



# CHERI Secure by Design Managed Deployment Programme

Summary update for the CHERI Blossoms  
Conference

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# Accelerating CHERI adoption across UK critical systems

## Why this matters

### Risk is accelerating

Cyber risk driven by memory-unsafe code is escalating even with constant patching programmes

### Existing tools don't scale

Approaches like patching, rewrites, safer languages do not scale to the depth of legacy code and modern system complexity

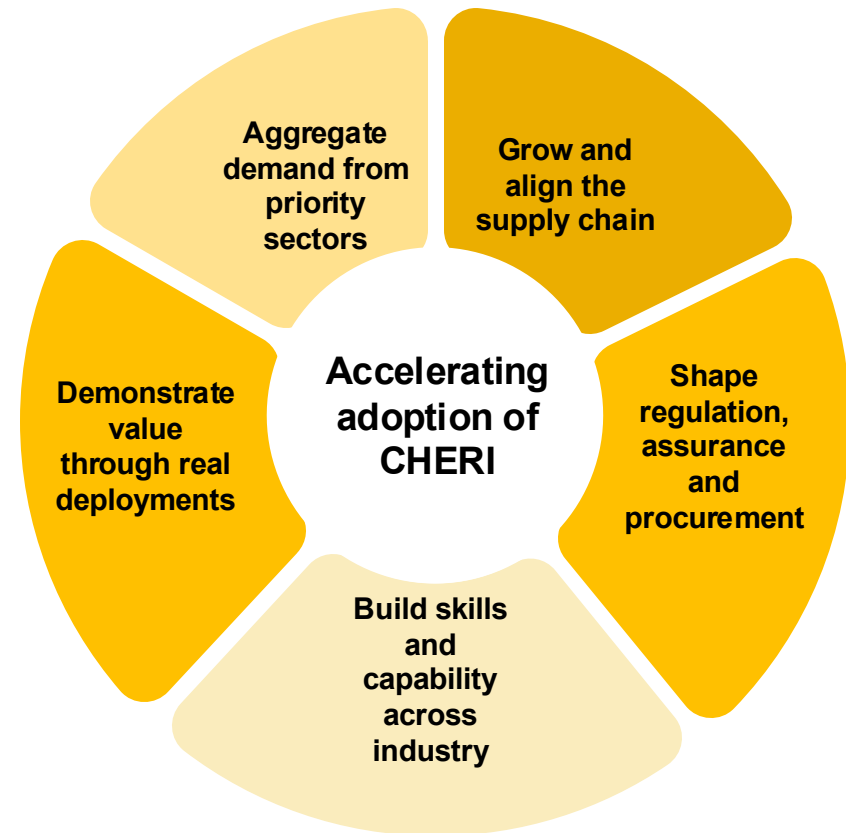
### Root cause is memory safety

Memory safety flaws remain the dominant source of software vulnerabilities and real-world exploits

### CHERI enables a step-change

For the first time, hardware-enforced memory safety offers a scalable, low-disruption route to address risks at their root

## What it will take to drive CHERI adoption at scale



# PA is delivering the DSIT funded CHERI Managed Deployment Programme



## Prioritised Use Cases

- Assessed seven sectors to identify where memory-safety risk, national importance and adoption timing align
- Developed and prioritised 25 high-risk subsystems and shortlisted 6 near-term use cases with strong CHERI fit
- Established a clear adoption pathway distinguishing “tech-ready” from “deployment-ready” opportunities



## Assembled Collective

- Engaged 30+ organisations across energy, defence and telecoms, including asset owners, OEMs, regulators and suppliers
- Secured 15 signed Letters of Support across priority use cases, exceeding initial targets
- Validated demand, capability and willingness to move beyond R&D into real deployment



## Planned Adoption

- Co-designed the managed deployment programme: governance, stage-gates, assurance and supply-chain enablement
- Developed four detailed intervention plans via workshops with clear routes to TRL-8 and live environments
- Identified costs, benefits, risks and non-technical adoption barriers (assurance, procurement, supply chain)



## Delivering Adoption

- Delivering CHERI adoption through a stage-gated, evidence-led programme
- Supporting projects with wrap-around governance, assurance, supply-chain coordination and buyer engagement
- Enabling real deployments and scalable pathways to wider adoption across UK critical sectors

**Phase 1**  
**Jul-Sept 2025**

**Phase 2a**  
**Oct-Dec 2025**

**Phase 2b**  
**Jan-Mar 2026**

**Phase 3**  
**Apr 26 – Mar 30**

# We have designed a programme to deliver TRL-8 deployable CHERI systems and a sustainable adoption Collective

## Real products, real environments

4 sector-critical products integrate CHERI into live architectures, progressing from prototype to TRL-8 through real validation, assurance and deployment pathways

### Collective expansion & co-funding for scale

Active expansion of the CHERI adoption collective and mobilisation of follow-on funding to move successful projects into larger-scale deployment

### Marketing, dissemination & learning capture

Structured dissemination of evidence, playbooks and reference deployments to build confidence and accelerate wider CHERI uptake

### Portfolio governance, stage-gates & assurance

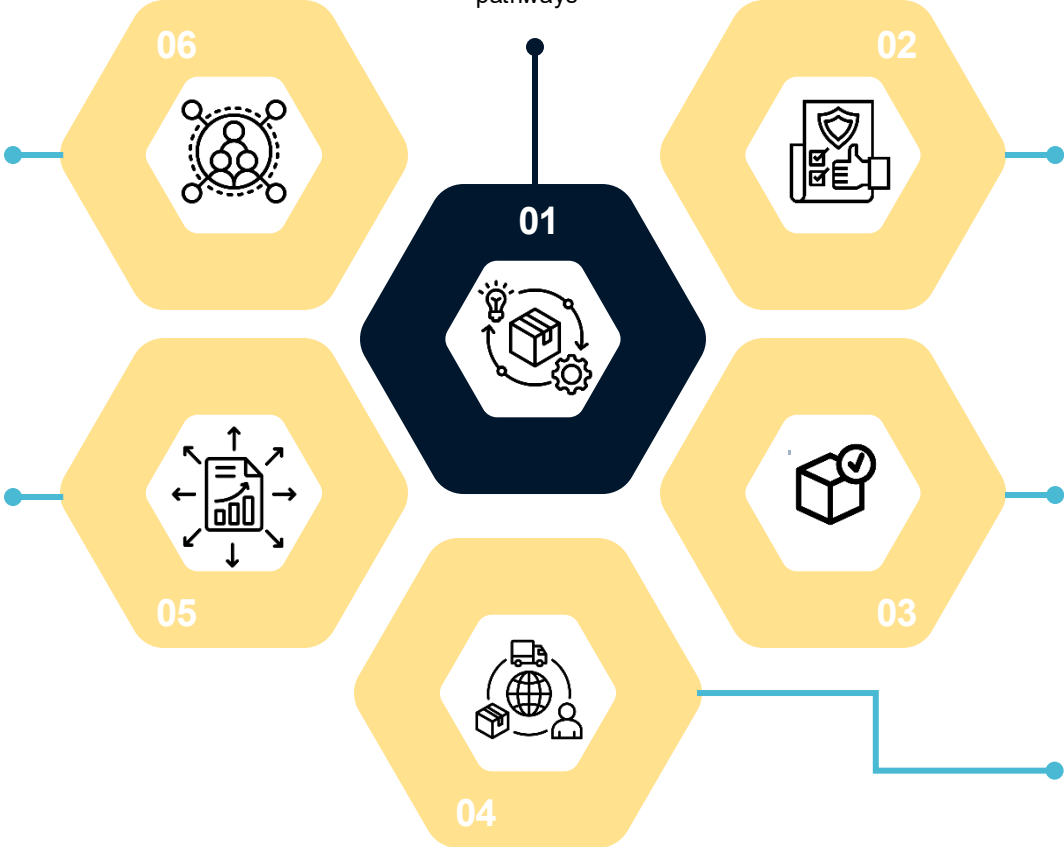
Stage-gated portfolio delivery ensures funding is tied to technical evidence, assurance readiness and deployability, reducing risk and focusing investment on solutions that can scale

### Regulatory, assurance & buyer interface

Programme-level engagement with regulators, assurers and buyers to align CHERI outputs to real acceptance and procurement requirements.

### Supply-chain coordination & hardware readiness

Coordinated CHERI hardware enablement- FPGAs, dev boards and silicon supported by training, distribution and future scale-up options



# Four high impact CHERI adoption projects across defence, energy and national security are primed to begin work in April 2026

## Defence Use Cases



**Vision:** Deploy a CHERI-hardened display-isolation device (WiredGlass) protecting high-security workstations from covert data transfer and exploit pathways

**Sector:** Government / Defence / CNI (high-assurance endpoints)

**Key benefits:**

- Strengthens high-assurance governance controls by hardening a critical security boundary
- Reduces exploit pathways and supports secure-by-design adoption

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**Vision:** Deliver a memory-safe, timing-safe MicroCrypto “trusted edge” module to strengthen resilience across critical national systems

**Sector:** Defence / National security / Critical infrastructure.

**Key benefits:**

- Hardens PNT processing against memory-safety exploits; improves resilience to GNSS disruption
- Enables secure-by-design deployment of a trusted-edge platform in high-assurance environments

## Energy Use Cases



**Vision:** Deploy CHERI-hardened load controllers to deliver cyber-safe energy flexibility at scale for a cheaper, more resilient Net Zero system

**Sector:** Energy (smart metering / flexibility / load control)

**Key benefits:**

- Reduces patching and whole classes of memory-safety vulnerabilities
- Improves device reliability
- Lowers assurance burden and helps simplify certification/acceptance routes



**Vision:** Upgrade Reclose2 from fault-restoration towards secure smart-grid control, enabling safer remote/local automation on LV networks.

**Sector:** Energy (distribution networks / LV substation monitoring & control)

**Key benefits:**

- Hardware-enforced memory safety to increase confidence in smarter, connected control use cases
- Improves grid-edge security and supports a more flexible, resilient, data-driven energy system

# Reflection on early learnings from the CHERI Programme

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- 1** **Orchestration of the supply chain is emerging as absolutely critical**  
CHERI deployment doesn't hinge on a single organisation making progress- it requires hardware vendors, OEMs, integrators, asset owners and regulators all moving together. So, a key part of our Programme work is coordinating these dependencies
- 2** **Targeting adoption windows is helping focus commercial decision-making**  
A clear learning from our work so far is that CHERI adoption advances fastest when there is a real commercial or operational window to aim towards- such as a known asset refresh cycle, procurement event, or regulatory driver. These windows create a natural pressure to prioritise
- 3** **Aggregated demand increases supply-chain confidence and accelerates commercial commitment**  
One of the clear signals we've seen is that suppliers respond strongly to coordinated or aggregated demand. When multiple buyers signal aligned interest in CHERI solutions, it reduces uncertainty, strengthens business cases, and encourages suppliers to invest and scale
- 4** **The Adoption Readiness Framework is helping us test assumptions and avoid hidden blockers**  
The framework has already proven valuable in forcing us to examine the full set of enablers needed for deployment- from hardware availability, assurance requirements and supply-chain readiness. It highlights where progress is real versus where assumptions remain untested

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