ANNUAL REPORT
2024

sprite+

Security, Privacy, Identity, Trust,
Engagement, NetworkPlus
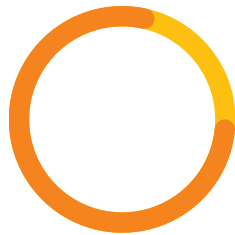
SPRITE+

Funding

£5m

SPRITE+ PHASE 1 £1.698M
SPRITE+ PHASE 2 £3.492M

£407, 563
OF GRANTS
ALLOCATED

Membership

957 MEMBERS
OF WHICH
213 ARE EXPERT FELLOWS

133 HIGHER ED
INSTITUTIONS

686 FROM ACADEMIA
271 OTHER SECTORS

122
SMALL MEDIUM
ENTERPRISES

40
GOVERNMENT

18
THIRD SECTOR

Activities in 2023/24

10
FUNDED
PROJECTS

12 EVENTS

SPRITE+

THE UK NETWORKPLUS FOR SECURITY, PRIVACY, IDENTITY AND TRUST.

SPRITE+ is the UK NetworkPlus for Security, Privacy, Identity and Trust in the Digital Economy, funded by the EPSRC. Our Mission is to deliver a step change in engagement between people involved in research, practice, and policy relevant to digital trust, identity, privacy, and security (TIPS).

Our initial grant (phase 1, EP/S035869/1) ran from 2019 to 2023. In 2022 we were awarded a further four years of grant funding (phase 2, EP/W020408/1), which will conclude on 31 August 2027.

In the second phase of SPRITE+ (hereafter 'SPRITE+2') will continue to build our Membership, whilst expanding the breadth and depth of our innovation, and deepen our impact through proactive engagement. SPRITE+ operates according to four interrelated principles:

1. Interconnection: Making magic in the joins. Digital TIPS challenges and opportunities are best addressed with an interdisciplinary - government-industry-citizen engagement.

2. Diversity: Great innovation from diverse voices. Our commitment to equality, diversity, and inclusion (EDI) is woven through all activities and we take practical steps to encourage and facilitate participation.

3. Challenge: Encouraging challenges to traditional perspectives. We embrace cybersecurity perspectives, but we actively seek to broaden and challenge our understandings of digital TIPS for the benefit of society.

4. Collaboration: Support; Communicate; Network. We work closely with cognate organisations and networks with an ethos of collaboration, and seeking opportunities for leverage and support, not duplication.

This report focusses on SPRITE+'s recent activities (from the end for SPRITE phase 1 and the beginning of SPRITE phase 2) to September 2024.

OUR AIMS

THE UK NETWORKPLUS FOR SECURITY, PRIVACY, IDENTITY AND TRUST.

As SPRITE+ evolves and expands, its aims and deliverables have also evolved and expanded. At the commencement of SPRITE+2 a number of areas of focus were identified as below:

1. Expand our TIPS network:
- Harness the expertise and collaborative potential of national and international TIPS communities,

2. Identify and prioritise future TIPS research challenges:
- Establish a horizon-scanning function, and run innovation forums,
- Produce academic papers and white papers,
- Stimulate discussion at our network events.

3. Explore and develop priority research areas to enhance our collective understanding of future global TIPS challenges:
- Run four intensive projects, co-created with partners to optimise relevance and impact.

4. Stimulate innovative research to advance understanding of digital TIPS:
- Sandpit projects,
- Industry led problem calls.

5. Deepen engagement with TIPS research end users across sectors to accelerate knowledge exchange:
- Hold research showcase events,
- Involve stakeholders in workshops,
- Hold events hosted by project partners.

6. Understand, inform and influence policymaking and practice at regional, national and international level:
- Drawing on other activities – feed through into policy and practice,
- Give early notice to stakeholders of critical socio-technical change.

These form the basis of the various work packages across SPRITE+ phase 2.

ACHIEVING OUR AIMS

SPRITE+ is achieving its aims through engagements with the SPRITE+ community, Project Partners, Academia and Government. Activities across the reporting period include: a Sandpit on Digital Identity: Created, Remembered, Forgotten; another Sandpit on Living in an Inauthentic World; Annual Showcase; Academic Industry Meeting (AIM) Day; Workshops; Expert Fellows Meeting; Human-centric Cybersecurity Partnership (HC2P) and the Futures Summer Camp.

These activities have fostered collaboration between academics, industry professionals and government to further research and practical outputs in the TIPS space. A summary of each can be seen below.

THE FUTURES SUMMER CAMP

The 2023 Futures Summer Camp was funded by SPRITE+ and organised jointly with the Research Institute for Sociotechnical Cyber Security (RISCS) and facilitated by the School of International Futures (SOIF).

In attendance were 28 experts from academia, government, and industry to explore what the future holds for the complicated intersection of technology and democracy.

The multi-disciplinary group was asked to consider:
- The threats and challenges to democratic institutions that will be faced by society in 5, 10 or 15 years,
- How the collision of technology and democracy might lead to positive impacts,
- What actions we should take now to mitigate negative outcomes and maximise positive ones.

Across two days, workshop participants developed five distinctive themes at the intersection of technology and democracy that might characterise a near-to-midterm future (taking a five-to-fifteen-year perspective).

The themes that emerged were:
1. An Inauthentic World: A future of increasingly perfect 'fakes' and anonymous activity, in which nobody is sure what is real and who they are interacting with—whether human or machine.
2. Swarms to Flocks: Digital technologies have enabled humans and machines to 'swarm' in novel ways, resulting in unprecedented behaviours and opportunities for group formation and action.
3. Simulating the Future: Ever more sophisticated simulations of the future come to underpin political decision-making, with democratic institutions taking new forms as a result.
4. Beyond the Nation State: The failure of traditional democratic institutions to respond to new technologies, and the democratisation of those technologies, pushes people to take matters into their own hands.
5. New Models of Dissent: A future in which technology has enabled and necessitated the emergence of new forms of dissent, while rendering some existing forms ineffective or obsolete.

SANDPITS

In 2023 the Sandpit **Digital Identity: Created, Remembered, Forgotten** was held at the DeVere Cranage in Cheshire. SPRITE+ funding of up to £160K was made available to fund interdisciplinary projects arising from this sandpit.

The five projects funded were: *Digital Product Passports: Unintended Consequences for Human Digital Identity; Building a minimal viable digital identity from digital footprints; Smoothing the Digital Identity Onboarding Process; Trust, Rights and Identity in the Metaverse;* and *Digital Identify and Life-Course Study.*

The outputs from the 2023 sandpit were incorporated as part of our 2024 showcase as seen below.

In June 2024, we took one of the themes emerging from the futures summer camp and held the Sandpit called **Living in an Inauthentic World** was held at DeVere Cranage in Cheshire. SPRITE+ funding of up to £162k was made available to fund interdisciplinary projects arising from this sandpit. The four projects to be funded are: *Fact-Checked? So what?; FinFRAUDSIM: Financial Fraud SImulative Analytic Research Platform; MICHA: Misinformation Intervention Countermeasure for Health Advice;* and *UNMASKED: the Theatre of Inauthenticity.*

SHOWCASE

On 14 September, the annual SPRITE+ Showcase **Understandings of Identity** was held via zoom. Over 60 attendees attended the three-hour showcase. There were six 20-minute talks from the SPRITE+ community.

The talks were:
- *Digital Product Passports: Unintended Consequences for Human Digital Identity* by Dr Richard Jones, University of Edinburgh,
- *Building a minimal viable digital identity from digital footprints* by Dr Heather Shaw, University of Lancaster,
- *Smoothing the Digital Identity Onboarding Process* by Dr Tasos Spiliotopoulos, University of Birmingham, and Prof Rob Dover, Hull University,
- *Trust, Rights and Identity in the Metaverse* by Prof Jill Marshall, Royal Holloway,
- *Digital Identify and Life-Course Study* by Dr Yang Lu, York's St John University, and Robin Renwick, Trilateral research, and
- *Trustworthy Digital Identity: What evidence exists about the nature of the relationship between digital and non-digital identities?* by Dr Tasos Spiliotopoulos, University of Birmingham, and Prof Rob Dover, Hull University.

The recordings of the talks can be found on the SPRITE+ website.

AIM DAY

On 7 June SPRITE+ held its first Academic Industry Meeting (AIM) day at PLEXAL London. There were 46 participants from academia, industry and the public sector.

The event, which focused on networking between academia and industry, aimed to facilitate conversations which could result in a secondment or internship placement. SPRITE+ funding of up to £10,000 per secondment was available to participants.

This was facilitated through:
- 3-minute elevator pitches by SPRITE+ Expert Fellows and academic Members, introducing their expertise, research focus, and proposed secondment topics.
- 3-minute elevator pitches by public sector, industrial partners and start-ups outlining their key technologies, innovations, research challenges, and secondment opportunities for collaborative research for an academic.
- Long coffee breaks enabling you to meet new contacts and have sufficient time to engage and network and develop jointly proposals for a fully funded 4-week secondment.

Four successful secondment projects were funded with a total value of £36,311. Further reporting will be included in the 2025 Annual Report.

WORKSHOPS

Creative ways of communicating cyber: what works and what doesn't.

On 8 December 2023 the SPRITE+ Community of Interest "Communicating Cybersecurity" organised a series of short talks accompanied with interactive activities exploring how creative methods can transform cyber security communications. This was led by Emma Moreton and Ola Michalec and was attended by over 30 participants from both academia and professional practice and received excellent feedback for pushing boundaries of cyber security discussions.

Our speakers included:
- *The Cybersecurity of Fairy Tales* by Luca Viganò, King's College London,
- *Electric Feels: adventures in visual communications of smart energy security,* by Ola Michalec,University of Bristol and Joe Bourne, University of Lancaster, Alan Turing Institute
- *Using Stories and Scenarios for Cyber Security* by Will Slocombe, University of Liverpool

Encouraged by the possibilities of creative methods in cyber, we're currently planning a virtual book club, where we'll be reading short stories which feature themes of security, privacy or surveillance.

Evolution of Cyber Crime Threats to 2030

On 5 December 2023 the SPRITE+ team ran a workshop in conjunction with UCL's Dawes Centre for Future Crime. This met a request from the UK Home Office and was tied to the Home Office's development of a cyber crime plan, which will shape investment in and development of UK Government capabilities, powers, and relationships to respond to cybercrime threats as they evolve over the next five years and beyond.

A total of 48 attendees participated in the workshop that then led to a Delphi study, the report of which will be available on the SPRITE+ website.

HUMAN-CENTRIC CYBERSECURITY PARTNERSHIP

Between 10 and 21 June 2024 the Université de Montréal and the University of Ottawa, Canada hosted the 2024 Human-Centric Cybersecurity Partnership (HC2P) summer program. SPRITE+ funded three scholarships for ECRs to attend.

The HC2P leverages a transdisciplinary group of more than forty scholars from across Canada and thirty government, industry, and not-for-profit partners to generate research and mobilise knowledge that will help create a safer, more secure, more democratic, and more inclusive digital society.

The HC2P's 2024 summer program focussed on human aspects of cybersecurity from the following three perspectives:
- Society and Human Centric Cybersecurity
- Regulation and Human Centric Cybersecurity
- Behaviour and Human Centric Cybersecurity

The program combines directed learning, practical experiences and hands on research that provides attendees with real world skills and contacts and the authorship of a published report on cybersecurity.

As part of the scholarship the attendees were required to provide a blog about their experience on the program. The blog posts which will be availalbe on the SPRITE+ website.

EXPERT FELLOWS MEETING

The 2024 expert fellows meeting was held in London at Scale Space on 30 April and 1 May. 57 attended the meeting framed around four provocation talks by experts in an emerging technology. These were:

- Cognitive Robotics
- Neurotechnology
- Biotechnology
- Digital twins

The choice of the four topics arose from various discussions arising during our engagements with stakeholders over the previous six months. Each of the talks was followed by deliberative breakout groups in which the fellows discussed the relationship between the emerging technology and the topics of interest to SPRITE+ i.e. Trust, Identity Privacy and Security.

The most important clusters that emerged could be characterised as follows:

- Trust and trustworthiness
- Data
- Legislation, governance, policy
- Human-Robot interactions
- Human Augmentation
- Errors and learning
- Digital twins
- Ontology and meaning

During the final part of the expert fellows meeting the participants engaged in group deliberation to answer five strategic questions. A full breakdown of the clusters, their sub posts and the areas of Focus can be found in the Expert Fellows Meeting report on the SPRITE+ website.

ENGAGEMENT

Across the reporting period SPRITE+ has engaged with multiple organisations that align with our objectives. The below table provides a snapshot of activities and the status of the relationship.

Organisation	Activity
Alan Turing Institute (ATI)	Cofunding and collaborator on the Deep dive project "Trustworthy Digital Identity"
Greater Manchester Combined Authority (GMCA)	Collaborator on the Deep Dive project "Smart Cities".
University of New South Wales Institute for Cyber Security (UNSW IFCYBER)	Agreed to co-fund a bilateral visitors scheme
Ofcom	Broad agreement to collaborate on placements, joint events
British Telecommunications (BT)	Hosting secondments / placements. Interested in collaborative research.
N8 Police Research Priorities (N8PRP)	Agreement in principle to co-organise Innovation Fora on AI for Preventative Policing.
Yoti	AIM Day, engaging with project work as required, providing speakers
PLEXAL	AIM Day Host
Network for Security Excellence and Collaboration (NSEC)	Active discussion about potential collaboration
Privacy Ethics Trust Reliability Accessibility and Security (PETRAS)	Project promotion, supporting communities past PETRAS Closure
Stanford Research International (SRI)	Agreement in principle to collaborate on visitor exchange.
UCL Dawes Centre	Co-organiser of the Future of Cyber Crime workshop.

This year, we have also engaged with numerous other stakeholders such as NVIDIA, Templar Executives, Waverstone Partners, The Competition and Marketing Authority (CMA), NCES, the Financial Conduct Authority (FCA), Optum X and CDD Services all of whom we will be looking to work more closely with in the future.

CONCLUSION

Across the first year of SPRITE+2 the activities undertaken helped to reframe the focus for SPRITE+ until the end of 2027. The combination of the Futures Summer Camp and the Expert Fellows meeting and different exercises suggest that there may be two threads that have emerged as organising themes for SPRITE+. These are:

1. Human technology interaction.
2. Cyber-physical systems and infrastructure.

Crosscutting those two themes are a set of interrelated lenses:

- GERP: Governance, ethics regulation and policy
- Language, meaning, education and communication.
- Trust and trustworthiness.
- (new) Threats and risks

The responses/outputs from both the fellows and the futures summer camp largely fall within one of those categories/lenses. A particularly strong signal seems have come through that a significant gap exists in the issues arising from Neurotechnology.

Across the second year of SPRITE+ a series of new initiatives and events will take place. These include Expert Clinics bringing together SPRITE+'s expert fellows and members of industry, international collaborations with Universities in Canada, Australia and Asia, local engagement with organisations such as the N8 Police Research Partnership (N8PRP), Greater Manchester Combined Authority (GMCA), policy hackathons, workshops, conferences and Innovation Fora.

Work Packages	Objectives					
	1. Expand our TIPS community	2. Identify and prioritise TIPS research challenges	3. Explore and develop priority research areas	4. Stimulate innovative research	5. Deepen research and end user engagement	6. Understand, inform and influence policy/practice
1.1 Network Events	✓✓	✓✓			✓	✓
1.2 Early Career Research Forum	✓✓				✓	
1.3 Student Engagement programme	✓✓					
1.4 Extended links with international partners	✓✓		✓			✓
1.5 Global South Fellowship awards	✓✓	✓				✓
2.1 Business intelligence and engagement	✓		✓		✓✓	✓✓
2.2 Project Partner engagement grants		✓			✓✓	✓✓
2.3 Develop Advice					✓✓	✓
3.1 Trustworthy digital identity			✓✓	✓	✓	
3.2 TIPS In digital cities	✓		✓✓	✓	✓	✓
3.3 Digital Twins			✓✓	✓		
3.4 Neurotechnology			✓✓	✓		
4.1 Horizon scanning	✓	✓✓	✓	✓✓		
4.2 Sandpits				✓✓	✓✓	
4.3 Partner Problem Challenge Calls	✓✓				✓✓	✓✓
CCA1 Influence Policy and practice	✓				✓✓	✓✓
CCA2 Communication and resources	✓✓	✓	✓✓	✓✓	✓✓	✓✓

Table 1.1 Objectives across workpackages for SPRITE+