

# ICGS3 17

11th Annual International Conference

QAHE with Northumbria University,  
London Campus

18 - 20 January 2017

**Conference Programme**

## **Preface - 'The Security Challenges of the Connected World'**

Welcome to the proceedings of the 11th International Conference on Global Security, Safety and Sustainability. Northumbria University London Campus was delighted to host this year's conference with the highly topical theme of "The Security Challenges of the Connected World".

Northumbria University has a long established background in providing world-class research, teaching and consultancy in the field of computer and information sciences. Key research groups from our Computer and Information Sciences Department include: Computer and Electronic Security Systems (CESS); Computer Vision and Artificial Intelligence Group (CVAI); Computer Games and Visual Effects, Digital Consumers; Behaviours and Literacy; Digital Libraries, Archives and Records; and Digital Socio-technical Design.

The papers presented at this year's conference reflect the security challenges we read and hear about on a daily basis in news, whether this be smart cities, smart health, smart metering and smart homes and the subsequent implications on privacy and potential for cyber attacks.

The launch of the new National Cyber Security Centre set to bring UK expertise together is an exciting prospect for the industry. With a growing threat of cyber attacks from nation states, serious crime gangs, hacking groups as well as terrorists the conference provides a forum for discussion of how the National Cyber Security Centre can best foster collaboration from academic and practitioner experts.

We will also consider the political and economic priorities placed on cyber security. As an example, the Horizon 2020 work program - Secure Societies: Protecting Freedom and Security of Europe and Its Citizens - is about protecting our citizens, society and economy as well as our assets, infrastructures and services, our prosperity, political stability and well-being. Any malfunction or disruption, intentional or accidental, can have detrimental impact with high associated economic or societal costs. This indicates security is an issue that can only be tackled effectively if all stakeholders cooperate. As key stakeholders, The question we ask is "What are the implications and how can we be fully engaged?".

This preface can only offer a hint of the insights that emerged from the conference. With themes including, systems security, safety and sustainability, cyber infrastructure protection, the future of digital forensics, information systems security management, cyber law and cyber arbitration, cyber Intelligence and operation, remote system intelligence and counter measures - we hope you find the papers in these proceedings intellectually engaging, relevant, stimulating and enjoyable.

January 2017

**Guy Brown**  
**Graham Sexton**

**Wednesday 18<sup>th</sup> January 2017**  
**Keynotes**  
**Afternoon Session**

<b>Registration</b>	<b>From 1:00pm and we would appreciate you registering as early as possible so we can start promptly at 2.00pm</b>
<b>Opening Session</b>  <b>Keynote address 1</b>  <b>Chaired by</b>  <b>Dr Graham Sexton</b>   <b>14:00 – 16:00</b>	<p><b>Overview and welcome</b> Professor Hamid Jahankhani, General Chair of ICGS3 Richard Beck, Head of QA Cyber Security Centre, UK</p> <hr/> <p><b>Title: Breaking Bad: Safeguarding our digital society</b> Raj Samani , Chief Technology Officer, EMEA, Intel Security</p> <p><b>Title: Corporate Governance and the Digital Space</b> Lord Carlile of Berriew, CBE, QC, FRSA</p> <p><b>Title: Stand and deliver: your money or your files!</b> David Emm, Kaspersky</p>
<b>16:00 - 16:30</b>	<b>Afternoon refreshment break</b>
<b>Opening Session</b>  <b>Keynote address 2</b>  <b>Chaired by</b>  <b>Dr Graham Sexton</b>   <b>16:30- 17:30</b>	<p><b>Title: Engaging students in security: challenges, games, gamification, societies, and adversarial thinking</b> Dr Z. Cliffe Schreuders, Director, Cybercrime and Security Innovation (CSI) Centre, Leeds Beckett University, UK</p> <p><b>Title: Can automated algorithmic techniques adhere to "Right to be forgotten" laws in cross-border data transfer requirements?</b> Amie Taal, Vice President at Deutsche Bank, NY, USA</p> <p><b>Title: Rethinking information security in the era of socio-technical systems</b> Professor Haris Mouratidis, University of Brighton, UK</p>
<b>18:30 – 20:00</b>	<p><b>Drinks Reception</b></p> <p><b>Overview Presentation</b> Richard Beck, Head of QA Cyber Security Centre, UK</p> <p><b>QA Cyber Security Centre</b> London International House St Katharine's Way, London E1W 1UN</p>

**Thursday 19<sup>th</sup> January 2017**  
**Morning Session**

<b>Registration</b>	From 9:00am and we would appreciate you registering as early as possible so we can start promptly at 9:30am
<b>9:30-10:00</b> <b>Keynote address</b>	<b>Title: Smart cross-border e-government systems and applications</b> Professor Alexander Sideridis, Agricultural University of Athens
<b>Session</b>	<b>Title: Application of a digraph for behavioural eye tracking biometrics</b> Bobby L. Tait
<b>Chaired by</b> <b>Professor Gianluigi Me</b>	<b>Title: Behavioural Biometrics for Authentication and Stress Detection – a Case Study with Children</b> Ana I. Azevedo, Henrique D. Santos, Vítor J. Sá, Nuno V. Lopes
<b>10:00 - 11:00</b>	<b>Title: Social Media and e-Voting – A Secure and Trusted Political Forum for Palestine</b> Fouad Shat and Elias Pimenidis
<b>11:00 - 11:30</b>	<b>Morning Coffee Break</b>
<b>Session 4</b>	<b>Title: Aspects of Voice Communications Fraud</b> Alexandre Helenport, Bobby L. Tait
<b>Chaired by</b> <b>Dr Amin Hosseinian-Far</b>	<b>Title: Scalable frameworks for application security and data protection</b> Ilya Kabanov
<b>11:30 - 13:00</b>	<b>Title: Balancing Targeted Delivery of Content and Personal Freedom in the Digital On-line Video Marketing Landscape</b> Kenneth Revett, Sérgio Tenreiro de Magalhães, Maria Jose Magalhães & Hamid Jahankhani
	<b>Title: Towards an Enterprise Architecture Framework for Community Policing</b> Helen Gibson and Babak Ahkgar
<b>13:00 – 14:00</b>	<b>Lunch</b>

**Thursday 19<sup>th</sup> January 2017**  
**Afternoon sessions**

<p><b>Session 5</b></p> <p><b>Chaired by</b></p> <p><b>Professor Vítor J. Sá</b></p> <p><b>14.00 – 15:15</b></p>	<p><b>Title: Using Dual Trigger Handover Algorithm to improve WiMAX Handover delay</b> Imran Khan, Sufian Yousef</p> <p><b>Title: Tor marketplaces exploratory data analysis: the drugs case</b> Alessandro Celestini, Gianluigi Me, and Mara Mignone</p> <p><b>Title: User acceptance of information technology: A critical review of technology acceptance models and the decision to invest in Information Security</b> Patrice Seuwou, Ebad Banissi, and George Ubakanma</p> <p><b>Title: A Novel Anonymity Quantification and Preservation Model for UnderNet Relay Networks</b> Gregory Epiphaniou, Tim French, Haider Al-Khateeb, Ali Dehghantanha, and Hamid Jahankhani</p>
<p><b>15:15 - 15:45</b></p>	<p><b>Afternoon Tea Break</b></p>
<p><b>Session 6</b></p> <p><b>Chaired by</b></p> <p><b>Professor Sérgio Tenreiro de Magalhães</b></p> <p><b>15:45 – 17:30</b></p>	<p><b>Title: Bitcoin Forensics: A Tutorial</b> David Neilson, Sukhvinder Hara, and Ian Mitchell</p> <p><b>Title: Combating Cyber Dependent Crimes: The Legal Framework in the UK</b> Oriola Sallavaci</p> <p><b>Title: Forensic Analysis of Secure Ephemeral Messaging Applications on Android Platforms</b> M A Hannan Bin Azhar and Thomas Edward Allen Barton</p> <p><b>Title: Digital Evidence: Disclosure and Admissibility in the United Kingdom Jurisdiction</b> Reza Montasari</p> <p><b>Title: Efficient energy and processes time Algorithm for offloading using cloud computing</b> Rakan Aldmour, Sufian Yousef, Faris Albaadani and Mohammad Yaghi</p>
<p><b>Banquet 19:00 - 22:00</b></p>	

**Friday 20<sup>th</sup> January 2017**  
**Morning sessions**

<b>Registration</b>	<b>From 9:00am and we would appreciate you registering as early as possible so we can start promptly at 9:30am</b>
<b>Session 7</b>  <b>Chaired by</b>  <b>Dr Kenneth Revett</b>  <b>9:30 - 11:00</b>	<p><b>Title: Deconstruct and Preserve (DaP): A method for the preservation of digital evidence on Solid State Drives (SSD)</b> I. Mitchell, T. Anandara ja, S. Hara, G. Hadzhinenov, &amp; D. Neilson</p> <p><b>Title: A Scalable Malware Classification based on Integrated Static and Dynamic Features</b> Tewfik Bounouh, Zakaria Brahimi, Ameer Al-Nemrat and Chafika Benzaid</p> <p><b>Title: Source Camera Identification using Non-decimated Wavelet Transform</b> Ahmad Ryad Soobhany, Akbar Sheikh Akbari, Z. Cliffe Schreuders</p> <p><b>Title: Phishing-deception Data Model for online Detection and Human protection</b> Phoebe Barraclough, Graham Sexton</p>
<b>11:00 - 11:30</b>	<b>Morning Coffee Break</b>
<b>Session 6</b>  <b>Chaired by</b>  <b>Dr Arshad Jamal</b>  <b>11:30 - 13:00</b>	<p><b>Title: Content Discovery Advertisements: An Explorative Analysis</b> Raghavender Rao Jadhav Balaji, Andres Baveralle, Ameer Al-Nemrat, Paolo Falcarin</p> <p><b>Title: Performance Analysis for Traffics in Mobile Ad Hoc Network</b> Firas Hazzaa and Sufian Yousef</p> <p><b>Title: The Future of Enterprise Security with Regards to Mobile Technology and Applications</b> F. T. Tagoe and M. S. Sharif</p> <p><b>Title: ITAOFIR: IT Asset Ontology for Information Risk in Knowledge Economy and Beyond</b> Kayode Adesemowo, Rossouw von Solms, and Reinhardt A. Botha,</p>
<b>13:00 – 14:00</b>	<b>Lunch</b>



**Friday 20<sup>th</sup> January 2017**  
**Afternoon sessions**

<p><b>Session</b></p> <p><b>Chaired by</b></p> <p><b>Professor Bobby L. Tait</b></p> <p><b>14:00 - 15:30</b></p>	<p><b>Title: Cyber Attacks Analysis using Decision Tree technique for Improving Cyber Situational Awareness</b> Sina Pournouri, Babak Akhgar, Petra Saskia Bayerl</p> <p><b>Title: Disaster Management System as an Element of Risk Management for Natural Disaster Systems Using the PESTLE Framework</b> Dilshad Sarwar, Muthu Ramachandran, Amin Hosseinian-Far</p> <p><b>Title: A Review on Privacy Issues in Hotels: a Contribution to the Definition of Information Security Policies and Marketing Strategies</b> Maria José Magalhães, Sérgio Tenreiro de Magalhães, Kenneth Revett, Hamid Jahankhani</p> <p><b>Title: Facial Recognition Cane for the Visually Impaired</b> Asim Majeed, Said Baadel</p>
<p><b>15:30 - 16:00</b></p>	<p><b>Afternoon Tea Break</b></p>
<p><b>Session 2</b></p> <p><b>Chaired by</b></p> <p><b>Dr Fouad Khelifi</b></p> <p><b>16:00 – 17:30</b></p>	<p><b>Title: A Novel Energy Sleep Mode based on Standard Deviation ‘ESMSD’ Algorithm for Adaptive Clustering in MANETs</b> Faris Al-Baadani, Sufian Yousef, Rakan Aldmour, Laith Al-Jabouri, Shashikala Tapaswi, Kiran Kumar Patnaik and Michael Cole</p> <p><b>Title: Chemical, biological, radiological and nuclear (CBRN) protective clothing – a Review</b> Maria José Magalhães, Sérgio Tenreiro de Magalhães, Kenneth Revett, Hamid Jahankhani</p> <p><b>Title: Actor-Network Theory as a framework to analyse Technology Acceptance Model’s external variables: the case of autonomous vehicles</b> Patrice Seuou, Ebad Banissi, George Ubakanma, Mhd Saeed Sharif, Ann Healey</p> <p><b>Title: Global Triumph or Exploitation of Security and Privacy Concerns in E-Learning Systems</b> Asim Majeed, Said Baadel, Anwar Ul Haq</p>
<p><b>17:30pm – 17:45pm</b></p>	<p><b>Closing Session</b></p> <p>Professor Hamid Jahankhani ICGS3 General Chair Dr Guy Brown, Director, Northumbria University, London Campus</p>