



FRAUNHOFER GROUP FOR DEFENSE AND SECURITY VVS



8TH FUTURE SECURITY SECURITY RESEARCH CONFERENCE BERLIN, SEPTEMBER 17 – 19, 2013

This conference series is hosted by the Fraunhofer Group for Defense and Security under the patronage of the German Federal Ministry of Defence (BMVg) and the German Federal Ministry of Education and Research (BMBF).

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FOREWORD

BY THE CHAIRMAN OF THE
8TH FUTURE SECURITY CONFERENCE



„Deeds undone often produce a deplorable lack of consequences“ – this phrase coined by the polish aphorist Stanislaw Jerzy Lec reminds us that future lacks regularly result from present omissions.

Since liberate and open societies are becoming increasingly sensitive to failures in safety and security, strong efforts in the present are not only a good but inevitable investment in a safe future for us and oncoming generations.

Research and the development of advanced technologies in the field of defense and security will help avoid the occurrence of severe failures endangering our society. Setting up an environment that enables intense communication and bringing together those experts that play a major role in a scientific field are appropriate means to stimulate the progress of research and technology. In this sense the Future Security Research Conference provides a unique platform for researchers, practitioners, and suppliers for safety and security issues from all over Europe as well as from other continents for the exchange of new ideas and research results.

Since 2006 the Future Security Research Conference is held on a yearly basis and has become one

of the major European events in defense and security research with highest scientific standards. My team and I are proud being tasked by the Fraunhofer Group for Defense and Security to organize the eighth conference in this series. Future Security returns to Berlin this year and my sincere thanks go to the Permanent Representation of North Rhine-Westphalia which hosts the conference for the second time now. I am especially grateful for taking over the patronage by the Federal Ministry of Defence and the Federal Ministry of Education and Research.

Many thanks go to the members of the Program Committee, who did a great job in peer-reviewing nearly 140 scientific papers. Most of all, I express my sincere thanks to all the participants for choosing Future Security Research Conference as their scientific platform and contributing to its success with their outstanding work.

As your chairman, I wish for us a successful conference filled with creative new ideas and lots of activities that will – in the sense of S. J. Lec – help produce desirable consequences.

Michael Lauster
Chairman, 8th Future Security Research Conference



FOREWORD

BY THE MINISTER FOR INNOVATION,
SCIENCE AND RESEARCH,
NORTH RHINE-WESTPHALIA

Dear Participants,

Welcome to the 2013 Future Security Research Conference. As Minister for Innovation, Science and Research, it is a pleasure to be able to host you here in the Office of the North Rhine-Westphalia Representative. I regard it as both confirmation and an expression of faith that for the second time since 2011 you have chosen our Representation Offices for this event. I wish you a smooth and successful Conference.

Then as now, the scientific exchange on security is the focal point for the Conference. Research in civil security is one of the cornerstones required for meeting the major social challenges of coming decades. This is very much true for the European Union and the Federal Republic of Germany, but especially for the State of North Rhine-Westphalia. Many projects sponsored at state level underline the importance of this research area.

Research in general and, naturally, security research as well, exist through networking by the relevant players. With its location in the heart of Europe, its excellent economic landscape and its many, internationally renowned scientific institutions, North Rhine-Westphalia is ideally geared for promoting

inner-European networking in security research. Even if the new media have greatly enlarged the possibilities for scientific exchange, the role of a large international conference remains unchallenged. Presentations and poster sessions inspire new ideas and offer starting points for joint activities. Informal talks on the fringe encourage personal contact between potential partners, offering the chance to sketch out new project concepts together – ready for realization after the Conference.

With this in mind, I wish us all a successful Conference.

Svenja Schulze
Minister for Innovation, Science and Research,
North-Rhine-Westphalia

PROGRAM COMMITTEE

- Prof. Dr. Oliver Ambacher, Fraunhofer IAF
- Dr. Marcel van Berlo, TNO - innovation for life
- Prof. Dr. Jürgen Beyerer, Fraunhofer IOSB
- Eckhart Curtius, Federal Ministry of Education and Research BMBF
- MinR Gerhard Coors, Federal Ministry of Defence BMVg
- Laurent Dubost, Thales
- Prof. Dr. Claudia Eckert, Fraunhofer AISEC
- Prof. Dr. Peter Elsner, Fraunhofer ICT
- Prof. Dr. Joachim Ender, Fraunhofer FHR
- Dr. E. Anders Eriksson, FOI - Swedish Defence Research Agency
- Prof. Dr. Hans-Joachim Grallert, Fraunhofer HHI
- Dr. Matthias Grüne, Fraunhofer INT
- Prof. Dr. Albert Heuberger, Fraunhofer IIS
- Dietmar Hilke, BDSV e.V. / Thales Deutschland
- TRDir Dr. Wolfgang Jans, Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw / WTD 71)
- Dr. Rüdiger Klein, Fraunhofer IAIS
- Christian Köhler, BDSV e.V. / IABG
- Andreas Könen, Federal Office for Information Security BSI
- OTL a. D. Rüdiger Koppe, BDSV e.V. / Astrium GmbH
- Dr. Horst Krause, Fraunhofer ICT
- Prof. Dr. Dr. Michael Lauster, Fraunhofer INT
- Dietrich Löpke, Deutsche Hochschule der Polizei DHPol (German Police University)
- Dr. Tobias Leismann, Fraunhofer VVS
- Prof. Dr. Peter Martini, Fraunhofer FKIE
- Sadhbh McCarthy, Centre for Irish and European Security CIES
- Dr. Luigi Rebuffi, European Organisation for Security EOS
- Dr. Wolfgang Rosenstock, Fraunhofer INT

- Prof. Dr. Christopher Schlick, Fraunhofer FKIE
- Prof. Dr. Viola Schmid, Technische Universität Darmstadt
- Gunther Schwarz, BDSV e.V. / Cassidian
- Dr. Sandra Scheermesser, Ministry of Innovation, Science and Research of North Rhine-Westphalia MIWF
- Dr. Françoise Simonet, Commissariat à l'Énergie Atomique CEA
- Christoph Stroschein, German European Security Association e.V. GESA
- Dr. Michael Suhrke, Fraunhofer INT
- Prof. Dr. Maurus Tacke, Fraunhofer IOSB
- Prof. Dr. Klaus Thoma, Fraunhofer EMI
- Thomas Tschersich, Deutsche Telekom AG
- Prof. Markus Ullmann, Federal Office for Information Security BSI
- Florian Walz, BDSV e.V. / MBDA Deutschland GmbH
- MinR Norbert Weber, Federal Ministry of Defence BMVg
- Prof. Dr. Marion Weissenberger-Eibl, Fraunhofer ISI
- Heiko Werner, Federal Agency for Technical Relief THW
- Dr. Karin Wey, VDI Technologiezentrum GmbH

TIMETABLE

TUESDAY, SEPTEMBER 17			
Room Time	Europa	Rheinland	Düsseldorf
10:00 - 10:45	Welcome & Opening* Michael Lauster (Fraunhofer INT), Klaus Thoma (Fraunhofer EMI / VVS), Paul Weissenberg (European Commission – DG ENTR), Stéphane Beemelmans (Federal Ministry of Defence BMVg), Wolf-Dieter Lukas (Federal Ministry of Education and Research BMBF)		
10:45 - 11:30	Keynote I: Future Security* <i>Markus Hellenthal (IBM Deutschland GmbH)</i>		
11:30 - 13:00	Panel I: Urban Resilience* <i>Chair: Klaus Thoma (Fraunhofer EMI / VVS)</i> Peter Loeffler (Siemens Building Technologies), Tjien-Khoen Liem (European Commission – DG ENTR), Michael Brooke (Association of Chief Police Officers, Secured By Design), Wolf Engelbach (Fraunhofer IAO, Fraunhofer Morgenstadt Project)		
13:00 - 14:30	Lunch		
14:30 - 16:00	Cyber Defense and Information Technology	Security Systems and Human System Integration	Maritime Security
16:00 - 16:30	Coffee Break		
16:30 - 18:00	Sensor Technology and Data Fusion	Supply Chain Security and Logistics / Urban and Land Transportation Security	Societal Dimension of Security
18:00 - 21:00	Poster Session & Welcome Reception		

* Takes place in Room Europa and will be transmitted into Room Rheinland

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WEDNESDAY, SEPTEMBER 18			
Time \ Room	Europa	Rheinland	Düsseldorf
8:30 - 9:00	Keynote II: Strategic Capability Planning & Innovation* <i>Robert Bach (Center for Homeland Defense and Security, Naval Postgraduate School)</i>		
9:00 - 10:30	Panel II.1: Detection of Explosives – Gaps and Challenges* <i>Chair: Horst Krause (Fraunhofer ICT)</i> Achim Friedl (Federal Ministry of the Interior BMI), Jaap de Ruiter (TNO – innovation for life), Didier Poullain (CEA - Commissariat à l'énergie atomique et aux énergies alternatives), Francois Mesqui (Morpho)		
10:30 - 11:00	Coffee Break		
11:00 - 12:30	Panel II.2: Electromagnetic Threats and Countermeasures* <i>Chair: Frank Sabath (Bundeswehr Research Institute for Protective Technologies and CBRN Protection WIS)</i> Mats Bäckström (Saab Aeronautics/Royal Institute of Technology KTH), Richard Hoad (QinetiQ), Michael Suhrke (Fraunhofer INT)		
12:30 - 14:00	Lunch		
14:00 - 15:30	CBRNE Threats and Countermeasures	Border Security / Aviation Security	Invited Session: Design, Analysis and Integration of Secure Systems <i>Chair: Jörn Müller-Quade (Karlsruhe Institute of Technology KIT - KASTEL)</i>
15:30 - 16:00	Coffee Break		
16:00 - 18:00	Security of Infrastructures	Electromagnetic Threats and Countermeasures	
18:00 - 18:30	Bus Shuttle to Dinner Location		
18:30 - 23:00	Conference Dinner		

* Takes place in Room Europa and will be transmitted into Room Rheinland

TIMETABLE

THURSDAY, SEPTEMBER 19			
Time \ Room	Europa	Rheinland	Düsseldorf
8:30 - 9:00	Keynote III.1: Where Synergy makes a Difference – European Security and Defence Research* <i>Christian Bréant (European Defence Agency EDA)</i>		
9:00 - 10:30	Panel III.1: Technology Foresight and Security* <i>Chair: Michael Lauster (Fraunhofer INT)</i> Jörg Wellbrink (Federal Ministry of Defence BMVg), Richard Biers (DSTL – S&T Futures and Innovation), Michel Rademaker (The Hague Centre for Strategic Studies HCSS), Christoph Henseler (nexus Institute for Cooperation Management and Interdisciplinary Research)		
10:30 - 11:00	Coffee Break		
11:00 - 11:30	Keynote III.2: Crisis Management – Not an Everyday Challenge* <i>Albrecht Broemme (Federal Agency for Technical Relief THW)</i>		
11:30 - 13:00	Panel III.2: Security Industry Policy * <i>Chair: Tjien-Khoen Liem (European Commission – DG ENTR)</i> Alina Iatan (CEN - European Committee for Standardization), Luigi Rebuffi (EOS – European Organisation for Security), Krzysztof Samp (ITTI – e-technologies & business), Christoph Stroschein (German Association for Systeminnovation GESI mbH)		
13:00 - 14:00	Lunch		
14:00 - 15:30	Planning and Innovation Support / Technology Foresight	Crisis Management	

* Takes place in Room Europa and will be transmitted into Room Rheinland

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TUESDAY, SEPTEMBER 17

10:00 - WELCOME & OPENING

10:45



Klaus Thoma

Fraunhofer EMI / VVS

Chairman of the Group



Michael Lauster

Fraunhofer INT

Conference Chairman Future Security 2013



Paul Weissenberg

European Commission – DG ENTR

Dr. Paul Weissenberg studied law at the Universities of Würzburg and Freiburg (Germany), followed by post-graduate studies in European law in Geneva (Switzerland) and by a PhD (Docteur en droit) in European law at the University of Geneva.

From 2005 to 2010 he was in charge of the Directorate for Aerospace, GMES (earth observation), Security and Defence and was appointed as the Coordinator for Aerospace, GMES, Security and Defence within DG Enterprise and Industry. In 2011, he became responsible, as Deputy Director General, for the Galileo programme and for the Directorate for Space, Security, Defence and Copernicus. Before joining the European Commission he worked in the Cabinet of the Minister of Economics of Germany. He started his career at the Ministry of Economics working in the department dealing with East-West economic relations and competition policy.

Mr. Weissenberg was also posted to the German Permanent Representation to the OCDE in Paris and to the Chambers of Commerce in La Paz and Toronto.



Stéphane Beemelmans

Federal Ministry of Defence BMVg

1983-1989: Law studies at the University of Bonn

1994-1997: Desk Officer for European affairs Saxony State Ministry
for Social Affairs, Health and Family

1997-1998: Seconded to the Representation of the Free State of Saxony to the
Federation, Desk Officer for European affairs and representative of Saxony to the
Bundesrat Committee on the Affairs of the European Union

2005-2009: Directeur de Cabinet of the Head of the Federal Chancellery, Berlin Head of
Political Staff, Federal Ministry of the Interior

2010-2011: Head, Directorate-General G: Policy Planning; European and International Affairs;
New Federal States, Federal Ministry of the Interior, Berlin

03-16-2011: Secretary of State, Federal Ministry of Defence, Berlin



Wolf-Dieter Lukas

Federal Ministry of Education and Research BMBF

Prof. Lukas has been Director-General for Key-Technologies – Research for Innovation at the Federal Ministry of Education and Research since 2005. His fields of work include innovation management, general innovation support (the Federal Government's High-Tech Strategy, particularly in the field of key technologies), information and communication technology, nanotechnology and security research. Professor Lukas graduated from Free University Berlin and earned his PhD in Physics at Technical University Darmstadt. He joined the BMBF in 1985, where he has since held different positions. He is honorary professor at Technical University Berlin and member of the Board of Trustees of the Max Planck Institute for Solid State Research, Stuttgart, as well as of the Max-Planck Institut für Informatik in Saarbrücken and the Alcatel-Lucent Stiftung for Communications Research, Stuttgart.

10:45 - KEYNOTE I
11:30 FUTURE SECURITY



Markus Hellenthal
IBM Deutschland GmbH

Since January 2013, Dr. Markus Hellenthal, age 55, is Vice President of IBM and managing director for the German public sector; as of April 2013 he also leads the Austrian and Swiss public sectors. Prior to that, he was Senior Vice President of Thales and head of the German sector, responsible for 7,500 employees and 1,4 Billion Euros of revenue in Germany and in export. He was a member of the supervisory boards of ESG GmbH, Diehl AirCabin GmbH and Diehl Aerospace GmbH.

Prior to this, he was Senior Vice President of EADS, where he founded and led the global business unit civil security systems. Before that, he was also a partner at Accenture for clients in the public sector both nationally and internationally. From 1983 until 1997 he was an administrative and police officer in north rhine-westphalia as well as in the federal administration, where he was appointed director of the federal border guard and head of division for the border police and aviation security in the Federal Ministry of the Interior.

For more than 10 years, he has been attending to European and German security research, advising the German federal ministry of economics and technology. Dr. Hellenthal has studied law and management in Cologne, Speyer and St. Gallen. In a multitude of publications he has taken a stand concerning diverse potentials for innovation through information- and communication technologies in the public sector.

11:30 - PANEL I
13:00 URBAN RESILIENCE

Chair:

Klaus Thoma

Fraunhofer EMI / VVS

Attendees:

Peter Loeffler

Siemens Building Technologies

Tjien-Khoen Liem

European Commission – DG ENTR

Michael Brooke

Association of Chief Police Officers, Secured By Design

Wolf Engelbach

Fraunhofer IAO, Fraunhofer Morgenstadt Project

14:30 - SESSION 1 (ROOM EUROPA)
16:00 CYBER DEFENSE AND INFORMATION TECHNOLOGY

Chairs: Andreas Könen (Federal Office for Information Security BSI, Germany);
Claudia Eckert (Fraunhofer AISEC, Germany)

Value-chain oriented identification of ERP-system supported End-to-End processes in the light of the use of Cloud Services

Sachar Paulus (FH Brandenburg, Germany); Ute Riemann (SAP Deutschland AG & CO. KG, Germany)

File Carving for Fragmented JPEG Files

Martin Lambertz (Fraunhofer FKIE, Germany); Rafael Uetz (Fraunhofer FKIE, Germany);
Elmar Gerhards-Padilla (Fraunhofer FKIE, Germany)

Search and Detection of Suspicious Social Media Web Pages

Ravi Coote (Fraunhofer FKIE, Germany); Kellyn Rein (Fraunhofer FKIE, Germany); Ulrich Schade (Fraunhofer FKIE, Germany)

A Generic Framework for Tracking of Peer-to-Peer Botnets

Julian Dammann (Fraunhofer FKIE, Germany)

14:30 - SESSION 2 (ROOM RHEINLAND)

**16:00 SECURITY SYSTEMS AND HUMAN
SYSTEM INTEGRATION**

Chairs: Thomas Weise (BDSV e. V. - Rheinmetall AG, Germany);
Jürgen Beyerer (Fraunhofer IOSB, Germany)

**Towards Situational Awareness Systems based on Semi-Stationary Multi-
Camera Components**

David Münch (Fraunhofer IOSB, Germany); Stefan Becker (Fraunhofer IOSB, Germany);
Ann-Kristin Grossefingler (Fraunhofer IOSB, Germany); et al.

3D Face Capture for Rapid Person Authentication

Markus Ketterer (Fraunhofer HHI, Germany); David Blumenthal-Barby (Fraunhofer HHI &
Humboldt University, Germany); Wolfgang Paier (Fraunhofer HHI, Germany); et al.

Elaborated Search for OSINT

Albert Pritzkau (Fraunhofer FKIE, Germany); Sandra Noubours (Fraunhofer FKIE,
Germany); Ulrich Schade (Fraunhofer FKIE, Germany); et al.

Gaze-based Interaction for Real-Time Video Surveillance Systems

Jutta Hild (Fraunhofer IOSB, Germany); Yvonne Fischer (Karlsruhe Institute of
Technology (KIT), Germany); Elisabeth Peinsipp-Byma (Fraunhofer IOSB, Germany); et al.

14:30 - SESSION 3 (ROOM DÜSSELDORF)

16:00 MARITIME SECURITY

Chairs: Wolfgang Jans (Bundeswehr Technical Center for Ships and Naval Weapons, Maritime Technology and Research (WTD 71), Germany);
Wolfgang Koch (Fraunhofer FKIE, Germany)

ECSIT - Impacts of the US 100% Scanning Law on the Bremerhaven Container Terminals

Frank Arendt (Institute of Shipping Economics and Logistics (ISL), Germany); Susanne Ficke (Institute of Shipping Economics and Logistics (ISL), Germany); Matthias Dreyer (Institute of Shipping Economics and Logistics (ISL), Germany)

High-Energy 3-D X-ray Tomography for Container Inspection

Theobald Fuchs (Fraunhofer EZRT, Germany); Frank Sukowski (Fraunhofer IIS, Germany); Christian Schorr (Fraunhofer IZFP, Germany); et al.

Integrated Structures for Maritime Security: Requirements, Concepts, Solutions

Dietmar Hilke (Thales Defence & Security Systems, Germany); Juliane Ulbricht (BDSV e.V. - Federation of German Security and Defense Industries, Germany)

How to improve Maritime Situational Awareness using Piracy Attack Patterns

Tsvetelin Polomski (Christian-Albrechts-Universität zu Kiel, Germany); Hans-Joachim Klein (Christian-Albrechts-Universität zu Kiel, Germany)

16:30 - SESSION 4 (ROOM DÜSSELDORF)

18:00 SOCIETAL DIMENSION OF SECURITY

Chairs: Sadhbh McCarthy (Centre for Irish and European Security (CIES), Ireland);
Antje Bierwisch (Fraunhofer ISI, Germany)

Resilience as an Innovation Policy Objective:

Blind Spots and Untapped Potential for Security Research

Georgios Kolliarakis (University of Frankfurt & Cluster of Excellence Normative Orders,
Germany)

Innovation in Security Organisations - Introducing the InnoSec project

Milos Jovanovic (Fraunhofer INT, Germany); Britta Pinzger (Fraunhofer INT, Germany)
representing the InnoSec consortium

Strategic Resilience as socio-technological Design Paradigm

Florian Fritz (Institute for Sociology of Law and Criminology, Austria)

**The EU Regulatory and Policy Framework on Emerging Security Technologies
and the „Fundamental Rights Factor“**

Matteo Bonfanti (Center for Science, Society and Citizenship CSSC, Italy)

16:30 - SESSION 5 (ROOM EUROPA)

18:00 SENSOR TECHNOLOGY AND DATA FUSION

Chairs: Peter Kaul (Institute of Detection Technology, Bonn-Rhein-Sieg University of
Applied Sciences, Germany); Wolfgang Schade (Fraunhofer HHI-FS, Germany)

Emitter Localisation in Urban Scenarios

Felix Govaers (Fraunhofer FKIE / University of Bonn, Germany); Christoph Degen (Fraunhofer FKIE, Germany); Klaus Wild (Fraunhofer FKIE, Germany); et al.

ELECTRA-X: An Enhanced Indoor Real Time Localization System with Telepresence, Telemetry and Communication capabilities for usage in First Responder operations

George E. Vastianos (National Centre of Scientific Research Demokritos, Greece); Olga Segou (National Centre of Scientific Research Demokritos, Greece); Konstantinos Dimitros (National Centre of Scientific Research Demokritos, Greece); et al.

Stand-off Detection for Constituent Analysis of Powder Samples Using Raman Spectroscopy

Oliver Lischtschenko (OceanOptics GmbH, Germany); Michael Matthews (Ocean Optics EMEA, Germany); Nick Barnett (Ocean Optics EMEA, United Kingdom)

Sensor fusion for an Integrated Video and Radio Positioning/Tracking System

Vit Libal (Honeywell, spol sro, Czech Republic); Christian Beder (Cork Institute of Technology, Ireland); Martin Klepal (Cork Institute of Technology, Ireland); et al.

16:30 - SESSION 6 (ROOM RHEINLAND)
18:00 SUPPLY CHAIN SECURITY AND LOGISTICS
// URBAN AND LAND TRANSPORTATION
SECURITY

Chairs: Jürgen Krieger (Federal Highway Research Institute (BASt), Germany); Jürgen Hupp (Fraunhofer IIS, Germany)

Methodology for the Assessment of Transport Infrastructure

Harald Kammerer (ILF Consulting Engineers, Austria); Jakob Haardt (The Federal Highway Research Institute, Germany)

Security of Road Transport Networks - Identifying and Assessing Critical Road Infrastructure

Ingo Kaundinya (Federal Highway Research Institute, Germany); Georg Mayer (PTV Group, Germany); Samuel Rothenpieler (Federal Highway Research Institute, Germany)

Modeling and Analyzing Secure Business Processes in Logistics

Carsten Böhle; Bernd Hellingrath; Michael Middelhoff (University of Münster, Germany); et al.

Intelligent Surveillance for Managing Emergencies in Public Transport

Fivos Andritsos (European Commission & Joint Research Centre (JRC), European Union)

Prioritization of Security Measures against Terrorist Threats to Public Rail Transport Systems using a Scenario-Based Multi-Criteria Method and a Knowledge Database

Lijun Lin (Karlsruhe Institute of Technology (KIT), Germany); Florian Brauner (Cologne University of Applied Sciences, Germany); et al.

18:00 - POSTER SESSION & WELCOME RECEPTION
21:00

WEDNESDAY, SEPTEMBER 18

08:30 - KEYNOTE II

**09:00 STRATEGIC CAPABILITY PLANNING
& INNOVATION**



Robert Bach

**Center for Homeland Defense and Security,
Naval Postgraduate School**

Dr. Robert Bach serves on the faculty of the Center for Homeland Defense and Security, Naval Postgraduate School, California. He teaches courses on strategic planning, border and transportation security, community resilience, and executive leadership. He currently coordinates for the Federal Emergency Management Administration (FEMA) an international policy leaders forum on community resilience.

Dr. Bach was a tenured faculty member at Binghamton University in New York, and was a senior fellow at the Carnegie Endowment for International Peace in Washington, D.C. He researched border issues, international migration and refugee movements, and human security.

From 1993 to 2000, he served in the U.S. Department of Justice as the primary policy and planning official for the Immigration and Naturalization Service. He led strategic initiatives on the U.S.-Mexico and U.S.-Canadian borders, and worked with the National Security Council and Domestic Policy Council on trans-border security and commercial issues. After 9/11/01, Dr. Bach returned to public service to assist the Office of National Risk Assessment in the Transportation Security Administration, and subsequently to help start the Office of Screening Coordination in the Department of Homeland Security. He worked on terrorist screening approaches and on privacy and information security issues. He currently advises the Kiernan Group, a security and technologies strategies firm.

09:00 - PANEL II.1

**10:30 DETECTION OF EXPLOSIVES –
GAPS AND CHALLENGES**

Chair:

Horst Krause

Fraunhofer ICT

Attendees:

Achim Friedl

Federal Ministry of the Interior BMI

Jaap de Ruiter

TNO – innovation for life

Didier Poullain

CEA - Commissariat à l'énergie atomique et aux énergies alternatives

Francois Mesqui

Morpho

11:00 - PANEL II.2

**12:30 ELECTROMAGNETIC THREATS
AND COUNTERMEASURES**

Chair:

Frank Sabath

Bundeswehr Research Institute for
Protective Technologies and CBRN Protection WIS

Attendees:

Mats Bäckström

Saab Aeronautics / Royal Institute of Technology KTH

Richard Hoad

QinetiQ

Michael Suhrke

Fraunhofer INT

14:00 - SESSION 7 (ROOM EUROPA)

15:30 CBRNE THREATS AND COUNTERMEASURES

Chairs: Paolo Peerani (European Commission, Joint Research Centre (JRC) - Institute for Transuranium Elements, Italy); Wolfgang Rosenstock (Fraunhofer INT, Germany)

Hyperspectral Image Analysis for Standoff Detection of Explosives

Jan Jarvis (Fraunhofer IAF, Germany); Frank Fuchs (Fraunhofer IAF, Germany); Stefan Hugger (Fraunhofer IAF, Germany); et al.

Detection of Explosives in Sewage Water for the Localisation of Illicit Bomb Factories in Urban Areas

Frank Schnürer (Fraunhofer ICT, Germany); Moritz Heil (Fraunhofer ICT, Germany); Angelika Eberhardt (Fraunhofer ICT, Germany); et al.

MULTIBIODOSE: New Development of Multi-Disciplinary Biodosimetric Tools to manage a High Scale Radiological Casualty

Horst Romm (BfS, Germany); Ainars Bajinskis (Stockholm University, Sweden); Ursula Oestreicher (BfS, Germany); et al.

Illicit Trafficking Radiation Assessment Program (ITRAP+10)

Said Arousahl (European Commission, Joint Research Centre (JRC), Belgium); Willem Janssens; Montserrat Marin Ferrer (ALL: European Commission, Joint Research Centre (JRC) - Institute for Transuranium Elements, Italy)

14:00 - SESSION 8 (ROOM RHEINLAND)

15:30 BORDER SECURITY // AVIATION SECURITY

Chairs: Robert Bach (Center for Homeland Defense and Security, Naval Postgraduate School, USA); Peter Elsner (Fraunhofer ICT, Germany)

Smart Control and Detection Feedback for a Multi-Robot Border Control System

Thomas Remmersmann (Fraunhofer FKIE, Germany); Alexander Tiderko (Fraunhofer FKIE, Germany); Ulrich Schade (Fraunhofer FKIE, Germany); et al.

Key Technologies for Enhancing Security and User Satisfaction at Airports

Markus Kommenda (AIT - Austrian Institute of Technology GmbH, Austria); Andreas Kriechbaum (AIT - Austrian Institute of Technology GmbH, Austria); Branislav Micusik (AIT - Austrian Institute of Technology, Austria); et al.

Towards User Requirements for Harmonised Automated Border Control Gates

Laura Salmela; Toni Ahonen (ALL: VTT Technical Research Centre of Finland, Finland); Csaba Beleznai (AIT - Austrian Institute of Technology, Austria); et al.

EU Port Security & Growth

Fivos Andritsos (European Commission, Joint Research Centre (JRC), European Union)

14:00 - SESSION 9 (ROOM DÜSSELDORF)

15:30 INVITED SESSION: DESIGN, ANALYSIS AND INTEGRATION OF SECURE SYSTEMS

Chairs: Jörn Müller-Quade (Karlsruhe Institute of Technology (KIT) Institute of Cryptography and Security (IKS), European Institute of System Security (EISS), Germany); Jürgen Beyerer (Fraunhofer IOSB, Germany)

Welcome: „CISPA, EC-SPRIDE and KASTEL -- Three Centers of Excellence for Cyber Security“

Jörn Müller-Quade

Reducing Human Factors in Software Security Architectures

Eric Bodden; Ben Hermann; Johannes Lerch; Mira Mezini (ALL: EC SPRIDE – European Center for Security and Privacy by Design, TU Darmstadt & Fraunhofer SIT, Germany)

Advances in Mobil Security

Sven Bugiel; Erik Derr; Sebastian Gerling; Christian Hammer (ALL: CISPA - Center for IT-Security, Privacy and Accountability, Saarland University, Germany)

Privacy Preserving Surveillance and the Tracking Paradox

Simon Greiner; Bernhard Beckert (KASTEL - Competence Center for Applied IT Security Technology, Karlsruhe Institute of Technology (KIT), Germany); Pascal Birnstill; Erik Krempel; Jürgen Beyerer (Fraunhofer IOSB, Germany)

16:00 - SESSION 10 (ROOM RHEINLAND)

18:00 ELECTROMAGNETIC THREATS AND COUNTERMEASURES

Chairs: Rainer Krug (Bundeswehr Technical Center for Information Technology and Electronics (WTD 81), Germany); Michael Suhrke (Fraunhofer INT, Germany)

Invited Talk: Intentional EMI- Experiences from Research, Testing and Vulnerability Assessments in Sweden

Mats Bäckström (Royal Institute of Technology (KTH) & Saab Aeronautics, Sweden)

HPEM Susceptibility Testing Using a Special Infrastructure Facility

Ronald Rambousky; André Bausen (ALL: Bundeswehr Research Institute for Protective Technologies and CBRN Protection (WIS), Germany); Lars Ole Fichte (Helmut-Schmidt-Universität, Germany); et al.

High Power Electromagnetics Technology (HPEM) - Protection and Application -

Robert Stark; Frank Sonnemann; Juergen Urban (ALL: DIEHL BGT Defence, Germany); et al.

EMI Effects of a TETRA Base Station as an Example of a Critical Infrastructure

Jürgen Schmitz; Michael Camp; Markus Jung (ALL: Rheinmetall Waffe Munition GmbH, Germany)

HPM Detector System with Frequency Identification

Christian Adami; Christian Braun; Peter Clemens (ALL: Fraunhofer INT, Germany); et al.

Electromagnetic Security and Critical National Infrastructure (CNI)

Richard Hoad; Barney Petit ; Colin Harper (ALL: QinetiQ, United Kingdom)

The Threat of High Power Microwaves to Infrastructure

Libor Palisek (Vojensky Technicky Ustav, Czech Republic)

16:00 - SESSION 11 (ROOM EUROPA)

18:00 SECURITY OF INFRASTRUCTURES

Chairs: Norbert Gebbeken (Universität der Bundeswehr München, Germany); Klaus Thoma (Fraunhofer EMI / VVS, Germany)

Safer Cities - Robustness of Urban Infrastructure Regarding Explosive Devices

Ingo Müllers (Schuessler-Plan Ingenieurgesellschaft mbH, Germany); Kai Fischer (Fraunhofer EMI, Germany); Assad Nawabi (Schuessler-Plan Engineering Consultants, Germany)

Recommendations for European Standards on Critical Built Infrastructure under Malicious (Explosive) Threats

Markus Nöldgen (Cologne University of Applied Sciences - CUAS, Germany); Andreas Bach (Schuessler-Plan Ingenieurgesellschaft mbH, Germany)

A Holistic Approach to Modeling, Simulation, and Analysis of Security in Modern Societies

Rüdiger Klein; Uwe Beyer; Kai Pervözl; Alexander Zimmermann (ALL: Fraunhofer IAIS, Germany)

Wireless Sensor Networks using Robust Antenna Packages for Infrastructure Security

Robert Tannhaeuser (University of Freiburg, Germany); Jean-Michel Boccard (IMTEK - Institute for Microsystem Technology, Germany); Dominik J. Schott (University of Freiburg, Germany); et al.

Security for Bridges and Tunnels - A Strategy for Selecting Protection Measures

Eva Hamann (Federal Highway Research Institute, Germany); Alexander Dahl (PTV GROUP, Germany); et al.

RiKoV - Strategic Planning and Intelligent Scenario Development for the Security of Public Transport - Risk analysis of terrorist threats to rail-bound public transportation with efficient measures

Stefan Pickl; Silja Meyer-Nieberg; Erik Kropat (ALL: UniBw Munich & COMTESSA, Germany); et al.

CONFERENCE DINNER

WEDNESDAY, SEPTEMBER 18

18:30 - 23:00

BUS SHUTTLE TO DINNER LOCATION

The shuttle busses will stop at the junction Hiroshimastraße/ Reichpietschufer (see map venue) and bring you to the dinner location „Wasserwerk“.

Please go to the bus stop **immediately** after the respective lecture session.

The departure after the Conference Dinner is for you to arrange individually.

DINNER LOCATION WASSERWERK

Historical Pump Station

Wasserwerk Berlin

Hohenzollerndamm 208

10713 Berlin

8TH FUTURE SECURITY
SECURITY RESEARCH CONFERENCE
BERLIN, SEPTEMBER 17 – 19, 2013



THURSDAY, SEPTEMBER 19

08:30 - KEYNOTE III.1

**09:00 WHERE SYNERGY MAKES A DIFFERENCE
– EUROPEAN SECURITY & DEFENCE RESEARCH**



Christian Bréant
European Defence Agency EDA

Christian BREANT has been first appointed by J. Solana in May 2008, EDA Director for Research & Technology, and for a second mandate by C. Ashton in November 2011. From February 2005, he was Deputy Director for “technology strategy” at the Directorate for Force System and Strategies for Industry, Technology and Cooperation, and Research and Technology Director for Defence and Security of the “Délégation générale pour l’armement”. Aged 57, he is a graduate from Ecole Polytechnique (1976) and PhD scientist in Laser Physics from Paris University. In 1993, he was appointed to the office of the National Armament Director (NAD), in charge of the development of the Defence Scientific Campus in Palaiseau. In 1994, he became Deputy Head of the Directorate for Research and Technology and Assistant to the NAD’s Chief Scientist Adviser. In 1997, he joined the Directorate for Cooperation and Industrial affairs (DCI) in Paris as Deputy Director in charge of industrial and economic analyses. In 2000, he was appointed Managing Director of the Defence Analysis Centre (CAD) in charge of operational analysis and simulation for the preparation of the future defence systems. In 2004, he became Director of the common technologies department and in charge of technological prospective and preparation of the technical policies for DGA. In March 2005 Christian Bréant was elected a member of the French Academy of Technologies. In 2006 and 2007, he was a member of the European Security Research Advisory Board (ESRAB) of the European Commission and presently member of ESRIF. He has been awarded the distinctions of Officier de la Légion d’Honneur and Officier de l’Ordre National du Mérite.

09:00 - PANEL III.1

**10:30 TECHNOLOGY FORESIGHT AND
SECURITY**

Chair:

Michael Lauster

Fraunhofer INT

Attendees:

Jörg Wellbrink

Federal Ministry of Defence BMVg

Richard Biers

DSTL – S&T Futures and Innovation

Michel Rademaker

The Hague Centre for Strategic Studies HCSS

Christoph Henseler

nexus Institute for Cooperation Management and Interdisciplinary Research

11:00 - KEYNOTE III.2

**11:30 CRISIS MANAGEMENT –
NOT AN EVERYDAY CHALLENGE**



Albrecht Broemme

Federal Agency for Technical Relief THW

1972-1977:	TU Darmstadt Dipl. Ing. Elektrotechnik
1977-1990:	Berliner Feuerwehr
1991-1992:	Senatsverwaltung für Inneres, Berlin
1992-2006:	Berliner Feuerwehr
Since 2007:	International Search and Rescue Advisory Group of the UN, Vice Chair/ Chair regional group.

Albrecht Broemme has been Chairman of the Federal Agency for Technical Relief THW since 2006. He holds a diploma in electrical engineering from the TU Darmstadt. A member of the Berlin Fire Brigade since 1977, he served as its leader from 1992 until 2006. He worked for the Senate Administration for Internal Affairs from 1991 to 1992. Since 2007, he is Vice Chair of the International Search and Rescue Advisory Group of the UN, as well as Chair of the regional group Germany.

11:30 - PANEL III.2
13:00 SECURITY INDUSTRY POLICY

Chair:

Tjien-Khoen Liem

European Commission – DG ENTR

Attendees:

Alina Iatan

CEN - European Committee for Standardization

Luigi Rebuffi

EOS – European Organisation for Security

Krzysztof Samp

iTTi – e-technologies & business

Christoph Stroschein

German Association for Systeminnovation GESI mbH

14:00 - SESSION 12 (ROOM RHEINLAND)

15:30 CRISIS MANAGEMENT

Chairs: E. Anders Eriksson (Swedish Defence Research Agency (FOI), Sweden);
Merle Missoweit (Fraunhofer INT, Germany)

Improving Volunteer Management in Crisis Response

Maike Vollmer (United Nations University - Institute for Environment and Human Security, Germany); Wolf Engelbach (Fraunhofer IAO & University Stuttgart IAT, Germany)

Results of the FASTID project

Stephen Crabbe (Crabbe Consulting Ltd, Germany); Peter Ambs (The International Criminal Police Organization - INTERPOL, France); Sue Black (University of Dundee, United Kingdom); et al.

Requirements for IT-Support in Practical Training Exercises

Robin Marterer (University of Paderborn, Germany); Therese Friberg (University of Paderborn, Germany); Jens Pottebaum (University of Paderborn, Germany)

The Risk of communicating Risk:

Seven mathematical concepts that are error-prone in risk communications

Stephan Lechner (European Commission, Joint Research Center (JRC), Italy)

14:00 - SESSION 13 (ROOM EUROPA)

**15:30 PLANNING AND INNOVATION SUPPORT
// TECHNOLOGY FORESIGHT**

Chairs: Jörg Wellbrink (BMVg Directorate-General for Planning - Division Future Development, Germany); Michael Lauster (Fraunhofer INT, Germany)

COPRA Aviation Security Research Roadmap

Marcel Paul Hasberg (TNO, The Netherlands); Tobias Leismann (Fraunhofer EMI, Germany); Imelda van de Voorde (TNO, The Netherlands); et al.

**Identification of Emerging Technologies with Security Implications:
Experience and Results of the ETCETERA Project**

Guido Huppertz (Fraunhofer INT, Germany)

Identification of Critical Technologies - a Methodology

Steven J. Savage (Swedish Defence Research Agency (FOI) & Royal Institute of Technology (KTH), Sweden); Malek Khan (Swedish Defence Research Agency (FOI), Sweden)

Measuring the Values of Security

Reinhard Hutter (CESS - Centre for European Security Strategies, Germany);
Christian Blobner (Fraunhofer IFF, Germany)

POSTERS

POSTER SESSION & WELCOME RECEPTION

TUESDAY, SEPTEMBER 17

18:00-21:00

- P 1** **Adaptive Approaches For Quantitative Risk Assessment & Controlling in Logistics Chains**
Jan Seitz (University of Applied Sciences Wildau & Research Unit Secure Object Identity, Germany); et al.
- P 2** **Usage Controlled Video Surveillance - Revealing its Potentials for Privacy**
Pascal Birnstill (Fraunhofer IOSB & Karlsruhe Institute of Technology (KIT), Germany)
- P 3** **Integration of Customers' Perception of Security and Uncertainties into Risk Management Concepts for Public Transportation Providers**
Florian Brauner (Cologne University of Applied Sciences, Germany); Frank Fiedrich (University of Wuppertal, Germany); Alex Lechleuthner (Cologne University of Applied Sciences, Germany)
- P 4** **Wireless self-organised electrorheological Micro Sensor System WOERMS**
Andreas Breitfeld (Helmut-Schmidt-University Hamburg, Germany); Holger Freyer (Helmut-Schmidt-University Hamburg, Germany)
- P 5** **UAS Contribution to Future Maritime Security**
F. Bruni (Alenia Aermacchi, Italy); M. Fracchia (Alenia Aermacchi, Italy); R. Prete (Alenia Aermacchi, Italy); et al.
- P 6** **Results of the ETCETERA Project**
Joachim Burbiel (Fraunhofer INT, Germany); Ruth Schietke (Fraunhofer INT, Germany)

- P 7** **Electromagnetic Interaction Studies of a Generic IT System**
Michael Camp (Rheinmetall Waffe Munition GmbH, Germany); Jürgen Schmitz (Rheinmetall Waffe Munition GmbH, Germany); Markus Jung (Rheinmetall Waffe Munition GmbH, Germany); et al.
- P 8** **Underwater Sensor Networks and Their Application in Antisubmarine Warfare**
Frank Ehlers (Bundeswehr Technical Center for Ships and Naval Weapons, Maritime Technology and Research (WTD 71), Germany)
- P 9** **SCINTILLA - Scintillation Detectors and new Technologies for Nuclear Security**
Hermann Friedrich (Fraunhofer INT, Germany); Sebastian Chmel (Fraunhofer INT, Germany); Wolfgang Rosenstock (Fraunhofer INT, Germany); et al.
- P 10** **Standoff Detection of Explosives with Infrared Laser Spectroscopy**
Frank Fuchs (Fraunhofer IAF, Germany); Stefan Hugger (Fraunhofer IAF, Germany); Jan Jarvis (Fraunhofer IAF, Germany); et al.
- P 11** **Adaptive Approaches For Quantitative Risk Assessment & Controlling in Logistics Chains**
Frank Gillert (University of Applied Sciences Wildau & Research Unit Secure Object Identity, Germany); Jan Seitz (University of Applied Sciences Wildau & Research Unit Secure Object Identity, Germany); Bertram Meimbresse (University of Applied Sciences Wildau & Research Unit Transport Logistics, Germany)
- P 12** **Robust WS-Notification through P2P-Technology**
Tobias Ginzler (Fraunhofer FKIE, Germany); Anne Diefenbach (Fraunhofer FKIE, Germany)

POSTERS

- P 13** **Biometric Authentication Objects for Access Control**
Phillip H Griffin (Griffin Information Security Consulting, USA)
- P 14** **Comparison of Automatic Classification of Side Scan Sonar and SAS Images**
Johannes Groen (NATO Undersea Research Centre, Italy); Holger Schmaljohann (Bundeswehr Technical Center for Ships and Naval Weapons, Maritime Technology and Research (WTD 71), Germany); Ursula Hölscher-Höbing (ATLAS Elektronik GmbH, Germany); et al.
- P 15** **Enabling Interoperability in Disaster Response Actions through IT solutions**
Marcel Heckel (Fraunhofer IVI, Germany); Gerhard Zuba (Frequentis, Austria); Massimo Cristaldi (IES Solutions, Italy); et al.
- P 16** **How to enhance the Efficiency of Training Activities for Crisis Situations in Mass Transportation by Competence Management**
Alexander Karapidis (Fraunhofer IAO, Germany); Hilbert Kuiper (TNO Netherlands Organisation for Applied Scientific Research, The Netherlands)
- P 17** **Advanced Safety and Security in the Transport Chain by efficient combinations of organizational, staff related and adopted technical measures**
Joachim Kochsiek (Fraunhofer IML, Germany); Uwe Clausen (Fraunhofer IML, Germany)
- P 18** **Smart everywhere and Information Interdependencies - A Cyber-Physical-Systems Approach for CIP**
Andreas Kullmann (Federal Office of Civil Protection and Disaster Assistance BBK, Germany)

- P 19** **CONTAIN Project**
Alberto Magrassi (Selex ES, Italy)
- P 20** **Challenging Future Security with Robotic Civil Protection Tools**
Jean-Paul Monet (Bouches du Rhone Fire Department & Assistant chief OFFICER (Sdis 13), France); Stéphane Mozziconacci (Sdis 13, France); Serge Deltour (ECA, France); et al.
- P 21** **CutFM: A Novel Sonar Signal Design**
Meelis Noemm (University of Kiel, Germany); Peter A. Hoehner (University of Kiel, Germany)
- P 22** **REFIRE: A reference Implementation for Deep Indoor Localization**
Federica Pascucci (Università degli Studi Roma Tre, Italy); Roberto Setola (University Campus BioMedico, Italy); Francesca De Cillis (University Campus BioMedico, Italy); et al.
- P 23** **Phenomena Disturbing the Europe Security and Tasks for Future Security Research**
Dana Prochazkova (Czech Technical University in Praha, Czech Republic)
- P 24** **Benefits, Risks, and Costs of Security Measures - A portfolio-oriented Decision-Support Approach for political Decision-Making**
Minna Räikkönen (VTT Technical Research Centre of Finland, Finland); Susanna Kunttu (VTT Technical Research Centre of Finland, Finland); Liisa Poussa (VTT Technical Research Centre of Finland, Finland); et al.

- P 25** **Metal Organic Frameworks as selective Preconcentrator Material for Gas Phase sensing**
Max Rieger (Fraunhofer ICT, Germany); Moritz Heil (Fraunhofer ICT, Germany); Thomas Altenburg (Fraunhofer ICT, Germany); et al.
- P 26** **Strategies for the Improvement of Critical Infrastructure Resilience to Electromagnetic Attacks - A (not too) Short Introduction**
Jürgen Schmitz (Rheinmetall Waffe Munition GmbH, Germany); Michael Camp (Rheinmetall Waffe Munition GmbH, Germany); Markus Jung (Rheinmetall Waffe Munition GmbH, Germany); et al.
- P 27** **Talking about technologies: Science meets Military**
Anna Schulte (Fraunhofer INT, Germany); Annika Vergin (Bundeswehr Transformation Centre, Germany); Marcus John (Fraunhofer INT, Germany); et al.
- P 28** **An Architectural Blueprint for a National Cyber Attack Information System**
Florian Skopik (AIT Austrian Institute of Technology, Austria); Arndt Bonitz (AIT Austrian Institute of Technology GmbH, Austria); Roman Fiedler (AIT Austrian Institute of Technology, Austria)
- P 29** **Prevention, Protection and Reaction to Cyber-Attacks to SCADA-Systems in critical Infrastructures**
Christoph Thomalla (Fraunhofer IOSB, Germany)
- P 30** **Semi-automatic road Extraction combining Particle Filtering and Geographic Information Systems**
Aikaterini Tzavella (Fraunhofer FKIE, Germany); Martin Ulmke (Fraunhofer FKIE, Germany)

- P 31** **Automatic Creation of Role Dependent Situation Views for different Devices**
Boris Wagner (Fraunhofer IOSB, Germany)
- P 32** **Laser Detection of Biosensors as a Novel Tool in Humanitarian Demining**
Martin Wehner (Fraunhofer ILT, Germany); Ulrich Thombansen (Fraunhofer ILT, Germany); Nicole Raven (Fraunhofer IME, Germany); et al.
- P 33** **Mobile Manipulation for Sampling from Surfaces in a Multi-Robot CBRNE Reconnaissance System**
Jochen Welle (Fraunhofer FKIE, Germany); Bastian Gaspers (Fraunhofer FKIE, Germany); Dirk Schulz (Fraunhofer FKIE, Germany)
- P 34** **Mobile Phones as Fortuitous Individual Dosimeters after Radiological Emergencies or Terrorism - Results of the EU security project Multibiodose**
Clemens Woda (Helmholtz Zentrum Muenchen & Institute of Radiation Protection, Germany); Albrecht Wieser (Helmholtz Zentrum Muenchen, Germany); Céline Bassinet (IRSN, France); et al.
- P 35** **High Energy X-ray Radiography: Detection of Dangerous Materials in Cargo Containers**
Norma Wrobel (BAM Federal Institute for Materials Research and Testing, Germany); Sanjeevareddy Kolkoori (BAM Federal Institute of Materials Research and Testing, Germany); Kurt Osterloh (BAM Federal Institute for Materials Research and Testing, Germany); et al.

FRAUNHOFER VVS

This conference series is hosted by the Fraunhofer Group for Defense and Security VVS.

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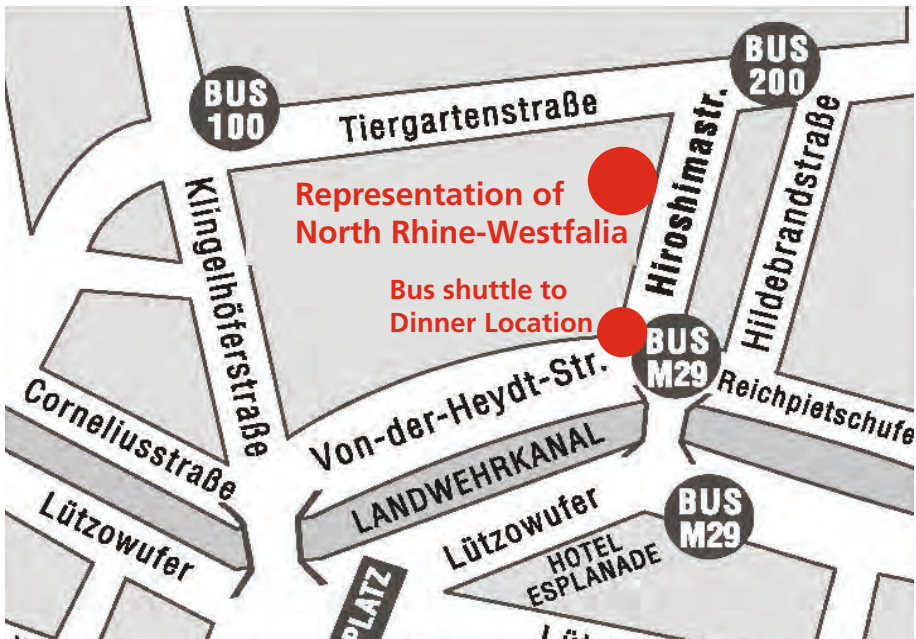
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8TH FUTURE SECURITY
SECURITY RESEARCH CONFERENCE
BERLIN, SEPTEMBER 17 – 19, 2013



GENERAL INFORMATION

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Regular	700,00 €
Presenter	560,00 €
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Ministries and subordinate agencies	200,00 €

These fees include coffee breaks and lunch buffets, the welcome reception and the conference dinner.

CONFERENCE COUNTER

Opening hours:	17.09.	09.00 - 21.00
	18.09.	08.00 - 18.30
	19.09.	08.00 - 16.00

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The conference proceedings will be printed and published by Fraunhofer Verlag under ISBN 978-3-8396-0604-9.

SAVE THE DATE

The 9th Future Security Conference will take place on September 16 - 18, 2014 at the Permanent Representation of North Rhine-Westfalia, Berlin.
www.future-security2014.de/

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