

Sixth International Conference
“Mathematical Methods, Models, and Architectures
for Computer Network Security”
(MMM-ACNS-2012) and
Second International Workshop
“Scientific Analysis and Policy Support for Cyber Security”
(SA&PS4CS-2012)

October 17-20, 2012, St. Petersburg, Russia

<http://comsec.spb.ru/mmm-acns12/>
<http://www.comsec.spb.ru/saps4cs12/>

Main sponsors

1. Office of Naval Research Global, USA
2. European Office of Aerospace Research and Development USAF, USA
3. Russian Foundation for Basic Research

Organizers

- St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)
- Binghamton University (State University of New York)

Title and scope

MMM-ACNS-2012 is the 6-th in the series of international conferences “Mathematical Methods, Models and Architectures for Computer Networks Security” organized by St. Petersburg Institute for Informatics and Automation and Binghamton University (SUNY) and supported by the European Office of Aerospace Research and Development USAF, Office of Naval Research Global, and Russian Foundation for Basic Research:

MMM-ACNS-2001 (<http://space.ias.spb.su/mmm-acns01/>)
MMM-ACNS-2003 (<http://space.ias.spb.su/mmm-acns03/>)
MMM-ACNS-2005 (<http://space.ias.spb.su/mmm-acns05/>)
MMM-ACNS-2007 (<http://www.comsec.spb.ru/mmm-acns07/>)
MMM-ACNS-2010 (<http://www.comsec.spb.ru/mmm-acns10/>)

These conferences demonstrated the high interest of the international scientific community to the theoretical and practical aspects of the computer network and information security and have resulted in a remarkable tradition of the Russian-American dialogue in this research area.

The MMM-ACNS-2012 Conference (<http://www.comsec.spb.ru/mmm-acns12/>) will continue this tradition by once again bring together leading researchers from academia and governmental organizations as well as practitioners. It will contribute towards the advancement of the state of the art and practice in the area of computer networks and information security with a focus on novel theoretical aspects; it will facilitate personal interactions and discussions of various aspects of information technologies in conjunction with computer network and information security problems arising in large-scale computer networks.

The Conference MMM-ACNS-2012 will offer its floor to **the Second International Workshop “Scientific Analysis and Policy Support for Cyber Security” (SA&PS4CS-2012)** (<http://www.comsec.spb.ru/saps4cs12/>) dedicated to the methods of scientific analysis and policy support for response to cyber intrusions and attacks.

Objective of the MMM-ACNS-2012 Conference

The main objectives of the MMM-ACNS-2012 Conference are to discuss state-of-the-art in mathematical methods and models for computer networks and information security to promote a better understanding of recent achievements and trends in the computer network security, as well as making use of recent achievements in the area of advanced information technologies for computer network and information assurance.

Security assurance of resident information and integrity of computer networks’ software is one of the important problems of the modern computer science and information technology. The problem importance is confirmed by ever-increasing significance and value of information followed by multiplicity and diversity of threads and vulnerabilities of computer networks, and by potentially devastating consequences of successful attacks on integrity, resource availability and information confidentiality. Unauthorized access to computer network facilities and resources, especially in global networks participating in real-time control operations, may be truly disastrous. The growing size of the network, its interconnectivity, large number of users, increasing number of vulnerable targets (communication protocols, operating systems, servers, applications, etc.), and the appearance of effective and previously unknown types of attacks are among the factors contributing towards the complexity of relevant security problems.

An additional objective of the conference is to bring together researchers, practitioners, security system developers and users from academia, industry and governmental organizations to exchange ideas on a broad range of topics from mutually recognized threats to commercial perspectives.

Since the scope of the conference reflects specific interests of individuals and organizations involved in basic and applied research, information about the conference will be distributed among the appropriate institutions in Russia and worldwide. Currently, preliminary agreement to participate in the conference has been received from leading Russian basic and applied research institutions operating in the areas of Computer Science, Telecommunication and Computer Security and from companies developing relevant industrial applications.

Objective of the SA&PS4CS-2012 Workshop

The Workshop is intended as a forum for discussing various aspects of organization of international efforts to reduce mutual threats in the cyberspace. These include but not limited to identifying emergent cyber technologies supporting social and political activity management. The Workshop will bring together professionals involved in multiple areas concerning scientific analysis and policy support for cyber security to exchange ideas and to learn the latest developments. Relevant experiences and existing practices will be discussed.

The Workshop will promote internationally shared understanding of the technically supportable indications and warnings for various types of intrusions and attacks, from the isolated to the highly coordinated, and from the forensic to strategic. Further exchanges between practitioners will be promoted.

The Workshop is scheduled on the last day of MMM-ACNS-2012.

Topics of interest

Papers offering novel research contributions to the theoretical aspects of the computer network and information security are solicited for submission.

Papers may present theory, technique, and applications on topics including but not restricted to:

- Adaptive security

- Anti-malware techniques: detection, analysis, prevention
- Anti-phishing, anti-spam, anti-fraud, anti-botnet techniques
- Applied cryptography
- Authentication, authorization and access control
- Cloud Security
- Computer and network forensics
- Covert channels
- Critical infrastructure protection
- Data and application security
- Data mining, machine learning, and bio-inspired approaches for security
- Deception systems and honeypots
- Denial-of-service attacks and countermeasures
- Digital Rights Management
- eCommerce, eBusiness and eGovernment security
- Embedded system security
- Formal analysis of security properties
- Information warfare
- Internet and web security
- Intrusion prevention, detection, and response
- Language-based security
- Network survivability
- New ideas and paradigms for security
- Operating system security
- Reliability and dependability
- Risks metrics, risk analysis and risk management
- Security and privacy in pervasive and ubiquitous computing
- Security event and information management
- Security in social networks
- Security of emerging technologies: sensor, wireless/mobile, peer-to-peer and overlay networks
- Security of autonomous agents and multi-agent systems
- Security modeling and simulation
- Security policies
- Security protocols
- Security verification
- Security visualization
- Self-protecting and healing
- Smartphone security
- Software protection
- Trusted computing
- Trust and reputation management
- Vulnerability assessment

The SA&PS4CS-2012 Workshop will focus on the detection, discrimination, and attribution of various activities of malefactors and response to cyber intrusions and attacks including national level information operations as well as identifying emergent cyber technologies supporting social and political activity management and trans-national distributed computing management.

Submitting a paper

The MMM-ACNS-2012 welcomes original papers from academic, government, and industry contributors reflecting the state of the art in the areas of interested listed below. All submissions will be subjected to a thorough review by at least three reviewers.

Draft versions of original full papers up to 14 A4 pages (but not less than 6 pages) in English prepared according to the instructions provided by Springer, including abstract (up to 300 words) and keywords (5 to 8), see (<http://www.springer.com/comp/lncs/Authors.html>), should be submitted by

June 9, 2012

or earlier through the upload facilities at the MMM-ACNS-2012 web site

<http://www.comsec.spb.ru/mmm-acns12/>

Only electronic submissions in PDF format will be considered.

Authors must also indicate the conference track to which the paper is submitted.

The Program Committee will make the final selection based on peer reviewers' evaluation with the primary focus is on high-quality original unpublished research, case studies and implementation experiences.

The notification of acceptance/rejection will be disseminated by

July 9, 2012

The due date for camera-ready versions of accepted papers is

July 20, 2012

The speakers of the SA&PS4CS-2012 Workshop, worldwide recognized specialists in cyber security from the USA, Europe, China, Russia and other countries, will be personally invited.

Proceedings

Program Committee intends to publish the MMM-ACNS-2012 Proceedings in Springer series "Lecture Notes in Computer Science" (LNCS). The final decision will be made by Springer after finalizing the reviewing process. Instructions for authors will be provided at the MMM-ACNS-2012 web site

(<http://www.comsec.spb.ru/mmm-acns12/>).

Camera ready paper submission can be uploaded through the MMM-ACNS-2012 web site

<http://www.comsec.spb.ru/mmm-acns12/>

The Proceeding of the SA&PS4CS-2012 Workshop will also be published.

Conference Languages

The working language of MMM-ACNS-2012 is English.

The working languages of SA&PS4CS-2012 Workshop are English and Russian. Presentations will be synchronously translated.

Invited Speakers

- **Ben Livshits** (Microsoft Research, USA)
- **Fabio Martinelli** (Istituto di Informatica e Telematica – IIT, Italy)
- **Angelos Stavrou** (George Mason University, USA)
- **Bhavani Thuraisingham** (University of Texas at Dallas, USA)

Conference Co-Chairmen

- Corresponding Member of the Russian Academy of Sciences, Prof. **R.M. Yusupov**, Director of St.Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)
- Dr. **Robert L. Herklotz**, U.S. Air Force Office of Scientific Research, USA

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- Angelos Stavrou (USA)
- Nadia Tawbi (Canada)
- Bhavani Thuraisingham (USA)
- Bill Tsoumas (Greece)
- Shambhu Upadhyaya (USA)
- Paulo Verissimo (Portugal)
- Peter Zegzhda (Russia)

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Chairman

R.M. Yusupov, Director of St.Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)

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- O.Polubelova (SPIIRAS, St. Petersburg)
- A.Shorov (SPIIRAS, St. Petersburg)

Location of the Conference and Workshop

According to the preliminary agreement, the MMM-ACNS-2012 conference and the SA&PS4CS-2012 Workshop will take place in the historical building "Palace of Grand Prince Vladimir Romanov," now "House of Scientists," located in the heart of St. Petersburg, address: 26, Dvortsovaya emb., St.Petersburg, 191186, Russia.

This venue provides ample space for the conference, as well as for the associated events (informal discussions, reception, breaks, etc.).

Contact us

Program Committee Co-Chairman

Prof. Igor Kotenko

Head of Laboratory of Computer Security Problems
 St. Petersburg Institute for Informatics and Automation
 of the Russian Academy of Sciences
 39, 14th Liniya, St. Petersburg, 199178, Russia
 Telephone: +7-(812)-328-2642
 Fax: +7-(812)-328-4450
 E-mail: mmmacns[AT]comsec[DOT]spb[DOT]ru

Program Committee Co-Chairman

Dr. Victor A. Skormin

Distinguished Service Professor
 Electrical/Computer Engineering
 Watson School of Engineering
 Binghamton University,
 Binghamton NY 13902, USA
 (607) 777-4013 /-4856
 E-mail: vskormin[AT]binghamton[DOT]edu

Local contact person

Irina Podnozova

Phone: 7-(812)-328-4446 Fax: +7(812)-328-06-85

E-mail: ipp[AT]mail[DOT]ias[DOT]spb[DOT]su