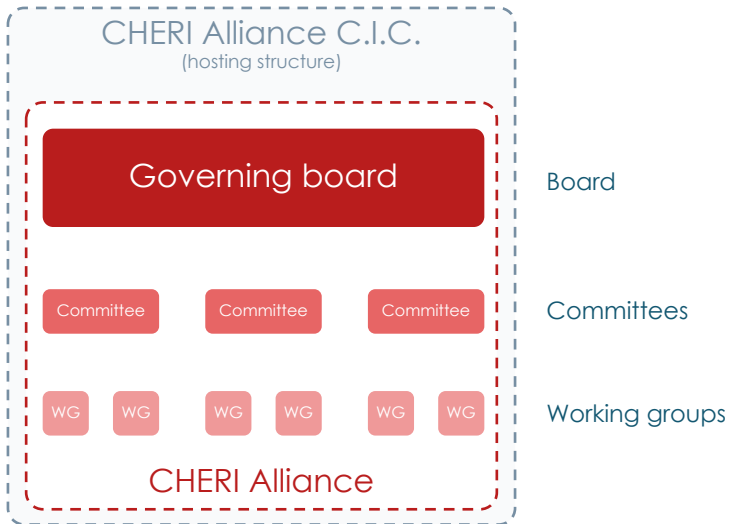VP Strategy & Ecosystem
Codasip

Robert Watson
Professor
UNIVERSITY OF CAMBRIDGE

Mike Halsall
Founder
Emerging Tech Radar

Gavin Ferris
Chief Executive Officer
lowRISC

CERTIFICATE OF INCORPORATION
OF A
COMMUNITY INTEREST COMPANY

Company Number **15516512**

The Registrar of Companies for England and Wales, hereby certifies that

CHERI ALLIANCE C.I.C.

is this day incorporated under the Companies Act 2006 as a Community Interest Company; is a private company, that the company is limited by guarantee, and the situation of its registered office is in England and Wales.

Given at Companies House, Cardiff, on **23rd February 2024**.

The above information was communicated by electronic means and authenticated by the Registrar of Companies under section 1115 of the Companies Act 2006

THE OFFICIAL SEAL OF THE
REGISTRAR OF COMPANIES

Companies House

⬡ **Governance**

Members
(yearly membership fee)

Community
(free)

CHERI Alliance C.I.C.
(hosting structure)

Governing board — Board

Committee   Committee   Committee — Committees

WG WG   WG WG   WG WG — Working groups

CHERI Alliance

Founding members of the CHERI Alliance

CAPABILITIES LIMITED

CHEVIN TECHNOLOGY

Codasip

Critical technologies inc.
Trustworthy Networked Autonomy

CYNAM

[dstl]

FreeBSD FOUNDATION

Google

LMT 光濟科技股份有限公司 LIGHT MOMENTUM TECHNOLOGY CORP. ~ Light Your Life ! ~

lowRISC

National Cyber Security Centre
a part of GCHQ

OPENHW GROUP
PROVEN PROCESSOR IP

PARVAT

SCI

SRI

Prifysgol Abertawe Swansea University

TRUSTED COMPUTING CENTER OF EXCELLENCE

TechWorks

UNIVERSITY OF BIRMINGHAM

UNIVERSITY OF CAMBRIDGE

University of Glasgow

CHERI

Governing board

Composition

- 7-9 people
  - 1 chair + seats from paying members
  - 0-2 community seats
- Max 1 person per company

Functioning

- Elected for 2 years
  - Elected by Members
  - Chair elected by board
  - By-election if changes
    - Member company acquired
    - Person leaving Member company
- 1 seat = 1 vote
  - Majority voting
  - Quorum 5 people
- No remuneration

Role

First elections just happened

- Control structure
- Approve new working groups / projects
- Approve major initiatives from committees
- Allocate budget / approve accounts
- Organize referendums

CHERI

○ **Committees**

Composition

- Max 5 people

- Max 1 person per company

Functioning

- Selected by gov board
  - Members propose candidates
  - Chair selected by board
  - By-election if changes
    - Member company acquired
    - Person leaving Member company

- 1 seat = 1 vote
  - Majority voting
  - Quorum 3 people

- No remuneration

Role

- Propose new working groups / projects

- Propose initiatives

- Manage working groups

- Prioritize work

- Review / approve WG results

- Publish / open results

Working groups

- Focus on key topics
  - Promotion
  - Software / OS / Tools porting
  - Hardware recommendations
  - …
- Opportunity to
  - Collaborate and show expertise
  - Learn
  - Network
- Open to all members

Marketing   Technical

Discover all working groups on
https://cheri-alliance.org/who-we-are/working-groups

CHERI

Target activities

Standardization & best practices

- Promote the CHERI specification and align across ISA
- Support CHERI adoption in open-source software
- Focus on efficient implementation and optimization
- Drive standardization, other organizations
- Establish best practices, guidelines, and implementation methodologies

Marketing

- Advocate for the adoption of CHERI by industry players
- Raise awareness about importance of robust security
- Educate industry stakeholders and regulatory bodies
- Promote and protect the CHERI brand

Compliance

- Develop a compliance program
- Manage testing process
- Manage branding and promotion of compliant products

Collaboration & knowledge sharing

- Foster collaboration among Alliance members
- Facilitate networking opportunities, conferences, and workshops
- Collaborate with related / complementary security initiatives
- Host SW repositories
- Promote HW reference models

○ **Audience**

Group	Desired impact of CHERI Alliance
Govt / Regulators	Requesting a higher security level in products
End users	Create awareness, pull for CHERI-enabled products
OEMs	Implement CHERI into their products
Tech providers	Release CHERI-enabled products (IP, tools, SoCs, modules…)
SW community	Port software to CHERI, use CHERI features (e.g. compartmentalization)
Media	Create awareness, get visibility
Research community	Get them involved, develop future extensions
CHERI Alliance members	Show leadership, drive CHERI, benefit from networking

Regulators   Media

Research

IP → SoC → Modules → Products → Users

SW → Tools →
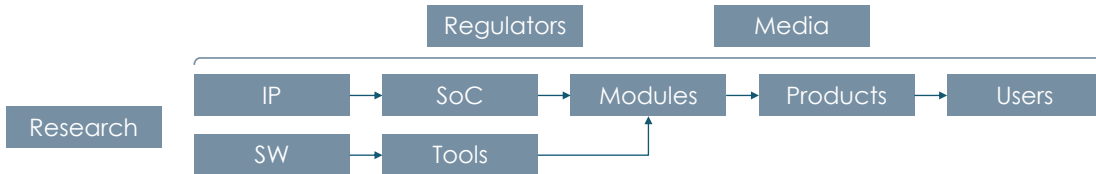
CHERI

○ **Expected deliverables**

- CHERI tech alignment (for all architectures)
- CHERI compliance suite
- Marketing collaterals
- Marketing campaigns
- Education material
- Web site
  - Information / Education / Networking
  - Access to deliverables
  - Ecosystem aggregation (listing players, SW repositories, forums…)
  - CHERI-compliant product listing

Join the Alliance now!

Demonstrate
security
leadership

Network,
collaborate
and exchange

Accelerate
adoption of
CHERI

Share
promotion
costs

Activate the
community

Member benefits

For all members

- Demonstrate security leadership
- Accelerate adoption of CHERI
- Drive alignment of the standard
- Activate the community / share dev costs
- Network and exchange
  - Member-only address book
  - Member-only reports, information
  - Special events
- Show product compliance*

- Vote in upcoming elections
- Get elected to the Governing Board
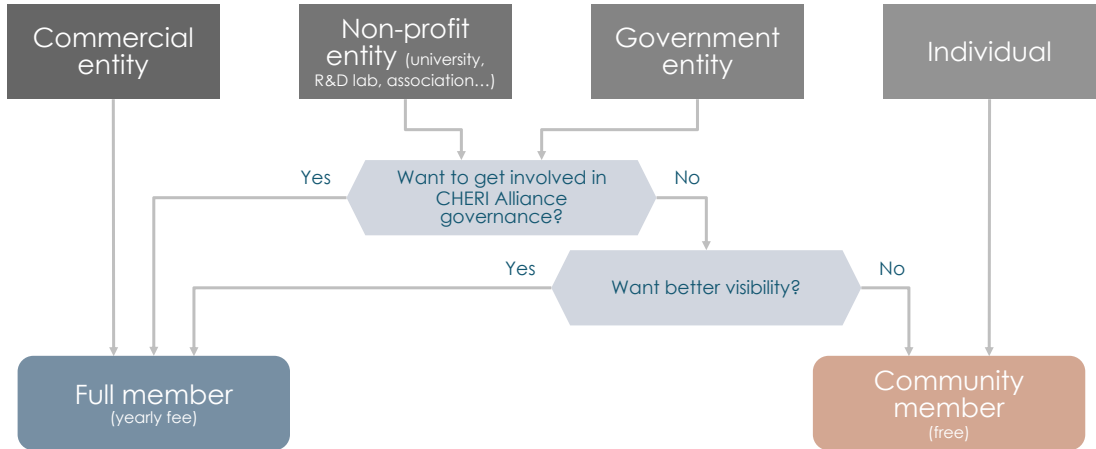- Get involved into committees / working groups

* Compliance program to be developed

Example of marketing benefits

- Free demo pods on the CHERI Alliance booth
  - Embedded World

- Web presence
  - Highlights on LinkedIn
  - CHERI Alliance Website

- CHERI Alliance conferences
  - Talks, demos, …

How to decide membership type?

Membership tiers

	Full Member (mandatory for commercial companies, possible for other entities)	Community (accessible only to non-profit – universities / research / govt / associations / individuals / …)
Gov board participation	● [7 seats]	● [0-2 seats]
Vote to elect gov board	■ [for member seats]	■ [for community seats]
Committees' participation	●	○
Working groups participation	■	■
Full members benefits (directory, visibility, product listing…)	■	
Cost	Depending on entity size	Free

Micro (< 5 p)   Small org (< 50 p)   Medium org (< 250 p)   Large org (≥ 250 p)

- ■ Yes
- ● Yes, if elected
- ○ By invitation only

Ensuring sustainable activity

- Use of funds
  - Web site dev & maintenance
  - Marketing activities
  - Infrastructure (hosting, cloud, SW…)
  - Legal & administrative costs
  - Technical conferences
  - Member & Community management
- … In the future
  - Compliance testing?

- Alliance financed by the industry

- Start-up phase with financial support of

Department for
Science, Innovation,
& Technology

CHERI

The Alliance relies on members' participation

- Exchange with other experts
- Provide feedback
- Contribute code & content
- Collaborate

- Participate to CHERI marketing
- Publish your CHERI-related news
- Promote / amplify the message

- Get involved in working groups
- Support and educate the community
- Network

No formal obligation…
but the more we work together, the more efficient we will be

CHERI

THANK YOU

Contact contact@cheri-alliance.org

Web   www.cheri-alliance.org