

List of papers

I. The most relevant publications after the PhD defense.

1. **B. Genge**, P. Haller, I. Kiss: Cyber Security-Aware Network Design of Industrial Control Systems, IEEE Systems Journal, IEEE Systems Council, 2015 (Available on-line).
2. **B. Genge**, F. Graur, P. Haller: Experimental Assessment of Network Design Approaches for Protecting Industrial Control Systems, International Journal of Critical Infrastructure Protection, Elsevier, vol. 11, pp. 24-38, December 2015.
3. **B. Genge**, I. Kiss, P. Haller: A system dynamics approach for assessing the impact of cyber attacks on critical infrastructures, International Journal of Critical Infrastructure Protection, Elsevier, Volume 10, pp. 3-17, 2015.
4. **B. Genge**, C. Enachescu: ShoVAT: Shodan-based vulnerability assessment tool for Internet-facing services, Security and communication networks, Wiley, 2015 (Available on-line).
5. **B. Genge**, P. Haller, I. Kiss: A Linear Programming Approach for K-Resilient and Reliability-Aware Design of Large-Scale Industrial Networks, International Conference on Ad Hoc, Mobile, and Wireless Networks (ADHOC-NOW), Lecture Notes in Computer Science, Volume 9143, Athens, Greece, pp. 288-302, 2015
6. C. Siaterlis, **B. Genge**: Cyber-physical testbeds. Communications of the ACM, Vol. 57, No. 6, pp. 64-73, June 2014.
7. **B. Genge**, C. Siaterlis: Analysis of the Effects of Distributed Denial-of-Service Attacks on MPLS Networks. International Journal of Critical Infrastructure Protection, Elsevier, Volume 6, Issue 2, pp. 87-95, 2013.
8. C. Siaterlis, A. Perez-Garcia, **B. Genge**: On the use of Emulab testbeds for scientifically rigorous experiments. IEEE Communications Surveys and Tutorials, Volume 15, Issue 2, pp. 929-942, 2013.
9. **B. Genge**, C. Siaterlis, G. Karopoulos: Data Fusion-Based Anomaly Detection in Networked Critical Infrastructures. 43th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2013), Workshop on Reliability and Security Data Analysis (RSDA 2013), Budapest, Hungary, pp. 1-8, 2013.
10. **B. Genge**, C. Siaterlis, I. Nai Fovino, M. Masera: A Cyber-Physical Experimentation Environment for the Security Analysis of Networked Industrial Control Systems. Computers and Electrical Engineering, Elsevier, Volume 38, Issue 5, pp. 1146-1161, 2012.

II. PhD thesis.

Bela Genge: *Contributions to the composition and implementation of security protocols.* Technical University of Cluj-Napoca, Computer Science, 2009.

III. Books and book chapters.

1. **B. Genge**, H. Sandor, P. Haller, A. Beres, I. Kiss: Using Software Defined Networking to Mitigate Cyber Attacks in Industrial Control Systems. *Securing Cyber-Physical Systems*, CRC Press, Taylor & Francis, USA, pp. 305-330, 2015, ISBN 978-1-4987-0098-6 (**Invited Book Chapter**).

2. **B. Genge:** *Introducere în implementarea aplicațiilor criptografice.* Editura Univ. "Petru Maior", Tîrgu Mureș, 2013, 190 pagini, ISBN 978-606-581-094-5.

3. A.V. Duka, **B. Genge**, P. Haller: *Sisteme cu microprocesoare. Microcontrolerul PIC 18F4455.* Editura Univ. "Petru Maior", Tîrgu Mures, 2013, 305 pagini, ISBN 978-973-7794-99-4.

4. C. Siaterlis, **B. Genge**, M. Hohenadel, M. Del Pra: *Enabling the Experimental Exploration of Operating Procedures in Critical Infrastructures.* Sixth Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection, Marshall Hall, National Defense University, Fort McNair, Washington, DC, pp. 217-233, 2012. **Book Chapter, Springer Critical Infrastructure Protection VI.**

5. **B. Genge**, I. Nai Fovino, C. Siaterlis, M. Masera: *Analyzing Cyber-Physical Attacks on Networked Industrial Control Systems.* Hannover, New Hampshire, USA, 5th IFIP WG 11.10 International Conference on Critical Infrastructure Protection, IFIP Advances in Information and Communication Technology (Critical Infrastructure Protection V), Vol. 367, Revised Selected Papers, Springer, pp. 167-183, 2011. **Book Chapter, Springer Critical Infrastructure Protection V.**

6. **B. Genge**, P. Haller, O. Ratoi: *Constructing Security Protocol Specifications for Web Services.* C. Badica et al. (Eds.), *Intelligent Distributed Computing*, Italy, Appears in *Studies In Computational Intelligence*, Springer-Verlag Berlin Heidelberg, Volume 162/2008, pp. 245-250, Sept. 2008.

7. **B. Genge**, P. Haller: *Proiectarea sistemelor dedicate si incorporate cu microcontrolerul PIC.* "Petru Maior" University Press, Targu Mures, 2008, 188 pagini, ISBN 978-973-7794-79-6.

IV. Papers published in peer-reviewed journals.

1. **B. Genge**, P. Haller, I. Kiss: *Cyber Security-Aware Network Design of Industrial Control Systems*, IEEE Systems Journal, IEEE Systems Council, 2015 (Available on-line). **FI: 1.980.**

2. **B. Genge**, F. Graur, P. Haller: Experimental Assessment of Network Design Approaches for Protecting Industrial Control Systems, *International Journal of Critical Infrastructure Protection*, Elsevier, vol. 11, pp. 24-38, December 2015. **FI: 1.000.**
3. **B. Genge**, I. Kiss, P. Haller: A system dynamics approach for assessing the impact of cyber attacks on critical infrastructures, *International Journal of Critical Infrastructure Protection*, Elsevier, Volume 10, pp. 3-17, 2015. **FI: 1.000.**
4. **B. Genge**, C. Enachescu: ShoVAT: Shodan-based vulnerability assessment tool for Internet-facing services, *Security and communication networks*, Wiley, 2015 (Available on-line). **FI: 0.720.**
5. **B. Genge**, P. Haller, C. Enachescu: Beyond Internet Scanning: Banner Processing for Passive Software Vulnerability Assessment. *International Journal of Information Security Science*, Vol. 4, no. 3, pp. 81-91, 2015.
6. H. Sandor, **B. Genge**, Z. Gal: Security Assessment of Modern Data Aggregation Platforms in the Internet of Things. *International Journal of Information Security Science*, vol. 4, no. 3, pp. 92-102, 2015.
7. C. Siaterlis, **B. Genge**: Cyber-physical testbeds. *Communications of the ACM*, Vol. 57, No. 6, pp. 64-73, June 2014. **FI: 3.621.**
8. **B. Genge**, C. Siaterlis: Physical process resilience-aware network design for SCADA systems. *Computers & Electrical Engineering*, Elsevier, Volume 40, Issue 1, pp. 142-157, 2014. **FI: 0.817.**
9. **B. Genge**, C. Siaterlis: Analysis of the Effects of Distributed Denial-of-Service Attacks on MPLS Networks. *International Journal of Critical Infrastructure Protection*, Elsevier, Volume 6, Issue 2, pp. 87-95, 2013. **FI: 1.000.**
10. C. Siaterlis, **B. Genge**, M. Hohenadel: EPIC: A testbed for scientifically rigorous cyber-physical security experimentation. *IEEE Transactions on Emerging Topics in Computing*, Volume 1, Issue 2, pp. 319-330, 2013.
11. C. Siaterlis, A. Perez-Garcia, **B. Genge**: On the use of Emulab testbeds for scientifically rigorous experiments. *IEEE Communications Surveys and Tutorials*, Volume 15, Issue 2, pp. 929-942, 2013. **FI: 6.490.**
12. **B. Genge**, C. Siaterlis, I. Nai Fovino, M. Masera: A Cyber-Physical Experimentation Environment for the Security Analysis of Networked Industrial Control Systems. *Computers and Electrical Engineering*, Elsevier, Volume 38, Issue 5, pp. 1146-1161, 2012. **FI: 0.817.**
13. **B. Genge**, C. Siaterlis, M. Hohenadel: Impact of Network Infrastructure Parameters to the Effectiveness of Cyber Attacks Against Industrial Control Systems. *International Journal of Computers, Communications & Control*, Volume 7, Number 4, pp. 673-686, 2012. **FI: 0.746.**

14. **B. Genge**, P. Haller: Using Planetlab To Implement Multicast at the Application Level. International Journal of Computer Networks & Communications (IJCNC) Vol.3, No.1, January 2011, pp. 67-80, 2011.
15. **B. Genge**, P. Haller: A New Video Surveillance System Using Automated Secure Service Composition. Studia Universitatis Babes-Bolyai Series Informatica, Volume LV, Number 2, pp. 35-46, 2010.
16. O. Ratoj, P. Haller, **B. Genge**: A New Multimedia Streaming Platform Based on XPCOM Components. Studia Universitatis Babes-Bolyai Series Informatica, Volume LV, Number 2, pp. 47-56, 2010.
17. **B. Genge**: Towards Automated Execution of Security Protocols for Web Services. Studia Universitatis Babes-Bolyai Series Informatica, Volume LIV, Number 2, pp. 23-36, 2009.
18. **B. Genge**: Automated Comparative Performance Evaluation of Security Protocols. Scientific Bulletin of the Petru Maior University of Targu Mures, Volume 4 (XXI), pp. 67-76, 2009.
19. **B. Genge**, I. Ignat: Syntactic Sequential Composition of Security Protocols. Journal of Automation Computers Applied Mathematics (ACAM), Volume 17, No. 2, pp. 169-178, 2008.
20. **B. Genge**, P. Haller: A Chained Authentication Model for Virtual Organizations. Acta Universitatis Cibiniensis, VOL. LV, Technical Series, Sibiu, Romania, pp. 60-68, 2007.

V. Papers published in the proceedings of international conferences.

1. I. Kiss, **B. Genge**, P. Haller: A Clustering-based Approach to Detect Cyber Attacks in Process Control Systems, INDIN 2015 IEEE International Conference on Industrial Informatics, 22-24 July, Cambridge, UK, pp. 142-148, 2015.
2. I. Kiss, **B. Genge**, P. Haller, G. Sebestyen: A Framework for Testing Stealthy Attacks in Energy Grids, IEEE 11th International Conference on Intelligent Computer Communication and Processing, September 3-5, Cluj-Napoca, Romania, pp. 553-560, 2015.
3. H. Sandor, **B. Genge**, G. Sebestyen: Resilience in the Internet of Things: The Software Defined Networking Approach, IEEE 11th International Conference on Intelligent Computer Communication and Processing, September 3-5, Cluj-Napoca, Romania, pp. 545-552, 2015.
4. **B. Genge**, P. Haller, I. Kiss: A Linear Programming Approach for K-Resilient and Reliability-Aware Design of Large-Scale Industrial Networks, International Conference on Ad Hoc Networks and Wireless (ADHOC-NOW), Special Track on "Efficient, reliable, and secure smart energy networks", Athens, Greece, LNCS, Volume 9143, pp. 288-302, 2015.

5. I. Kiss, **B. Genge**, P. Haller: Behavior-based Critical Cyber Asset Identification in Process Control Systems Under Cyber Attacks, 16th International Carpathian Control Conference, Miskolc, Hungary, pp. 196-201, 2015.
6. I. Kiss, **B. Genge**, P. Haller, G. Sebestyen: Data clustering-based anomaly detection in industrial control systems. 2014 IEEE International Conference on Intelligent Computer Communication and Processing (ICCP), Cluj-Napoca, Romania, September, pp. 275-281, 2014.
7. **B. Genge**, A. Beres, P. Haller: A Survey on Cloud-based Software Platforms to Implement Secure Smart Grids. 49th IEEE International Universities' Power Engineering Conference, Cluj-Napoca, Romania, September, pp. 1-6, 2014.
8. **B. Genge**, P. Haller, A. Gligor, A. Beres: An Approach for Cyber Security Experimentation Supporting Sensei/IoT for Smart Grid. Second International Symposium on Digital Forensics and Security, Houston, Texas, USA, pp. 37-42, May 2014.
9. **B. Genge**, D.A. Rusu, P. Haller: A Connection Pattern-based Approach to Detect Network Traffic Anomalies in Critical Infrastructures. 2014 ACM European Workshop on System Security (EuroSec2014), Amsterdam, The Netherlands, pp. 1-6, 2014.
10. **B. Genge**, C. Siaterlis, G. Karopoulos: Data Fusion-Based Anomaly Detection in Networked Critical Infrastructures. 43th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2013), Workshop on Reliability and Security Data Analysis (RSDA 2013), Budapest, Hungary, pp. 1-8, 2013.
11. **B. Genge**, C. Siaterlis, M. Hohenadel: AMICI: An Assessment Platform for Multi-Domain Security Experimentation on Critical Infrastructures. 7th International Conference on Critical Information Infrastructures Security, Lillehammer, Norway, Lecture Notes in Computer Science 7722, pp. 228-239, 2012.
12. I. Garitano, C. Siaterlis, **B. Genge**, R. Uribeetxeberria, U. Zurutuza: A Method to Construct Network Traffic Models for Process Control Systems. 17th IEEE International Conference on Emerging Technologies & Factory Automation (ETFA2012), Krakow, Poland, pp. 1-8, 2012.
13. **B. Genge**, C. Siaterlis: An Experimental Study on the Impact of Network Segmentation to the Resilience of Physical Processes. Networking 2012, Prague, Czech Republic, Lecture Notes in Computer Science 7289 Springer 2012, pp. 121-134, 2012.
14. **B. Genge**, C. Siaterlis: Developing Cyber-Physical Experimental Capabilities for the Security Analysis of the Future Smart Grid. IEEE PES Innovative Smart Grid Technologies, Manchester, UK, ISBN 978-1-4577-1422-1, pp. 1-7, 2011.
15. **B. Genge**, C. Siaterlis: Investigating the Effect of Network Parameters on Coordinated Cyber Attacks Against a Simulated Power Plant. 6th International Conference on Critical Information

Infrastructure Security, Luzerne, Switzerland, Lecture Notes in Computer Science 6983, pp. 140-151, 2011.

16. **B. Genge**, C. Siaterlis: Using Soft Real-Time Simulation in a Hybrid Environment for Cyber-Physical Security Experiments. International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises, Paris, France, pp. 285-290, 2011.

17. **B. Genge**, P. Haller: Resource Usage Prediction for Application-Layer Multicast Networks. 2009 IEEE International Conference on Intelligent Communication and Processing (ICCP 2010), Cluj-Napoca, Romania, pp. 473-478, 2010.

18. **B. Genge**, P. Haller: End-Host Distribution in Application-Layer Multicast: Main Issues and Solutions. 9th RoEduNet IEEE International Conference, Sibiu, Romania, pp. 334-339, ISSN 2068-1038, 2010.

19. R. Potop, O. Iovanici, **B. Genge**, P. Haller: A Fault Tolerant Peer-to-Peer Replication Network. 9th RoEduNet IEEE International Conference, Sibiu, Romania, pp. 196-201, 2010.

20. F. Gyula, **B. Genge**, P. Haller: A Platform for Implementing Secure Wireless Ad Hoc Networks. MACRo2010, Proceedings of the 2nd conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics, Scientia Publishing House, Targu Mures, Romania, pp. 29-32, 2010.

21. **B. Genge**, P. Haller: A syntactic approach for identifying multi-protocol attacks. ICUMT '09 - International Conference on Ultra Modern Telecommunications, St. Petersburg, Russia, pp. 1-5, 2009.

22. **B. Genge**, I. Ignat, P. Haller: Automated Composition of Security Protocols. 2009 IEEE International Conference on Intelligent Communication and Processing (ICCP 2009), Cluj-Napoca, Romania, pp. 251-258, 2009.

23. **B. Genge**, P. Haller: Middleware for Automated Implementation of Security Protocols. 6th European Semantic Web Conference, Heraklion, Greece, 31 May - 4 June, Lecture Notes in Computer Science (LNCS 5554), L. Aroyo et al. (Eds.), Springer-Verlag, pp. 476-490, 2009.

24. **B. Genge**, P. Haller: Towards Automated Secure Web Service Execution. Networking 2009, Aachen, Germany, May 11-15, Lecture Notes in Computer Science (LNCS 5550), L. Fratta et al. (Eds.), Springer-Verlag, pp. 943-954, 2009.

25. **B. Genge**, P. Haller: A Modeling Framework for Generating Security Protocol Specifications. 10th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC'08), Workshop on Global Computing Models and Technologies, Timisoara, Romania, pp. 362-365, Sept. 2008.

26. **B. Genge**, P. Haller, O. Ratoi, I. Ignat: Term-based composition of security protocols. 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, Cluj-Napoca, Romania, May 2008, pp. 233-238, 2008.
27. O. Ratoi, P. Haller, I. Salomie, **B. Genge**: Component Based Platform for Multimedia Applications. 7th IEEE RoEduNet International Conference, Cluj-Napoca, Romania, Aug. 2008, pp. 40-43, 2008.
28. **B. Genge**, P. Haller, I. Ignat, O. Ratoi: Informal specification-based performance evaluation of security protocols. 4th IEEE International Conference on Intelligent Computer Communication and Processing, Cluj-Napoca, Romania, pp. 193-200, Aug. 2008.
29. **B. Genge**, I. Ignat: Verifying the Independence of Security Protocols. 3rd IEEE International Conference on Intelligent Computer Communication and Processing, Cluj-Napoca, Romania, pp. 155-163, September 2007.
30. **B. Genge**, P. Haller: Towards a distributed authentication system in Coordinated Mobile Virtual Organizations. In the Proceedings of the 5th RoEduNet IEEE International Conference, Sibiu, Romania, pp. 119-123, July 2006.

VI. Other publications.

Interview Security Europe Magazine. **B. Genge**: New simulation tool allows realistic testing of sub-components of a critical infrastructure's cyber network and process control software. Security Europe Magazine, March 2014.

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Béla GENGE