SEVENTH FRAMEWORK PROGRAMME

Information & Communication Technologies
Trustworthy ICT

NETWORK OF EXCELLENCE

A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet: *Europe for the World*

1st Periodic Dissemination Report [†]

September 2010–August 2011

Abstract: This is the dissemination report for SysSec for the period September 2010–August 2011.

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Politecnico Di Milano	Principal Contractor	Italy
Vrije Universiteit Amsterdam	Principal Contractor	The Netherlands
Institut Eurécom	Principal Contractor	France
IPP-BAS	Principal Contractor	Bulgaria
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TUBITAK-UEKAE	Principal Contractor	Turkey

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1 Executive Summary

This report summarizes the dissemination activities carried out by the *SysSec* project in the September 2010–August 2011 period. Specifically, in the following pages we will list the papers presented by the consortium in conferences as well as the presentations made at various events and forums and related to the project. Any additional coverage of the project by the press and online media is also presented in this document.

During this first year of *SysSec* the consortium published a total of 34 peer-reviewed papers, plus 31 presentations, talks and seminars.

Moreover, we organized an extremely successful workshop, interacted with the international press, and with other EU funded projects.

The overall dissemination output of *SysSec* is an indication of the global excellence and recognition of the project partners.

2 Conference and journal papers

Following is the list of peer-reviewed papers that were presented or published in the period September 2010–August 2011.

[1] Asia Slowinska, Traian Stancescu, and Herbert Bos. **DDE: Dynamic Data Structure Excavation**. In *ACM APSYS'10*, New Delhi, India, August 2010.

Local copy: papers/dde-apsys10.pdf
Online: http://syssec-project.eu/nNa#dde-apsys10.pdf

[2] Alexandros Kapravelos, Iasonas Polakis, Elias Athanasopoulos, Sotiris Ioannidis, and Evangelos P. Markatos. **D(e—i)aling with VoIP: Robust Prevention of DIAL Attacks**. In *Proceedings of the 15th European Symposium on Research in Computer Security (ESORICS)*, Athens, Greece, September 2010.

Local copy: papers/dial-esorics10.pdf
Online: http://syssec-project.eu/nNa#dial-esorics10.pdf

[3] Georgios Kontaxis, Iasonas Polakis, Spiros Antonatos, and Evangelos P. Markatos. **Experiences and observations from the NoAH infrastructure**. In *Proceedings of the 6th European Conference on Computer Network Defense (EC2ND)*, Berlin, Germany, October 2010.

Local copy: papers/noah-experiences-ec2nd10.pdf
Online: http://syssec-project.eu/nNa#noah-experiences-ec2nd10.pdf

[4] Elias Athanasopoulos, Antonis Krithinakis, and Evangelos P. Markatos. **An Architecture For Enforcing JavaScript Randomization in Web2.0**

Applications.. In *Short paper in Proceedings of the 13th Information Security Conference (ISC 2010)*, Boca Raton, FL, USA, October 2010.

Local copy: papers/raja-isc10.pdf
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[5] Iasonas Polakis, Georgios Kontaxis, Spiros Antonatos, Eleni Gessiou, Thanasis Petsas, and Evangelos P. Markatos. **Using social networks to harvest email addresses**. In *WPES '10: Proceedings of the 9th annual ACM workshop on Privacy in the electronic society*, pages 11–20, New York, NY, USA, October 2010.

Local copy: papers/social-harvest-wpes10.pdf
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[6] Phuong Nguyen, Wil Kling, Giorgos Georgiadis, Marina Papatriantafilou, Anh Tuan Le, and Lina Bertling. **Distributed Routing Algorithms to Manage Power Flow in Agent-Based Active Distribution Network**. In *Innovative Smart Grid Technologies Europe, 2010*, Göteborg, Sweden, October 2010. IEEE.

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[7] Magnus Almgren and Wolfgang John. **Tracking Malicious Hosts on a 10Gbps Backbone Link**. In *Proceedings of the 15th Nordic Conference in Secure IT Systems (NordSec 2010)*, Espoo, Finland, October 2010.

Local copy: papers/tracking-10gbps-nordsec10.pdf
Online: http://syssec-project.eu/nNa#tracking-10gbps-nordsec10.pdf

[8] Zlatogor Minchev and Maria Petkova. **Information processes and threats in social networks: A case study**. In *Conjoint Scientific Seminar on Modelling and Control of Information Processes*, Sofia, Bulgaria, November 2010.

Local copy: papers/minchev-social-threats.pdf
Online: http://syssec-project.eu/nNa#minchev-social-threats.pdf

[9] Georgios Portokalidis, Philip Homburg, Kostas Anagnostakis, and Herbert Bos. **Paranoid android: Versatile protection for smartphones**. In *Proceedings of the 26th Annual Computer Security Applications Conference (ACSAC)*, Austin, TX, December 2010.

Local copy: papers/paranoid-android-acsac10.pdf
Online: http://syssec-project.eu/nNa#paranoid-android-acsac10.pdf

[10] Kaan Onarlioglu, Leyla Bilge, Andrea Lanzi, Davide Balzarotti, and Engin Kirda. **G-free: Defeating return-oriented programming through**

gadget-less binaries. In *Proceedings of the 26th Annual Computer Security Applications Conference (ACSAC)*, Austin, TX, December 2010.

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[11] Michalis Polychronakis, Kostas G. Anagnostakis, and Evangelos P. Markatos. **Comprehensive shellcode detection using runtime heuristics**. In *Proceedings of the 26th Annual Computer Security Applications Conference (ACSAC)*, Austin, TX, December 2010.

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[12] Andreas Larsson and Philippas Tsigas. **Self-stabilizing (k,r)-clustering in wireless ad-hoc networks with multiple paths**. In *Proceedings of 14th International Conference On Principles Of Distributed Systems (OPODIS)*, Tozeur, Tunisia, December 2010.

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[13] Theodoor Scholte, Davide Balzarotti, and Engin Kirda. **Quo vadis? a study of the evolution of input validation vulnerabilities in web applications**. In *Proceedings of the 15th International Conference on Financial Cryptography and Data Security (FC)*, St. Lucia, February 2011.

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[14] Asia Slowinska, Traian Stancescu, and Herbert Bos. **Howard: a dynamic excavator for reverse engineering data structures**. In *Proceedings of the 18th Annual Network & Distributed System Security Symposium (NDSS)*, San Diego, CA, February 2011.

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[15] Zhang Fu, Marina Papatriantafilou, and Philippas Tsigas. **CluB: A Cluster Based Proactive Method for Mitigating Distributed Denial of Service Attacks**. In *Proceedings of the 2011 ACM Symposium on Applied Computing (SAC)*, Taichung, Taiwan, March 2011.

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[16] Nick Nikiforakis, Marco Balduzzi, Steven Van Acker, Wouter Joosen, and Davide Balzarotti. **Exposing the Lack of Privacy in File Hosting Services**. In *Proceedings of the 4th USENIX Workshop on Large-Scale Exploits and Emergent Threats (LEET)*, Boston, MA, USA, March 2011.

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[17] Demetris Antoniades, Iasonas Polakis, Georgios Kontaxis, Elias Athanasopoulos, Sotiris Ioannidis, Evangelos P. Markatos, and Thomas Karagiannis. **we.b: The Web of Short URLs**. In *Proceedings of the 20th International World Wide Web Conference (WWW)*, Hyderabad, India, March 2011.

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[18] Georgios Kontaxis, Iasonas Polakis, Sotiris Ioannidis, , and Evangelos P. Markatos. **Detecting Social Network Profile Cloning**. In *Proceedings of the 3rd IEEE International Workshop on SEcurity and SOCial Networking (SESOC)*, Seattle, WA, USA, March 2011.

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[19] Iasonas Polakis, Georgios Kontaxis, Sotiris Ioannidis, and Evangelos P. Markatos. **Dynamic Monitoring of Dark IP Address Space**. In *Proceedings of the COST TMA International Workshop on Traffic Monitoring and Analysis (TMA)*, Vienna, Austria, April 2011.

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[20] Leyla Bilge, Andrea Lanzi, and Davide Balzarotti. **Thwarting Real-Time Dynamic Unpacking**. In *Proceedings of the 4th European Workshop on System Security (EuroSec)*, Salzburg, Austria, April 2011.

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[21] Zacharias Tzermias, Giorgos Sykiotakis, Michalis Polychronakis, and Evangelos P. Markatos. **Combining Static and Dynamic Analysis for the Detection of Malicious Documents**. In *Proceedings of the 4th European Workshop on System Security (EuroSec)*, Salzburg, Austria, April 2011.

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[22] Georgios Kontaxis, Demetris Antoniades, Iasonas Polakis, and Evangelos P. Markatos. **An Empirical Study on the Security of Cross-Domain Policies in Rich Internet Applications**. In *Proceedings of the 4th European Workshop on System Security (EuroSec)*, Salzburg, Austria, April 2011.

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[23] Farnaz Moradi, Magnus Almgren, Wolfgang John, Tomas Olovsson, and Philippas Tsigas. **On Collection of Large-Scale Multi-Purpose Datasets on Internet Backbone Links**. In *Proceedings of the First Workshop on Building Analysis Datasets and Gathering Experience Returns for Security (BADGERS)*, Salzburg, Austria, April 2011.

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[24] Willem de Bruijn, Herbert Bos, and Henri Bal. **Application-tailored i/o with streamline**. *ACM Transacations on Computer Systems (TOCS)*, 29:6:1–6:33, May 2011.

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[27] Francesco Roveta, Luca di Mario, Federico Maggi, Giorgio Caviglia, Stefano Zanero, and Paolo Ciuccarelli. **BURN: Baring Unknown Rogue Networks**. In *Proceedings of VizSec 2011*, Pittsburg, PA, USA, July 2011.

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[28] Herbert Bos and Lorenzo Cavallaro. **Systems Security at VU University Amsterdam**. In *Proceedings of the 1st SysSec Workshop on Systems Security*, Amsterdam, The Netherlands, July 2011.

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[29] Kiril Boyanov. **The security aspects of the research activities in IICT-BAS**. In *Proceedings of the 1st SysSec Workshop on Systems Security*, Amsterdam, The Netherlands, July 2011.

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[30] Federico Maggi and Stefano Zanero. **Systems Security research at Politecnico di Milano**. In *Proceedings of the 1st SysSec Workshop on Systems Security*, Amsterdam, The Netherlands, July 2011.

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[31] Magnus Almgren, Zhang Fu, Erland Jonsson, Pierre Kleberger, Andreas Larsson, Farnaz Moradi, Tomas Olovsson, Marina Papatriantafilou, Laleh Pirzadeh, and Philippas Tsigas. **Mapping Systems Security Research at Chalmers**. In *Proceedings of the 1st SysSec Workshop on Systems Security*, Amsterdam, The Netherlands, July 2011.

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[32] Iasonas Polakis, Georgios Kontaxis, and Sotiris Ioannidis. **CAPTCHuring Automated (Smart)Phone Attacks**. In *Proceedings of the 1st SysSec Workshop on Systems Security*, Amsterdam, The Netherlands, July 2011.

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[33] Georgios Kontaxis, Iasonas Polakis, and Sotiris Ioannidis. **Outsourcing Malicious Infrastructure to the Cloud**. In *Proceedings of the 1st SysSec Workshop on Systems Security*, Amsterdam, The Netherlands, July 2011.

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[34] Danesh Irani, Marco Balduzzi, Davide Balzarotti, Engin Kirda, and Calton Pu. **Reverse Social Engineering Attacks in Online Social Networks**. In *Proceedings of DIMVA 2011*, Amsterdam, The Netherlands, July 2011.

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3 Talks, seminars and presentations

[1] Evangelos Markatos. **Collaboration in Systems Security**. At *IncoTrust networking session in ICT 2010*, Brussels, Belgium, September 2010.

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Online: http://syssec-project.eu/jNa#markatos-presentation-incotrust.pdf

[2] Evangelos Markatos. **SysSec: A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet**. At *Effectsplus networking session in ICT 2010*, Brussels, Belgium, September 2010.

Local copy: talks/markatos-presentation-effectsplus.pdf
Online: http://syssec-project.eu/jNa#markatos-presentation-effectsplus.pdf

[3] Zlatogor Minchev. **New Threats in Cyber Security**. At *Round Table "Bulgarian Cyber Security Status and Problems"*, Sofia, Bulgaria, September 2010.

Organised by *the Association of Officers in Reserve-Atlantic, the Association of Communication and Information Specialists and the Central Military Club of Bulgarian Ministry of Defense*.

Local copy: talks/minchev-presentation-sora.pdf
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[4] Evangelos Markatos. **SysSec: A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet**. At *"Open Doors FORTH-ICS"*, Heraklion, Greece, October 2010.

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Online: http://syssec-project.eu/jNa#markatos-presentation-opendoors-oct-2010.pdf

[5] Magnus Almgren. **Mitigating Cyber Attacks**. At *Lunch seminar at Lindholmen Science Park*, Göteborg, Sweden, October 2010.

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Online: http://syssec-project.eu/jNa#almgren-presentation-security-arena-oct-2010.pdf

[6] Zlatogor Minchev. **New Cyber Security Challenges**. At *C4ISR in South-East Europe - Problems and Solutions*, Plovdiv, Bulgaria, October 2010.

Organised by *AFCEA Varna under the Auspices of the Bulgarian Minister of Defense*.

Local copy: talks/minchev-presentation-afcea.pdf
Online: http://syssec-project.eu/jNa#minchev-presentation-afcea.pdf

[7] Herbert Bos. **Give me back my data structures! Reverse engineering data structures from stripped binaries**. At *Vancouver Systems Colloquium*, Vancouver, Canada, October 2010.

Local copy: talks/bos-presentation-dde-vsc10.pdf
Online: http://syssec-project.eu/jNa#bos-presentation-dde-vsc10.pdf

[8] Magnus Almgren. **Mitigating Cyber Attacks**. At *Network Meeting, IT faculty at Göteborg University*, Göteborg, Sweden, November 2010.

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Online: http://syssec-project.eu/jNa#almgren-gbg-alumni-2010.pdf

[9] Zlatogor Minchev and Maria Petkova. **Information Processes and Threats in Social Networks: A Case Study**. At *Conjoint Scientific Seminar "Modelling and Control of Information Processes"*, Sofia, Bulgaria, November 2010.

Organised by *the College of Telecommunications, Institute of ICT - Bulgarian Academy of Sciences and Institute of Mathematics and Informatics - Bulgarian Academy of Sciences*.

Local copy: talks/minchev-modelling-control-processes.pdf
Online: http://syssec-project.eu/jNa#minchev-modelling-control-processes.pdf

[10] Zlatogor Minchev. **Threats and Challenges in Social Networks: A European Glance and Alliance Perspective in the Context of the New Strategic Concept**. At *National conference "NATO's Policy on Cyber Defense"*, Sofia, Bulgaria, December 2010.

Organised by *the Institute for European Initiatives in cooperation with Association of Officers in Reserve - "Atlantic", the Bulgarian Ministry of Defence, e-Health Bulgaria Foundation and NATO Public Diplomacy Division*.

Local copy: talks/minchev-nato-cyberdefense-policy.pdf
Online: http://syssec-project.eu/jNa#minchev-nato-cyberdefense-policy.pdf

[11] Evangelos Markatos. **Managing Threats and Vulnerabilities in the Future Internet**. At *"WebScienceNet" meeting*, Patras, Greece, December 2010.

Local copy: talks/markatos-websciencenet.pdf
Online: http://syssec-project.eu/jNa#markatos-websciencenet.pdf

[12] Federico Maggi. **SysSec: A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet**. At *Effectsplus informal session in FIA Ghent*, Ghent, Belgium, December 2010.

Local copy: talks/federico-maggi-presentation-effectsplus.pdf
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[13] Andreas Larsson. **Self-stabilizing (k,r)-Clustering in Wireless Ad-hoc Networks with Multiple Paths**. At *14th International Conference On Principles Of Distributed Systems (OPODIS)*, Tozeur, Tunisia, December 2010.

Local copy: talks/larsson-opodis2010.pdf
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[14] Herbert Bos. **Paranoid Android: Heavy-weight Protection for Light-weight Devices**. At *SURFnet-IBO Conference*, The Hague, Netherlands, February 2011.

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Online: http://syssec-project.eu/jNa#almgren-gbg-alumni-2010.pdf

[15] Evangelos Markatos. **SysSec: A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet**. At *Effectsplus 1st technical cluster meeting*, Brussels, Belgium, March 2011.

Local copy: talks/markatos-effectsplus-kickoff-march-2011.pdf
Online: http://syssec-project.eu/jNa#markatos-effectsplus-kickoff-march-2011.pdf

[16] Evangelos Markatos. **Threats and Vulnerabilities in the Future Internet: The SysSec project**. At *Effectsplus 1st technical cluster meeting*, Brussels, Belgium, March 2011.

Local copy: talks/markatos-effectsplus-roadmap-march-2011.pdf
Online: http://syssec-project.eu/jNa#markatos-effectsplus-roadmap-march-2011.pdf

[17] Zlatogor Minchev. **Cybersecurity and cyberdefense - Smart defense elements in 21 century - Trends and Progress**. At *National Conference "Smart Defence: national defence policy and investments in the second half of 21 century"*, Sofia, Bulgaria, March 2011.

Organised by *Association of the Officers in the Reserve - "Atlantic" and the Bulgarian Ministry of Defense*.

Local copy: talks/minchev-smart-cyberdefense-march-2011.pdf
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[18] Zlatogor Minchev. **Strategic criminality and terrorism - cyberspace protection**. At *Round Table Discussion "National Security the Strategic Range of Criminality"*, Sofia, Bulgaria, April 2011.

Organised by *George C. Marshall European Center for Security Studies, Germany and and George C. Marshall Associations, Bulgaria*.

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[19] Andreas Larsson. **Information Security: Wireless Sensor Networks and Civil Security**. At *Security Arena collaboration Arena for Civil Security*, Gothenburg, Sweden, April 2011.

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[20] Zlatogor Minchev and Velizar Shalamanov. **Information Technologies in Support to Counterterrorism in Culturally and Linguistically Diverse Communities**. At *NATO ARW "Counter Terrorism in Culturally and Linguistically Diverse Communities"*, Antalya, Turkey, May 2011.

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[21] Herbert Bos. **Paranoid android or why the security of your smart phone is so dumb**. At *BTG Themadagen 2011 (Conference of Broadband Telecom Wholesale users)*, Utrecht, Netherlands, May 2011.

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[22] Tomas Olovsson. **Forskning inom datasäkerhet (English title: Research in IT security)**. At *Thematic day "IT ur säkerhetsperspektiv" (English title: "IT from a security perspective")*, Lindholmen Science Park, Göteborg, Sweden, May 2011.

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[23] Magnus Almgren. **Datorer finns överallt – men kan man lita på dem? (English title: Computers are everywhere – but can you trust them?)**. At *2011 Göteborg Science Festival*, Göteborg, Sweden, May 2011.

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[24] Pierre Kleberger, Tomas Olovsson, and Erland Jonsson. **Security aspects of the in-vehicle network in the connected car**. At *2011 IEEE Intelligent Vehicles Symposium (poster presentation)*, Baden-Baden, Germany, June 2011.

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[25] Sotiris Ioannidis. **Privacy-preserving policies, protocols and architectures**. At *2011 International Workshop on Policies for the Future Internet*, Pisa, Italy, June 2011.

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[26] Herbert Bos. **Paranoid Android:Why is the security on my smartphone so dumb?**. At *BTG Conference*, Utrecht, Netherlands, May 2011.

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[27] Evangelos Markatos. **SysSec: A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet**. At *Effectsplus clustering meeting*, Amsterdam, The Netherlands, July 2011.

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[29] Federico Maggi. **When the FIRE BURNs: Visualizing and Exploring Rogue Autonomous Systems**. At *1st SysSec Industry Advisory Board meeting*, Amsterdam, The Netherlands, July 2011.

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[30] Federico Maggi. **SysSec Dissemination Activity**. At *1st SysSec Industry Advisory Board meeting*, Amsterdam, The Netherlands, July 2011.

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Local copy: talks/zm-cybersec-course-parts-I-II.pdf
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4 Other Dissemination Activities

4.1 Cooperation with other projects

SysSec made a conspicuous effort to integrate and cooperate with other projects funded by the EU and other entities. In particular:

- Cooperation with the **EffectsPlus Project**[1]:

  On February 1st Evangelos Markatos represented *SysSec* on the *Open comminications event* organized by the Effectsplus project.

  URL: http://effectsplusopencommunications.eventbrite.com/?ref=ebtn

  SysSec participated in the 1st Technical Cluster Meeting organized by *EffectsPlus* project with two presentations by Evangelos Markatos (as documented in section 3). Additionally, we provided detailed information about *SysSec* to them when we were asked.

  We expect that our continued participation in the events organized by EffectsPlus will help to disseminate *SysSec* and its output to the wider *Trust and Security* research area and also contribute to the roadmap they lay out for this area. Additionally, participation to clustering events helps to identify possible future collaborations with other related projects.

  URL: http://www.effectsplus.eu/effectsplus-1st-technical-cluster-meeting-march-29th-30th-2011/

  The EffectsPlus Project will be organising a dedicated EC Unit F5 Security event in 2012. After their invitation, Evangelos Markatos will be in the event organisation committee.

- Cooperation with the **VIKING project**:

  In the Effectsplus Open Communications event we came in contact with Gunnar Bjorkman of the VIKING project. Among other activities, VIKING is doing some work in the area of cyberattacks against power grids. The initial contact had a follow-up with the participation of Rita Lenander in the 1st *SysSec* workgroup meetings in Amsterdam, where she contributed to the discussion on the security of smart grids.

  URL: http://www.vikingproject.eu/new2/index.php

- Cooperation with the **BiC Project**:

  Early in the period covered by this report we established contact with the *BiC Project* and investigated a possible collaboration. BiC is a follow-up project to the *INCO-Trust*[2] Coordination and Support Action

[1] http://www.effectsplus.eu
[2] http://www.inco-trust.eu/

which aimed to foster the international collaboration in ICT trust and security. BiC shares the same goals with its precursors but extends its activities beyond Europe to Brazil, India and South Africa.

Since BiC was planning to make *"System Security"* the theme of their first event, it was discussed if it would be possible to organise it as a joint event with our 1st *SysSec* workshop, on 6 July 2011 in Amsterdam. BiC organized one of the afternoon sessions, and Evangelos Markatos participated in the Organisation Committee of the BiC session. The two organizations jointly promoted the event.

- Questionnaire for the Monitoring of the ICT-RTD Implementation in 2010 After the DG's request, the consortium filled and submitted a questionnaire with data on the output and the perceived impact of the project in 2010. The data will be used for the assessment of the overall progress made in 2010 towards the achievement of the FP6 and FP7 implementation objectives.

  URL: http://ec.europa.eu/dgs/information_society/evaluation/rtd/indicators/index_en.htm

4.2 Presence in other events and the media

During September 2010–August 2011 we tracked the following references to *SysSec* by traditional and online media.

- The project was mentioned at http://www.future-internet.eu/activities/fp7-projects.html: "SysSec aims to create a virtual, distributed center of excellence for research in Systems Security. Our target is to enact a game changing approach to cybersecurity. Currently, most security research is reactive: it usually studies solutions after an attack has been launched and identified. Thus, researchers are always one step behind attackers. SysSec aims to break this vicious cycle, by investing energy in anticipating attacks and vulnerabilities, predicting future threats and preparing for them."

- On **LiveNews.bg**:

  Zlatogor Minchev (of IPP-BAS/IICT-BAS) was interviewed about *SysSec* and Social Networks. The interview is in Bulgarian.

  URL: http://syssec-project.eu/zm001

- On the **FIA website**:

  The Call for Papers for the 1st *SysSec* workshop has been advertised in the EU *Future Internet Assembly* (FIA) website. The workshop was also featured in the FIA related events agenda.

URL: http://www.future-internet.eu/events/eventview/article/1st-syssec-workshop.html
http://www.future-internet.eu/events.html

- On the **George C. Marshall Associations - Bulgaria website**:

  The 18th issue of the Security Focus and Security Sector Watch Newsletter features an article by Zlatogor Minchev and Iliya Nalbantov on **Challenges to Cyber Security and the Draft of National Security**. The article makes mention on *SysSec*:

  > "... An intuitive and simple but rather utopic and difficult for practical realization answer is: 'being one step ahead of the bad guys', i.e. 'being proactive'.
  >
  > One possible solution of this are the academic activities related to EU Network of Excellence on System Security (SysSec) and the Future Internet Assembly (FIA) in Ghent, Belgium where Bulgaria is already actively participating together with other European countries."

  URL: http://www.gcmarshall.bg/security/issues/22/index.shtml

- On the **Effectsplus News Feed**:

  The Effectsplus project has created a merged RSS feed of Trust and Security projects which includes the RSS feed of *SysSec*. A screenshot with the feed highlighted can be seen on Figure 1.

  URL: http://www.effectsplus.eu/

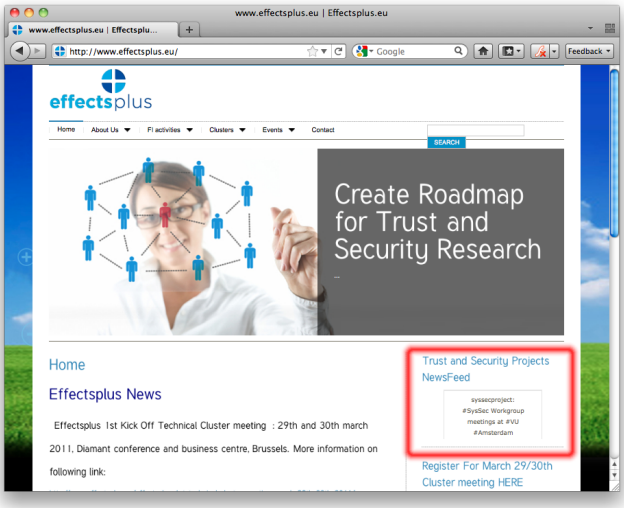

Figure 1: The merged RSS feed of Effectsplus project.

- The **Newsletter on ICT R&D in Trust and Security** from the Unit F5 of the Directorate General Information Society and Media of the European Commission mentions our project's workshop in the February issue.

  URL: http://cordis.europa.eu/fp7/ict/security/newsletter_en.html

- At the **IDC IT Security Roadshow 2011**:

  SysSec was listed as a partner at the IDC IT Security Roadshow 2011. The event took place in Sofia, Bulgaria on March 22 2011 under the general title *"Win the Game: Beat IT Threats"*. The *SysSec* logo and a link to the project's website was featured in the Roadshow's website.

  URL: http://www.idc-cema.com/?showproduct=39012&content_lang=ENG&action=Agenda

- At the **ENISA NIS Summer School 2011**:

  SysSec was invited to prepare and present a poster at the ENISA's 4^{th} *Summer School on NIS*. The summer school takes place annually on Crete, Greece and brings together stakeholders in the field of network and information security from across Europe. Therefore it provides an excellent opportunity for directly reaching the target audience of the project.

  Towards this end, FORTH created a poster for the project which can be seen in Figure 2. The poster provides an overview of the *SysSec* goals and additionally provides information about our most important activities, such as our 1^{st} workshop and our researcher exchange program.

  URL: http://www.nis-summer-school.eu/

- On **Slashdot** and **The Register** technology news sites:
  A research project conducted by our partner Eurecom on file hosting sites has been widely reported in the media. Among the sites that reported on their work was Slashdot and The Register[3], perhaps the two most popular technology news aggregators. The posts can be read on the following URLs:
  http://it.slashdot.org/story/11/05/08/2339252/
  http://www.theregister.co.uk/2011/05/08/file_hosting_sites_under_attack/

- News about our workshop and the co-located BiC session were included in the 16^{th} Future Internet Assembly newsletter. The newsletter is available online:
  http://ec.europa.eu/information_society/activities/foi/library/nl/newsletter16.html

[3] The corresponding URLs for the sites are http://slashdot.org and http://theregister.co.uk

Figure 2: The *SysSec* poster presented in the 2011 ENISA NIS Summer School.

- A publication from the information office of the Bulgarian Ministry of Transport and Information Technologies and Communications mentions SysSec in the context of national participation in a EU Network of Excellence in the area of systems security. The article is titled "4 Million Euro Funding for National ICT Organizations in 2010" and is available on: http://computerworld.bg/view/print.php?nid=35514

- On the **Swedish Television** (Kunskapskanalen):
The seminar titled "Datorer finns överallt – men kan man lita på dem?" (Computers are everywhere – but can you trust them?) given by Magnus Almgren (see Section 3 above) was also recorded by the Swedish Television and was aired later in June. It can be watched online on the following URL: http://urplay.se/164391

4.3 1st SysSec workshop

In this reporting period, the 1st SysSec workshop took place. More precisely, the workshop was held in Amsterdam, The Netherlands, on July the 6th, co-located with the DIMVA 2011 conference.

The aim of the workshop was to mobilize the System Security research community in Europe. The research community responded positively to the call: The workshop included 23 position papers and 6 student papers, all peer-reviewed, written by 95 co-authors from 35 organizations. The research sessions included topics such as malware classification, web application security as well as attacks against cloud infrastructures and mobile devices. The research roadmap papers were submitted from both authors known to the *SysSec* consortium (e.g., past collaborators, previous affiliations) as well as researchers from other institutions and countries (including the US). Most of the authors were from Europe, as can be seen from the map generated from the received submissions, which is available on the workshop page at http://www.syssec-project.eu/events/1st-syssec-workshop/. This map visualizes the community that has been built around the 1st SysSec workshop.

The program, announced on May 24, 2011, was promoted through mailing lists and Twitter. Additionally, the consortium promoted the workshop in every suitable occasion (e.g., the ENISA NIS Summer School discussed

Figure 3: Picture taken during the 1st SysSec Workshop.

in Section 4.2) in order to attract participation. This had the positive effect of attracting many participants: More than 70 people attended the workshop, nearly 80% of the total DIMVA participants, whereas the consortium estimated an upper bound of 50 people. The room was full, as shown in Figure 3 although every participant was able to find a seat and attend the whole program.

Given the many accepted papers and participants, especially for a one-day workshop, the organizers had to came up with a very tight schedule. More precisely, the organizers assigned 5-minutes slots to research roadmap, position papers, whereas research papers were given 15 to 20 minutes. In addition, with the kind collaboration of all the speakers, the organizers collected the slides into one computer prior to the workshop, to avoid wasting time between talks. Therefore, the program ran smoothly, with a good balance of talks and question & answers. Despite the tight schedule, the workshop was conducted in an informal and thought-stimulating manner, to favor strong and constructive networking.

4.4 SysSec Constituency

During the first year, we created and expanded a wide dissemination base for our activities, which we called the SysSec "Constituency". This is not just a mailing list, but a list of people with which we have direct connections, and who specifically wished to be informed of our activities. At the end of this reporting period, we had a total of **185 people subscribed**[4].

This dissemination list was instrumental, for example, in getting submissions and participation to our first workshop, and in circulating our calls for scholarships.

5 SysSec website and social media

5.1 New website sections

In deliverable D2.1[5] we have detailed the sections of the *SysSec* website at the time of its launch. During the course of the first project year, a few additional sections have been added. We will briefly outline their purpose and contents in this section.

5.1.1 *Events* Section

The *Events* section was added in January 2011 to accommodate the Call for Papers for our 1st project workshop. More information about the workshop,

[4] This figure excludes the *SysSec* partners and Working Group members.

[5] http://syssec-project.eu/nNa#d2.1

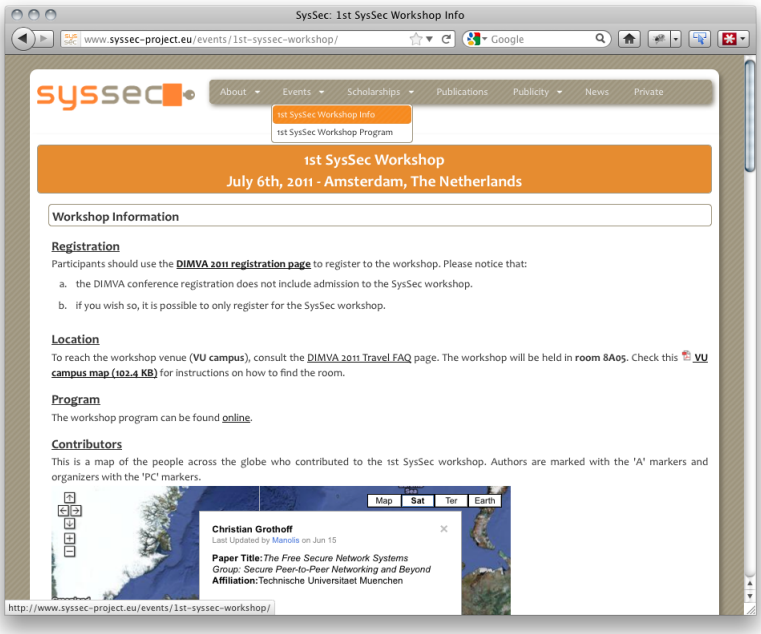

Figure 4: Website events section: 1st SysSec Workshop information.

including the workshop programme, were added as they became available (Figure 4). Finally, after the workshop the slides from the presentations were posted in this section.

In the future, we plan to add in this section the respective information about our 2nd project workshop and about the summer schools. Information about other Systems Security events we may contribute to may also appear here.

5.1.2 *Scholarships* Section

The *Scholarships* section was added to the *SysSec* website in late April 2011. It initially contained the call for scholarship proposals, show in Figure 5. Soon after, it was augmented with a FAQ list aimed to clarify potential misunderstandings on the application process. Finally, in June 2011, the call for Marie Curie postdoctoral fellowship proposals was added. With this call, we aim to provide support to postdoctoral researchers returning from abroad in requesting funding. The links to these pages were advertised to our *Constituency mailing list* and Twitter followers (see sections 4.4 and 5.4).

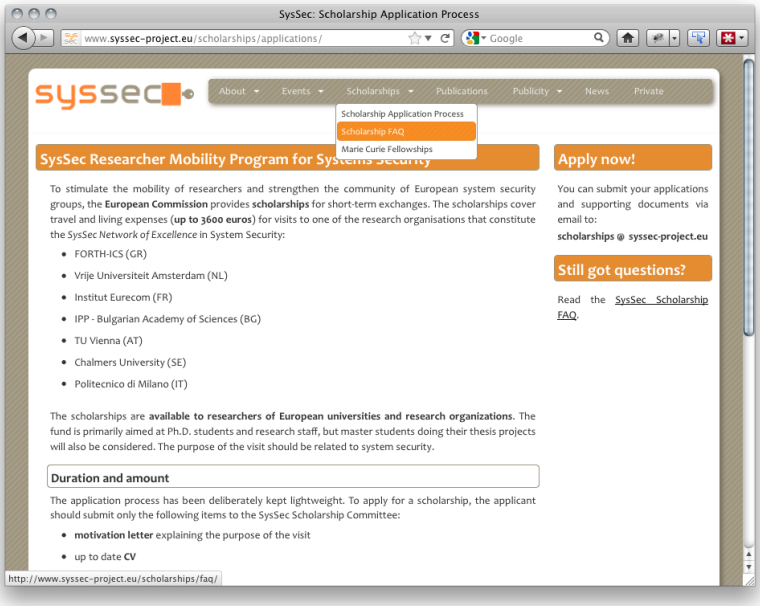

Figure 5: Website scholarships section.

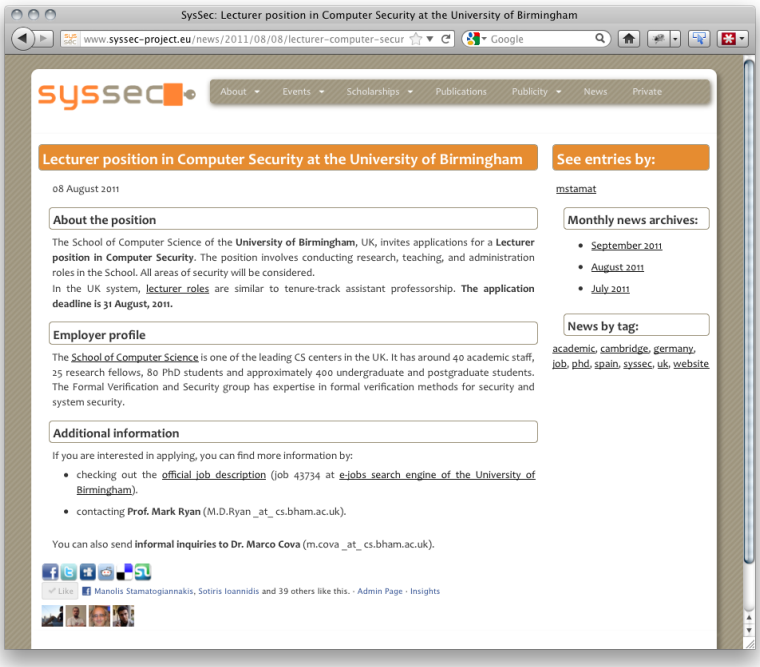

Figure 6: Website news section.

5.1.3 *News* Section

During the 1st *SysSec* workshop, we were contacted about job offers in organizations which could be of interest to the wider systems security community in Europe. To promote such job openings (see Figure 6) and encourage the mobility of systems security experts within Europe, we created the *News* section in our website.

Since the rate of job offers may not remain constant through time we plan to also use the new section for posting Call for Papers and other items that could be of interest to the community. In general, we view the *News* section as complementary to the existing Twitter-based *SysSec* news feed. The latter is better suited for pushing short announcements rather than verbose posts. As such, we already use it to advertise to our Twitter followers the job openings we announce on the website.

5.2 Visitors & Trends

The visits to the *SysSec* website per week during the first year of the project can be seen in Figure 7. We can see that a total of *9207 visits* were recorded in this period. This means that we had an approximate of *more than 25 visits per day*.

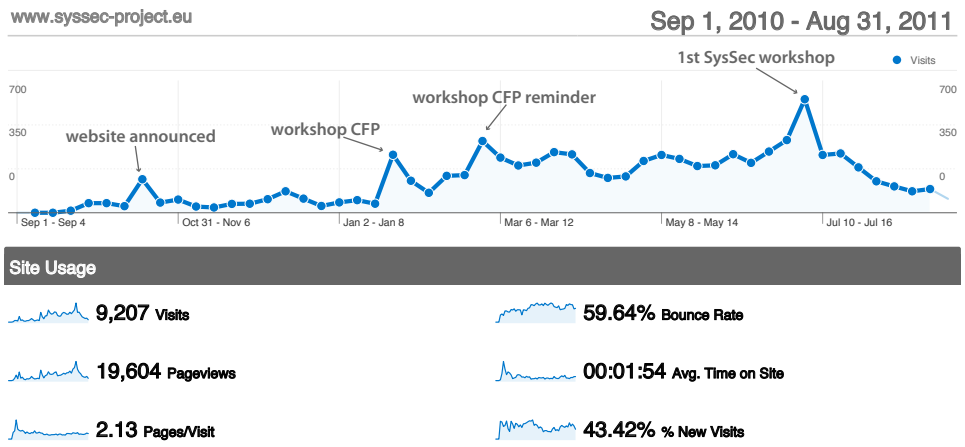

Figure 7: Visits to the *SysSec* website.

It is important to notice that the spikes in the website traffic as shown in Figure 7 coincide with important events in our dissemination activities: the public website announcement[6] and the promotion and organization of the 1st *SysSec* workshop. In between, other announcements (e.g. about the *SysSec* scholarships) helped to maintain a stable rate of visits.

[6]This came a few weeks after the website launch in order to polish the looks of the site and add more content.

The pages viewed by the visitors of our website appear in Figure 8. Naturally enough, the front page of the website and the 1st *SysSec* workshop (our most heavily promoted section) dominate the pageviews. It also seems that there is a considerable interest in our *Publications* and *Presentations* section.

Finally, we can see that there is already some interest on the *SysSec* scholarship scheme. Since we only started promoting this activity in the final quarter of this first year of *SysSec*, we expect that these pages will rank much higher next year.

5.3 Documents downloads

Perhaps more important than the statistics about the visits to the pages of our website is how much material was downloaded from it. This is because most of the output of the project is published online as pdf documents and not html pages. During this reporting period a total of **7937 copies of documents were downloaded** from the *SysSec* website, out of the **116 published documents**.

5.3.1 Downloads per document category

To gain some insight on the preferences of our website visitors we categorized the documents we made available to the following categories:

- *Publications*: *SysSec* sponsored papers published by the consortium in peer reviewed conferences and journals.
- *Presentations*: Presentations made by the consortium in events related to the project.
- *Workshop material*: Papers and presentations from the 1st *SysSec* workshop.
- *Deliverables*: The deliverables produced by the project, as outlined in the description of work document.
- *Workshop information*: Documents containing information regarding the 1st *SysSec* workshop. This includes the call for papers as well as venue-related information.

Figure 9 shows how many documents were downloaded from each category. We can see publications downloads dominating, which is good indication of the quality reseach conducted by the *SysSec* consortium. It is also a good sign that no documents category falls short in terms of downloads. One could argue that the deliverables downloads could be higher. But we

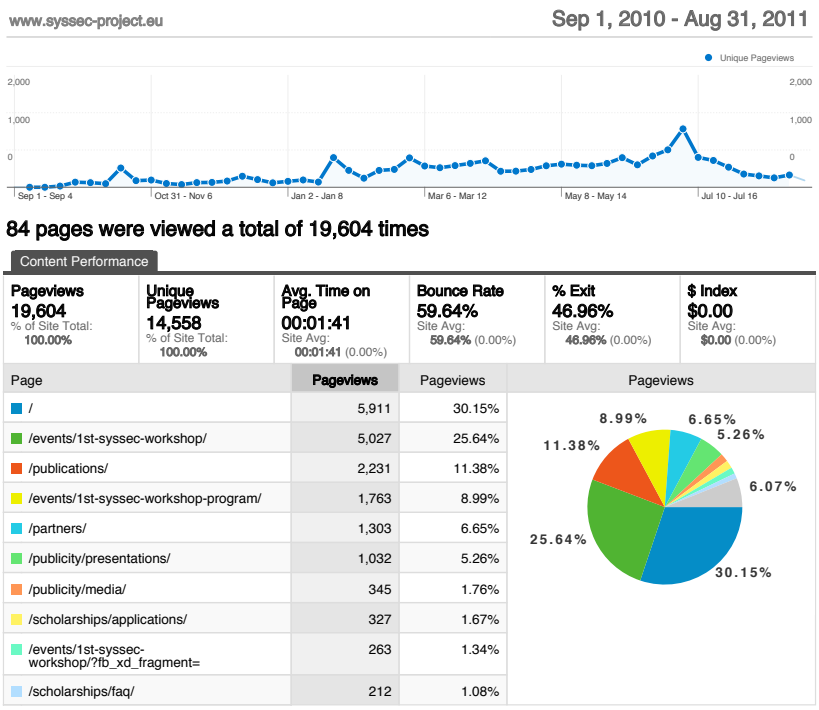

Figure 8: Unique pageviews of the website content.

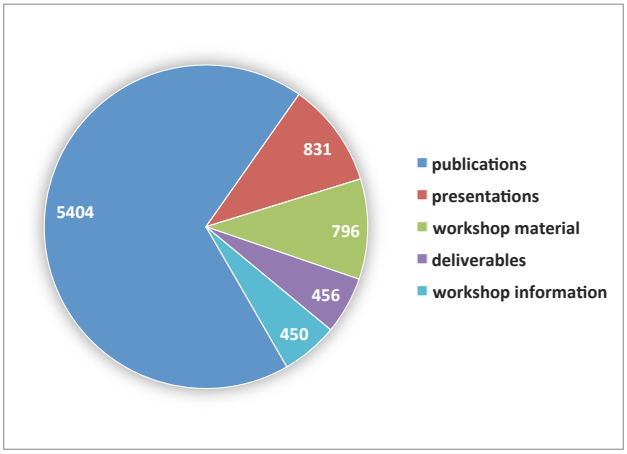

Figure 9: Downloads per document category.

consider this to be because the more interesting of the *SysSec* deliverables were yet to be published at the turn of the first year[7].

In the following figures, we present the top-5 downloaded documents of each of the first four categories[8].

5.4 Twitter and Facebook

We proceeded to create a social circle around our project and its web page, by using both a Facebook page and a Twitter account[9] linked to each other. Both were intensively used to disseminate events participations, published papers and news about SysSec. The SysSec Facebook page has 140 followers, whereas the Twitter feed is followed by 116 followers, for a total of approximately 250 contacts. The number of followers indicates a considerable interest for *SysSec* from the community, as we didn't push to gather followers, but rather let the social network effect build a community. In the first year of the project, we pushed *38 tweets* through these channels.

[7] E.g. we released the first version of the *SysSec* research roadmap (http://syssec-project.eu/roadmap1) in September 2011, the first month of the second project year.

[8] The fifth category (*workshop information*) only contains two documents.

[9] http://twitter.com/#!/syssecproject

#	Document
1	Asia Slowinska, Traian Stancescu, Herbert Bos. Howard: a dynamic excavator for reverse engineering data structures.
2	Georgios Portokalidis, Philip Homburg, Kostas Anagnostakis and Herbert Bos. Paranoid Android: Versatile Protection For Smartphones.
3	Phuong Nguyen, Wil Kling, Giorgos Georgiadis, Marina Papatriantafilou, Anh Tuan Le and Lina Bertling. Distributed Routing Algorithms to Manage Power Flow in Agent-Based Active Distribution Network.
4	Iasonas Polakis, Georgios Kontaxis, Spiros Antonatos, Eleni Gessiou, Thanasis Petsas and Evangelos P. Markatos. Using Social Networks to Harvest Email Addresses.
5	Zlatogor Minchev and Maria Petkova. Information Processes and Threats in Social Networks: A Case Study.

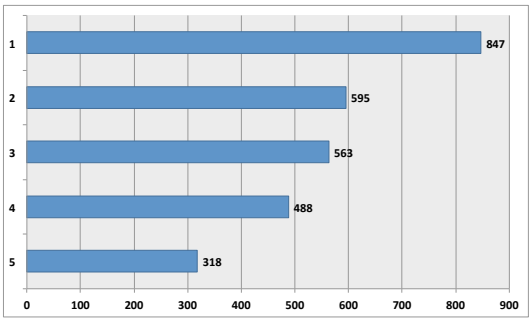

Figure 10: Top-5 downloaded *SysSec* publications.

#	Document
1	Magnus Almgren. Mitigating Cyber Attacks.
2	Evangelos Markatos. Managing Threats and Vulnerabilities in the Future Internet.
3	Evangelos Markatos. Threats and Vulnerabilities in the Future Internet: The SysSec project.
4	Evangelos Markatos. SysSec: A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet.
5	Herbert Bos. Give me back my data structures! Reverse engineering data structures from stripped binaries.

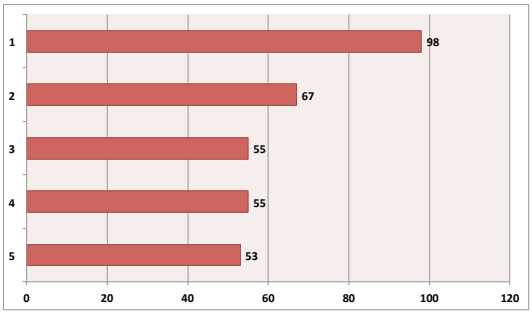

Figure 11: Top-5 downloaded *SysSec* presentations.

#	Document
1	D7.1: Review of the State-of-the-Art in Cyberattacks
2	D2.1: Web Site
3	D5.1: Survey of Research and Data Collection Initiatives in Malware and Fraud
4	D3.1: Framework for Researcher Exchanges
5	D2.3: First Public Workshop Proceedings

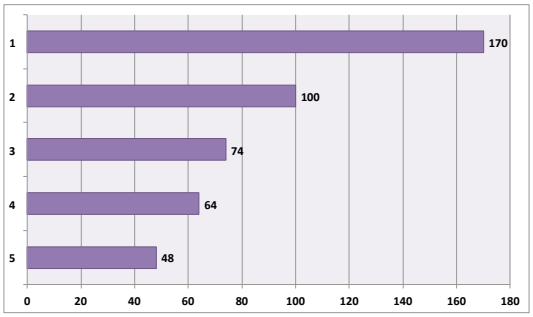

Figure 12: Top-5 downloaded *SysSec* deliverables.

#	Document
1	BiC Session Invitation.
2	BiC Session Agenda.
3	Jody Westby. Icon Legal, Regulatory, Privacy, and Political Challenges.
4	BiC Session Position Paper.
5	John C. Mallery. Straw man architecture for International data exchange and collaborative analysis.

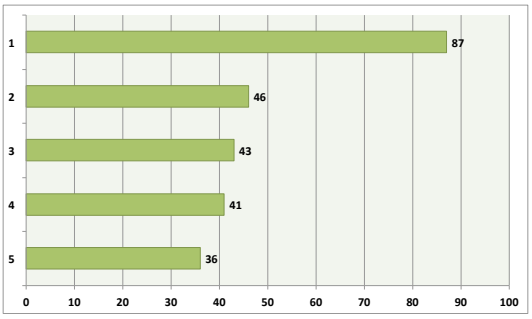

Figure 13: Top-5 downloaded *SysSec* workshop documents.