Research-to-Reality Report 2014

CENTRIC

CENTRE OF EXCELLENCE IN TERRORISM, RESILIENCE, INTELLIGENCE & ORGANISED CRIME RESEARCH

law media firmly MALDI combat perspectives security intelligence consideration information platform Law specialist Concept strong modelling proven three namely avoidance LEAs recognition Resilience groups addition facilitating interests end-user due expression e.g. Cultural Centre's facilitate solutions Mining citizen Computing skill crisis agenda Mass National Enforcement Research Public key Institute origins Professional practitioners order stakeholders provide Crisis Policing leading surveillance communication promotion centric issues Industry domain providers Trauma computing face Imaging marks within International Analysis Cyber Knowledge Academia record makers Latent specific Management research Centre located matters Stress enforcement orientation policy agencies Agencies Understanding Excellence currently multi researchers Think-Tank number Post societal protest crime Technological Formal situations University Relevant focuses Semantic ethical Social strategic Terrorism close collaborating social domains knowledge Security engagement Sheffield disciplinary Media following technology organised

CENTRIC

Research-to-Reality Report 2014

CONTENTS

Foreword

It is with great pleasure that we present to you the Research-to-Reality Report of the Centre of Excellence in Terrorism, Resilience, Intelligence and Organised Crime Research (CENTRIC) for 2014. We are also delighted that this report coincides with our annual conference, 'Experience the Future of Policing', kindly hosted by SAP at their new innovation centre and attended by leading security experts from across the world.

The purpose of this report is to highlight the achievements of CENTRIC during the last twelve months and to set out our strategic priorities for the year ahead. The publication of this report is timely, set against a background of conflict, insecurity and the resurgence of violence in troubled regions across the world. For the United Kingdom, like many other nations, we remain under constant attack from all manner of hazards including terrorism, organised crime and cyber related threats that, if left unchecked, can cause untold harm to citizens, communities, public services, businesses and the wider economy.

In recognising these challenges, the innovative approach of CENTRIC is to bring together practitioners, private industry, academia and the public to focus on applied research in the security domain. The multi-disciplinary approach of CENTRIC seeks to inform operational policy, practice and procedure but, in doing so, strives to make positive contributions towards citizen safety and push professional practice beyond the current state of the art.

This report showcases the contribution of CENTRIC across the landscape of policing and security, highlighting pioneering research and the publication of practitioner focused handbooks which address contemporary security challenges. CENTRIC has quickly established itself as a dynamic, progressive and innovative Centre of Excellence, priding itself on making a difference through its unique collaborative approach.

May we take this opportunity to thank all of the CENTRIC team for their energy and enthusiasm, and extend our appreciation to members of the Steering Group who not only provide strategic oversight and operational direction of CENTRIC, but also show great willingness to share their expertise. We are delighted that CENTRIC continues to develop its capacity and capability, ensuring that all in authority are better informed today to meet the security challenges of tomorrow.

John Parkinson OBE
Chair of CENTRIC Steering Group &
CENTRIC Senior Research Fellow

Professor Roger Eccleston
Pro Vice-Chancellor and Dean,
Faculty of Arts Computing,
Engineering and Science

Director's Report

On behalf of the CENTRIC board it is my pleasure to present to you the 2014 annual report.

It has been another good year and CENTRIC continues to go from strength to strength, securing eight new projects on various aspects of policing and security, aimed for example at improving our understanding of 'radicalisation', of Cyber Crime, and of Cyber Terrorism. Whilst these projects bring funding to CENTRIC, more importantly they will all develop new knowledge and technologies that have a positive impact on policing and security. The other key benefit of these collaborative projects is that they have expanded the CENTRIC network of stakeholders, creating exciting new and flourishing partnerships and international collaborations.

Another key area of CENTRIC activity and success has been in the publication of new practice orientated publications. These publications focus on contemporary security challenges and allow CENTRIC to share its knowledge to the wider security stakeholder community.

Whilst 2014 has been another good year in the development of CENTRIC, it is also important to see it as a foundation for our future work. Therefore I would like to take this opportunity to share our five key research streams for the coming year:

• Big Data analytics and national security

• Social media

• LEAs performance measurement

• Cyber Crime and Cyber Terrorism

• Public order

The success of CENTRIC is a team effort. These achievements could not have been reached without the support and commitment of many people. However a specific mention and thank you must go to the CENTRIC board, advisory group and visiting researchers ; CENTRIC colleagues and stakeholders and last but not least the CENTRIC industrial partners in particularly SAP, for hosting this year's CENTRIC event, "Experience the Future of Policing".

Thank you all once again for making 2014 a great year for CENTRIC and I look forward to working with you all to build on this good work in 2015.

Professor Babak Akhgar
Director of CENTRIC

An Introduction to CENTRIC

CENTRIC is a multi disciplinary and end-user focused research network, located within the Cultural, Communication and Computing Research Institute (C3RI) at Sheffield Hallam University. The CENTRIC network links both academic and professional expertise across a range of disciplines, professional practice and countries. The strategic aim of CENTRIC is to facilitate the triangulation between the four key stakeholders in the security domain including;

• **G**overnment

• **A**cademia

• **P**ublic

• **P**rivate industry

Our mission is to provide a platform for researchers, practitioners, policy makers and the public to focus on applied research in the security domain. All CENTRIC activity will seek to bridge the gap between research and operational realities, ensuring that our outcomes have positive IMPACT:

• *Inform operational policy, practice and procedure*

• *Make a positive contribution to citizen safety*

• *Push professional practice beyond the current state of the art*

• *Anticipate new and emerging threats and risks*

• *Challenge existing concepts*

• *Tackle the most pressing contemporary security challenges*

Meet the Team

At the heart of CENTRIC is a collaborative and innovative approach to all activity. This includes both the management and operation of the Centre of Excellence. CENTRIC is a network of expertise that includes both academic and end-user experience

Director
• Professor Babak Akhgar

Chair of Steering Group
• John Parkinson OBE

CENTRIC Board
• Jo Byrne, Assistant Chief Constable for South Yorkshire Police
• David Fortune (policing)
• Med Hughes QPM, CBE, BSc (Econ)
• Brendan McGloughlin, Head of Police & Criminal Justice, SAP UKI
• Glynn Rankin, LL.B MBA
• Dr Gregory Saathoff, Head of Critical Incident Analysis Group, University of Virginia
• Fraser Sampson, Chief Executive, Office of the Police & Crime Commissioner for West Yorkshire
• Andrew Staniforth, Detective Inspector, CENTRIC Senior Research Fellow
• Alan Treddenick, Director, National Security & Law Enforcement Liaison, Blackberry
• Professor Dave Waddington, CENTRIC Academic Chair

External advisors
• Liz Bacon, Vice-President British Computer Society
• Nigel Hughes, Head of Police National Legal Database (PNLD)
• Lachlan MacKinnon, Professor of Computing, Science, University of Greenwich
• Professor Adam Ogilvie-Smith, Visiting Professor, Aberdeen Business School
• Angela Patrignani, Head of Organised Crime Research, United Nations Interregional Crime and Justice Research Unit (UNICRI)
• Dr Brooke Rogers, Department of War Studies, King's College London

CENTRIC Team
• Dr Simon Andrews (Software Engineering)
• Ben Brewster (Informatics)
• Dr Katie Cutts (Psychology)
• Dr David Day (Network Security)
• Dr Kathy Doherty (CENTRIC Academy)
• Dr Konstantinos Domdouzis (Informatics)
• Dr Simona Francese (Forensics)
• Dr Helen Gibson (Informatics)
• Dr Laurie Hirsch (Computing)
• Dr Eleanor Lockley (New Media)
• Stephen Lofthouse (Informatics)
• Dr Sue McHale (Psychology)
• Dr Kerry McSeveny (New Media & Public Disorder)
• Carmel O'Toole (Public Relations & Crisis Communications)
• Dr Craig Paterson (Criminology)
• Dr Simon Polovina (Business Computing)
• Professor Marcos Rodrigues (Computer Science)
• Adrian Roxan (Public Relations & Crisis Communications)
• Christine Straker (Data Mining)

Visiting Researchers
• Dr Saskia Bayerl, Rotterdam School of Management, Erasmus University
• Francesca Bosco, Project officer, Emerging Crimes Unit, United Nations Interregional Crime Research Institute (UNICRI)
• Detective Sargent Tim Ingle (West Yorkshire Police)
• Dr Rupali Jeswall, CEO of Xiphos-ISS & Director of CVE Research & Trainings, IACSPSEA
• Benn Kemp Sargent (West Yorkshire Police)
• Dr Arturo Laurent, Programme Officer, Terrorism Prevention Branch, United Nations Office on Drugs & Crime (UNODC)

Summary of Achievements

CENTRIC builds on over six years of work by a range of colleagues across government, academia and the private sector. Details of our key achievements over the last twelve months are provided below.

Projects

CENTRIC have created a unique portfolio of pioneering research projects supported by the European Commission Research Executive Agency. The Development and delivery of large-scale, multi-disciplinary projects with international partners serve to examine threats arising from serious and organised cross border crime, cyber crime, cyber terrorism and radicalisation, and address operational challenges associated with command and control, social media and crisis management. A profile of each of the following projects is included in this report;

• ATHENA

• COURAGE

• ePOOLICE

• SMART CV

• TRANSRAD

• UINFC2

Publications

CENTRIC have developed a suite of practitioner focussed publications which highlight the collaborative and multi-disciplinary approaches that are necessary to address the most pressing security challenges of our time. A profile of the following highly authoritative and accessible publications is contained within this report:

• Blackstone's Counter-Terrorism Handbook (Third Edition) (Oxford University Press, 2013)

• Cyber Crime and Cyber Terrorism Investigators Handbook (Elsevier, 2014)

• Emerging Trends in ICT Security (Elsevier, 2014)

• Preventing Terrorism and Violent Extremism (Oxford University Press, 2014)

• Hostile Intent and Counter Terrorism (Ashgate, 2014)

Innovations in policing

During November 2013 CENTRIC were pleased to be the only organisation outside of the United States to be invited to contribute to the "Challenges and Innovations in Combating Urban Crime" meeting of senior delegates. The event was organised by the Critical Incident Analysis Group (CIAG) with support from the Research Strategic Network (RSN) and the Law Enforcement Network (LEAN), held at the University Club of Washington DC. This unique event brought together US Chief Police Officers, Federal Bureau of Investigation Agents, prosecutors, Governors and academics to identify and develop an agenda of key issues in strategic policing. Keynote presentations were followed by panel discussions which included challenges associated with social media, big data, crisis management, active shooters, preventing terrorism, human trafficking and the use of stop and search powers. CENTRIC and CIAG continue to strengthen and align their trans-Atlantic alliance in order to identify existing knowledge gaps and enhance law enforcement capabilities for the preservation of public safety.

Online articles

This accessible series provides a rich blend of theory and practice. Its diverse range of articles with their focus on counter-terrorism, are regularly followed by a large audience of academics and practitioners.

Strategic partnerships

CENTRIC continue to develop new strategic partners and were pleased to support the mission of the Terrorism Prevention Branch, United Nations Office of Drugs and Crime (UNODC) for Afghanistan during 2014. The opportunity to inform senior Afghan officials and prosecutors on the development of an anti-terror legal framework provided a unique opportunity for CENTRIC to share its expertise in this field.

ATHENA

ATHENA, funded under the European Commission 7th Framework Programme security themed research (Topic SEC-2012.6.1-30) seeks to explore how the huge popularity of new communication media can be harnessed to provide efficient and effective communication and enhanced situational awareness during a crisis for ordinary citizens and first responders.

ATHENA recognises that the public are under-utilized crisis responders; they are often first on the scene, vastly outnumber the emergency first responders and are creative and resourceful. In a crisis, the public self-organise into voluntary groups, adapt quickly to changing circumstances, emerge as leaders and experts and perform countless life-saving actions; and they are increasingly reliant upon the use of new communications media. ATHENA shall deliver two major outputs:

• A set of best practice guidelines for first responders and citizens for the use of new media, supporting tools and technologies in crisis situations.

• A suite of prototype software tools to enhance the ability of first responders and citizens in their use of new media in crisis situations.

As Technical Coordinators for ATHENA, CENTRIC are supporting the development of solutions to help citizens during crisis by joining their conversations and adding an enabling voice, giving them the information they ask for in a way they can understand. ATHENA will assist the public in targeting their actions, by directing them to the places they need to be, and diverting them away from danger while identifying emergent behaviour that is beneficial to the provision of support through emergency agency resources. ATHENA will create a fundamental and permanent shift in the way crisis situations are managed.

The West Yorkshire for Innovation (WYfi) team of the Office of the Police and Crime Commissioner for West Yorkshire are leading a consortium of fourteen partners during this three-year project from 2013-2016.

The ATHENA consortium provides a multi-disciplinary approach from across government, academia and the private sector and includes, the United Nations International Organisation for Migration (Belgium); Fraunhofer Institute (Germany); SAS Software Limited (UK); Children's Hospital Corporation, Harvard University (US); Municipality of Ljubljana (Slovenia); Thales Nederland BV (Netherlands); Critical Incident Analysis Group (CIAG), University of Virginia (US); Forsvarshogskolan - Defence College (Sweden); EPAM Systems (Sweden); Izmir Buyuk Sehir Belediyesine (Turkey); Police National Legal Database (PNLD) (UK) and Blackberry, Research-in-Motion (Canada).

COURAGE (Cybercrime and cyberterrOrism EUropean Research AGEnda)

COUARGE (Cybercrime and cyberterrOrism EUropean Research AGEnda), is the 2014 flagship European Commission, Research Executive Agency research project funded under the 7th Framework Programme (Topic SEC-2013.2.5-1). The 2-year grant-funded project commenced during May 2014 and aims to develop a Cyber Crime and Cyber Terrorism research agenda for the European Commission to significantly improve the security of citizens and critical infrastructures and support crime investigators.

Coordinating COURAGE is the European Organisation for Security (EoS) who lead an internationally recognised team of experts and organisations who are able to draw together their insights into cybercrime and cyber-terrorism through established foundations of research and scholarship. As part of the COURAGE consortium of partners and advisors, 17 individual countries are represented, including leading centres of academic and industrial research, as well as unique high-level security agencies including; United Nations Interregional Crime and Justice Research Institute (UNICRI) (Italy): Cybercrime Research Institute (Denmark); Organisatie voor toegepast natuurwetenschappelijk Onderzoek (Netherlands); Totalförsvarets forskningsinstitut (Sweden);

Engineering Ingegneria Informatica (Italy); THALES (France); Europol; Eurojust; RAND (Europe & US); NATO Cooperative Cyber Defence Centre of Excellence.

The COURAGE approach builds on three primary pillars as follows;

• User-centric methodology to identify gaps, challenges and barriers based on real-world needs and experiences.

• Analytical and semantic approach, to deliver a taxonomy and create a common understanding of the subject with all stakeholders.

• Competitive and market oriented approach to foster practical implementations of countermeasures using effective test and validation solutions.

The ground breaking research of COURAGE shall serve to inform and establish the European Commission research agenda for cyber crime and cyber terrorism, bridging the gap between cyber research and operational front-line realties. The multi-disciplinary research of COURAGE represents innovation in policing research to tackle the most pressing contemporary security challenges.

ePOOLICE (early Pursuit against Organised crime using envirOnmental scanning, the Law and IntelligenCE systems)

ePOOLICE (early Pursuit against Organised crime using envirOnmental scanning, the Law andIntelligenCE systems) is funded under European Commission 7th Framework Programme security themed research (Topic SEC-2012.6.3-1), designed to meet the requirement of "Developing an efficient and effective environmental scanning system as part of the early warning system for the detection of emerging organised crime threats".

The three-year project (2013-2016) will seek to:

• Identify end-user needs and requirements by sharing tools and processes used in assessing emerging organised crime threats

• Develop an efficient and effective environmental scanning system as part of an early warning system, defining processes for the identification and prioritisation of indicators

• Develop dynamic scenarios based on end-user needs and requirements to validate real-world performance

• Evaluate trends and factors driving 'future crime' in order to identify potential 'weak signals' in emerging organised crime trends

One major objective of the ePOOLICE project is to develop a system for the scanning and analysis of a stream of information from all relevant sources, including open source, police sources and public and government databases. The system will be capable of effectively analysing a diverse range of data, taking into account the expected reliability of the source, compatibility of information, traceability of the source and supporting a common, unified data model of 'weak signals' from the environmental scanning.

The ePOOLICE project is coordinated by Isdefe (Spain), who lead a strong consortium of organisations working within the organised crime domain across European Union Member States including: CENTRIC (UK), West Yorkshire Police (UK), Legind Technologies (Denmark), Inthemis (France), SAS (UK), CEA (France), Fraunhofer (Germany), Thales (Netherlands), United Nations Interregional Crime & Justice Research Institute (Italy), Macedonia Ministry of Interior (Macedonia), Guardia Civil (Spain), Universidad de Granada (Spain), Aalborg University (Denmark), Study Department of Bavarian Police, (Germany) EUROPOL (Netherlands), Copenhagen Institute for Future Studies (Denmark).

SMART CV (Social Media Anti-Radicalisation Training for Credible Voices)

SMART CV (Social Media Anti-Radicalisation Training for Credible Voices) was an 18-month grant-funded project awarded by the European Commission, Directorate General Home Affairs Internal Security (ISEC) as part of the Prevention of and Fight against Crime 2007-2013 security research programme (Topic SEC-2012.6.1-3) the project was set up to address the specific theme of "Preventing radicalisation leading to terrorism to stimulate, promote and develop horizontal methods and tools necessary for strategically preventing and fighting crime and guaranteeing security and public order".

From December 2012 to June 2014, CENTRIC have evaluated the design and delivery of SMART-CV, a table-top community consequence exercise for use by public bodies and community safety focused groups in European Member States, which raises awareness of social media to counter negative online influences following a terrorist event. The exercise has shared and developed effective practice as well as increasing the awareness of the benefits of harnessing the power and influence of social media to prevent radicalisation of individuals following a local, national or global counter-terrorism related event.

At the final project event held at Bramshill, College of Policing during June, SMART CV was presented to a global audience, serving to illustrate the benefits of social media in the management of terrorist incidents to prevent radicalization. SMART CV demonstrates how a network of online 'Credible Voices' within a community can help to prevent the radicalization of others by combating misinformation or extremist messaging.

The SMART CV consortium was led by the Office of the Police and Crime Commissioner for West Yorkshire with partners from the Police and Border Guard (Estonia); University of Applied Science, Police Affairs (FHVR) (Germany); European Institute (Bulgaria) and the

Ministry of Interior, Counter Terrorism Centre (Hungary). SMART CV is an excellent education product, which can be adapted for use in all manner of situations and locations. The associate partners of SMART CV included the Association of Chief Police Officers (Terrorism and Allied Matters) National Prevent Delivery Unit and the European Police College (CEPOL) who have supported the design, development and delivery of the training exercise.

SMART CV is now available to Member States to strengthen preventative measures designed to prevent opportunities for online radicalisation. CENTRIC are supporting the Office of the Police and Crime Commissioner for West Yorkshire to adapt SMART CV to address other social media security challenges including online bullying and child sexual exploitation.

TRANSRAD

Transversal Bridge (TRANSRAD) is a two-year European Commission, Directorate General Home Affairs funded project addressing the emerging threat of transversal terrorist alliances for European nations and communities. TRANSRAD aims to detect and profile the emerging threat of transversal European radical groups and raise the awareness of institutional bodies and civil society at large on the risks potentially connected to these 'radical bridges'. This project seeks to provide a new analytical grid to underpin the design of a strategic approach to counter these new and emerging threats.

TRANSRAD will undertake research to record counter-radicalisation case studies and identify the primary and secondary data required to subsequently produce threat assessments for new and emerging transversal threats. Research activity shall focus on movements involved in Southern European Member States with specific focus on Italy, Greece, Spain and Cyprus and their ties with radical movements in Northern and Western Europe. This research activity will study sources from academic literature, police interview reports, court proceedings, prison records, intelligence agency reports, government assessments and other open sources in order to build a richer picture throughout Member States with regard to the connections among the different groups, individuals and narratives.

Led by Agenfor Italalia, the TRANSRAD consortium includes Guardia Civil, Czech Technical University, European Institute in Bulgaria and the Hellenic Foundation for European and Foreign Policy, providing a rich mix of practitioner and academic expertise. CENTRIC will inform the project by providing threat assessments from a UK perspective, captured from a series of interviews with experts from government and academia.

Aimed not simply at traditional stakeholders involved in identifying and countering radicalisation, TRANSRAD aims to produce video reportages, articles and working papers focused on delegitimizing terrorist and extremist narratives. These products will raise the awareness and understanding amongst a wider security stakeholder community of a wide community of security stakeholders regarding the nature of transversal threats and lay the foundations for the future development of a pan-EU strategy.

UNIFC (illegal Use of the iNternet In Fighting Cyber Crime)

The illegal Use of the iNternet In Fighting Cyber Crime (UNIFC2), is a two-year European Commission, Directorate General Home Affairs funded project led by the Centre for Security Studies (KEMEA). The strategic objectives of UNIFC2 are:

• To build and strengthen the capabilities of Law Enforcement Agencies, citizens and EU bodies in order to strategically combat cybercrime

• To assist Law Enforcement Agencies in automatically detecting online illegal data from social media, blogs, underground communities and to determine investigative priorities

• To introduce the latest achievements of ICT in data mining, intelligence, correlation, fuzziness, classification, automatic monitoring, decision making, report producing in compacting cybercrime

• To facilitate the formal exchange of compiled information, produced by intelligent analysis of online information, amongst Law Enforcement Agencies and EU bodies in order to enhance collaboration and effectively counteract cybercrime

• To strengthen the mission of the recently founded European Cybercrime Centre against only crimes, by producing strategic reports on cybercrime trends and emerging threats in order to provide comparable statistics among Member States

The project promises to design, build and pilot study a multi-lingual software platform that supports Law Enforcements Agencies in combating cybercrime through four primary methods;

1. Providing intelligent analysis of the collected and maintained data regarding cybercrime events at EU level.

2. Performing automated monitoring and inspection of online content in social media, blogs, underground communities,

3. Producing automatic decision on cyber crimes or formal reports that give guidelines and evidences to Law Enforcement Agencies in preventing , investigating and fighting cybercrime

4. Exploiting the databases retained by hot lines and Law Enforcement Agencies and enabling users to report online cybercrime events.

CENTRIC will support KEMEA providing academic and end-user expertise who are joined by world class partners including the University of Piraeus Research Centre, Cyprus Safer Internet Centre (CNTI), Advanced Integrated Technology Solutions and Services (ADITESS) and Mezza, a leading provider of innovative software and web solutions.


European Commission

PUBLICATIONS

Preventing Terrorism and Violent Extremism

This accessible and authoritative guide provides a clear and detailed introduction to the prevention of terrorism and violent extremism, offering an operational guide to effectively tackle the most pressing threat to national and neighbourhood security. Written by an experienced counter-terrorism police practitioner, this unique title provides all police practitioners and professionals, for the very first time, with an operational reference and resource designed to guide and inform them through the complexities and challenges of effectively delivering preventative counter-terrorism policing.

Enriched with case studies, clear explanations of national policy and providing the contextual information and theoretical underpinning required for the clear interpretation and application of counter-terrorism powers, this title is a primary reference and resource for all police officers, the extended police family and partners working to keep communities safe from terrorism and violent extremism.

Sir David Omand GCB, Visiting Professor, King's College London: "This new volume fills a lacuna in police counter-terrorism literature, combining both practical and theoretical elements to support the operational implementation and interpretation of national strategies."

Lord Carlile of Berriew CBE QC: "The author of this excellent book has drawn together the body of counter-terrorism legislation in a form accessible to all stakeholders. Although designed for police officers, I have no doubt that it will be an essential part of a wider range of libraries, especially for those partners who contribute towards the delivery of preventing terrorism".
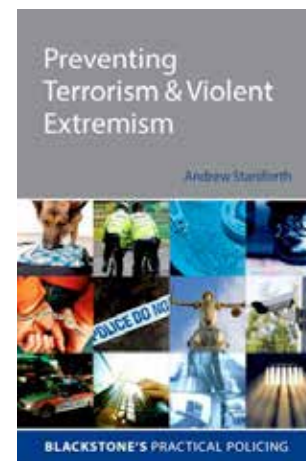
Title: Preventing Terrorism and Violent Extremism

Author: Andrew Staniforth

Editors: Lord Carlile of Berriew CBE QC and John Parkinson OBE

Publisher: Oxford University Press

Published: 2014

ISBN: 978-0-19-870579-6

Emerging Trends in Information Communication Technologies Security

Emerging Trends in ICT Security is an edited volume which discusses the foundations and theoretical aspects of ICT security, covering trends, analytics, assessments and the frameworks necessary for performance analysis and evaluation. This new volume provides the state-of-the-art knowledge needed for the successful deployment of security solutions in many environments. Application scenarios also provide the reader with an insider's look at security solutions deployed in real-life scenarios, including but not limited to smart devices, biometrics, social media, big data security, and crowd sourcing.

• Provides a multidisciplinary approach to security with coverage of communication systems, information mining, policy making, and management infrastructures

• Discusses deployment of numerous security solutions, including, cyber defence techniques and defence against malicious code and mobile attacks

• Addresses application of security solutions in real-life scenarios in several environments, such as social media, big data and crowd sourcing

John Parkinson OBE, Chair of Steering Group, CENTRIC: "Contemporary threats to national security and neighbourhood safety are increasingly non-physical. Those who seek to destroy citizen freedoms and liberties are harnessing the power of Information Communication Technologies which now require innovative solutions. This insightful volume fills an operational gap in understanding Information Communication Technologies and is a welcome introduction to tackling the security challenges which lie ahead."

Title: Emerging Trends in ICT Security

Editors: Babak Akhgar and Hamid R. Arabnia

Publisher: Elsevier

Published: 2014

ISBN: 978-0-12-411474-6

Blackstone's Counter-Terrorism Handbook (Third Edition)

This highly accessible and conveniently portable handbook provides an authoritative guide for all counter-terrorism practitioners to anti-terrorism legislation, and includes important contextual chapters on the counter-terrorism operational framework, the national structures and strategies, and the role and functions of key agencies. This new edition has been updated to include the Government's CONTEST, Cyber Security, and National Security Strategies and the national response to terrorist emergencies. It also contains new case studies of counter-terrorism investigations, guidance on the Government Protective Marking Scheme and practical scenarios and checklists to illustrate the operational application of anti-terror laws. The legislative section, brought fully up to date by the highly regarded Police National Legal Database, focuses primarily on police powers, procedures and offences. These provisions are accompanied by explanatory notes, related case law and points to prove, ensuring quick and clear translation of complex anti-terror powers and provisions. Concise and accessible, this book is an ideal reference and resource for all operational police officers and counter-terrorism practitioners.

Lord Carlile of Berriew CBE QC: "As the former independent reviewer of counter-terrorism legislation, and as a legal practitioner and Parliamentarian, I now observe the Blackstone's Counter-Terrorism Handbook on the desks of barristers, solicitors, MPs, members of the House of Lords and elsewhere."
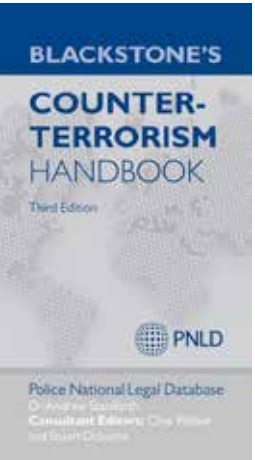
Title: Blackstone's Counter-Terrorism Handbook (Third Edition)

Author: Police National Legal Database & Andrew Staniforth

Editors: Professor Clive Walker and Stuart Osborne QPM

Publisher: Oxford University Press

Published: 2013

ISBN: 978-0-19-9658091

Cyber Crime & Cyber Terrorism Investigator's Handbook

The Cyber Crime and Cyber Terrorism Investigator's Handbook is a vital tool in the arsenal of today's computer programmers, students, and investigators. As computer networks become ubiquitous throughout the world, cyber crime, cyber terrorism, and cyber war have become some of the most concerning topics in today's security landscape. Recent news stories about Stuxnet and PRISM have brought these activities into the public eye and serve to show just how effective, controversial—and worrying—these tactics can become.

This handbook describes and analyzes many of the motivations, tools, and tactics behind both cyber attacks and the defences against them. You will learn about the technological and logistic framework of cyber conflict, as well as the social and legal backgrounds to the prosecution and investigation of the same. Whether you are a law enforcement professional, an IT specialist, a researcher, or a student, you will find valuable insight into the world of cyber crime/cyber terrorism and cyber warfare.

Edited by experts in computer security, law enforcement agencies, cyber investigations, and counterterrorism, and with contributions from computer researchers, legal experts, and law enforcement professionals, Cyber Crime and Cyber Terrorism Investigator's Handbook will serve as the best reference book currently available on the modern world of cyber crime and cyber terrorism.
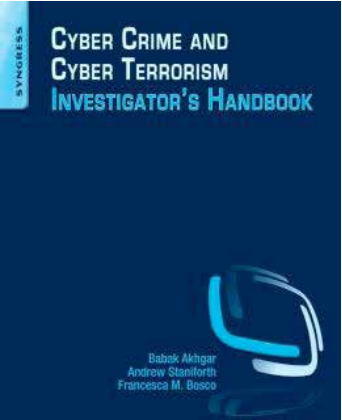
Title: Cyber Crime & Cyber Terrorism Investigator's Handbook

Author: Babak Akhgar, Francesca Bosco & Andrew Staniforth

Editors: Professor Clive Walker and Stuart Osborne QPM

Publisher: Elsevier

Published: 2014

ISBN: 978-0-12-411474-6

Hostile Intent & Counter Terrorism - Human Factors Theory & Application

This new book from Ashgate has been designed as a resource that is accessible to a wide readership, and which promises to interrogate leading research and knowledge from around the world across a diverse range of areas within the scope of Human Factors and Psychology. The editors have chosen a range of contributions that expand typical definitions of human factors, stimulating discussion by representing diverse disciplines that contribute knowledge to this area such as: psychology, criminology, sociology, social and scientific philosophy, political science, ethics, art and design, neuroscience, engineering and computer science. In doing so the aim has been to illustrate the multi-disciplinary requirements of investigating the issues surrounding hostile intent that might then facilitate counter-terrorism strategies, policies and interventions.

The book concludes with a section that looks to the potential future directions of hostile intent and counter-terrorism research. The result is a truly international edition including monographs, reviews, and findings from empirical research. Across 20 contributed chapters, 27 senior academics and 13 Professors represent those at the forefront of their subject areas. These are supplemented by valuable contributions from Government advisors and leading figures in counter-terrorism policing who have led UK security initiatives, training and the development of police handbooks including John Parkinson OBE and Detective Inspector Andrew Staniforth of CENTRIC.

Title: Hostile Intent & Counter Terrorism – Human Factors Theory and Application

Editors: Glyn Lawson and Alex Stedmon

Publisher: Ashgate

Published: 2014

ISBN: 978-1-4724-0210-3

CENTRIC Academy

The Centre of Excellence for Terrorism, Resilience, Intelligence and Organised Crime (CENTRIC) is a multi-disciplinary and end-user focussed research network linking both academic and professional expertise across a range of disciplines and professional practice in the security domain. This provides a unique context in which to undertake innovative, applied research in the form of a structured doctoral research programme.

CENTRIC seeks to bridge the gap between research and operational realities, ensuring that research has an impact on operational policy, practice and procedure. The CENTRIC Academy offers an opportunity for those in law enforcement, intelligence agencies, the military and wider security industry to engage in a flexible but rigorous programme of research, relevant to the demands and challenges of their profession.

CENTRIC PhD Programme

As members of the CENTRIC PhD Programme, students can study either part-time or full-time and can submit a PhD thesis in either a traditional monograph style or as an article-based PhD.

The Article-based PhD

The Article-based PhD is designed to meet the needs of doctoral candidates who wish to publish their research early in their career. A number of peer-reviewed research articles (usually between 3 and 5) are produced by the student during their period of registration as a PhD candidate, and these articles form part of the PhD submission, alongside a 40,000 word thesis. Students are encouraged to publish their research in high quality, international journals and edited collections and all articles must be published or accepted for publication to be included in the submission. Publications may be jointly written, but the PhD candidate must be the principle author.

Students progress on an approved programme of research and are supported throughout the life of their studies by CENTRIC and an experienced supervisory team consisting of a Director of Studies, one or two Second Supervisors and, where appropriate, one or more Advisors who may be external to the university. Students' individual training needs are assessed at the outset of the programme and they will be invited to attend a structured training programme designed to develop generic research skills.

The article-based PhD is a recommended five-year programme for part-time candidates as follows:

• **Year 1** – The programme of doctoral research is refined and approved, including review of research design, methodology and ethical considerations. Students undertake research training. Research activities commence.

• **Year 2** – By the end of year 2, students are assessed via a 6,000 word report and an oral defence as part of the institutional process of approval to confirm PhD candidature. Submit article for publication.

• **Year 3** – Students submit two articles suitable for publication and present a paper at a CENTRIC seminar

• **Year 4** – Students submit two articles for publication. Draft literature review for the thesis part of the submission.

• **Year 5** – Students continue to prepare the thesis part of the submission, comprising an introduction, an explanation of the research questions, the relevant literature, an account of the methodology and a summary and discussion of the research findings as a whole. Submit thesis & undergo viva voce examination.

The CENTRIC article-based PhD ensures that student research is published at regular intervals, informing and raising awareness of research programmes across the international security landscape. The article-based PhD provides students with a unique opportunity to achieve a body of peer-reviewed published works by the conclusion of their studies and recognises the need for security practitioners' studies to have a real and positive impact.

Duration of PhD Programme

The PhD Programme is suitable for security practitioners and professionals who, whilst being committed to their studies and maintaining a healthy work and life balance, should be able to complete the programme in a recommended period of 5 years on a part-time basis. Understanding the demands of professional and personal life, students may apply to suspend their studies at anytime and reconvene their research from the point at which their studies were suspended. Students may also apply to extend the end date of their studies beyond the recommended 5-year period if required. Alternatively, for highly motivated students, a part-time PhD candidate thesis may submit within a minimum of 45 months.

Entry Requirements

Entry requirements for a PhD programme are 1) an appropriate Masters degree (preferred) or 2) a minimum of a first class or upper second-class undergraduate degree. Non-standard applicants may have evidence of research ability and background knowledge taken into account. Relevant practitioner experience is desirable.

Your personal development

The completion of the CENTRIC PhD provides a unique investment in your personal and professional development. It also offers the opportunity to develop niche expertise, to be part of CENTRIC activities and extend your networks, as well as increasing your profile with senior leaders and subject specialists across the global security landscape.

Organisational benefits

The PhD Programme provides organisations with an opportunity to recognise invest in and reward talent by sponsoring colleagues. Programmes of research can be designed to meet specific organisational needs, goals, or gaps in knowledge. This approach serves to develop research skills and capacity within your organisation, from which you shall see a direct and positive return on your investment. The full or part sponsorship of students for the duration of the PhD Programme ensures a long-term and cost-effective commitment to employee's personal and professional development while serving to tackle your organisations' most pressing security challenges and concerns.

Enrolment dates for 2015

CENTRIC are pleased to welcome applications for the following enrolment dates:

• **January 2015** – Submission of application by **1st October 2014**

• **May 2015** – Submission of application by **1st February 2015**

• **September 2015** – Submission of application by **1st June 2015**

The Year Ahead

In the coming year CENTRIC seeks to expand its mission and increase its capacity and capability to provide a platform for researchers, practitioners', policy makers and the public to focus on applied research in the security domain. To ensure continued success, CENTRIC shall seek new alliances and strategic partners while strengthening existing relationships through further collaborative research across the security domain.

Key priorities for the year ahead will include the design and development of multi-agency research proposal submissions to national and international grant funding bodies. Primary focus shall be centred upon the European Commission Horizon 2020 and ISEC programmes with an interest in community policing, human trafficking and cyber-based threats and challenges.

CENTRIC will also focus efforts on the publication and dissemination of new learning materials for practitioners and academics. Work is already underway to create a new suite of innovative publications which meet operational requirements and address security concerns. Publications already in progress include:

• **Blackstone's Cyber Crime Investigators' Handbook** (Oxford University Press) to be authored by Police National Legal Database (PNLD) and Andrew Staniforth and edited by Professor Babak Akhgar and Francesca Bosco. Due for publication in January 2015, this new authoritative and accessible volume will be of substantial practical and operational value providing all police practitioners with a trusted reference and resource designed to guide them through the complexities and operational challenges of effectively investigating cyber crimes.

• **Big Data and National Security** (Elsevier) is an edited volume by Professor Babak Akhgar, Professor Richard Hill and Andrew Staniforth which explores the critical success factors for harnessing big data for

national security. A multi-disciplinary team of leading academics and practitioners from across the world are contributing to this unique volume which will no doubt form a welcome introduction to understanding big data in a security context when published later in 2014.

2014 Host- SAP

With the vision of CENTRIC looking at collaboration between Industry, Academia and Law enforcement agencies, a perfect opportunity was presented to SAP, a leading technology and predictive analytics company, to partner up and host CENTRIC's influential associates and colleagues at their NEW innovation centre near London.

In this world of perpetual uncertainty where there is a constant need to adapt, societies need their agencies and public services to have the right strategies, structures, capabilities, skills, resources and infrastructure to meet the challenges of today and tomorrow. It is inevitable that these challenges will grow and the nation's citizens will demand that its Public Security Agencies coordinate and work efficiently and effectively to protect both them and their environment. As we are all aware Public Security Agencies of all type across the world are having to cope with a **tremendous amount of data to keep on top on intelligence.**

But maybe the first question to ask is why ?

What is a typical security agency trying to achieve? And then ask the question what are the common problems and issues that they face.

Our Approach

Our approach is to provide a platform of capability that will address the core requirements for an intelligence platform to service, if required, the full intelligence lifecycle

Any platform needs to flexibility and adaptable, we understand that no one agency or department from anywhere in the Public Security World will be at the same place. Its has to adapt to different challenges, at different time whilst building a core platform of competency and control providing our customer rapid solutions to big problems whether on the cloud, on premise or a combination of both whilst never forgetting or ignoring the investment that an organisation has in its current technology platform.

The solution would be based on configuration (NOT Customisation) of our global SAP solutions.

We would propose a platform that would also offer great possibilities for innovation in future phases –

Why SAP?

Access to real time analysis- Fast and easy creation of ad hoc views on new emerging situations.

Smart Public Safety Organizations: one common picture between all levels of an organization and between all organizations

Unlock new insights – remove constraints for analyzing large data volumes - A delay in emergency response results in casualties and further destruction

On the move – having the ability to sense predict and act in real time from anywhere -first responders are safer and can act more effectively to save lives, reduce harm and minimize loss.

SAP Limited is at the Centre of today's technology revolution, and committed to being the cloud leader, powered by SAP HANA. We develop innovations that not only help businesses run better, but also ultimately improve the lives of people everywhere. As the market leader in enterprise business software solutions, we help companies of all sizes and industries achieve better business outcomes. With more than 36 million users cloud, SAP also offers the most comprehensive portfolio of line-of-business Cloud solutions in the industry, the world's largest business trading network and the leading social business collaboration solutions. We enable the world's largest cloud implementations and our solutions offer an unparalleled, beautiful user experience - all built for mobile, and all leveraging the industry expertise from more than 258,500 SAP customers in 191 countries across 25 industries. Learn more about how SAP Cloud can provide the innovation and agility your businesses needs to run like never before.

Your CENTRIC

CENTRIC welcomes your views and extends an invitation for you and your organisation to contribute towards our mission. CENTRIC is driven by practitioners' needs and requirements. If you wish to support our efforts, be kept updated on the developments of our activities, or to learn more about the unique professional development opportunities of the CENTRIC Academy and to reserve your place on the forthcoming PhD Practitioner Programmes, please contact us at the details shown below.

Visit us at

http://research.shu.ac.uk/centric/

Contact details:

centric@shu.ac.uk

Professor Babak Akhgar
Director of CENTRIC
Sheffield Hallam University, Cantor Building, Sheffiled, S1 2NU
B.Akhgar@shu.ac.uk
+44 114 225 6770

Visit us at
http://research.shu.ac.uk/centric/

Contact details:
centric@shu.ac.uk