# CRITIS 2014

9TH INTERNATIONAL CONFERENCE ON CRITICAL INFORMATION INFRASTRUCTURES SECURITY

OCTOBER 13-15, 2014 LIMASSOL, CYPRUS

## Program

University of Cyprus

KIOS Center for Intelligent Systems & Networks

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# *Monday, 13th of October*

09:00-10:00 **CIPRNet Lecture,** *Jose Marti*

Session Chair: *E. Kyriakides* - Room: "Grand Hall B"

10:00-11:00 **Risk Prediction for Increasing Critical Infrastructure Protection: A Key Issue for Enhancing City Resilience,** *Vittorio Rosato*

Session Chair: *E. Rome* - Room: "Grand Hall B"

11:00-11:30 **Coffee Break**

| | **Session 1 - "Grand Hall B"** Session Chair: *S. Cavallini* | **Session 2 - "Grand Hall C"** Session Chair: *R. Setola* |
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| | **Cyber-Physical Systems and Sensor Networks** | **Security of Water Systems** |
| **11:30-11:50** | **Fault Detection and Isolation in Critical Infrastructure Systems** *V. Puig, T. Escobet, R. Sarrate and J. Quevedo* | **Decentralised Hierarchical Multi-rate Control of Large-scale Drinking Water Networks** *A.K. Sampathirao, P. Sopasakis and A. Bemporad* |
| **11:50-12:10** | **Critical Infrastructure in the Future City - Developing Secure and Resilient Cyber–Physical Systems** *H. Boyes, R. Isbell and T. Watson* | **dbpRisk: Disinfection By-Product Risk Estimation** *M. Kyriakou, D. Eliades and M. Polycarpou* |
| **12:10-12:30** | **Inferring Field Device Identity and Operating State Using Physical Features of Highway Addressable Remote Transducer (HART) Signals** *J. Lopez Jr. and M. Temple* | **Gaussian-Process-based Demand Forecasting for Predictive Control of Drinking Water Networks** *Y. Wang, C. Ocampo-Martínez, V. Puig and J. Quevedo* |
| **12:30-12:50** | **Processing and Communications Rate Requirements in Sensor Networks for Physical Thread Assessment** *I. Kyriakides, S. Neophytou, A. Kounoudes, K. Michail, Y. Argyrou and T. Wieland* | **Graph-Based Hydraulic Vulnerability Assessment of Water Distribution Networks** *M. Fragiadakis, S. Xanthos, D. Eliades, A. Gagatsis and S. Christodoulou* |
| **12:50-13:10** | **A Comprehensive Approach for Security Assessment in Transport** *S. Cavallini, F. D'Onofrio, P. Ferreira, A. Simoes and N. Garcia* | **Sensor Data Validation and Reconstruction in Water Networks: A Methodology and Software Implementation** *D. Garcia, J. Quevedo, V. Puig and M.A. Cugueró* |

13:10-14:50 **Lunch Break**

| | **Session 3 - "Grand Hall B"**<br>Session Chair: *B.M. Hämmerli* | **Session 4 - "Grand Hall C"**<br>Session Chair: *G. Sansavini* |
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| | **CYCA Session** | **Power and Energy System Security** |
| **14:50-15:10** | **Critical Infrastructure Online Fault Detection: Application in Water Supply Systems**<br>*C. Heracleous, E.E. Miciolino, R. Setola, F. Pascucci, D.G. Eliades, G. Ellinas, C.G. Panayiotou and M.M. Polycarpou* | **An Attack Analysis of Managed Pressure Drilling Systems on Oil Drilling Platforms**<br>*T.R. Mcevoy and S. Wolthusen* |
| **15:10-15:30** | **Improving Situational Awareness for First Responders**<br>*F. De Cillis, F. De Simio, F. Inderst, L. Faramondi, F. Pascucci and R. Setola* | **The Effect of Branch Parameter Errors to Voltage Stability Indices**<br>*V. Kirincic, M. Asprou, P. Mavroeidis and E. Kyriakides* |
| **15:30-15:50** | **Faults and Cyber Attacks Detection in Critical Infrastructures**<br>*I. Soupionis, S. Ntalampiras and G. Giannopoulos* | **CFD Simulation of Contaminant Transportation in High-Risk Buildings using CONTAM**<br>*A. Nikolaou and M. Michaelides* |
| **15:50-16:10** | **Automatic Fault Identification in Sensor Networks Based on Probabilistic Modeling**<br>*S. Ntalampiras and G. Giannopoulos* | **Detection and Management of Large Scale Power System Disturbances**<br>*A. Sauhats, V. Chuvychin, G. Bockarjova, D. Zalostiba, D. Antonovs and R. Petrichenko* |
| **16:10-16:30** | **A Decision Support System for Emergency Management of Critical Infrastructures subjected to Natural Hazards**<br>*A. Di Pietro, L. La Porta, M. Pollino, V. Rosato, A. Tofani, J.R. Marti and C. Romani* | **Impact of Surface Nuclear Blast on the Transient Stability of the Power System**<br>*C. Barrett, V. Centeno, S. Eubank, C.Y. Evrenosoglu, A. Marathe, M. Marathe, C. Mishra, H. Mortveit, A. Pal, A. Phadke, J. Thorp, A. Vullikanti and M. Youssef* |
| **16:30-16:50** | **Progressive Recovery from Failure in Multi-layered Interdependent Network Using a New Model of Interdependency**<br>*A. Mazumder, C. Zhou, A. Das and A. Sen* | **Building an Integrated Metric for Quantifying the Resilience of Interdependent Infrastructure Systems**<br>*C. Nan, G. Sansavini and W. Kröger* |

**18:00-19:00 Welcome Reception (by the hotel pool area)**

# *Tuesday, 14th of October*

09:00-10:00 **Methodologies for the Identification of Critical Information Infrastructure Assets and Services,** *Rossella Mattioli*

Session Chair: *C. Panayiotou* - Room: "Grand Hall B"

10:00-11:00 **Water Distribution Systems Security Enhancement through Monitoring,** *Avi Ostfeld*

Session Chair: *M. Polycarpou* - Room: "Grand Hall B"

11:00-11:30 **Coffee Break**

| | **Session 5 - "Grand Hall B"** Session Chair: *T. Bogaard* | **Session 6 - "Grand Hall C"** Session Chair: *Y. Soupionis* |
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| | **Security and Recovery Policies** | **Cyber Security** |
| **11:30-11:50** | **Public-private Partnership: The Missing Factor in the Resilience Equation. The French Experience on CIIP** *D. D'Elia* | **Model-based Evaluation of the Resilience of Critical Infrastructures under Cyber Attacks** *P. Popov, K. Salako and O. Netkachev* |
| **11:50-12:10** | **Enterprise Security Analysis and Training Experience** *E. Tyugu and A. Ojamaa* | **The Role of One-Class Classification in Detecting Cyberattacks in Critical Infrastructures** *P. Nader, P. Honeine and P. Beauseroy* |
| **12:10-12:30** | **Storm Surge Defenses at the Dutch Coast - New Developments on Modeling and Operating Barriers** *T. Bogaard, A. Zijderveld and S. de Goederen* | **Cyber Attacks in Power Grid ICT Systems leading to Financial Disturbance** *Y. Soupionis and T. Benoist* |
| **12:30-12:50** | **Using Programmable Data Networks to Detect Critical Infrastructure Challenges** *K. White, D. Pezaros and C. Johnson* | **Obfuscation of Critical Infrastructure Network Traffic using Fake Communication** *S. Jeon, J-H Yun and W-N Kim* |
| **12:50-13:10** | **Security Stress: Evaluating ICT Robustness through a Monte Carlo Method** *F. Baiardi, F. Tonelli, F. Corò, L. Guidi, A. Bertolini and R. Bertolotti* | **CyNetPhy: Towards Pervasive Defense in Depth for Smart Grid Security** *M. Azab, B. Mokhtar and M. Farag* |

13:10-14:50 **Lunch Break**

| | Session 7 - "Grand Hall C"<br>Session Chair: *M. Caselli* |
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| | **Security Tools and Protocols** |
| 14:50-15:10 | **Recovering Structural Controllability on Erdős–Rényi Graphs via Partial Control Structure Re-Use**<br>*B. Alwasel and S. Wolthusen* |
| 15:10-15:30 | **Self-healing Protocols for Infrastructural Networks**<br>*A. Scala, W. Quattrociocchi, G. A. Pagani and M. Aiello* |
| 15:30-15:50 | **PRoCeeD: Process State Prediction for CRITIS using Process Inherent Causal Data and Discrete Event Models**<br>*C. Horn and J. Krueger* |
| 15:50-16:10 | **Cascading Failures: Dynamic Model for CIP Purposes - Case of Random Failures following Poisson Stochastic Process**<br>*M. Eid, T. Kling, T. Hakkarainen, A. Grangeat, Y. Barbarin and D. Serafin* |
| 16:10-16:30 | **A Security Assessment Methodology for Critical Infrastructure**<br>*M. Caselli and F. Kargl* |

**Banquet Dinner at "Forsos Tavern"**

*Meet at the hotel entrance (GrandResort) at 20:00 for transfer to the dinner venue.*

# *Wednesday, 15th of October*

09:00-10:15 **CI Panel: Current Status and Future Challenges in CIP in Cyprus**
**Panelists:** *G. Karkas* **(Cyprus Police),** *N. Paris* **(Civil Defense),** *K. Kyrou* **(Water Development Board),** *C. Moritsis* **(Ministry of Foreign Affairs),** *N. Koutras* **(ADITESS LTD)**

Session Chair: *G. Boustras* - Room: "Grand Hall B"

10:15-10:35 **Coffee Break**

10:35-13:05 **COncORDE Emergency Response Stakeholders Case Studies**

Session Chair: *T. Kotis* - Room: "Grand Hall B"

13:05-13:15 **Introduction to CRITIS 2015, Erich Rome** - Room: "Grand Hall B"

13:05-14:35 **Lunch Break**

| | **Session 8 - "Grand Hall B"** Session Chair: *N. Voropai* | **Session 9 - "Grand Hall C"** Session Chair: *T. Staykova* |
|---|---|---|
| | **CRIS2014 Special Session** | **COncORDE Special Session: Coordination Mechanisms and Decision Support in Emergency Environments** |
| **14:35-14:55** | **Determination of Cyber Security Index in the Problem of Power System State Estimation based on SCADA and WAMS Measurements**<br>*I. Kolosok and L. Gurina* | **Utilizing Social Media Data for Enhancing Decision Making during Emergencies**<br>*I. Kotsiopoulos, L. Baruh, A. Papadimitriou* |
| **14:55-15:15** | **Factors influencing Oscillations within Meshed HVDC Grids and Implications for DC Voltage Control**<br>*A-K Marten, D. Westermann and P. Favre-Perrod* | **An Experimental Evaluation of the HelpNet Emergency Response Networking Protocol**<br>*K. Koumidis, A. Pingas, P. Kolios, and C.G. Panayiotou* |
| **15:15-15:35** | **Model-based Security Risk Analysis for Networked Embedded Systems**<br>*M. Vasilevskaya and S. Nadjm-Tehrani* | **Literature Review and State-of-art in Healthcare Emergency Response in Europe**<br>*T. Staykova* |
| **15:35-15:55** | **Security of the Russian Information Infrastructures in Power System**<br>*N. Solonina and K. Suslov* | **Review of Communication Technologies for Emergency Response**<br>*H. Papadopoulos and E. Zoulias* |
| **15:55-16:15** | **Using the IEC 61850 Protocol for Safe and Reliable Information Exchange in Smart Grids Power Systems**<br>*A. Naumann, P. Komarnicki and Z. Styczynski* | |

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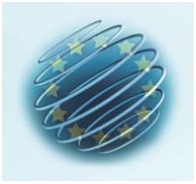

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