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CRANE Annual Report

YEAR ONE: ending March 2026



CRANE Year One Annual Report

Year ending 31/03/2026

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Executive Summary

The focus of the first year of CRANE has been building the network and establishing initial directions for research.

- We have held meetings with the cyber security research community, established a website and newsletter, and built a mailing list of 639 recipients.
- Initial streams of work have been established on *Inclusive Careers* and on *Research Practices* – to include ethics, vulnerability research and disclosure, and trusted research.
- Four Special Interest Groups have been set up, following a call to the community for proposals.
- Regional seminar coordinators have been recruited, and four seminars have been held, live-streamed for the wider network.
- A major exercise in horizon-scanning – exploring technology trends – is in progress and will inform the Network's first call for research proposals.
- The team – academic and administrative – has been established, including the recruitment of a Programme Manager.
- A *Community Advisory Board* has met four times, to provide advice and challenge to the executive team, and to form the core of a group of reviewers for proposals (for projects, SIGs, and other activities).



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Introduction

CRANE is an EPSRC-funded *NetworkPlus* with the overall objective of strengthening the UK's Cyber Security Research community. This report covers activities and achievements in its first year of operation.

Time-Line and Major Milestones

The project's funding began on 1st April 2025. Our project plan called for a short 'set-up' phase, followed by three substantive project phases of around 18 months each. Delays in contractual arrangements extended the set-up phase, so *phase one* began on 1st September 2025, and will run until 31st March 2027.

We expect to produce further annual reports each April: the 2027 report will also be a review of phase one. The phased approach is intended to offer an opportunity to review CRANE's full programme of activity, and consider necessary changes of emphasis for the subsequent phase(s). Whereas the present report is a short summary of activity, we envisage that the year two report (and subsequent reports) will have more substantial narrative content, as CRANE activities begin to produce outputs.

The extended set-up phase (with limited activity taking place) means that we plan to seek a 'no cost' extension in the last year of the project, so that the actual project end is expected in July 2030.

Leadership and Governance

The Leadership team of CRANE consists of the lead and four co-leads, together with our professional Programme Manager. The team has a short meeting fortnightly, with a full-day off-site meeting every four months.

The Community Advisory Board meets quarterly with an independent chair, to hear reports on CRANE activity, and to give challenge and advice on the programme and priorities. The Board also provides the core of a group of peer reviewers for project proposals, new working and special interest groups, and other new activities.

The Independent Steering Group is constituted according to EPSRC's specification and will meet twice a year to provide accountability and oversight to the Leadership Team.

The report below gives details of progress in these areas of leadership and governance.

Audience

Production of this report meets an obligation to EPSRC, but it is also offered to the wider community as a transparent account of CRANE activities. It also forms a progress report for discussion at the Independent Steering Group.

Theory of Change

During the set-up phase, we developed *A Theory of Change* model, intended to provide a comprehensive, visual, or narrative framework that maps out how specific activities, inputs, and interventions lead to desired long-term outcomes and impacts. A Theory of Change acts

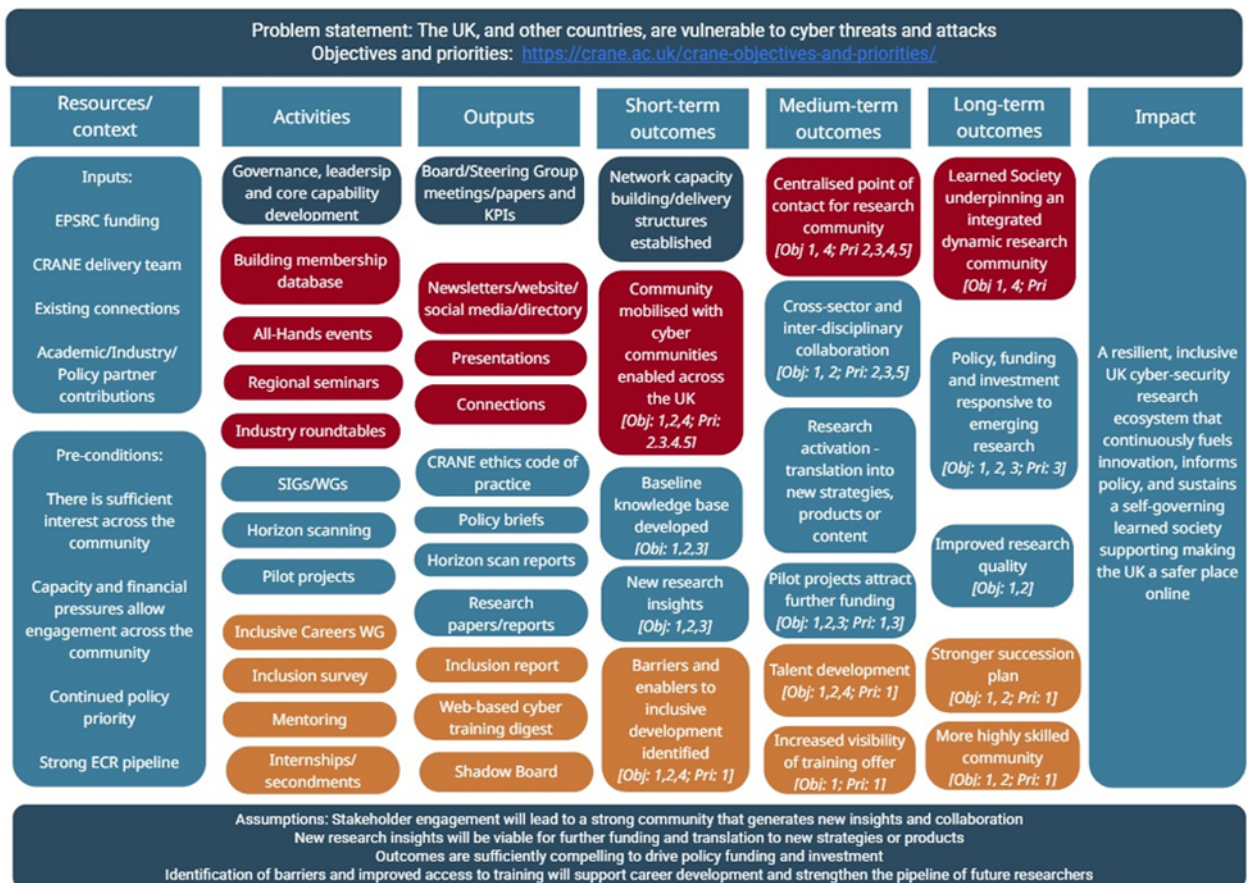


as a 'logic model' or roadmap, detailing the causal pathways, necessary preconditions, and explicit assumptions behind a strategy. It focusses on impact, outcomes, outputs, and activities.

The CRANE theory of change draws on the Network objectives and priorities which are here framed into measurable outcomes to be delivered over time through specified activities and outputs.

The theory of change is a live document, updated in response to stakeholder feedback and providing a framework for learning within and between the Network phases. A current snapshot of our ToC document is shown in Figure 1. It shows our activities in relation to our inputs (resources and context) and expected outputs. It makes explicit the assumptions around how activities will lead to outcomes. Progress against the theory of change is to be monitored over time (through project KPIs), with appropriate course correction to be implemented in response.

Figure 1: Theory of Change



Key

- Network delivery
- Community building
- Game-changing
cyber research
- Inclusive career
development



Progress towards objectives

The CRANE proposal identified four objectives for the NetworkPlus, and we report on these below. In designing a programme to pursue those objectives, we had five priorities in mind, which are:

- Priority 1. Developing Researcher Careers, (ECRs, PhDs); Equality; Diversity; Inclusion
- Priority 2. Integrating the academic community
- Priority 3. Facilitating partnerships with business, government, and other sectors
- Priority 4. Promoting and developing regional strengths
- Priority 5. International knowledge exchange

We report on progress against each objective below, and cover these priorities where relevant.

In addition, we seek to structure CRANE wherever possible to maximise engagement whilst minimising the carbon footprint of events. We do not have a systematic methodology for balancing these concerns yet, but prefer online and hybrid events where these can meet the relevant goals. We note that such events can also assist inclusivity for members unable to travel, or who work best away from crowded environments.

Objective 1: Help to deliver the UK National Cyber Strategy (Pillar 1:UK Cyber Ecosystem; Pillar 3: Technology Advantage).

A significant part of the first seven months of operation (the start of Phase One) has been in seeking to understand the ecosystem of cyber security researchers and how it could be developed.

Community Advisory Board

We convened our Community Advisory Board (membership detailed below) and have held quarterly meetings to describe our programme of work and gain feedback and shape for CRANE's work. The group has so far provided substantive feedback to our planning, helped to review SIG proposals, shaped the *Technology Trends* analysis work-package, and provided a sounding-board for discussions about the ongoing relationship of NCSC with the academic community. The Board has an independent chair, Dr. Pamela Richards (University of Lancashire).

Events and Communications

For the wider community, we held an online launch event (attended by 167, in mid-July 2025), established the CRANE website (www.crane.ac.uk), a membership programme, and a monthly email newsletter, *wingspan* (see KPIs below for membership and mailing list statistics).

In addition, we have presented CRANE at a variety of conferences and events (tabulated below).

SIGs and Regional Seminars

In order to magnify the reach, we have sought involvement from the community in a wider programme: special interest groups and working groups, as described below, and regional seminars.



The objective of the regional seminars is to encourage academic networking in all parts of the UK, with visible CRANE support and with specific talks being livestreamed for the benefit of the wider research community. We have attempted to recruit coordinators for these in each region of the UK. Four regions held seminars in this period, with more planned for summer 2026. These allow members from different institutions in the regions to come together, and provides an ongoing programme of CRANE events. We envisage this being the starting point or catalyst for stronger regional activity over time.

Wider Ecosystem

Aware of other parts of the ecosystem, we have engaged significantly with:

- NCSC: regular meetings to shape our relationship; leading to a Working Group to put this on an open ongoing basis.
- CyBOK: points of shared interest; CyBOK to have a significant presence at our 'All-Hands' meeting
- CyberFocus: we have held discussions held around potential to collaborate in relation to industry stakeholder engagement and future roundtables. The Cyberfocus team is supporting the CRANE Regional Seminar series in the North West.
- SPRITE+: is another EPSRC Networkplus, with an emphasis on Security, Privacy, Identity, Trust, and Engagement. Since these topics are strongly related to cyber security, we have sought to avoid duplication of effort, and complementary programmes of activity. We have planned a joint *sandpit* (see below).
- NABS+: is also a Networkplus, addressing Analytical Behavioural Science in Security and Defence. Again, these topics have relevance to cyber security, and we have an ongoing discussion on shared funding priorities

Support of 'technology advantage' pillar is mainly addressed in Objective 3.

Work in progress and future plans

- We have scheduled an *All-Hands meeting* for the cyber security research community, 24/25 June 2026 at the University of Bath. We hope this will gain momentum as an annual gathering with a rich programme to promote networking and serendipitous collaboration.
- We enjoyed the support of many organisations in our initial proposal, and plan to re-engage with these and others very soon.
- A business roundtable was held adjacent to CyberUK in April 2026, to discuss challenges and opportunities for academic-business engagement in cyber security research, and we expect to hold more such events, and to use this to inform our wider engagement outside academia.
- International engagement is also important in this discipline, and we are developing plans to help the research community to work with partners overseas.

Objective 2: Support, develop, and nurture research in cyber security within and across academic disciplines, throughout the UK, with transformative challenge from wider stakeholder groups.

Both research and researcher career development are promoted through CRANE working groups and special interest groups.



Inclusive Careers

At the start of CRANE we established an Inclusive Careers Working Group. The Group is led by Prof. Lynne Coventry and will be supported by a number of researchers that will be identified from a call for membership of a *Shadow Board* (in progress at the time of writing). This Group exists to enhance awareness of EDI issues and promote a positive EDI culture within the Network and beyond. It is charged with creation and maintenance of the network's policies on diversity and inclusion and reviewing calls and events to try and remove any barriers to inclusion. The focus is on ensuring that all cybersecurity researchers feel included and valued by this network. Alongside collecting diversity data when members join, we will use an annual survey to measure feelings of inclusion. The Group's objectives are to promote individual growth, enable meaningful relationships and to communicate inclusion best practises.

Work to Date

- Quarterly online meetings set up. 3 held to date.
- ECR shadow Board call for members closed and Shadow to be chosen in May.
- First barriers to progression workshop held and barriers identified. Leading to design of first training workshop.
- First training workshop scheduled for May ('*Creating 4* impact*')
- Web page established

Research Practices

The Research Practices SIG was established in the starting phase of CRANE to investigate the requirements of the cyber security research community in terms of ethical review, disclosure practices, and engagement with the responsible research agenda. The SIG has held one meeting so far, where the community expressed enthusiasm for the work set out, and there was a wide-ranging discussion on what the scope for the SIG should be and what results we should deliver. A recurring theme is that there is considerable material relating to research practices, although not all of it is suitable for the cyber security research community.

Special Interest Groups

In terms of particular substantive research topics, we have sought to promote networking around these through an open call for special interest groups. We issued a call for proposals in October 2025, and received eight proposals. These were reviewed by a college drawn from the co-leads and the Advisory Board, and prioritized by a panel of the co-leads (a detailed transparency report was shared with the Board). Four proposals were accepted. Each SIG receives support from the CRANE team in organising events, an opportunity to meet at the All-Hands Meeting, funding for additional face-to-face meetings, and financial support (£5000) for an early-career researcher to work on the SIG's activities and deliverables. SIGs report quarterly on progress to the Board (the first reporting period ending on 31st March 2026), with two of the SIGs reporting on substantive initial meetings during this first quarter.

The initial set of SIGs is:

- Secure, Accountable and Efficient Intelligent Networked Systems (SIG-SANE)
 - Vadim Safronov (ECR, Oxford), Richard Mortier (Cambridge), Nicholas Allott (Nquiring Minds Ltd)



- Economics of Cybersecurity
 - Siraj Shaikh (with input from Pantelis Koutroumpis (Oxford), Neeshé Khan (ECR, Nottingham) Marta F. Arroyabe (Essex), Simon Parkin (TU Delft) Anjuli Shere (DSIT), John Maguire (DSIT), David Slinn (DSIT), Paul Waller (NCSC), Kathryn M (NCSC), and Tahir Soomro (KPMG)).
- Safe, Secure and Privacy-Aware Robotics (Safe and Secure Robotics)
 - John Clark (Sheffield University), Jims Marchang, (ECR, Sheffield Hallam University) Reza Sahand (Rahal Technology)
- AI and Cyber Security (AI-Cyber)
 - Biju Issac (Northumbria University), Adam Robson (ECR, University of Sunderland), Meera Sarma, (Cystel)

Work in progress and future plans

- The work of the SIGs and WGs is ongoing. We will review them at the end of Phase 1.
 - A second call for SIGs will be issued.
 - SIGs and WGs will have an opportunity to feed ideas into the CRANE pilot projects call.
 - *Pilot projects call*: the structure of the NetworkPlus allows us to operate pilot projects, with the aim of nurturing emerging research fields and developing researcher careers. We have divided this fund into three equal parts – one per CRANE phase – and will issue a call for proposals in June 2026. The inputs to this call include:
 - the horizon-scanning work of Objective 3
 - topics proposed by WGs and SIGs
- At the time of reporting, the call structure is still under discussion with the Advisory Board: it will be approved by that group before issue.
- *Joint Sandpit with SPRITE+*: SPRITE+ is EPSRC's long-established NetworkPlus in trust, identity, security and privacy. SPRITE+ proposed a *Sandpit* for summer 2026, and invited CRANE to participate. We have helped to shape the call and review the applicants. We will participate in the sandpit and the reviewing, and will fund one of the pilot projects arising from it.
 - *Inclusive Careers WG*
 - First inclusion survey to be circulated at All-Hands and then annually there after
 - Peer/group mentoring to be set up next year.
 - Regular update of website including quarterly inclusive careers showcase update
 - *Research Practices SIG*
 - The ongoing first activity of the SIG is to collect and collate existing resources. The next step proposed is to engage with the research methodology community to guide further work on identifying any gaps in research practice guidance that could be filled by CRANE.

Objective 3: Identify and articulate the need and opportunity for significant/game-changing new developments in cyber security research.

In support of this objective, we have completed a wide-ranging technology trends process, incorporating desk research of key sources, two rounds of a Delphi study and an additional two workshops focused on AI and Robotics / Automation respectively. As we write, the results of this work are being synthesised, to be published at our Annual All-Hands. We have also



engaged with stakeholders throughout this process, including meetings with DSIT and NCSC, and engagement of Ofcom and GO-Science in the workshop phase.

The process has yielded rich insights into the emerging cybersecurity research needed to ensure that future and emerging technologies are secure by design, in particular the technical and socio-technical challenges faced by technologies that are deeply embedded into our personal, family and work lives, as well as within us as humans.

Work in progress and future plans

- The report of this analysis will be published by June 2026.
- Topics identified in the report will contribute to first projects call (see above).
- We will adapt and repeat this process in Phase Two – noting the rapid change of cyber security issues, and the opportunity to explore topics which had to remain in the background in this first iteration.

Objective 4: Promote the development of a learned society in cyber security to enable a long-term sustainable community of research.

We are convinced that the need for a Cyber Security research community will out-live the NetworkPlus funding. CRANE will support the establishment of a learned society for cyber security research to support the community indefinitely. Progress towards this objective will accelerate in later years of the project.

During this phase, we have established the main milestones for this development, aligning with the subsequent phases (so that the learned society gains its own distinct identity and ability to take over CRANE functions during phase three). We have agreed that the learned society formation activity should be structured as a CRANE Working Group, with Prof. Shujun Li (University of Kent) as the lead for this WG. A small budget for this activity has been agreed.

Work in progress and future plans

- Working group is being established and its method of working determined.
- Detailed plans to be presented to the Independent Steering Group, to ensure no conflict of interest, etc.



Work Packages and Deliverables

WP1: NetworkPlus Leadership and core capability (for Objective 1)

Reporting Item/Deliverable	Reporting On	Objective(s) served	Reporting When
Community Advisory Board	Initial meeting held in Jul-25, with subsequent meetings in Nov-25, Jan-26 and Apr-26	1,2,3	Jul-25
Steering Group	Membership identified and approved with initial Group meeting scheduled for early May-26	1,2,3	Apr-26
Administrative Team	Programme Manager, Comms Officer and Project Administrator appointed	1,2,3	PM - May-25 PA – Oct-25 CO – Dec-25
Website	Website created including pages introducing CRANE, dedicated pages for each SIG, events, news and joining information.	1,2,3	May-25
CRM Database	CRM database and formal membership registration launched	1,2,3	Jan-26
Newsletter	Monthly newsletter including news from CRANE and the network community launched in October 2025 with a further 6 issues released in: Nov-25, Dec-25, late Dec-25 special issue, Feb-26, Mar-26 and Apr-26	1,2,3	Oct-25
EDI plan	EDI plan drafted and undergoing final sign-off	1,2	Apr-26

WP2: Technology, Threats, and Application Domains: Trends Tracking and Analysis

Reporting Item/Deliverable	Reporting On	Objective(s) served	Reporting When
Scoping and Reviewing	Evidence from external reports collated	3	Nov-25
First Survey	First Emerging Technology Delphi Survey runs	3	Nov-25
Second Survey	Emerging Technologies Delphi Part Two runs	3	Feb-26
Workshops	Two topic workshops held on Robotics and Automation (17 attendees) and AI and Machine Learning (18 attendees)	3	Mar-26

WP3: Topic Development (Thematic Workshops and Sandpits)

Reporting Item/Deliverable	Reporting On	Objective(s) served	Reporting When
Sandpit	Sandpit in collaboration with Sprite+ advertised and	3	Mar-26



	attendees confirmed. Event to run in Jun-26		
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WP4: Pilot Projects

Milestones occur later in phase one (June 2026).

WP5: Research Community Activity

Reporting Item/Deliverable	Reporting On	Objective(s) served	Reporting When
Inclusive Careers WG	WG launched with second quarterly meeting held in Jan-26	1,2	Oct-25
Research Practices SIG	SIG launched with resource gathering survey shared in follow-up	1,2	Oct-25
Open call for SIGs	Call for proposals for new SIGs	1,2,3	Oct-25
Thematic SIGs	4 new SIGs (detailed above) launched with first quarterly update reports received in Mar-26	1,2,3	Jan-26
Regional Activity	Seminar co-ordinators appointed for 12 regions across the UK. 4 hybrid seminars held.	1,2,3	Apr-26

WP6: Large-Scale Community Activity

Reporting Item/Deliverable	Reporting On	Objective(s) served	Reporting When
Online launch event	Online launch event held including keynote from Ollie Whitehouse (CTO, NCSC)	1,2,3	Jul-25
All Hands meeting	All-Hands meeting booked for Jun-26. Registration open Mar-May '26. Event to include: Keynotes, SIG presentations, tech talks (call for abstracts) issued to community, ACE-CSR closed meeting and networking sessions	1,2,3,4	Mar-26

WP7: Dissemination and Public Policy Work

This WP will start towards the end of phase one (Jan 2027).



KPIs and other numbers

Table 1: Membership

Mailing list launched in May 2025. Membership database launched in Jan 2026.

	Mar-26
Total Mailing List Size	639
Total Membership	258
UK Academic	224
Business/Prof Network	14
Public Sector	2
O/S Academics	16
Other	2

Table 2: Engagements

Events	Attendee Number
CRANE Events	
Launch Webinar	167
AI and Machine Learning Workshop	18
Robotics and Automation Workshop	17
Industry Roundtable, Glasgow	18
SIG/WG Meetings	
Research Practices SIG Session 1	31
Inclusive Careers SIG Session 1	5
Inclusive Careers SIG Session 2	5
Economics Cyber SIG Planning Meeting	12
Safe and Secure Robotics SIG Session 1	29
Regional Seminars <i>(NB: Attendee numbers for regional seminars are estimated as they are open access)</i>	
South East: AI and Cyber Security for Society	55
Northern Ireland: Cyber-Resilient Innovation	30
North East: Detection of AI-Generated Images Using Combined Uncertainty Measures and Particle Swarm Optimised Rejection Mechanism	30
Wales: Multiparty Computation for Privacy Preserving Computing	25
Total number of event attendees	442

Table 3: Calls

Calls	Application Numbers	Awarded
Call for SIG proposals (Oct-25)	8	4
Sprite+/CRANE AI Sandpit (Awarded is number of Sandpit attendees)	75	42

Table 4: List of regional seminars

South East: AI and Cyber Security for Society
Northern Ireland: Cyber-Resilient Innovation
North East: Detection of AI-Generated Images Using Combined Uncertainty Measures and Particle Swarm Optimised Rejection Mechanism
Wales: Multiparty Computation for Privacy Preserving Computing



Table 5: Other engagements (conferences, etc.)

Event	Date	CRANE engagement	Audiences
CyBOK Showcase event	Nov-24	Preview of CRANE	Academic
ACE-CSR meeting, Lancaster	Jan-25	Preview of CRANE	Academic
CyberUK 2025, Manchester	May-25	Stand	Industry, Academic, Public Sector
RITICS Fest, London	Sep-25	Presentation of CRANE	Industry, Academic, Public Sector
AMLUCS Conference, Bristol	Sep-25	Stand	Industry, Public Sector
IoTTSF Conference, London	Oct-25	Stand	Industry, Academic
CyberUK 2026, Glasgow	Apr-26	Stand	Industry, Academic, Public Sector

Memberships

Community Advisory Board

- Dr. Pamela Richards (University of Lancashire) - Chair
- Prof. Bill Buchanan (Edinburgh Napier University)
- Prof. Lorenzo Cavallaro (UCL)
- Dr. Lucas Cordeiro (University of Manchester)
- Prof. Steven Furnell (Nottingham University)
- Peter H (NCSC)
- Prof. Shujun Li (University of Kent)
- Prof. Muttukrishnan Rajarajan (City, University of London)
- Prof. Siraj Ahmed Shaikh (Swansea University)

- Prof. Andrew Martin (University of Oxford) CRANE PI
- Prof. Lynne Coventry (Abertay University) CRANE Co-I
- Prof. Adam Joinson (Bath University) CRANE Co-I
- Prof. Steven Murdoch (UCL) CRANE Co-I
- Prof. Mark Ryan (University of Birmingham) CRANE Co-I

Independent Steering Group

- Prof. Chris Johnson, (CSA DSIT, Queen's University Belfast) - Chair
- Dr. Nick Allott (NquiringMinds Ltd)
- Prof. Alice Hutchings (University of Cambridge)
- Dr. Thalia Laing (HP Labs)



- Prof. Angela Sasse (Ruhr University Bochum)
- Dr. Romnik Thind (EPSRC project officer *ex officio*)
- Prof. Paul Watson (Newcastle University)

With the CRANE lead/co-leads and Advisory Board Chair in attendance.