

Security & Defence SIG

“Small Unmanned Air Systems – Enforcement Tool or Security Threat?”

17 February 2015

Hosted by **OLSWANG**

The Security and Defence SIG is championed by *David Chater-Lea of Motorola Solutions, Nicholas Hill of Plextek Consulting, Guy Kenyon of Kenyon Consulting, Tim Phipps of Cambridge Consultants, Rob Quarton of Airwave and Paul Tindall of Sepura.*

Venue: Olswang, 90 High Holborn, London, WC1V 6XX

AGENDA

13:00 Registration and Networking over Buffet Lunch

14:00 Introduction to Security & Defence SIG from **Nicholas Hill, Plextek Consulting**

14:10 Welcome from our supporter, **Steve Gale** of KTN

Session Chaired by **David Chater-Lea, Motorola Solutions**

14:20 ‘UAVs: flying into the legal headwind’

Ross McKean, Partner, Data Protection Practice, **Olswang**

UAVs are multiplying and as their price point continues to drop a large consumer market is now in reach. They raise some challenging legal and regulatory issues and Brussels is planning new restrictions. In this session Ross McKean, the head of Olswang’s award winning data protection practice, will give a brief overview of the legal and regulatory landscape for UAVs in the UK and how to keep regulators and lawyers happy when flying them.

14:40 Q&A

14:45 ‘Rapid design and manufacture of unmanned systems’

Jim Scanlan, Professor of Aerospace Design, **University of Southampton**

This talk will provide an update on unmanned systems activities at the University following the flight in 2011 of the “worlds first printed aircraft”. It addresses the challenges of providing low cost reliable systems for unmanned air vehicles.

15:05 Q&A

Session chaired by **Tim Phipps, Cambridge Consultants**

15:10 ‘Potential Emergency Service Applications’

Alan Brooke, UAS Lead, **CAST (Centre for Applied Science & Technology)**

As with any novel technology Unmanned Systems present opportunities and challenges. This presentation will review their use to date and discuss a number of other areas where their adoption can have benefits across the range of emergency service operations.

15:30 Q&A

15:35 Refreshments and Networking

Session chaired by **Paul Tindall, Sepura**

16:05 ‘Unmanned Air Systems as a threat’

Counter-UAS SME (Subject Matter Expert), Dstl, UK Government

Please note that this speaker appears at the meeting strictly under the Chatham House Rule

This presentation will review a number of recent UAS misuse incidents, look at the typical systems involved, categorise the types of misuse of most concern and outline the real-world risk involved. It will then go on to discuss the need for a proportionate response to the risk and outline some current UK Government initiatives.

16:25 Q&A

16:30 'Airborne Monitoring of ground traffic behaviour for hidden threat assessment using a swarm of UAVs'

Antonios Tsourdos, Head of the Centre for Cyber-Physical Systems, Institute of Aerospace Sciences, **Cranfield University**

Using a swarm of UAVs has been receiving attention for a variety of applications to take advantage of its inherent flexibility and versatility. The focus of this talk is airborne monitoring of ground traffic behaviour by multiple UAVs in order to detect disguised threats and then to notify the human commander about the potentially dangerous vehicles.

16:50 Q&A

16:55 Panel session with all speakers and **KTN** chaired by **Nicholas Hill, Plextek Consulting**

17:30 Complete evaluation forms and Event Closes

With the permission of the speakers, presentations will be loaded to the CW website on the day following the event

Profile of Organisers

Cambridge Wireless (CW)

CW is the leading international community for companies involved in the research, development and application of wireless and mobile, internet, semiconductor and software technologies. With 400 members from major network operators and device manufacturers to innovative start-ups and universities, CW stimulates debate and collaboration, harnesses and shares knowledge, and helps to build connections between academia and industry. CW's 19 Special Interest Groups (SIGs) provide its members with a dynamic forum where they can network with their peers, track the latest technology trends and business developments and position their organisations in key market sectors. CW also organises the annual Future of Wireless International Conference and Discovering Start-Ups competition along with other high-quality industry networking events and dinners. With headquarters at the heart of Cambridge, UK, CW partners with other international industry clusters and organisations to extend its reach and remain at the forefront of global developments and business opportunities. For more information, please visit www.cambridgewireless.co.uk

Profile of Joint Supporter

Knowledge Transfer Network

The KTN is the UK's innovation network. It is a single overarching national resource, funded by Innovate UK to stimulate innovation. It works with businesses of any size, universities, research and technology organisations as well as funding bodies, government and Europe.

KTN brings together businesses, entrepreneurs, academics and funders to develop new products, processes and services. Formed by the merger of 15 KTNs, the Knowledge Transfer Network launched in April 2014 to offer a more joined-up support for UK business growth through innovation

KTN aims to improve business performance through innovation by building collaborations and by driving the flow of people, knowledge and experience between business and the science-base, between businesses and across sectors.

The membership of KTN has been growing during the course of the last six years with over 60.000+ members now participating via the web platform: www.ktn-uk.co.uk

Profile of Host

Olswang

Olswang is a pioneering firm with a distinctive approach to business law. Thanks to its decisive, connected and highly-commercial people, they have built an unparalleled technology, media and telecoms practice, which makes Olswang the firm of choice for true innovation. Headquartered in London, Olswang has an international presence spanning Belgium, France, Germany, Spain, the UK and Singapore. Its clients include major multinational corporations, companies listed on the London Stock Exchange and AIM, private-equity backed groups, established private companies as well as early stage/high growth organisations.

Olswang is a Founder Member of Cambridge Wireless and the Legal SIG which generates discussion and develops legal best practice in the wireless and technology sector.

For further information please visit www.olswang.com

Profiles of SIG Champions

David Chater-Lea, Motorola Solutions

David is a senior technologist working for Motorola in the areas of advanced system architecture and design. He is a specialist in wireless communication system security, a founder member of the TETRA Association Security and Fraud Prevention Group and has been working in the ETSI TETRA standardisation activities since 1994. He is currently chairman of ETSI TETRA WG4, looking at advanced air interfaces, and an active member of TETRA WG6 and TETRA Association SFPG. During a career which includes over 20 years at Motorola, he has worked on a variety of mobile radio products and systems designs, and is one of the original architects of Motorola's TETRA compliant digital communications system, Dimetra. David holds a BSc in Electronic and Electrical Engineering from the University of Birmingham, England, and is a Chartered Engineer and a Fellow of the IET. He holds a number of patents in the field of radio communications systems. For further information, please visit www.motorolasolutions.com

Nicholas Hill, Plextek Consulting,

Nick joined Plextek in 2007 - based at the offices of a client in Malaysia - to provide technical coordination and consultancy for technology development projects, and to assist the client to improve the performance and efficiency of their R&D department of ~60 staff. This role involved developing in-car entertainment product concepts, requirement specifications and project plans, coordination between development teams in UK and Malaysia and providing technical support and assistance to the client team. Subsequently, he set up and led an R&D Management Council and implemented a two-year R&D improvement plan. Prior to joining Plextek, Nick worked as a hardware designer, embedded software designer, systems engineer and company director for a range of companies and on a diverse range of applications including, defence, aerospace, healthcare, scientific instrumentation and telemetry systems. He graduated from Liverpool University in 1982, is as a member of the Institution of Engineering and Technology and has co-authored a patent on radio location and tracking technology. For further information, please visit www.plextek.com

Guy Kenyon, Kenyon Consulting

Guy Kenyon previously worked for Northrop Grumman Information Systems, a large US based defence and government IT contractor. His work with the company included a seven year attachment to Airwave Solutions where, as a Systems Engineer, he focussed on the design and implementation of the nationwide secure TETRA communications system. More recently, Guy implemented a TD-CDMA broadband wireless trial in Lewes with support by NPIA and Sussex Police – based upon a system fielded in New York City. In addition to next generation wireless, Guy's interests include secure networks, cyber security/information assurance and the development of secure shared services for UK government. Guy is a Chartered Engineer, a Fellow of the BCS and a Member of the IET.

Tim Phipps, Cambridge Consultants

Tim Phipps has a long track record of working on leading edge wireless technology development. Tim is responsible for Wireless Business Development at Cambridge Consultants. Prior to working at Cambridge Consultants, he has worked for Plextek, TTPCom, Symbionics and TTP to develop new business of strategic importance for manufacturers of mobile handsets software and wireless communications ICs. Over his career he's worked to introduce innovative new technologies at the earliest stage of their market development such as mobile phone operating systems, EDGE, GSM, Bluetooth and WiFi. As Champion of the Cambridge Wireless Security and Defence SIG, Tim's objective is to restore technology leadership to organisations that promote public safety and the civil society. For further information, please visit www.cambridgeconsultants.com

Rob Quarton, Airwave

Airwave designed, built and operates the largest public safety radio communications network in the world, delivering critical voice and data communications to organisations that provide vital public services. This includes the police, fire and ambulance services as well as local authorities, utilities and transport providers. For more information please visit www.airwavesolutions.co.uk

Paul Tindall, Sepura

Paul Tindall works in the Technology Office at Sepura PLC where he works on Advanced Technology projects, investigates future technologies and strategies and is responsible for the company's software architecture. Prior to this Paul was the Software Architect for the Wireless Division of U-Blox where he created a novel Software Defined Modem (SDM) Platform for the latest generation of Wireless User Equipment using Model Driven Development techniques to develop Modem Physical Layers on Heterogeneous Multi-processors platforms. He was the Technical Director and Uber-Architect at TTPCom SW Business Unit where he developed wireless technology for 13 years. Paul also works in the Defence industry on a variety of MOD Defence projects. Paul has a 1st class honours degree from the Royal Military College of Science and is a Fellow of the BCS. For further information, please visit www.sepura.com

Profiles of speakers

Ross McKean, Partner, Olswang

Ross is a technology partner in Olswang's London office and heads Olswang's award winning data protection practice. Ross has a particular focus on the technology sector advising organisations right across the spectrum from start-ups to established global technology brands. Ross is ranked as a leading individual for data protection, technology and outsourcing in the Chambers legal directory. Before joining Olswang he was with Baker & McKenzie for 16 years, where he was a partner in the IT/Com department of their London office and an active member of their data protection and outsourcing practice groups. For further information, please visit www.olswang.com

Jim Scanlan, Professor of Aeronautical Engineering, University of Southampton

Jim worked in the aircraft industry (BAE and Airbus) for 12 years before joining academia. He has an interest in engineering design and co-directs the Rolls-Royce UTC in design at Southampton. Jim has a successful spin-out business that provides software to the aerospace industry. He leads the Autonomous Systems group at the university and is now working on a number of large unmanned systems including maritime patrol. He is a qualified light aircraft pilot. For further information please visit <http://www.southampton.ac.uk/aerospace/index.page>

Alan Brooke, UAS Lead, CAST (Centre for Applied Science and Technology)

Alan joined the Home Office in 1989 and has worked in a number of areas over the years including development of ballistic body armour, a vehicle security evaluation regime, CCTV system design and testing methods, and maritime security technologies. He also provides technical support and advice on topics such as manned air support and latterly UAS. For further information please visit <https://www.gov.uk/government/collections/centre-for-applied-science-and-technology-information>

Speaker from the UK Government's Defence, Science and Technology Laboratory (Dstl)

As part of the MOD, the Defence, Science and Technology Laboratory (Dstl) ensures that innovative science and technology contribute to the defence and security of the UK. Dstl responsibilities include:

- supplying sensitive and specialist science and technology services for MOD and wider government
- providing and facilitating expert advice, analysis and assurance on defence procurement
- leading on the MOD's science and technology programme
- understanding risks and opportunities through horizon-scanning
- acting as a trusted interface between MOD, wider government, the private sector and academia to provide science and technology support to military operations by the UK and her allies
- championing and developing science and technology skills across MOD

For further information, please visit: <https://www.gov.uk/government/organisations/defence-science-and-technology-laboratory>

Antonios Tsourdos, Head of the Centre for Cyber-Physical Systems, Institute of Aerospace Sciences, Cranfield University

Professor Antonios Tsourdos, Cranfield University, is the Head of the Centre for Cyber-Physical Systems within the School of Aerospace, Transport and Manufacturing, Cranfield University. Professor Tsourdos was a member of the Team Stellar, the winning team for the UK MoD Grand Challenge (2008) and the IET Innovation Award (Category Team, 2009). Professor Tsourdos is an editorial board member of the International Journal of Systems Science, IEEE Transactions of Aerospace and Electronic Systems and the Aerospace Science & Technology. Professor Tsourdos is a member of the IFAC Technical Committees on Networked Systems and Intelligent Autonomous Vehicles and vice chair of the IFAC Technical Committee on Aerospace Control. Professor Tsourdos is also member of the IET Robotics & Mechatronics Executive Team and Autonomous Systems National Technical Committee. He has a diverse expertise in both unmanned and autonomous vehicles as well as complex systems. He conducts basic and applied research in the fields of guidance, control and navigation for single and multiple unmanned autonomous vehicles as well as research on cyber-physical systems.

For further information, please visit: www.cranfield.ac.uk/about/people-and-resources/schools-institutes-research-centres/satm-centres/institute-for-aerospace-sciences

Delegate List

Name	Organisation	Company Profile
Jennie Adams	TRL	Transport research
Kieran Arnold	Satellite Applications Catapult	
Dev Audsin	Orange	
Simon Barton	Airworking	
Nick Bliss	S4S international	Strategic security company with over 100 years Special Forces and Police command experience.
Alessandro Bovone	EE	EE
Alan Brooke	Home Office Science	
Jonathan Burg		
Mick Camerlengo	Crater Innovation	Product Design Consultancy. We help companies develop desirable physical products.
Ren Capes	Earth Metrics Ltd	
Harry Cassar	BP International	
Andrew Chadwick	Frazer-Nash Consultancy	We specialise in the delivery of high added value systems engineering solutions
David Chambers	ThinkSmallCell	Mobile network technology subject matter expert
Rick Chandler	Airworking	
David Chater-Lea	Motorola Solutions	SIG Champion
Philip Claridge	JDSU	
Stephen Clark	Selex ES	
Ian Collinson	Broadcast Networks Ltd	System Integrators
Jerry Connolly	Kestrel Associates (UK) Ltd	Business consultancy in high-tech sector with emphasis on aerospace/defence/homeland security
John Cross	ST Defence Limited	Defence SME focused upon communications
Anthony (Tony) Davies	Retired - involved in IEEE, King's College London and Kingston University	Engineering Professional Development, Education and Research
Clifford Dive	Argon Design Ltd	Electronic and software product design consultancy
Stewart Dresner	Privacy Laws & Business	
Alex Eastabrook	Thales	
David Edwards	Underwriter laboratories	Global market Access (Type Approvals) for wireless and automotive products
Olga Egorosheva	Lobster	The marketplace for digital content
Ed Elias	NATEP	A grant funding organisation looking to fund aerospace innovation projects.
Stirling Essex	Espansivo	Helping organisations make better strategic decisions in technology, marketing and business devt.
JF Fava-Verde	Innovate UK	UK's innovation agency, accelerating economic growth
James Finlow	FCO Services	
Peter Forrest	Teledyne Defence	Teledyne Defence design and manufacture RF systems, subsystems and components from DC to 100GHz
Steve Gale	The KTN	
Paul Galwas	Digital Catapult	
Bez Ghazani	ConnectVu	Wireless Streaming of Video, Data, GPS, Telemetries, Biometric Data, Video sharing on any Devices

Dave Gorshkov	CCTV Standards Committee/Digital Grape	Transportation security standards organisation
Robert Haddon	Frost & Sullivan	Market Research Consultancy
Dongyeob Han	Chonnam national university	University located in southern South Korea
Tom Haye	Broadcast Networks Ltd	System Integrators
William Hayes	BBC	
Robin Higgons	Qi3 Ltd	Market Strategy and Research for the UAV, Space, Defence, Remote Sensing and Associated Sectors
Nicholas Hill	Plextek Consulting	SIG Champion
Sharni Humphrey	Plextek Consulting	
Chris Jones	STS Defence	STS Defence is a manufacturing and engineering services business serving the UK MOD.
Kevin Jones	CGI	CGI is an independent global secure information management systems integrator
Soraya Jones	Cambridge Wireless	
Emily Knight	SignalCheck	
Peter Lee	Taylor Vinters LLP	Technology law firm with drone law practice
Philippe Leroy-Sahli	Silverlit France	
Stephen Lowe	KTN-UK	
Paul Martin	Plextek Consulting	Innovation Consultancy
George Matich	Selex ES Limited	Selex is a systems solutions provider to the Global Defense and Aerospace Domain.
Jane McAlister	e2v	
Ross McKean	Olswang	
David Minn	Satellite Applications Catapult	The Satellite Applications Catapult is an independent space innovation and technology company.
Dave Misell	David.misell@bcs.org	Www.ossb.bcs.org
Kevin Mooney	Enterprise Ireland	Enterprise Ireland is a government agency responsible for the growth of indigenous firms globally
Richard Moyes	Lead Turn	
Silver Mulenga	Panasonic Europe	
Kay Murray	The Real-Time Data Company Ltd	
Graham Norgett	CellMetric	
Sheridan Nye	Frost & Sullivan	ICT market analysis & consultancy
Jean-Louis Olie	French ministry of ecology, sustainable development and energy	Defence and security, critical infrastructures protection
Michael Oliver	Thales	Thales UK innovation hub
Lina Pao	Panasonic Europe	
Odysseas Pappas	University of Bristol	University
Tim Phipps	Cambridge Consultants	SIG Champion
Jack Powell	Network Rail	
Rob Quarton	Airwave	SIG Champion
Julien Sabene	SGDSN	French Prime Minister Services
Martin Sabry	A-ideas Ltd - A-ideas Companies Group	http://www.linkedin.com/groups/aideas-897037/about/
Jim Scanlan	University of Southampton	

Barney Scott	Electronic Specifier	Europe's premier publisher of information resources to the Global Electronics Industry
David Sharp	Ocado	the leading global online-only grocer
Ian Shaw	British Standards Institution	UK National Standards Body by Royal Charter since 1901 with Standards in Security
Suzy Shinner	Taylor Wessing	
Jeremy Smith	Mathys & Squire LLP	Patent and Trademark Attorneys at the forefront of communication and other hi-tech technologies
Colin Smith	CAST	
Charles Sturman	u-blox UK	
Rodger Sykes	Claverton Solutions Ltd	
Nithin Thomas	SQR Systems	
Paul Tindall	Sapura Plc	SIG Champion
John Townsend	Angetech Consultants	Telecoms consultancy
Antonios Tsourdos	Cranfield University	
Helen Tung	TLC	Research, unmanned systems
Charles Vafiadis	Communications Audit Uk Ltd	Communications Audit Uk Ltd. provide systems to detect, and geo-locate sources of RF energy.
Alan Varco	Selex ES Limited	Selex ES is a System Solutions provider to the global defense and aerospace market.
Geoff Varrall	RTT Online	
Laurence Venner	Vislink	Wireless Video System for Broadcasters/Security Organisations, over Satellite and Microwave
Nigel Wall	Climate Associates Ltd	thought leaders setting standards for energy efficiency for next gen comms
Sara Walton	BSI Standards Limited	National Standards Body
Wendy Welsh	Network Rail	NR Manages the infrastructure of the UK rail network.
Phil Williams	Knowledge Transfer Network	
Andy Wood	e2v	www.e2v.com
Yan Yang	Dassault Systemes	3D EXPERIENCE
Yahya Zweiri	Kingston University	Kingston University is active in UAVs, different types of small unmanned aerial vehicles being dev.