

# **2012 4th International Conference on Cyber Conflict**

**(CYCON 2012)**

**Tallinn, Estonia  
5 – 8 June 2012**



**IEEE Catalog Number: CFP1226N-PRT  
ISBN: 978-1-4673-1270-7**

# TABLE OF CONTENTS

Introduction

## **Chapter 1: Cyberspace – The Role of States in the Global Structure**

Legal Implications of Territorial Sovereignty in Cyberspace 1  
*Wolff Heintschel von Heinegg*

When “Not My Problem” Isn’t Enough: Political Neutrality and National Responsibility in Cyber Conflict 14  
*Jason Healey*

Neutrality in Cyberspace 27  
*Wolff Heintschel von Heinegg*

Impact of Cyberspace on Human Rights and Democracy 39  
*Vittorio Fanchiotti / Jean Paul Pierini*

## **Chapter 2: Cyber Policy & Strategic Options**

Russia’s Public Stance on Cyber/Information Warfare 51  
*Keir Giles*

French Cyberdefense Policy 64  
*Patrice Tromparent*

A Treaty for Governing Cyber-Weapons: Potential Benefits and Practical Limitations 76  
*Louise Arimatsu*

Internet as a Critical Infrastructure – A Framework for the Measurement of Maturity and Awareness in the Cyber Sphere 95  
*Assaf Y. Keren, Keren Elazari*

The Significance of Attribution to Cyberspace Coercion: A Political Perspective 108  
*Forrest Hare*

The Militarisation of Cyberspace: Why Less May Be Better 123  
*Myriam Dunn Cavelty*

### **Chapter 3: Cyber Conflict – Theory & Principles**

Beyond Domains, Beyond Commons: 136  
The Context and Theory of Conflict in Cyberspace  
*Jeffrey L. Caton*

Applying Traditional Military Principles to Cyber Warfare 147  
*Samuel Liles, J. Eric Dietz, Marcus Rogers, Dean Larson*

The Principle of Maneuver in Cyber Operations 159  
*Scott D. Applegate*

Countering the Offensive Advantage in Cyberspace: N/A  
An Integrated Defensive Strategy  
*David T. Fahrenkrug*

An Analysis For A Just Cyber Warfare 172  
*Mariarosaria Taddeo*

### **Chapter 4: Cyber Conflict – Actors**

Socially Engineered Commoners as Cyber Warriors - Estonian Future or Present? 182  
*Birgy Lorenz, Kaido Kikkas*

The Notion of Combatancy in Cyber Warfare 194  
*Sean Watts*

Direct Participation in Cyber Hostilities: 209  
Terms of Reference for Like-Minded States?  
*Jody Prescott*

### **Chapter 5: “Cyber-Attacks” – Trends, Methods & Legal Classification**

Attack Trends in Present Computer Networks 225  
*Robert Koch, Björn Stelte, Mario Golling*

“Attack” as a Term of Art in International Law: 237  
The Cyber Operations Context  
*Michael N. Schmitt*

*Ius ad bellum* in Cyberspace – Some Thoughts on N/A  
the “Schmitt-Criteria” for Use of Force  
*Katharina Ziolkowski*

The “Use of Force” in Cyberspace: A Reply to Dr Ziolkowski      248  
*Michael N. Schmitt*

A Methodology for Cyber Operations Targeting and      255  
Control of Collateral Damage in the Context of Lawful Armed Conflict  
*Robert Fanelli, Gregory Conti*

Command and Control of Cyber Weapons      268  
*Enn Tyugu*

A Case Study on the Miner Botnet      279  
*Daniel Plohmann, Elmar Gerhards-Padilla*

## **Chapter 6: Cyber Defence – Methods & Tools**

Natural Privacy Preservation Protocol for Electronic Mail      295  
*Kim Hartmann, Christoph Steup*

Paradigm Change of Vehicle Cyber-Security      312  
*Hiro Onishi*

Sensing for Suspicion at Scale: A Bayesian Approach      323  
for Cyber Conflict Attribution and Reasoning  
*Harsha K. Kalutarage, Siraj A. Shaikh, Qin Zhou, Anne E. James*

The Role of COTS Products for High Security Systems      342  
*Robert Koch, Gabi Dreo Rodosek*

Conceptual Framework for Cyber Defense      356  
Information Sharing within Trust Relationships  
*Diego Fernández Vázquez, Oscar Pastor Acosta,  
Christopher Spirito, Sarah Brown, Emily Reid*