PROGRAM
Sochi, September 8-10, 2015

ПРОГРАММА
Восьмой международной конференции
по безопасности информации и сетей (SIN 2015)
8-10 сентября 2015, г. Сочи
SIN 2015 Organizers

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Dedicated to the 100th Anniversary of Southern Federal University

Technical Cooperation
<table>
<thead>
<tr>
<th>Conference Timeline</th>
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<tr>
<td><strong>Monday, September 7th</strong></td>
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<tr>
<td>16:00 - 20:00 Registration of guests in the lobby of Marins Park Hotel (2 Morskoy per.)</td>
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| **Tuesday, September 8th** |
| 09:00 - 10:00 Registration of guests in the lobby of Marins Park Hotel (2 Morskoy per.) |
| 10:00 - 11:30 Welcome announcements and short performance (Panorama business center of Marins Park Hotel, 2 Morskoy per.) |
| 11:30 - 12:00 Coffee break |
| 12:00 - 13:00 Parallel sessions |
| 13:00 - 15:00 Lunch |
| 15:00 - 18:00 Keynote talk No. 1 (Alexey Zhukov) |
| 15:45 - 16:00 Coffee break |
| 16:00 - 18:00 Parallel sessions |

| **Wednesday, September 9th** |
| 10:00 - 10:45 Keynote talk No. 2 (Ron Poet) |
| 10:45 - 11:00 Coffee break |
| 11:00 - 13:00 Parallel sessions |
| 13:00 - 15:00 Lunch |
| 15:00 - 15:45 Keynote talk No. 3 (Ramakrishna Thurimella) |
| 15:45 - 16:00 Coffee break |
| 16:00 - 18:00 Parallel sessions |

| **Thursday, September 10th** |
| 10:00 - 10:45 Keynote talk No. 4 (Alexander Barabanov) |
| 10:45 - 11:00 Coffee break |
| 11:00 - 13:00 Parallel sessions |
| 13:00 - 14:00 Concluding remarks and SIN 2016 announcement |
| 19:00 - 22:00 Social event at DENART hotel (16 per. Gorkogo; transfer from Marins Park Hotel at 18:45) |

| **Friday, September 11th** |
| 09:00 - 17:00 Conference outing: bus tour to Krasnaya Polyana alpine resort and Olympic Park |
| 18:00 Departures |
# Расписание мероприятий

## 7 сентября, понедельник
16:00 - 20:00 Регистрация участников конференции в холле Мариинского Парка (пер. Морской, 2)

## 8 сентября, вторник
09:00 - 10:00 Регистрация участников конференции в холле Мариинского Парка (пер. Морской, 2)
10:00 - 11:30 Объявления и приветствия участников Конференции, небольшой концерт (бизнес-центр «Панорама» Мариинского Парка (пер. Морской, 2))
11:30 - 12:00 Кофе-брейк
12:00 - 13:00 Секционные заседания
13:00 - 15:00 Обед
15:00 - 18:00 Пленарный доклад №1 (Алексей Жуков)
15:45 - 16:00 Кофе-брейк
16:00 - 18:00 Секционные заседания

## 9 сентября, среда
10:00 - 10:45 Пленарный доклад №2 (Рон Поуэл)
10:45 - 11:00 Кофе-брейк
11:00 - 13:00 Секционные заседания
13:00 - 15:00 Обед
15:00 - 15:45 Пленарный доклад №3 (Рамакришна Туримелла)
15:45 - 16:00 Кофе-брейк
16:00 - 18:00 Секционные заседания

## 10 сентября, четверг
10:00 - 10:45 Пленарный доклад №4 (Александр Барабанов)
10:45 - 11:00 Кофе-брейк
11:00 - 13:00 Секционные заседания
13:00 - 14:00 Заключительное заседание и анонс SIN 2016
19:00 - 22:00 Товарищеский ужин и культурная программа в отеле DENART (пер. Горького, 16; трансфер на автобусе от Мариинского Парка Отель в 18:45)

## 11 сентября, пятница
09:00 – 17:00 Автобусная экскурсия на Красную Поляну и в Олимпийский Парк (посадка в автобус у входа в Мариинский Парк Отель)
18:00 Отъезд участников
Registration for SIN 2015 will take place at the lobby of Marins Park Hotel, 2 Morskoy per. Conference sessions will be held on the 1<sup>st</sup> floor at Panorama business center near the hotel. Keynote talks will be organized at “Ekaterinburg” hall; parallel sessions will be organized at “Ekaterinburg”, “Sochi”, and “Novosibirsk” halls. The social event will be at DENART hotel (16 per. Gorkogo).

Регистрация участников конференции SIN 2015 состоится в гостинице «Маринс Парк Отель» по адресу пер. Морской, 2. Сама конференция будет проходить в Деловом центре рядом с отелем на 2-ом этаже. Пленарные заседания в зале «Екатеринбург», секционные в залах «Екатеринбург», «Сочи» и «Новосибирск». Товарищеский ужин будет проходить в отеле DENART (пер. Горького, 16).

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Oleg Borisovich
Makarevich (RU)

**IMPORTANT!**

1. All conferees need to be registered in the Marins Park Hotel hall. Registration dates:
   - September, 7<sup>th</sup>, 18.00 – 20.00
   - September, 8<sup>th</sup>, 9.00 – 10.00

2. Business dinner will be performed on September, 10<sup>th</sup> in the DENART Hotel
   from 19.00 to 23.00. Departure from the Marins Park Hotel at 18.45.
September 8, 2015

9:00-10:00 Registration
10:00-11:30 Welcome and opening announcements
11:30-12:00 Break
12:00-13:00 Parallel Sessions

Room A. “Security in information systems”, p.1
Session Chair: Samrat Mondal, IIT Patna
1. Igor Anikin, Kazan National Research Technical University; Lilia Emaletdinova, KNRTU “Information Security Risk Management in Computer Networks Based on Fuzzy Logic and Cost/Benefit Ratio Estimation”
2. André Rifaut, Luxembourg Institute of Science and Technology; Christophe Feltus, LIST; Slim Turki, LIST; Djamel Khadraoui, LIST “Analysis of the Impact of Ethical Issues on the Management of the Access Rights”
3. Anil Saini, MNIT; Manoj Gaur, Malaviya National Institute of Technology, India; Vijay Laxmi, MNIT, Jaipur; Priyadarsini Nanda, University of Technology, Sydney, Australia “sandFOX: Secure Sandboxed and Isolated Environment for Firefox Browser”

Room B. “Cryptographic techniques and key management”, p.1
Session Chair: Akka Zemmari, Université de Bordeaux
1. Subhasish Banerjee, NIT, Arunachal Pradesh, India; Manash Dutta, NIT, Arunachal Pradesh; Chandan Bhunia, NIT, Arunachal Pradesh “A Perfect Dynamic-Id and Biometric Based Remote User Authentication Scheme Under Multi-Server Environments Using Smart Cards”
2. Rajat Goswami, NIT Arunachal Pradesh; Subhasish Banerjee, NIT Arunachal Pradesh; Manash Dutta, NIT Arunachal Pradesh; Chandan Bhunia, NIT, Arunachal Pradesh “Absolute Key Variation Technique of Automatic Variable Key in Cryptography”
3. Naila Abbasi, CASE Islamabad; Muhammad Baig, CASE; Liaquat Khan, Air University “Improved Trust Based Key Management for End-To-End Secure Communication in Cellular Networks”

Room C. “Security-aware software engineering”
Session Chair: Vinod P., SCMS School of Engineering and Technology
1. Alexey Markov, NPO Echelon; Valentin Tsirlov, Bauman MSTU; Alexander Barabanov, Bauman MSTU; Andrey Fadin, Bauman MSTU; Igor Shakhalov, NPO Echelon “Synthesis of Secure Software Development Controls”
2. Alexey Markov, NPO Echelon; Valentin Tsirlov, Bauman MSTU; Alexander Barabanov, Bauman MSTU; Andrey Fadin, Bauman MSTU “A production model system for detecting vulnerabilities in the software source code”

13:00 – 15:00 Lunch
15:00 – 15:45 Keynote 1: Alexey Zhukov, Bauman Moscow State Technical University “Lightweight Cryptography: Modern Development Paradigms”
Session Chair: Chandan Tilak Bhunia, NIT Arunachal Pradesh
15:45-16:00 Break
16:00-18:00 Parallel Sessions
Room A. “Security in information systems”, p.2

Session Chair: Rudrapatna Shyamasundar, Tata Institute of Fundamental Research

1. Alexander Tarasov, NPO Echelon “Modern techniques of function-level fault tolerance in mfm-systems”

2. Igor Ilin, St. Petersburg Polytechnic University; Alexey Anisiforov, SPbPU; Vladimir Glukhov, SPbPU “Problems of Data Protection in Industrial Corporations Enterprise Architecture”

3. Natalia Miloslavskaya, NRNU MEPhI (Moscow Engineering Physics Institute); Alexander Tolstoy, NRNU MEPhI; Vladislav Petrov NRNU MEPhI “Secure e-Learning Portal for Teaching Business Continuity and Information Security Management”

4. Sergey Lapin, Altai State University “Access control model D-TBAC subject to the requirements to tasks' performing”

5. Francesco Buccafurri, University of Reggio Calabria; Lidia Fotia, University of Reggio Calabria; Angelo Furfaro, University of Calabria; Alfredo Garro, University of Calabria; Matteo Giacalone, Poste Italiane; Andrea Tundis, University of Calabria “An Analytical Processing Approach to Supporting Cyber Security Compliance Assessment”

6. Artem Garkusha, SFedU “Building data in motion DLP system from scratch using open source software and confirming its effectiveness within ```Capture The Flag``` competitions”

Room B. “Cryptographic techniques and key management”, p.2

Session Chair: Ecir Uğur Küçüksille, Suleyman Demirel University

1. Valeriy Osipyan, Kuban State University “Mathematical modelling of cryptosystems, based on Diophantine problem with gamma superposition method”


3. Alina Trepacheva, SFedU; Lyudmila Babenko, SFedU “Cryptanalysis of Factoring-based Fully Homomorphic Encryption”

4. Philipp Burtyka, SFedU; Oleg Makarevich, SFedU “Execution of Data-Dependent Programs Over Encrypted Data”

5. Maxim Anikeev, SFedU “Improvement of Treeless Signature Schemes Implementation by Random Oracle Buffering”

Room C. [Special Session] Detecting and Preventing Fraud with Data Analytics

Session Chair: Slim Turki, Luxembourg Institute of Science and Technology

1. Natalia Evstifeeva, NRNU MEPhI; Olga Evstifeeva, NRNU MEPhI “Approbation of the methodology for Web monitoring of terrorism- and extremism-related content”

2. Stanislav Alkhasov, SFedU; Alexander Tselykh, SFedU; Alexey Tselykh, SFedU “Application of cluster analysis for the assessment of the share of fraud victims among bank card holders”

3. Daria Chukova, NRNU MEPhI “Profile-Based Students Assignment to Core Financial Intelligence Unit Departments”

4. Margarita Knyazeva, SFedU; Alexander Tselykh, SFedU; Alexey Tselykh, SFedU; Elena Popkova, SFedU “A Graph-Based Data Mining Approach to Preventing Financial Fraud: A Case Study”

5. Alexey Tselykh, SFedU; Dmitry Petukhov, Immanuel Kant Baltic Federal University “Web Service for Detecting Credit Card Fraud in Near Real-Time”


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September 9, 2015

10:00 – 10:45 Keynote 2: Ron Poet, University of Glasgow “The use of mobile devices in authentication”

Session Chair: Margarita Knyazeva, Southern Federal University

10:45-11:00 Break

11:00-13:00 Parallel Sessions

Room A. [Special Session] Cybersecurity of Large-Scale and Distributed Systems, p.1

Session Chair: Ron Poet, University of Glasgow

1. Aleksandr Minin, St. Petersburg Polytechnic University; Maxim Kalinin, SPbPU “Information Security in Computer Networks with Dynamic Topology”

2. Artem Konoplev, St. Petersburg Polytechnic University; Alexey Busygin, St. Petersburg State University of Technology “Steganographic Methods of Communications in Distributed Computing Networks”

3. Dmitry Zegzhda, St. Petersburg Polytechnic University; Tatiana Stepanova, St. Petersburg Polytechnic University “Large-scale Systems Security Evolution: Control Theory Approach”

4. Tatiana Stepanova, St. Petersburg Polytechnic University; Alexander Pechenkin, St. Petersburg Polytechnic University “Ontology-based Big Data Approach to Automated Penetration Testing of Large-scale Heterogeneous Systems”

5. Denis Ivanov, NeoBIT LLC; Dmitry Moskvin, St. Petersburg Polytechnic University “Cybersecurity of Ad-hoc Distributed Systems”

Room B. “Network security and protocols”, p.1

Session Chair: Atilla Elçi, Aksaray University

1. Mehmet Yalçınkaya, Suleyman Demirel University; Ecir Küçükşille, Suleyman Demirel University; Samet Ganal, Suleyman Demirel University “Developing a Penetration Test Methodology in Ensuring Router Security and Testing it in a Virtual Laboratory”

2. Anna Epishkina, NRNU MEPhI; Konstantin Kogos, NRNU MEPhI “Protection from Binary and Multi-Symbol Packet Length Covert Channels”

3. Evgeny Abramov, SFedU; Elena Basan, Department of Information Security Southern Federal University; Oleg MAKAREVICH, ""Federal University of South Russia, Russia."" “Trust management system for mobile cluster-based wireless sensor network”

4. Hamid Hanifi, University of Denver; Leemon Baird, ; Ramakrishna Thurimella “A New Algorithm for Unkeyed Jam Resistance”

5. Aragats Amirkhanyan, Hasso Plattner Institute; Andrey Sapegin, ; Marian Gawron, Hasso Plattner Institute; Feng Cheng, ; Christoph Meinel “Simulation User Behavior on A Security Testbed Using User Behavior States Graph”

Room C. “Computational intelligence techniques in security”

Session Chair: Ludmila Babenko, Southern Federal University

1. Vladimir Eliseev, Infotecs; Yury Shabalin, National Research University MPEI “Dynamic response recognition by neural network to detect network host anomaly activity”

2. Sergey Zapechnikov, National Research Nuclear University MEPhI(Moscow Engineering Physics Institute); Natalia Miloslavskaya, NRNU MEPhI; Alexander Tolstoy, National Research Nuclear University MEPhI(Moscow Engineering Physics Institute) “Modeling of Next-Generation Firewalls as Queueing Services”

4. Andrei Petrovski, Robert Gordon University Aberdeen; Prapa Ratadilok, Robert Gordon University, Aberdeen; Sergei Petrovski, Samara State Technical University “Designing a Context-Aware Cyber Physical System for Detecting Security Threats in Motor Vehicles”

5. Vinod P., MNIT Jaipur; Princy George, SCMS School of Engineering & Technology “Machine Learning Approach for Filtering Spam Emails”

13:00 – 15:00 Lunch

15:00 – 15:45 Keynote 3: Ramakrishna Thurimella, University of Denver “Record Linkage Applications in Health Services Research: Opportunities and Challenges” (joint work with Rinku Dewri and William Mitchell)

Session Chair: Manoj Singh Gaur, Malaviya National Institute of Technology, Jaipur

15:45-16:00 Break

16:00-18:00 Parallel Sessions

Room A. [Special Session] Cybersecurity of Large-Scale and Distributed Systems, p.2

Session Chair: Alexander Barabanov, Bauman Moscow State Technical University

1. Zainab Saud, CASE; Muhammad Islam, CASE “Towards Proactive Detection of Advanced Persistent Threat (APT) Attacks using Honeypots”

2. Emmanouil Vasilomanolakis, TU Darmstadt; Shankar Karuppayah, TU Darmstadt; Panayotis Kikiras, AGT International; Max Mühlhäuser, TU Darmstadt “A honeypot-driven cyber incident monitor: lessons learned and steps ahead”

3. Malik Awan, Cardiff University; Mohammed Al Ghamdi “A Classification Framework for Distinct Cyber-Attacks based on Occurrence Patterns”


5. Philipp Burtyka, Southern Federal University; Oleg Makarevich, SFedU; Ludmila Babenko, SFedU; Alina Trepacheva, SFedU “The General Model of Secure Computation System”

6. Evgeny Shcherba, Omsk State Technical University “Two formal problems of network security and a theory of Boolean-valued flow networks”

Room B. “Malware analysis”

Session Chair: Alexey Tselykh, Southern Federal University

1. Xuefei Wang, Institute of Software Chinese Academy of Science; Hengtai Ma, IS CAS ; Lisha Jing, IS CAS “A dynamic marking method for implicit information flow in dynamic taint analysis”

2. Shweta Bhandari, MNIT Jaipur; Rishabh Gupta, MNIT Jaipur; Vijay Laxmi, MNIT Jaipur; Manoj Gaur, MNIT Jaipur; Akka Zemmari, LaBRI - University of Bordeaux; Maxim Anikeev, SFedU “DRACO:DRoid Analyst COMbo An Android Malware Analysis Framework”

3. Jyoti Gajrani, MNIT Jaipur; Jitendra Sarswat, MNIT Jaipur; Meenakshi Tripathi, MNIT Jaipur; Vijay Laxmi, MNIT Jaipur; Manoj Gaur, MNIT Jaipur; Mauro Conti, University of Padua “A Robust Dynamic Analysis System Preventing SandBox Detection by Android Malware”

4. Vinod P., SCMS School of Engineering and Technology; Jithu Raphel, SCMS School “Information Theoretic Method for Classification of Packed and Encoded Files”

5. Vinod P., SCMS School of Engineering and Technology; Meenu Mary John, SCMS School of Engineering and Technology; Dhanya KA, SCMS School of Engineering and Technology “Hartley’s Test Ranked Opcodes for Android Malware Analysis”
Room C. “Security algorithms and analysis”

Session Chair: Maxim Kalinin, Peter the Great St. Petersburg Polytechnic University

1. Andrey Shalyapin, Siberian State Aerospace University; Vadim Zhukov, Siberian State Aerospace University “Case based analysis in information security incidents management system”

2. Octavio Salcedo Parra, UDFJC Bogotá; Brayan Reyes Daza, UDFJC Bogotá “Comparison between Safety and Efficient Security of the ARP Protocol”


4. Dmitry Mikhaylov, NRNU MEPhI; Andrey Starikovskiy, NRNU MEPhI; Grigoriy Lebedev, NRNU MEPhI; Dmitry Rubin, NRNU MEPhI; Alexey Egorov, NRNU MEPhI; Eugeniy Uleykin, NRNU MEPhI; Anastasia Tolstaya, NRNU MEPhI; Alexander Boruchinkin, NRNU MEPhI “Developing a System for Text-Messages Protection”


September 10, 2015

10:00 – 10:45 Keynote 4: Alexander Barabanov, NPO Echelon “Modern Trends in the Regulatory Framework of the Information Security Compliance Assessment in Russia Based on Common Criteria” (joint work with Alexey Markov)

Session Chair: Naghmeh Moradpoor Sheikhkanloo, Abertay University

10:45-11:00 Break

11:00-12:00 Sessions

Room A “Network security and protocols”, p.2

Session Chair: Andrei Petrovski, Robert Gordon University

1. Alexander Shukhman, Orenburg State University; Petr Polezhaev, Orenburg SU; Yuri Ushakov, Orenburg SU; Leonid Legashev, Orenburg SU; Veniamin Tarasov, Volga Region State University of Telecommunications and Informatics; Nadezhda Bakhareva, VRSUTI “Development of network security tools for enterprise software-defined networks”

2. Marian Gawron, Hasso Plattner Institute; Aragats Amirkhanyan, Hasso Plattner Institute; Feng Cheng, Hasso Plattner Institute; Christoph Meinel, Hasso Plattner Institute “Automatic Vulnerability Detection for Weakness Visualization and Advisory Creation”


12:00 – 12:15 SIN 2016 Announcement by Atilla Elçi

12:15 – 13:00 Closing remarks

19:00 – 23:00 Social Event at DENART hotel (pereulok Gorkogo, 16). Meeting in 18:30 in front of Marins Park hotel.
September 11, 2015
9:00 – 17:00 Outing to Krasnaya Polyana alpine resort and Olympic Park in Imereti valley by bus – meeting point in front of Marins Park Hotel
See you next year at
SIN 2016

Host: Rutgers, The State University of New Jersey
Location: Newark, NJ, USA
Dates: July 20-22, 2016 (tentative)

Check www.sinconf.org for updated information!