

Informatics Security and Privacy Research

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Opportunity

- **Problem still here.** Security and privacy challenges are increasing across many sectors: IoT, finance, e-Health, autonomous systems, national infrastructure, defence, etc. Important open research problems.
- **Research is well-funded.** UK Government has doubled cyber security funding for 5 years from 2017, to £1.8 billion. Some will go to research via EPSRC, ESRC, GCHQ, new NCSC. Also money in H2020.
- **Royal Society report, July 2016** called for a new research funding organisation; tackling of big challenge research problems; for increased translational research to take advantage of innovation opportunities.
- **Industry demand.** Strong job market for security professionals, including PhDs: 50% more vacancies in the US for Cyber Security than for Data Scientists, with higher starting salary [indeed.com, Sept 2016].
- The EPSRC/GCHQ Academic Centres of Excellence in Cyber Security Research (ACE-CSR) scheme is being renewed from 2017. It brings industry and student recognition, credibility and influence. Scottish Government wants a Scottish university represented; plans to fund a **Cyber Hub** with research/policy role.

Status

- **Largest research group in Scotland.** Two new hires bring Informatics S&P group to 5.1 FTE researchers (Arapinis, Aspinall, Gordon, Kashefi, Kiayias, Vanea) who will form core of ACE-CSR application.
- **Increasing interest across Informatics,** e.g., ICSA staff (Marina, Patras, Lee) started on security topics.
- New **MSc specialism in Cyber Security and Privacy** had 10 students in 15/16, some very good.
- Starting on **public engagement activities** to raise profile of cyber security research and group.
- Some **multidisciplinary activities** with other Schools, e.g., IFIP Summer School on Privacy and Identity Management, 2015; joint research bids. Could do much more, many aspects span disciplines.

Challenges

- We are still a **small group with narrow expertise**, most knowledge is in theory areas (quantum, cryptography, proof, programs, protocols). Have bare minimum for ACE-CSR, may not win. Need new staff and expertise to join UK leaders and take full advantage of possible multidisciplinary connections.
- **PhD funding.** No reliable source of funding, losing strong applicants. Big threat to winning ACE-CSR.
- **Industry and business development.** Security companies want to give us money, hire our students, has been difficult to make it happen due to lack of School resources/priority for cyber security.
- **Strategic importance not yet apparent/realised in other Schools,** e.g., SPS likely to lose world-class expertise in privacy and surveillance.

Actions

1. Prioritise Security and Privacy research across Informatics institutes, not just in LFCS.
2. Hire new lecturers in the area (e.g., **one per institute?**) to expand breadth.
3. **Reserve PhD places** from existing CDTs (e.g. **1 per CDT per year?**)
4. Raise importance with other Schools and University strategy makers, EDS initiative.
5. Continue **budget** for Cyber Security development and dedicate **PT admin role** to assist group.
6. Using above, improve **publicity** to recruit new PhDs, researchers (web pages, advertising).