

**19th European Conference on Cyber Warfare and Security  
ECCWS 2020  
A virtual Conference supported by the University of Chester, UK**

**Thursday 25th June 2020**

**08:45** Zoom Room Opens

**09:00** **Welcome to the Conference**

Thaddeus Eze and Lee Speakman, University of Chester, UK

**09:15** **Keynote Address: Dr. Cyril Onwubiko, Cyber Security Intelligence at Research Series Limited**  
***A Comprehensive Cyber Recovery Operational Framework***

**10:00** Conference splits into two Zoom Rooms

**Stream A: Mini track on Big Data for Cybersecurity**  
**Chair: Nasser Abouzakhar**

**Stream B: Cybersecurity education and chip security**  
**Chair: Pardis Moslemzadeh Tehrani**

**10:15** A View Point on Management Practices for Cybersecurity in an Industry 4.0 Environment  
**Zia Najam UI and Victor Kwarteng Owusu**, Tomas Bata University in Zlin, Czech Republic

Fostering Cyber-Security Awareness among Computer Science Undergraduate Students: Motivating by Example  
**Cruz Tiago and Paulo Simões**, University of Coimbra, Portugal

**10:45** Blockchain Based Voting Systems  
**Soni Yash**, Leandros **Maglaras** , De Montfort University, Leicester, UK and Mohamed Amine **Ferrag**, Guelma University, Algeria

Cyber Security Capacity Building : Cyber Security Education in Finnish Universities  
**Lehto Martti**, University of Jyväskylä, Finland

**11:15** An Approach Towards a Hybrid Fault Tolerance Framework Within a Distributed Computer Architecture.  
**O'Flaherty** Christopher, Malcolm **Hodgson**, Louis **Hyman** and Dewald **Blaauw**, Stellenbosch University, South Africa

On the Security of the EMV Authentication Methods of Contactless Cards  
**Al-Maliki** Ossama and Hisham **Al Assam**, The University of Buckingham, UK

**11:45** Smart City IoT: Co-Designing Trustworthy Public Safety Drones for Indoor Flight Missions  
**Wingo** Harry, National Defense University, Washington, D.C., USA

Security of Systems on Chip  
**Tumer** Eda and Leandros **Maglaras**, De Montfort University, Liecester, UK

**12:15** **Lunch Break**

**Lunch Break**

**12:45**

**Panel**  
***The legality and ethics of cyber self-defence [hack back]***  
***Led by Dr Thadeus Eze with Char Sample, Brett van Nierkerk, Tim Grant, Thorsten Kodalle,***

**13:35** Comfort break and Conference splits into two streams

**Zoom Room details**  
**Password to all Rooms: ECCWS20**

[Stream A/Room 1](https://us02web.zoom.us/j/89763024362)  
<https://us02web.zoom.us/j/89763024362>  
[Meeting ID: 897 6302 4362](https://us02web.zoom.us/j/89763024362)

[Stream B/Room2](https://us02web.zoom.us/j/82016714001)  
<https://us02web.zoom.us/j/82016714001>  
[Meeting ID: 820 1671 4001](https://us02web.zoom.us/j/82016714001)

[Panel link](https://us02web.zoom.us/j/88901069304)  
<https://us02web.zoom.us/j/88901069304>

[Stream C – PhD](https://us02web.zoom.us/j/84430793626)  
<https://us02web.zoom.us/j/84430793626>  
[Meeting ID: 844 3079 3626](https://us02web.zoom.us/j/84430793626)

	<b>Stream A: Mini track on Cyber Security and Privacy for IoT and other Emerging Technologies</b> <b>Chairs: Tago Cruz</b>	<b>Stream B: Cyber Issues</b> <b>Chair: Martti Lehto</b>	<b>Stream C: PhD &amp; Masters Colloquium</b> <b>Chair: Dan Remenyi</b>
<b>13:45</b>	Towards a Methodology for the Classification of IoT Devices <b>Sarris</b> Dimitrios , Digital14, Dubai, UAE, Huw <b>Read</b> , Norwich University, Northfield, USA, Konstantinos <b>Xynos</b> and Iain <b>Sutherland</b> , Noroff University College, Kristinsand, Norway	Towards Cyber Sensing: Venturing Beyond Traditional Security Events <b>Laurenovs</b> Arturs, Kimmo <b>Heinaaro</b> and Erwin <b>Orye</b> , NATO, Tallin, Estonia	<b>13:45-13:55</b> The Roots of Restraint in Cyber Conflict Variola Federico, Fudan University, Shanghai, China <b>14:00-14:10</b> Cyberattacks and the Prohibition of Use of Force in the Regulations of Humanitarian Laws with an Approach to Tallinn Manual Akbariavaz Khalil, Pardis Moslemzadeh Tehrani and Johan Shamsuddin bin hj Sabaruddin, University Malaya, Malaysia <b>14:15-14:25</b> "The three "Cyber Logics" and their Implications to Cyber Conflicts: Germany, France and UK as Case Studies <b>Toso de Alcântara</b> Bruna, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil <b>14:30-14:40</b> Comparing Personality Traits Between Penetration Tester, Information Security and ITS Professionals from two Cohorts <b>Opedal</b> Olav, Capella University, Minneapolis, USA <b>14:45-14:55</b> Enabling Rapid Response and Service Restoration with Machine Learning Techniques Hutchison Andrew and Andre Lopes, University of Cape Town, South Africa (Masters) <b>15:00-15:15 - discussion and feedback</b>
<b>14:15</b>	How to Secure the Communication and Authentication in the IIoT: A SRAM-based Hybrid Cryptosystem <b>Lipps</b> Christoph, Pascal <b>Ahr</b> and Hans <b>Dieter</b> , German Research Center for Artificial Intelligence, Kaiserslautern, Germany	A Change Management Perspective to Implementing a Cyber Security Culture <b>Ramluckan</b> Trishana, Isabel <b>Martins</b> and Brett <b>van Nierkerk</b> , University of KwaZulu-Natal, South Africa (Presentation only)	
<b>14:45</b>	The Evolution of Ransomware Variants <b>Wood</b> Ashley and Thaddeus <b>Eze</b> University of Chester, UK	Artificial Intelligence and its' Legal Risk to Cybersecurity <b>Watney</b> Murdoch, University of Johannesburg, Gauteng, South Africa	
<b>15:15</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
	<b>Stream A: Mini Track on Evolving Cyber Operations in International Relations</b> <b>Chairs: Trishana Ramluckan &amp; Brett van Niekerk</b>	<b>Stream B: Mini Track on Interdisciplinary Research in Cybersecurity</b> <b>Chair: Char Sample</b>	<b>Stream C: PhD &amp; Masters Colloquium</b> <b>Chair: Dan Remenyi</b>
<b>15:30</b>	An Ontology for Cyber ISTAR in Offensive Cyber Operations <b>Grant</b> Tim, Retired But Active Researchers (R-BAR), Benschop, Netherlands, Carien <b>Van't Wout</b> , Council for Scientific and Industrial Research, Pretoria, South Africa and Brett <b>Van Niekerk</b> , University of KwaZulu-Natal, Durban, South Africa	Strengthening the Cybersecurity of Smart Grids: The Role of Artificial Intelligence in Resiliency of Substation Intelligent Electronic Devices <b>Iftimie</b> Ion, NATO Defense College, Rome, Italy and Gazmend <b>Huskaj</b> , Swedish Defence University, Sweden	<b>15:30-15:40</b> Event Tracing for Application Security Monitoring in Linux Whitter-Jones Jack, Mark Griffiths, and Ross Davies, University of South Wales, Pontypridd, UK <b>15:45-15:55</b> A study on Prolems of Behaviour Based user Attribution in Computer Forensics Investigation Akotoye Francis Xavier, Hein Venter University of Pretoria, Pretoria, South Africa, Richard Ikuesan Adeyemi, Community College of Qatar, Qatar and Hein S. Venter, University of Pretoria, South Africa <b>15:50-15:55</b> Towards Cyber-User Awareness: Design and Evaluation Oyinloye Toyosi, Thaddeus Eze and Lee Speakman, University of Chester, UK (Masters) <b>16:00-16:15 - discussion and feedback</b>
<b>16:00</b>	An approach to objective and replicable Risk Appetites Ian <b>Bryant</b> and Tim <b>Watson</b> , Cyber Security Centre, WMG, University of Warwick, UK	Artificial Intelligence in Megaprojects: The Next Frontier <b>Greiman</b> Virginia, Boston University Boston, MA, USA	
<b>16:30</b>	<b>Networking in Small Groups to Catch up with Colleagues and build New Connections for Future Collaboration</b> <b>Room 1</b>		
<b>17:00</b>	<b>Close of Conference Day</b>		

	<b>Friday 26th June 2020</b>	
<b>09:00</b>	<b>Room:</b> <b>Opening Messages</b>	
<b>09:05</b>	<b>Keynote Address: Detective Sergeant Damian Ward, Metropolitan Police, UK</b> <b>Experiences of Policing Cybercrime in the UK: Challenges and Successes</b>	
<b>09:50</b>	<b>Introduction to ECCWS 2021</b>	
<b>10:00</b>	<b>Break</b>	
	<b>Stream A: Mini Track on Evolving Cyber Operations in International Relations</b> <b>Chair: Trishana Ramluckan &amp; Brett van Niekerk</b>	<b>Stream B: Mini Track on Interdisciplinary Research in Cybersecurity</b> <b>Chair: Char Sample</b>
<b>10:15</b>	Assessment of the French and Dutch Perspectives on International Law and Cyber-Operations <b>van Niekerk</b> Brett, Trishana <b>Ramluckan</b> , University of KwaZulu-Natal, Durban, South Africa and Daniel <b>Ventre</b> , CESDIP, CNRS, France	Applications of Epidemiology to Cyber Security <b>Modini</b> Jessemyn, Timothy <b>Lynar</b> , Elena <b>Sitnikova</b> and Keith <b>Joiner</b> , University of New South Wales, Canberra, Australia (PhD)
<b>10:45</b>	Cyber as Hybrid Threat to Energy Security <b>Dupuy</b> Arnold Virginia Polytechnic Institute and State University, USA , Ion <b>Iftimie</b> , NATO Defense College, Rome, Italy, Daniel <b>Nussbaum</b> , Naval Postgraduate School, Monterey, USA and Stephan <b>Pickl</b> , University of Bundeswehr, Germany	Information Sharing in Cyber Defence Exercises <b>Brilingaitė</b> Agnė, Linas <b>Bukauskas</b> , Eduardas <b>Kutka</b> , Vilnius University, Aušrius <b>Juozapavičius</b> , General Jonas Žemaitis Military Academy of Lithuania, Lithuania
<b>11:15</b>	Decision Tree for National Responses to a Cyber-attack: An International Law Perspective <b>Ramluckan</b> Trishana and Brett <b>van Niekerk</b> , University of KwaZulu-Natal, Durban, South Africa	Cyber Wargaming on the technical/tactical level: The Cyber Resilience Card Game <b>Kodalle</b> Thorsten, The Bundeswehr Command and Staff College, Hamburg, Germany
<b>11:45</b>	Turning the Asymmetry around - Tactical Principles of Warfare in the Cyber Domain <b>Kiviharju</b> Mikko and Mika <b>Huttunen</b> , Finnish Defence Research Agency, Riihimäki, Finland	Cyber-Informed: Bridging cybersecurity and other disciplines <b>Sample</b> Char, Elenanor <b>Taylor</b> , Idaho National Laboratory, Idaho Falls, USA, Sin Ming <b>Loo</b> , Boise State University, Connie Justice and Clay <b>Hampton</b> , Indiana University at Purdue, USA
<b>12:15</b>	<b>Lunch Break</b>	
	<b>Stream A: Systems and Solutions</b> <b>Chair: Paul Simon</b>	<b>Stream B: Cyber Issues</b> <b>Chair: Christoph Lipps</b>
<b>12:45</b>	Cyber Security Systems of FPGA Platform for a Wireless Sensor Network <b>Tulemissova</b> Gulfarida and Olimzhon <b>Baimuratov</b> , Suleyman Demirel University, Almaty, Kazakhstan	Finnish View on the Combat Functions in the Cyber Domain <b>Kiviharju</b> Mikko, Finnish Defence Research Agency, Riihimäki, Finland, Harry <b>Kantola</b> , Finnish Army Signal School, Finland and Mika <b>Huttunen</b> , Finnish Defence Research Agency, Finland
<b>13:15</b>	What LEGAD needs to know? Analysis of AARs from Locked Shields (2012-2018) <b>Harasta</b> Jakub, Masaryk University, Brno, Czech Republic	Water Distribution Network Leak Detection Management <b>de Coning</b> Arno, University of Pretoria, South Africa and Francois <b>Mouton</b> , Noroff University College, Oslo, Norway
<b>13:45</b>	Vulnerabilities Analysis of Software Solutions for Critical Activity Sectors <b>Zamfiroiu</b> Alin and Paul <b>Pocatilu</b> , Bucharest University of Economic Studies, Bucharest, Victor Emmanuel <b>Badea</b> , National Institute for Research and Development in Informatics, Romania	White Supremacy, Marketing Virtual hate, and Information Warfare: An Anticipatory Ethical Analysis <b>Wilson</b> Richard L., Towson University, Towson, USA (presentation only)
<b>14:15</b>	<b>Award to the winner of the best PhD paper and</b> <b>Close of Conference</b>	
	<b>Posters have been uploaded to the facebook group where we invite participants to view them and comment/discuss the work</b>	
	<b>Poster with a WIP Paper</b>	<b>Poster Only</b>
	SHAPES Secure Cloud Platform for Health Care Solutions and Services <b>Rajamäki</b> Jyri and Aarne <b>Hummelholm</b> , University of Jyväskylä, Finland	Domestic Terrorism, Racism, and White: An Anticipatory Ethical Analysis <b>Wilson</b> Richard L. , Towson University, Towson, U.S.A.
		The PUF Commitment: SRAM-based Trust Anchors for the IIoT <b>Lipps</b> Christoph, Pascal <b>Ahr</b> and Hans Dieter <b>Schotten</b> , German Research Center for Artificial Intelligence, Kaiserslautern, Germany