20th European Conference on Cyber Warfare and Security - ECCWS 2021
Supported by The University of Chester, UK
24 -25 June 2021
All timings in GMT+1 - UK Time

Thursday 24 June

			Conference Zoom Details
			Passcode for all sessions **ECCWS21**
08:45	**Zoom Room Opens**		
09:00	**Welcome to the Conference**		Room 1 – https://us02web.zoom.us/j/84240261247
09:15	**Keynote Address: *Policing the UK Cyber Space Including the Dark Web*** **Presented by: Temporary Detective Chief Inspector David Turner and Detective Constable Michael Roberts**		Room 2 - https://us02web.zoom.us/j/81543316545
10:00	**Break and conference splits into three streams**		Room 3- https://zoom.us/j/93080974923

	Stream A: Forensics **Chair: Christoph Lipps** **Room 1**	**Stream B: Security and Privacy challenges in Smart Infrastructure** **Chair: Arianit Maraj** **Room 2**	**Stream C: PhD Colloquium** **Chair: Thaddeus Eze** **Room 3** *(10 minute presentations with time for discussion and feedback)*
10:10	Digital Forensic Readiness Implementation in SDN: Issues and Challenges Nickson **Karie** and Craig **Valli** Edith Cowan Univeristy, Australia	Critical Infrastructure Protection: Employer Expectations for Cyber Security Education in Finland Janne **Jaurimaa**, Karo **Saharinen** and Sampo **Kotikoski**, JAMK University of Applied Sciences, Finland	How the Civilian Sector in Sweden Percieve Threats from Offensive Cyberspace Operation Joakim **Kävrestad** and Gazmend **Huskaj** University of Skövde, Sweden
10:30	Deepfake Video Detection Shankar Bhawani **Dayal** and Brett **van Niekerk**, University of KwaZulu-Natal, South Africa	Weaknesses of IoT devices and sensors in the access networks used by People in their Homes Aarne **Hummelholm**, University of Jyväskylä, Finland	Side Channel Attacks and Mitigations 2015-2020: A Taxonomy of Published Work Andrew **Johnson**, University of South Wales, UK
10:50	Computer-Aided Diagnostics of Digital Evidence Tampering (CADDET) Babak **Habibnia**, Pavel **Gladyshev** and Marco **Simioni**, University College Dublin, Ireland	Resilience Management Concept for Railway and Metro Cyber-Physical Systems Jyri **Rajamäki**, Laurea University of Applied Sciences, Finland	Sanctions Theory in Cyberspace: The case of the EU's cyber sanctions regime Eleni **Kapsokoli**, University of Piraeus, Greece
11:10	KSA for Digital Forensic First Responder: A Job Analysis Approach Ruhama Mohammed **Zain**, Zahri **Yunos**, Nur Farhana **Hazwani**, Mustaffa **Ahmad** and Lee Hwee **Hsiung**, CyberSecurity Malaysia	Emergency Response Model as a part of the Smart Society Jussi **Simola**, Martti.J. **Lehto**, University of Jyväskylä, Finland and Jyri **Rajamäki**, Laurea University of Applied Sciences, Finland	e-Health as a Target in Cyberwar: Expecting the Worst Samuel **Wairimu**, Karlstad University, Sweden
11:30	Digital Evidence in Disciplinary Hearings: Perspectives from South Africa Trishana **Ramluckan**, Harold **Patrick** and Brett **van Niekerk**, University of KwaZulu-Natal, South Africa	Connected, Continual Conflict: Towards a Cybernetic Model of Warfare Keith **Scott**, De Montfort University, Leicester, UK	Bio-Cyber Operations inspired by the Human Immune System Seyedali **Pourmoafi** and **Stilianos** Vidalis University of Hertfordshire, UK
11:50	Global Social Network Warfare on Public Opinion Long **Chen**, Beihang University, and Jianguo **Chen**, Hebei Sismological Unit, China	Establishing Real-time Security for Levels 1 and 0 in SCADA Networks Mark **Baggett**, Mission Secure, USA (Presentation only)	
12:10	*Lunch Break*	*Lunch Break*	*Lunch Break*
12:45	**Keynote: *Cyber Choices – Helping Young People Choose the Right and Legal Path*** **Presented by: Detective Constable Will Farrell and Police Constable Phil Byrom**		
13:30	**Break and Conference splits into three streams**		

	Stream A: Cyber Warfare Chair: Richard Wilson Room 1	Stream B: Implementation Strategies and Fraud Chair: Iain Sutherland Room 2	Stream C: PhD Colloquium Chair: Thaddeus Eze Room 3 *(10 minute presentations with time for discussion and feedback)*
13:40	Asylum Seekers from Russia to Finland: A Hybrid Operation by Chance? Kari **Alenius**, University of Oulu, Finland	A Shoestring Cyber Range for a Developing Country. Jaco **du Toit** and Sebastian **von Solms,** University of Johannesburg, South Africa	Biocyberwarfare and Crime: A Juncture of Rethought Xavier-Lewis **Palmer** and Lucas **Potter**, Old Dominion University and Ernestine **Powell**, Christopher Newport University, USA
14:00	Cyber Range: Preparing for War or Something Just for Technical People? Jani **Päijänen**, Karo **Saharinen**, Tuomo **Sipola**, Tero **Kokkonen**, JAMK University of Applied Sciences, Jarno **Salonen**, VTT Technical Research Centre of Finland and Jan **Vykopal**, Masaryk University, Brno, Czech Republic	Cybersecurity and Local Government: Emperitive, Challenges and Priorities Mmalerato **Masombuka**, Stellenbosch University, South Africa, Marthie **Grobler** CSIRO'S, Melbourne, Australia and Petrus **Duvenage**, Johannesburg University, South Africa	Space Cyber Threats and Need for Enhanced Resilience of Space Assets Jakub **Pražák**, Charles University, Prague, Czech Republic Talos: a Prototype Intrusion Detection and Prevention System for Profiling Ransomware Behaviour. Ashley **Wood**, Thaddeus **Eze** and Lee **Speakman**, University of Chester, UK
14:20	The Manifestation of Chinese Strategies into Offensive Cyberspace Operations Targeting Sweden Johnny **Bengtsson**, Swedish National Forensic Centre (NFC), Linköping University and Gazmend **Huskaj**, Swedish Defence University, Sweden	A GDPR Compliant SIEM Solution Ana **Vazão**, Leonel **Santos**, Adaíl **Oliveira** and Carlos **Rabadão**, Polytechnic of Leiria, Portugal	Aviation Sector Computer Security Incident Response Teams: Guidelines and Best Practice Faith **Lekota** and Marijke **Coetzee**, University of Johannesburg, South Africa Matters of Biocybersecurity with Consideration to Propaganda Outlets and Biological Agents Xavier-Lewis **Palmer**, Lucas **Potter**, Old Dominion University, USA and Ernestine **Powell**, Christopher Newport University, USA
14:40	Joint All-Domain Command and Control and Information Warfare: A Conceptual Model of Warfighting Joshua **Sipper**, Air Force Cyber College, USA	The PUF Commitment: Evaluating the Stability of SRAM-Cells Pascal **Ahr**, Christoph **Lipps** and Hans Dieter **Schotten**, German Research Center for Artificial Intelligence, Germany	The Impact of GDPR Infringment Fines on the Market Value of Firms Adrian **Ford**, Ameer **Al-Nemrat**, Seyed **Ali Ghorashi** and Julia **Davidson**, University of East London, UK
15:00	Multiple-Extortion Ransomware: The Case for Active Cyber Threat Intelligence Bryson **Payne** and Edward **Mienie**, University of North Georgia, USA	A Strategy for Implementing an Incident Response Plan Alexandre **Fernandes**, Adaíl **Oliveira**, Leonel **Santos** and Carlos **Rabadão**, Polytechnic of Leiria, Portugal	
15:20	*Break*	*Break*	*Break*
	Stream A: Cyber Security and Privacy for the Internet of Things and other Emerging Technologies Chair: Samuel Wairimu Room 1	Stream B: Hacking and Legalities Chair: Johnny Bengtsson Room 2	Stream C: Masters Colloquium Chair: Thaddeus Eze Room 3 *(10 minute presentations with time for discussion and feedback)*
15:40	Educating the Examiner: Digital Forensics in an IoT and embedded environment Iain **Sutherland**, Konstantinos **Xynos**, Noroff University College, Norway and Huw **Read**, Norwich University, USA	Is Hacking Back Ever Worth it? Antoine **Lemay**, Cyber Defence Corporation, Montreal and Sylvain **Leblanc**, Royal Military College of Canada	Analysis of API Driven Application to Detect Smishing Attacks Pranav **Phadke** and Christina **Thorpe** Technological University Dublin, Ireland Employing Machine Learning Paradigms for detecting DNS Tunnelling Jitesh **Miglani** and Christina **Thorpe,** Technological University Dublin, Ireland
16:00	IoT Security and Forensics: A Case Study Erik David **Martin**, Sopra Steria, Iain **Sutherland**, Noroff University College and Joakim **Kargaard**, Noroff Education, Norway	Using Semantic-Web Technologies for Situation Assessments of Ethical Hacking High-Value Targets Sanjana **Suresh**, Rachel **Fisher**, Radha **Patole**, Andrew **Zeyher** and Thomas **Heverin**, Drexel University, USA	The Use of Neural Networks to Classify Malware Families Theodore **Drewes** and Joel **Coffman**, United States Air Force Academy, USA
16:20	Security and Safety of Unmanned Air Vehicles: An Overview Sérgio **Ramos,** Tiago **Cruz**,and Paulo **Simões**, University of Coimbra, Portugal	Defunding the Police, Domestic Terrorism, and the Future of Law Enforcement: An Ethical and Anticipatory Ethical Analysis Michael **Shifflett** & Richard **Wilson** Towson University, USA	Evolving Satellite Control Challenges: The Arrival of Megaconstellations and Potntial Complications for Operational Cybersecurity Carl **Poole**, Robert **Bettinger** and Mark **Reith**, Air Force Institute of Technology, Wright Patterson AFB, USA
16:40	Evasion of Port Scan Detection in Zeek and Snort and its Mitigation Graham **Barbour,** Andre **McDonald**, and Nenekazi **Mkuzangwe**, Council for Scientific and Industrial Research, Pretoria, South Africa	Mobile Phone Surveillance: Privacy and Security Legal Risks Murdoch **Watney**, University of Johannesburg, South Africa	
17:00	Networking in Small Groups to Catch up with Colleagues and build New Connections for Future Collaboration		
17:30	*Close of Conference Day*	*Close of Conference Day*	*Close of Conference Day*

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	Friday 25 June		
09:00	**Opening Messages:**		
09:05	**Keynote Address:** *Current Patterns and Trends in Cyber Crime* **Presented by: Keith Terrill and Louisa Murphy, North West Regional Organised Crime Unit**		
09:50	**Introduction to ECCWS 2022**		
10:00	*Break and Conference splits into three streams*		
	Stream A: Mini Track on Modelling Nation-state Cyber-operations **Chairs: Brett van Niekerk & Trishana Ramluckan** **Room 1**	**Stream B: Mini Track on Interdisciplinary Research in Cybersecurity** **Chair: Char Sample** **Room 2**	**Stream C: Poster Session** **Chair: Lee Speakman** **Room 3** *(5 minute presentations with time for discussion and feedback)*
10:10	Antarctica and Cybersecurity: Useful Analogy or Exposing Limitations? Shadi **Alshdaifat**, University of Sharjah, UAE, Brett **van Niekerk**, and Trishana **Ramluckan,** University of KwaZulu-Natal, South Africa	How Penetration Testers View Themselves: A Qualitative Study Olav **Opedal**, Opedal Consulting LLC, USA	Use of Blockchain Technologies Within the Creative Industry to Combat Fraud in the Production and (Re)Sale of Collectibles Alexander **Pfeiffer**, Danube University Krems, Austria, Thomas **Wernbacher**, Danube University Krems, Austria and Stephen **Bezzina**, University of Malta, Malta ECHO Federated Cyber Range as a Tool for Validating SHAPES services Jyri **Rajamäki** and Harri **Ruoslahti**, Laurea University of Applied Sciences, Finland
10:30	Interdependence of Internal and External Security Ilkka **Tikanmäki** and Harri **Ruoslahti** Laurea University of Applied Sciences, Finland	Cyber Wargaming on the Strategic/Political Level: Exploring Cyber Warfare in a Matrix Wargame Thorsten **Kodalle**, The Bundeswehr Command and Staff College, Germany	Peer2Peer Communication via Testnet Systems of Blockchain Networks: A New Playground for Cyberterrorists? Alexander **Pfeiffer**, Danube University Krems, Austria, Stephen **Bezzina**, University of Malta, Malta and Thomas **Wernbacher**, Danube University, Austria
10:50	EU Digital Sovereignty: A Regulatory Power Searching for its Strategic Autonomy in the Digital Domain Andrew **Liaropoulos**, University of Piraeus, Greece	Are Endpoint users Willing to Secure Themselves? A Cyber-Physical Comparison Jan **Kleiner**, Masaryk University in Brno, Czech Republic (Presentation Only)	Ethics of Cybersecurity in Digital Healthcare and Well-being of Elderly at Home Jyri **Rajamäki**, Laurea University of Applied Sciences, Finland Software Protection Measures- Inter-process CFI for peer/reciprocal monitoring in RISCV-based binaries Toyosi **Oyinloye**, University of Chester, UK
11:10	Targeting in All-Domain Operations: Choosing Between Cyber and Kinetic Effects Tim **Grant**, R-BAR, Netherlands Harry **Kantola**, Finnish National Defense University, Helsinki, Finland	Situational Awareness Dark Web Micki **Boland**, Check Point Software Technologies LTD, United States (Presentation only)	Media Ecology, Twitter and Information Warfare: Ethical and Anticipated ethical issues" Richard **Wilson**, Towson University, United States" Political Campaigns, Fluency Bias, Media Infocalypse: An Ethical and Anticipatory Ethical Analysis Richard **Wilson**, Towson University, United States
11:30	Global Military Machine Learning Technology Development Tracking and Evaluation Long **Chen** Beihang University, China and Jianguo **Chen**, Hebei Sismological Unit, China	The Rising Power of Cyber Proxies Janine **Schmoldt**, University of Erfurt, Germany	The Role of Risk Among National Cyber Security Strategies (NCSS): Should Risk Matter in NCSS? Angela G. J**ackson-Summers**, U.S. Coast Guard Academy, New London, CT USA Say who You are: Biometric Authentication based on Characteristics of the Voice Christoph **Lipps**, Max **Laule** and Hans Dieter **Schotten**, German Research Center for Artificial Intelligence, Germany
11:50	ICT Uses in Peace and War Brett **van Niekerk**, University of KwaZulu-Natal, South Africa (Round Table)	Defensive Cyber Deception: A Game Theoretic Approach Abderrahmane **Sokri**, DRDC CORA, Ottawa, Canada	
12:10	*Lunch Break*	*Lunch Break*	*Lunch Break*

	Stream A: Education Chair: Joakim Kävrestad Room 1	Stream B: AI and remote piloting Chair: Leigh Armistead Room 2	Stream C: Cyber Issues Chair: Room 3
13:00	Unrehearsed Education Automation amid COVID-19 flouts, as potential Academic integrity Cyber Risks(AICR)! Fredrick **Omogah**, Uzima University, Kenya	The Impact of AI Regulations on Cybersecurity Practitioners Louise **Leenen**, University of the Westen Cape, South Africa, Trishana **Ramluckan** and Brett **van Niekerk**, University of Kwazulu-Natal, South Africa	Effectiveness of Covert Communication Channel Mitigation Across the OSI Model Tristan **Creek**, Mark **Reith** and Barry **Mullins**, Air Force Institute of Technology, USA
13:20	The Challenges to Cybersecurity Education in Developing Countries: A Case Study of Kosovo Arianit **Maraj**, AAB College, Kosovo, William **Butler** and Cynthia **Sutherland**, Capitol Technology University, USA	AI-Powered Defend Forward Strategy Jim **Chen**, U.S. National Defense University, USA	QAnon, Social Media Warfare, and Conspiracy Theories: An Ethical and Anticipatory Ethical Analysis Richard **Wilson**, Towson University, United States
13:40	Studying the Challenges and Factors Encouraging Girls in Cybersecurity: A Case Study Arianit **Maraj**, AAB College, Kosovo, Cynthia **Sutherland** and William **Butler**, Capitol Technology University, USA	Cyber Security Analysis for Ships in Remote Pilotage Environment Aarne **Hummelholm**, Jouni **Pöyhönen**, Tiina **Kobanen,** and Martti **Lehto**, University of Jyväskylä, Finland	A Review of NCSS using the ENISA Evaluation Framework Angela **Jackson-Summers**, U.S. Coast Guard Academy, USA
14:00	Serious Games for Cyber Security: Elicitation and Analysis of End-user Preferences and Organisational Needs Sabarathinam **Chockalingam**, Coralie **Esnoul**, John Eidar **Simensen** and Fabien **Sechi**, Institute for Energy Technology, Norway	Cyber-Threat Analysis in the Remote Pilotage System Tiina **Kovanen**, Jouni **Pöyhönen** and Martti **Lehto**, University of Jyväskylä, Finland	Challenges of Fuzzing-Based Vulnerability Mining of IEC 61850 Protocol Gábor **Visky**, Artūrs **Lavrenovs**, NATO Cooperative Cyber Defence Centre of Excellence and Olaf **Maennel**, Tallinn University, Estonia
14:20	Mandatory Cybersecurity Training for All Space Force Guardians Banks **Lin**, Mark **Reith** and Wayne **Henry**, Air Force Institute of Technology, USA	Are Encrypted Protocols Really a Guarantee of privacy? Jan **Fesl**, Michal **Konopa**, Jiří **Jelínek**, Jan **Janeček**, Marie **Feslová**, Ivo **Bukovsky**, University of South Bohemia and Yelena **Trofimova**, Viktor **Černý**, Czech Technical University in Prague, Czech Republic	The Rise of 'Soft' Warfare, State Sponsored Information Deception, and Social Media Richard **Wilson**, Towson University, United States
14:45	**Award to the winner of the best PhD paper and best poster** **Close of Conference**		