UK Research and Innovation

DIGITAL SECURITY
BY DESIGN
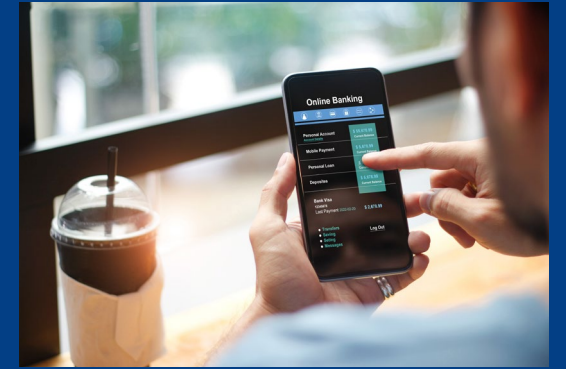
FREE THE WAY WE LIVE,
WORK AND PLAY

A pathway to a fundamental step change in digital technology that will transform how we learn, work, play, automate and collaborate.

What is Digital Security by Design (DSbD)?

DSbD is an initiative supported by the UK Government to transform digital technology and create a resilient, and secure foundation for a safer future.

The initiative will enable a more trustworthy digital environment, in which only expected access to data and operations are permitted while limiting the impact of vulnerabilities.

Although there is no magic bullet that solves everything to eradicate the cyber security risks, the Digital Security by Design initiative is realising new technologies that can block many of the ongoing software vulnerabilities from being exploited therefore reducing harm.

CREATING A MORE RESILIENT, SAFER FUTURE

Why is DSbD relevant?

- The continuous cycle of patching and mitigating vulnerabilities is at the core of today's organisation's strategy to protect their cyber-attack surface.

- Cybercriminals only need to be right once, while defenders need to be right all the time.

- What if instead computers could be built to block vulnerabilities by design?

- UKRI's DSbD Challenge (DSbD) is rethinking how computers are built to be inherently more secure from cyber-attacks.

ENHANCING SECURITY

DSbD Programme Activity

This programme addresses a market failure that has existed for decades.

That is, hardware will not be created when software does not exist to enable the use, and software will not be written for hardware that does not yet exist.

Through collaboration between Industry, Academia and Government, the scope of this challenge includes:

- The Morello board, developed by a consortium led by Arm implementing research from Cambridge University (CHERI)

- Software Development and Enabling Use through Collaborative Research and Development Projects

- Evaluating impact in sector specific examples through Business Led Demonstrator Projects

- Progressing towards technology adoption.

A MINDSET
CHANGE

DSbD will enable everyone to live in a future more resilient from cyber threats by design.

How will DSbD Technologies have an impact?

In the long term new DSbD technology will:

- block the exploitation of up to 70% of ongoing vulnerabilities
- lower costs in cyber security
- increase business productivity
- increase trust in computers and connected devices
- increase sales of products and services as consumer trust increases
- build a safer digital future for everyone.

A collaborative integrated approach

Research and Innovation

Various collaborations are researching the adoption of DSbD technologies.

Industry Integration

Digital Catapult is delivering a DSbD initiative to provide the UK technology community with the training and opportunities to explore the technologies in the Arm Morello prototype platform. The DSbD Technology Access Programme will deliver a series of events giving businesses hands-on experience with the technologies. Businesses will gain access to the wider community of technology stakeholders increasing their understanding of DSbD technologies and how these can benefit their business and their customers.

Interdisciplinary, applied research

Cyber Security is not just a technical problem. The DSbD Discribe Hub, social science and other STEAM disciplines are working together to address the DSbD challenge; and the regulatory and policy environment to create a better collective understanding of the future context for the next generation in digital security technology. One that will inspire successful development and wide-scale adoption.

BUILDING
TRUST

Through the application new DSbD technologies, business and people will be free to use and trust technology.