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Security Research – UK Perspective

Home Office Centre for Applied Science and Technology

Presented by: **Shaun Mallinson**
Date: 11th May 2016

Vision

Our vision is to work with UK industry and academia to develop a safer society for all whilst improving the UK's standing as a national and international supplier of high quality security solutions and scientific excellence in research

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Context

❑ *The UK has an international reputation of maintaining a safe and secure society for all it citizens*

❑ *The ability to retain this safe and secure environment has never been more prominent with the onset of global extremism and organised crime*

❑ *The threats presented to public safety impact upon everyone in their public and private lives*

❑ *Public safety has a significant impact upon the UK economy*

❑ *The UK can capitalise on this reputation to develop economic opportunities and stimulate growth*

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UK Security Market

The UK security market consists of 11500 companies employing 75000 staff with an annual turnover of £7.9bn. The sector grew by 20% in 2013 and 66% of companies expect more than 10% growth in turnover in 2015.

Source: ADS

UK policing is the largest single sector and employs 200k people and spends more than £1bn on non ICT goods and services. This includes vehicles, uniforms, technical equipment and a wide range of other security related products.

Source: NAO

UK Security Market

UK Security Market

Public Sector

- Aviation Security
- CBRNE & HAZMAT
- Cyber Security
- Border Security
- Transport Security
- Counter Terrorism
- Maritime Security
- Critical Infrastructure
- First Responder
- Law Enforcement

Examples of Enabling Technologies

Biometrics

Cloud based security

Big data analysis

CBRNE detection/ decontamination

Communication systems

Counter IED technology

Intrusion detection

Stand off detection

Listening and imaging technology

Smart Vehicles

Smart uniforms

Electronic fencing

UAV/Counter UAV technology

PPE

Ballistics protective equipment

Less lethal weaponry

CCTV

UK Security Market

UK Security Market
Private Sector

- Personal Security
- Private Security
- Residential Security
- Food Security
- Vehicle Security
- Commercial Premises Security
- Event Security
- Digital Services
- Comms
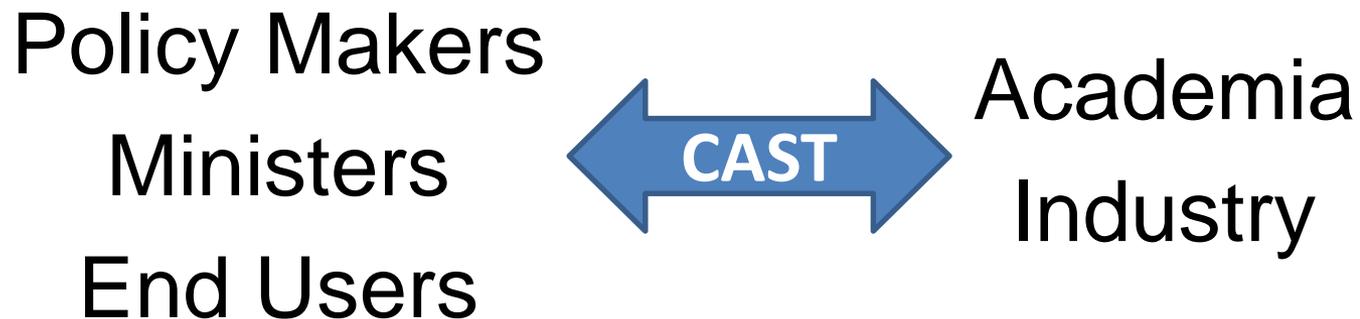- Cyber Security

Examples of Enabling Technologies

Biometrics

Cloud based security

Access control

Mobile devices

CCTV

Intruder alarms

Physical security – commercial and domestic

Autonomous vehicles

Vehicle security

Tracking technology

Wearable technology

'Smart' homes

Genetic testing

Encryption

Electronic currency

UAV

Priorities for Home Office

- Prevent Terrorism
- Cut Crime
- Control Immigration
- Promote Growth
- Transform the Home Office

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Role of CAST

CAST support the full range of Home Office interests as the primary technical interface between:

Policy Makers

Ministers

End Users

CAST

Academia

Industry

CAST Capability Areas

- Contraband detection
- Community safety and crime prevention
- Digital investigations
- Forensics
- Identity assurance
- Protective security
- Public order
- Surveillance

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Barriers to Change

Security is a complex area that ranges from the individual and their own personal security through to combating international criminal networks. Some of the barriers can be defined as:

❑ *The pace of technology development outstrips the law enforcement capability to keep up with change*

❑ *Balancing the privacy rights of the individual with the ability to provide a safe and secure society*

❑ *Introducing innovative and novel techniques to the CJS can take time to be accepted by the judiciary*

❑ *Lack of coordination of requirements can lead to fragmented needs being developed*

❑ *Insufficient applied research on the key challenges*

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Security Research Funding Sources

Public
- Research Councils
- Public Sector Research Establishments
- Government

Charity
- Leverhulme Trust
- Wellcome Trust

Industry
- Physical and Technological
- Biomedical
- Data Services
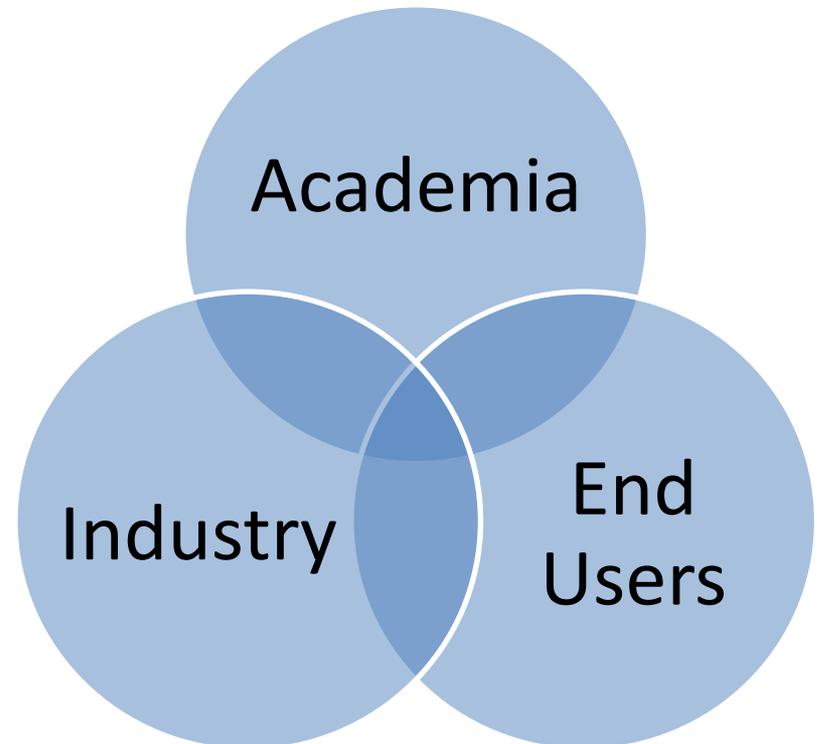
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Smarter Operating Models
Key Partners

- InnovateUK – Government agency to promote technology innovation
- KTN – Network connectors in both disciplines and sectors
- SIDC – Creates demonstration environments to address challenges
- ADS – Principal trade body for security industry in UK
- RISC – Community of security suppliers across trade associations

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Smarter Operating Models Working Examples

Special Interest Group – Forensic Science

- Build and maintain an active community for innovation;
- Work with stakeholders through workshops;
- Improve understanding of application opportunities;
- Improve dissemination of state-of-the-art technologies;
- Assist in the direction of funding of R&D;
- Raise awareness of forensic science-related funding opportunities;
- Raise awareness of the UK's capabilities;
- Help create a UK hub for forensic science exploitation;
- Support emergence of supply chains through:
  – Better engagement with industry;
  – Acceptance of standards;
  – Cost effective manufacturing;

http://www.ktn-uk.co.uk/interest/forensic-science/
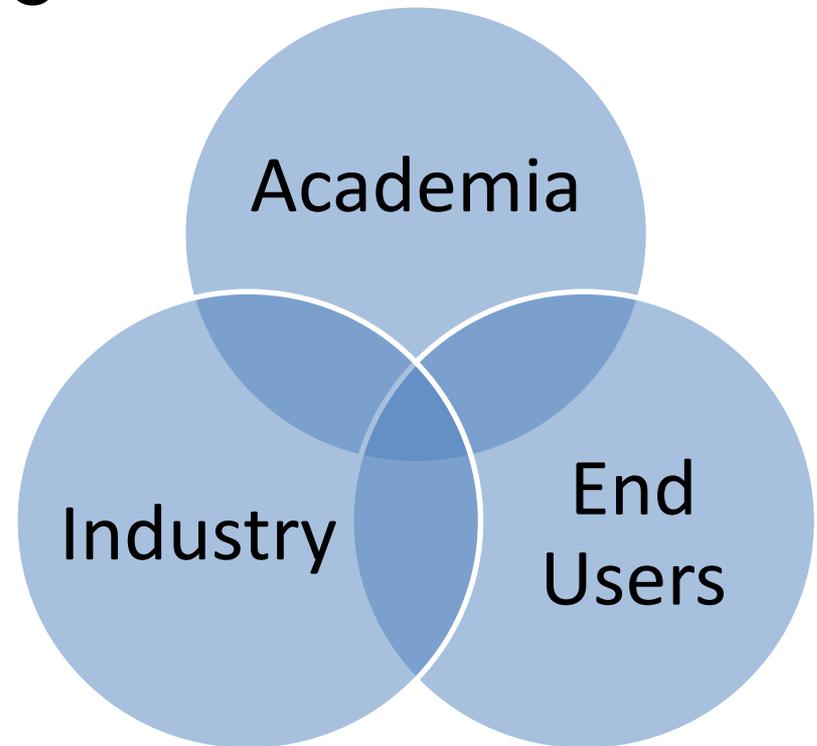
Smarter Operating Models Working Examples

Security Innovation Demonstration Centre SIDC

` We facilitate the development of innovative solutions to UK security challenges and demonstrate them to buyers and investors from the UK and overseas.

We provide a forum:

- for government to articulate its security requirements to industry and academia to enable exportable solutions to be developed quickly and efficiently
- to build partnerships between end-users, government, industry and academia in order to test and deliver solutions
- to facilitate commercialisation of products through demonstrating capability, efficiencies and the potential market to buyers and investors

We also provides overseas governments with access to UK expertise, innovative technologies and novel ways of working.

Academia

Industry

End Users

https://www.gov.uk/government/groups/security-innovation-and-demonstration-centre

International Funding Opportunities

- ***European Union Horizon 2020***

- ***NATO Science for Peace and Security Programme***

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Please contact:

Shaun.mallinson@homeoffice.gsi.gov.uk

PARTNERSHIPS AND FUNDING COORDINATOR CENTRE FOR APPLIED SCIENCE AND TECHNOLOGY