Fraunhofer

VVS

Future Security
Security Research Conference

7TH FUTURE SECURITY
BONN, SEPTEMBER 4TH – 6TH, 2012

PROGRAM

WELCOME ADDRESS

Jürgen Nimptsch
Mayor of the City of Bonn

Dear participants of the security conference "Future Security",

Welcome to the City of Bonn. This year the Fraunhofer Group for Defense and Security VVS is organizing the international security conference "Future Security" for the seventh time. You are bringing top scientists, representatives of industry, ministries, public authorities and politics together. I am glad that Bonn was chosen as the conference venue.
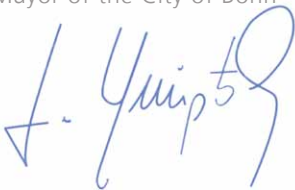
The Bonn region is characterized by its university, its various international research institutes and important national institutions of science policy and academic administration.

There has been great progress in the shift from a city defined by its function as a capital to a nationally and internationally competing location. The strong growth of research based services and the close alliance of city, economy, and science make Bonn so attractive.

I wish you an exciting and productive conference!

Kind regards,
Jürgen Nimptsch
Mayor of the City of Bonn

GENERAL INFORMATION

TOWARDS A SECURE FUTURE

Freedom is among the greatest achievements of modern society – and it is our duty to protect this freedom.

The Future Security Conference brings together decision makers, public authorities, industry and scientists to discuss new ways of facing this challenge.

The conference, organized by the Fraunhofer Group for Defense and Security, takes a holistic view on security.

It provides insight into technological breakthroughs as well as societal aspects of security. It brings together the experience of high-profile researchers and professionals from both industry and public authorities.

Take this opportunity to meet and discuss our Future Security with this manifold community of security experts. We look forward to hearing your opinions from September 4th until September 6th 2012 at the World Conference Center in Bonn.

VENUE

World Conference Center Bonn
Platz der Vereinten Nationen 2
53113 Bonn, Germany

REGISTRATION

All conference attendees have to register in advance for the conference.
Please visit **www.future-security-2012.de** to register online.

CONFERENCE FEES

Regular	(588.24 € net)	700.00 €
Students (only with certificate)	(294.12 € net)	350.00 €
Ministries and subordinate agencies	(83.19 € net)	99.00 €

Please note: The registration fee includes lunches, coffee breaks, welcome reception and social event. The number of participants is limited (first come, first serve).

ACCOMODATION

Hotel accommodations are pre-reserved for you by Tourismus & Congress GmbH der Region Bonn. Fraunhofer and the City of Bonn only provide the contact. Reservation and payment have to be made by the individual attendee. For contact please visit the link of the Tourismus & Congress GmbH: **www.bonn-region.de/3519**.

PROGRAM COMMITTEE

- Prof. Dr. Oliver Ambacher, Fraunhofer IAF
- Prof. Dr. Achim Bachem, Forschungszentrum Jülich GmbH
- Prof. Dr. Bernd Becker, University of Freiburg
- Prof. Dr. Jürgen Beyerer, Fraunhofer IOSB
- Dr. Peter Boßdorf, Mittler Report Verlag GmbH
- Dr. Adam S. Cumming, Defence Science & Technology Laboratory, UK
- Dr. Eckhart Curtius, Federal Ministry of Education and Research (BMBF)
- OTL i. G. Armin Dirks, Federal Ministry of Defence (BMVg)
- Dr. Bert Don, TNO Defence, Security and Safety
- Prof. Dr. Claudia Eckert, Fraunhofer AISEC
- Prof. Dr. Peter Elsner, Fraunhofer ICT
- Prof. Dr. Joachim Ender, Fraunhofer FHR
- Sabine Groth, Hessisches Ministerium der Justiz, für Integration und Europa
- Karsten Heidrich, Deutsche Bank AG
- Prof. Dr. Albert Heuberger, Fraunhofer IIS
- Dr. Wolfgang Jans, BWB FWG
- Dr. Rüdiger Klein, Fraunhofer IAIS
- Andreas Könen, Federal Office for Information Security (BSI)
- MinR Rainer Krug, Federal Ministry of Defence (BMVg)
- Dr. Tobias Leismann, Fraunhofer VVS
- Monika Lieberam, Bundesanstalt Technisches Hilfswerk (THW)
- Prof. Dr. Peter Martini, Fraunhofer FKIE
- Prof. Dr. William Robertson, Northeastern University, Boston
- Prof. Dr.-Ing. Christopher Schlick, Fraunhofer FKIE
- Prof. Dr. Viola Schmid, Technische Universität Darmstadt

- Dr. Françoise Simonet, CEA Commissariat à l'Energie Atomique
- Prof. Dr. Birgitta Sticher, Berlin School of Economics and Law
- Prof. Dr. Jürgen Stock, Federal Criminal Police Office
- 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)
- MinR Norbert Weber, Federal Ministry of Defence (BMVg)
- Dr. Karin Wey, VDI Technologiezentrum GmbH
- Prof. Dr. Uwe Wiemken, Fraunhofer INT

TIMETABLE

	Time	Plenarsaal	Room A	Room B	Room C	Room D	Lobby
A.M.	10:00 - 10:45	**WELCOME AND OPENING** Prof. Dr. Peter Martini, Prof. Dr. Klaus Thoma, State Secretary Stéphane Beemelmans, Prof. Dr. Wolf-Dieter Lukas, Dr. Beate Wieland					**EXHIBITION** 10:00 A.M. - 7:00 P.M.
	10:45 - 11:30	**KEYNOTE I** People, Security, Technology – Police within the social area of conflict Dr. Steffen Richter, Federal Police, Potsdam					
	11:30 - 12:15	**KEYNOTE II** Cyber Crime and the Cyber Underground Economy Prof. Dr. Richard Kemmerer, University of California at Santa Barbara					
P.M.	12:15 - 2:00	BREAK					
	2:00 - 3:30	FUS - Creating the Resilient City of Tomorrow	Supply Chain and Critical Infrastructures Security	Crisis Management	Sensor Data Fusion Workshop	Security Situational Awareness (1)	
	3:30 - 4:00	BREAK					
	4:00 - 6:00	Security for Critical Infra- structures and Urban Areas		Social, Psychological and Political Aspects	Sensor Data Fusion Workshop	Sensor Technologies	
	6:00 - 9:00	POSTER SESSION AND WELCOME RECEPTION					

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WEDNESDAY 5TH SEPTEMBER

	Time	Plenarsaal	Room A	Room B	Room C	Room D	Lobby
A.M.	08:30 - 09:00	**OPENING PRESENTATION** Current Threats to Cyber Security Michael Hange, President of the Federal Office for Information Security (BSI)					EXHIBITION 09:00 A.M. - 7:00 P.M.
	09:00 - 10:30	**PLENUM SESSION I** Cloud and Law Dr. Alexander Kurz, Fraunhofer Executive Board – Personnel and Legal Affairs Attorney Dr. Marc Hilber, Prof. Dr. Gerrit Hornung, Peter Schaar					
	10:30 - 11:00	BREAK					
	11:00 - 12:30	**PLENUM SESSION II** Cyber Crime Prof. Dr. Peter Martini, Director Fraunhofer FKIE Toralv Dirro, Mirko Manske, Dr. Harald Niggemann, Thomas Tschersich					
P.M.	12:30 - 2:00	BREAK					
	2:00 - 3:30	Economic and Industrial Espionage	Maritime Border Security (1)	Detection of Hazardous Materials (1)	Sensor Data Fusion Workshop	Cyber Defense and Information Security	
	3:30 - 4:00	BREAK					
	4:00 - 6:00	IT Crisis Management	Maritime Border Security (2)	Detection of Hazardous Materials (2)	Sensor Data Fusion Workshop	Food Chain Security	
	6:00 -11:00	POSTER SESSION AND SOCIAL EVENT					

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THURSDAY 6TH SEPTEMBER

	Time	Plenarsaal	Room A	Room B	Room C	Room D	Lobby
A.M.	08:30 - 09:30	PLENUM SESSION I Public Security - User Aspects **Dr. Harald Olschok,** **Association of German Private Security Industry (BDSW)** Keynote: Klaus Neidhardt, German Police University					EXHIBITION 09:00 A.M. - 3:30 P.M.
	09:30 - 10:45	PLENUM SESSION II Public Security - Sensor Aspects **Dr. Reinhard Ebert, Fraunhofer IOSB, Ettlingen** Keynote: Dr. Mario Münzberg, Carl Zeiss Optronic					
	10:45 - 11:15	BREAK					
	11:15 - 12:30	PLENUM SESSION III Public Security - System Aspects **Dr. Andreas Meissner, Fraunhofer IOSB, Karlsruhe** Keynote: Tjien-Khoen Liem, European Commission					
P.M.	12:30 - 2:00	BREAK					
	2:00 - 3:30		Aviation Security	Security Situational Awareness (2)	Sensor Data Fusion Workshop	Ergonomic Aspects	
	3:30 - 4:00	BREAK					
	4:00 - 6:00				Sensor Data Fusion Workshop		

TUESDAY 4TH SEPTEMBER

10:00–10:45 WELCOME AND OPENING

Professor Dr. Peter Martini
Director Fraunhofer FKIE

Professor Dr. Klaus Thoma
Director Fraunhofer EMI,
Chairman Fraunhofer Group for Defense and Security VVS

Stéphane Beemelmans
State Secretary,
Federal Ministry of Defence (BMVg)

Professor Dr. Wolf-Dieter Lukas
Federal Ministry of Education and Research (BMBF)

Dr. Beate Wieland
Ministry of Innovation, Science and Research of the German
State of North Rhine-Westphalia

A.M.
10:45–11:30 **PLENARSAAL.**KEYNOTE I
**PEOPLE, SECURITY, TECHNOLOGY – POLICE
WITHIN THE SOCIAL AREA OF CONFLICT**

Dr. Steffen Richter
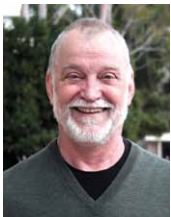**Head of Aviation Security, Federal Police, Potsdam**

Steffen Richter is the Head of the Department of Aviation Security at the German Federal Police Headquarters in Potsdam. He started his career in 1986 as a uniformed patrol officer and switched to the Criminal Investigation Department Hoyerswerda/Saxonia in 1987. After his studies of criminalistics at the Humboldt University of Berlin he worked for the Criminal Investigation Department in Bautzen/Saxonia. In 1992 he switched to the German Federal Police. From 1994 to 2001 he focused on issues of aviation security and protection of nuclear facilities and transports at the German Federal Ministry of the Interior. After further studies at the German Police Academy in Münster he became the Head of Office of the Federal Police at Berlin Tegel Airport.

After being seconded to the German Federal Ministry of the Interior (2005 to 2008), he participated in establishing the Department of Aviation Security at the newly founded Federal Police Headquarters. His duties include passenger and baggage screening, police security measures at most German airports, the security measures for air cargo and the assignment of inflight security officers on board of German airplanes.

A.M. – P.M.
11:30–12:15 PLENARSAAL.KEYNOTE II
CYBER CRIME AND THE CYBER
UNDERGROUND ECONOMY

Prof. Dr. Richard Kemmerer
University of California at Santa Barbara, USA

Richard Kemmerer is the Computer Science Leadership Professor
and past department chair of the Department of Computer
Science at the University of California, Santa Barbara. His research
interests include formal specification and verification of systems,
computer system security and reliability, programming and
specification language design, and software engineering. He
is author of the book Formal Specification and Verification of
an Operating System Security Kernel. Kemmerer has a PhD in
computer science from the University of California, Los Angeles.
He is a fellow of the IEEE and of the ACM and the 2007
recipient of the Applied Security Associates Distinguished
Practitioner Award.

P.M.
2:00–3:30

PLENARSAAL.PLENUM SESSION I
FUTURE URBAN SECURITY - CREATING THE RESILIENT CITY OF TOMORROW

Moderator:

Prof. Dr. Klaus Thoma (Director Fraunhofer EMI, Chairman Fraunhofer Group for Defense and Security VVS)

Attendees:

- **Norman Brockie** (City of London, Southwark)
- **Jakob Ohm Laursen** (Dissing & Weitling)
- **Joachim Hagen** (NDR Broadcasting)
- **Wilfried Gräfling** (Fire Protection Director Berlin)
- **Peter Löffler** (Siemens Building Technology)

P.M.
2:00–3:30

ROOM A.1
SUPPLY CHAIN AND CRITICAL INFRASTRUCTURES SECURITY

Chair: *Prof. Dr. Alexander Pflaum* (Fraunhofer IIS, Germany)

"Measurement Concept for Security in Mass Transportation"

Jan-Peter Nicklas (University of Wuppertal, Germany);
Nadine Schlüter (University of Wuppertal, Germany);
Petra Winzer (University of Wuppertal, Germany)
[Short-Paper, 10 min. presentation time]

"Improved Emergency Management by a Loosely Coupled Logistic System" Dirk Thorleuchter (Fraunhofer INT, Germany); Joachim Schulze (Fraunhofer INT, Germany); Dirk Van den Poel (Ghent University, Belgium) [Short-Paper, 10 min. presentation time]

"Monitoring Security and Safety of Assets in Supply Chains"
Ganna Monakova (SAP Research, Germany); Christina Severin (esciris GmbH, Germany); Achim D. Brucker (SAP Research, Germany); Ulrich Flegel (HFT Stuttgart, Germany); Andreas Schaad (SAP Research, Germany)
[Full-Paper, 20 min. presentation time]

"Standards for the Protection of Transport Infrastructures"
Norbert Siegel (Deutsches Institut für Normung e.V., Germany); Simone Wurster (Technical University of Berlin, Germany)
[Short-Paper, 10 min. presentation time]

"Security in Supply Chains in the Scope of Surface Transport of Goods by Secure Information Patterns on the Freight - Trans4Goods" Hagen Borstell (Fraunhofer IFF, Germany); Liu Cao (Fraunhofer IFF, Germany); Klaus Richter (Fraunhofer IFF, Germany); Christian Schäfer (T-Systems Multimedia Solutions GmbH, Germany)
[Short-Paper, 10 min. presentation time]

"A Process for Secure Supply Chain Evaluation"
Maria Akbulatova (SAP Research, Germany); Matthias Winkler (SAP Research, Germany) [Short-Paper, 10 min. presentation time]

P.M.
2:00–3:30

ROOM B.1
CRISIS MANAGEMENT

Chair: *Dr. Manfred Bogen* (Fraunhofer IAIS, Germany)

"Collaborative Methodology for Crisis Management Knowledge Integration and Visualization"

Ana Laugé (Tecnun - University of Navarra, Spain); Josune Hernantes (CEIT, Spain); Leire Labaka (Tecnun - University of Navarra, Spain); Jose M. Sarriegi (Tecnun - University of Navarra, Spain)
[Full-Paper, 20 min. presentation time]

"Prioritisation of Simulation Models for Ensuring Safety and Security in Underground Stations on the Basis of a Detailed Requirements Analysis"

Steffen Schneider (University of Paderborn, Germany); Therese Friberg (University of Paderborn, Germany); Tobias Becker (University of Paderborn, Germany); Rainer Koch (University of Paderborn, Germany) [Full-Paper, 20 min. presentation time]

"Location and Routing Models for Emergency Response Plans with Priorities"

Ali Oran (SMART, Singapore); Kiat Chuan Tan (DSO National Laboratories, Singapore); Boon Hooi Ooi (DSO National Laboratories, Singapore); Melvyn Sim (NUS, Singapore); Patrick Jaillet (MIT, Singapore) [Full-Paper, 20 min. presentation time]

P.M.
2:00–3:30 **ROOM C.**1
SENSOR DATA FUSION WORKSHOP

P.M.
2:00–3:30 **ROOM D.**1
SECURITY SITUATIONAL AWARENESS (1)
Chair: *Prof. Dr. Jürgen Beyerer* (Fraunhofer IOSB, Germany)

"Unsupervised Techniques for
Audio Summarization in Acoustic Environment Monitoring"
David Damm (Fraunhofer FKIE, Germany); Dirk von Zeddelmann
(Fraunhofer FKIE, Germany); Frank Kurth (Fraunhofer FKIE, Germany)
[Short-Paper, 10 min. presentation time]

"Integrating Persistent Surveillance Systems
into ISR Architecture" Çagatay Soyer (NATO Consultation,
Command and Control Agency, The Netherlands); Florian Segor
(Fraunhofer IOSB, Germany); Barbara Essendorfer (Fraunhofer IOSB,
Germany); Wilmuth Müller (Fraunhofer IOSB, Germany)
[Full-Paper, 20 min. presentation time]

"Collaborative Mapping for Pedestrian Navigation
in Security Applications" Maria Garcia Puyol (DLR, Germany);
Martin Frassl (DLR, Germany); Patrick Robertson (DLR, Germany)
[Full-Paper, 20 min. presentation time]

"Coordination Challenges for Global Disease Outbreaks Security" Fadl Bdeir (University of Sydney, Australia); Liaquat Hossain (University of Sydney, Australia); Jafar Hamra (University of Sydney, Australia); John Crawford (University of Sydney, Australia) [Short-Paper, 10 min. presentation time]

"Intelligent Multi Sensor Fusion System for Advanced Situation Awareness in Urban Environments"
Georg Hummel (Bundeswehr University Munich, Germany); Martin Russ (Bundeswehr University Munich, Germany); Peter Stütz (Bundeswehr University Munich, Germany); John Soldatos (AIT, Greece); Lorenzo Rossi (Vitrociset Spa, Italy); Thomas Knape (Data Fusion International, Ireland); Akos Utasi (Computer and Automation Research Institute, Hungarian Academy of Sciences, Hungary); Levente Kovács (Computer and Automation Research Institute, Hungarian Academy of Sciences, Hungary); Tamas Szirányi (Computer and Automation Research Institute, Hungarian Academy of Sciences & Pázmány Péter Catholic University, Hungary); Charalambos Doulaverakis (Informatics and Telematics Institute (ITI), Greece); Yiannis Kompatsiaris (Informatics and Telematics Institute (ITI) & Multimedia Knowledge Laboratory, Greece)
[Full-Paper, 20 min. presentation time]

P.M.
4:00–6:00

PLENARSAAL.PANEL SESSION I
SECURITY FOR CRITICAL INFRASTRUCTURES AND URBAN AREAS

Chair: *Prof. Dr. Klaus Thoma* (Fraunhofer EMI, Germany)

"New Building Concepts Protecting Against Aircraft Impact"

Alexander Stolz (Fraunhofer EMI, Germany); Werner Riedel
(Fraunhofer EMI, Germany); Markus Noeldgen (Schuessler-Plan
Engineering Consultants, Germany); Andreas Laubach (Schuessler-
Plan Engineering Consultants, Germany)
[Full-Paper, 20 min. presentation time]

"Safety and Security of Urban Areas Through Innovative Architectural and Structural Concepts"

Norbert Gebbeken (University of the Bundeswehr, Munich,
Germany); Torsten Döge (University of the Bundeswehr, Munich,
Germany); Martin Larcher (University of the Bundeswehr, Munich,
Germany) [Full-Paper, 20 min. presentation time]

"Security for Critical Infrastructure and Urban Areas: A Holistic Approach to Urban Safety, Security and Resilience"

William Hynes (Urban Planner, Ireland); Stephen Purcell
(Urban Planner, Ireland) [Full-Paper, 20 min. presentation time]

"Vulnerability Identification and Resilience Enhancements of Urban Environments"
Kai Fischer (Fraunhofer EMI, Germany); Werner Riedel (Fraunhofer EMI, Germany); Ivo Häring (Fraunhofer EMI, Germany); Albert Nieuwenhuijs (TNO, The Netherlands); Stephen Crabbe (Crabbe Consulting, Germany); Steen Trojaborg (Dissing + Weitling, Denmark); William Hynes (Downey Hynes Partnership, Ireland); Ingo Müllers (Schuessler-Plan Engineering GmbH, Germany)
[Short-Paper, 10 min. presentation time]

"Determining the Effectiveness of Safety Measures for Self-Rescue in the Built Environment"
Inge Trijssenaar-Buhre (TNO, The Netherlands); Sandra Wijnant-Timmerman (TNO, The Netherlands); Remco Witberg (TNO, The Netherlands); Gerard Veldhuis (TNO, The Netherlands) [Short-Paper, 10 min. presentation time]

"Enhancing Robustness of Tubbing Tunnels in Case of Extreme Loads"
Christoph Niklasch (Ed. Züblin AG, Germany); Peter-Michael Mayer (Ed. Züblin AG, Germany) [Short-Paper, 10 min. presentation time]

"Security Evaluation of Street Bridges for Fire Exposure - Current Findings of the Project SKRIBTPlus"
Ulrich Bergerhausen (Federal Highway Research Institute, Germany); Sven Priestaff (University of Stuttgart, Germany) [Short-Paper, 10 min. presentation time]

P.M.
4:00–6:00

ROOM B.2
SOCIAL, PSYCHOLOGICAL AND
POLITICAL ASPECTS

Chair: *Dr. Merle Missoweit* (Fraunhofer INT, Germany)

"Methodology for Analysing Unstructured Usability Evaluation Data" Therese Friberg, Christina Schäfer, Rainer Koch (University of Paderborn, Germany) [Full-Paper, 20 min. presentation time]

"Creating and Testing Holistic Crisis Management Strategies: The Crisis Management Balanced Scorecard and Systems Modelling" Jose M Sarriegi (Tecnun - University of Navarra, Spain); Eliot Rich (Tecnun - University of Navarra & University at Albany, SUNY, USA); Ana Laugé (Tecnun - University of Navarra, Spain); Leire Labaka (Tecnun - University of Navarra, Spain); Josune Hernantes (CEIT, Spain) [Short-Paper, 10 min. presentation time]

"How is Positive-Sum Privacy Feasible?" Christoph Bier (Fraunhofer IOSB & Karlsruhe Institute of Technology, Germany); Pascal Birnstill (Fraunhofer IOSB & Karlsruhe Institute of Technology, Germany); Erik Krempel (Fraunhofer IOSB, Germany); Hauke Vagts (Fraunhofer IOSB & Karlsruhe Institute of Technology, Germany); Jürgen Beyerer (Fraunhofer IOSB, Germany) [Short-Paper, 10 min. presentation time]

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"Concept for Scenario-Development for Foresight Security Scenarios: Mapping Research to a Comprehensive Approach to Exogenous EU Roles" Thomas Benesch (Danube University Krems, Austria); Johannes Göllner (Danube University Krems, Austria); Johann Höchtl (Danube University Krems, Austria); Andreas Peer (Danube University Krems, Austria); Walter Seböck (Danube University Krems, Austria)
[Short-Paper, 10 min. presentation time]

"Establishment of the European Reference Network for Critical Infrastructure Protection (ERNCIP)"
Naouma Kourti (None, European Union); Ferenc Borsos (None, European Union); Peter Gattinesi (None, Italy)
[Short-Paper, 10 min. presentation time]

P.M.
4:00–6:00   ROOM C.2
SENSOR DATA FUSION WORKSHOP

P.M.
4:00–6:00

ROOM D.2
SENSOR TECHNOLOGIES

Chair: *Dr. Andreas Brenner* (Fraunhofer FHR, Germany)

"Influence of Orientation Fields of Fingerprints to Matching Performance" Sebastian Bodó (University of Applied Science, Heide, Germany); Thorsten M. Buzug (University of Lübeck, Germany) [Short-Paper, 10 min. presentation time]

"Jamming and Spoofing in GPS / GNSS Based Applications and Services - Threats and Countermeasures" Manuel Cuntz (DLR, Germany); Andriy Konovaltsev (DLR, Germany); Achim Dreher (DLR, Germany); Michael Meurer (DLR, Germany) [Short-Paper, 10 min. presentation time]

"Millimeter-Wave Monolithic Integrated Circuits and Modules for Safety and Security Applications" Michael Schlechtweg (Fraunhofer IAF, Germany); Axel Tessmann (Fraunhofer IAF, Germany); Axel Hülsmann (Fraunhofer IAF, Germany); Ingmar Kallfass (Fraunhofer IAF; KIT, Germany); Arnulf Leuther (Fraunhofer IAF, Germany); Rolf Aidam (Fraunhofer IAF, Germany); Christian Zech (Fraunhofer IAF, Germany); Ulrich J. Lewark (KIT, Germany) Hermann Massler (Fraunhofer IAF, Germany); Markus Riessle (Fraunhofer IAF, Germany); Martin Zink (Fraunhofer IAF, Germany); Josef Rosenzweig (Fraunhofer IAF, Germany); Oliver Ambacher (Fraunhofer IAF, Germany) [Full-Paper, 20 min. presentation time]

"Data Simulation and Testing of Visual Algorithms in Synthetic Environments for Security Sensor Networks"

Georg Hummel (Bundeswehr University Munich, Germany); Levente Kovács (Computer and Automation Research Institute of the Hungarian Academy of Sciences, Hungary); Peter Stütz (Bundeswehr University Munich, Germany); Tamas Szirányi (Computer and Automation Research Institute of the Hungarian Academy of Sciences & Pázmány Péter Catholic University, Hungary) [Short-Paper, 10 min. presentation time]

"Unmanned Inspection of Large Industrial Environments"

Thomas Barz (Fraunhofer FKIE, Germany); Gero Bonow (University of Kassel, Germany); Jens Hegenberg (University of Kassel, Germany); Karim Habib (BAM Federal Institute of Materials Research and Testing, Germany); Liubov Cramar (University of Kassel, Germany); Jochen Welle (Fraunhofer FKIE, Germany); Dirk Schulz (Fraunhofer FKIE, Germany); Andreas Kroll (University of Kassel, Germany); Ludger Schmidt (University of Kassel, Germany)
[Short-Paper, 10 min. presentation time]

"The LabDisk - a Fully Automated Centrifugal Lab-on-a-Chip System for the Detection of Biological Threats"

Thomas van Oordt (HSG-IMIT, Germany); Oliver Strohmeier (University of Freiburg - IMTEK, Germany); Daniel Mark (HSG-IMIT, Germany); Roland Zengerle (University of Freiburg - IMTEK, Germany); Michael Eberhard (Qiagen Lake Constance, Germany); Josef Drexler (Qiagen Lake Constance, Germany);

Pranav Patel (Robert Koch Institute, Germany);
Manfred Weidmann (University of Göttingen, Germany);
Andrea Zgaga-Griesz (Uniklinik Freiburg, Germany);
Wolfgang Bessler (University of Freiburg, Germany);
Felix von Stetten (University of Freiburg, Germany)
[Short-Paper, 10 min. presentation time]

"Susceptibility of Two Deployable C4I Systems to HPM - Improvement by Hardening"
Christian Adami (Fraunhofer INT, Germany); Christian Braun (Fraunhofer INT, Germany); Peter Clemens (Fraunhofer INT, Germany); Michael Jöster (Fraunhofer INT, Germany); Michael Suhrke (Fraunhofer INT, Germany); Hans-Joachim Taenzer (Fraunhofer INT, Germany)
[Full-Paper, 20 min. presentation time]

P.M.
6:00–7:00　　**LOBBY.**PLENARSAAL
POSTER SESSION

P.M.
7:00–9:00　　**LOBBY.**PLENARSAAL
WELCOME RECEPTION

WEDNESDAY
5TH SEPTEMBER

A.M.
08:30–09:00 PLENARSAAL.OPENING PRESENTATION
CURRENT THREATS TO CYBER SECURITY

Michael Hange
President of the Federal Office for Information Security (BSI)

A.M.
09:00–10:30 PLENARSAAL.PLENUM SESSION I
CLOUD AND LAW

Moderator:
Dr. Alexander Kurz
(Fraunhofer Executive Board – Personnel and Legal Affairs)

Attendees:
"Cloud-Computing and Data Security from the Legal Perspective"
Attorney Dr. Marc Hilber (Oppenhoff & Partner)

European Provisions for the Cloud?
"Effects of the General Data Protection Regulation on IT Security, Business Models, and Data Protection"
Prof. Dr. Gerrit Hornung (University of Passau)

"Cloud Computing Only With Data Protection"
Peter Schaar (Federal Commissioner for Data Protection and Freedom of Information)

A.M. – P.M.
11:00–12:30 **PLENARSAAL.**PLENUM SESSION II
CYBER CRIME

Moderator:
Prof. Dr. Peter Martini (Director Fraunhofer FKIE)

Attendees:
- **Toralv Dirro** (McAfee GmbH)
- **Mirko Manske** (Federal Criminal Police Office / BKA)
- **Dr. Harald Niggemann**
  (Federal Office for Information Security / BSI)
- **Thomas Tschersich** (Deutsche Telekom AG)

P.M.
2:00–3:30 **PLENARSAAL.**PANEL SESSION I
ECONOMIC & INDUSTRIAL ESPIONAGE

ONLY IN
GERMAN
LANGUAGE

"Risks of Industrial Espionage – Status by BfV"
Herbert Kurek
(Federal Office for the Protection of the Constitution / BfV)

"Risks for the German Economy Caused by Cyber Attacks"
Florian Oelmaier (Corporate Trust GmbH)

P.M.
2:00–3:30

ROOM A.3
MARITIME AND BORDER SECURITY (1)
Chair: *Priv.-Doz. Dr. Wolfgang Koch* (Fraunhofer FKIE, Germany)

"Underwater Inspection Using the AUV SeaCat"
Joerg Kalwa (Atlas Elektronik GmbH, Germany)
[Short-Paper, 10 min. presentation time]

"Probing the Seafloor in Order to Find Dumped Ammunition and Other Hazardous Materials" Wolfgang Jans (Bundeswehr Technical Centre for Ships and Naval Weapons, Maritime Technology and Research - Research Branch for Water borne Sound and Geophysics (FWG), Germany); Matthias Reuter (Technical University of Clausthal, Germany); Stefan Behringer (WTD 71-FWG, Germany); Sabine Bohlmann (Technical University of Clausthal, Germany) [Full-Paper, 20 min. presentation time]

"An Experiment for Detection of Underwater Intruders with Different Kinds of Sensors"
Dietmar Stiller (WTD71, Germany); Stephan Benen (Atlas Elektronik GmbH, Germany); Paula Berkel (Atlas Elektronik GmbH, Germany)
[Full-Paper, 20 min. presentation time]

"Electro-Optical Surveillance in Maritime Environments"
Joerg Kushauer; Nicolai Kuenzner; Stefan Katzenbeisser;
Klaus Wingender (Diehl-BGT-Defence, Germany)
[Short-Paper, 10 min. presentation time]

P.M.
2:00–3:30

ROOM B.3
DETECTION OF HAZARDOUS MATERIALS (1)

Chair: *Prof. Dr. Oliver Ambacher* (Fraunhofer IAF, Germany)

"Designer Drugs and Trace Explosives Detection with the Help of Very Recent Advancements in Proton-Transfer-Reaction Mass Spectrometry (PTR-MS)" Philipp Sulzer (IONICON Analytik GmbH, Austria); Simone Jürschik (IONICON Analytik GmbH / University of Innsbruck, Austria); Bishu Agarwal (University of Innsbruck, Austria); Thomas Kassebacher (IONICON Analytik / University of Innsbruck, Austria); Eugen Hartungen (IONICON Analytik GmbH, Austria); Achim Edtbauer (IONICON Analytik GmbH, Austria); Fredrik Petersson (IONICON Analytik GmbH, Austria); Johannes Warmer (Bonn-Rhine-Sieg University of Applied Sciences, Germany); Gerhard Holl (Bonn-Rhine-Sieg University of Applied Sciences, Germany); Dave Perry (University of Birmingham, United Kingdom); Christopher Mayhew (University of Birmingham, United Kingdom); Tilmann Märk (IONICON Analytik GmbH / University of Innsbruck, Austria) [Full-Paper, 20 min. presentation time]

P.M.
2:00–3:30

ROOM B.3
DETECTION OF HAZARDOUS MATERIALS (1)

Chair: *Prof. Dr. Oliver Ambacher* (Fraunhofer IAF, Germany)

"On the Detection and Localization of Radioactive Sources in Public Facilities" Monika Wieneke (Fraunhofer FKIE, Germany); Priv.-Doz. Dr. Wolfgang Koch (Fraunhofer FKIE, Germany); Hermann Friedrich (Fraunhofer INT, Germany); Sebastian Chmel (Fraunhofer INT, Germany);
[Full-Paper, 20 min. presentation time]

"Development of an Experimental Multi-Robot CBRNE Reconnaissance Demonstrator"
Frank E. Schneider (Fraunhofer FKIE, Germany); Dennis Wildermuth (Fraunhofer FKIE, Germany); Markus Ducke (Fraunhofer FKIE, Germany); Bernd Brüggemann (Fraunhofer FKIE, Germany)
[Full-Paper, 20 min. presentation time]

P.M.
2:00–3:30

ROOM C.3
SENSOR DATA FUSION WORKSHOP

P.M.
2:00–3:30

ROOM D.3
CYBER DEFENSE AND
INFORMATION SECURITY

Chair: *Jörg Eschweiler* (Cassidian, Germany)

"Designing a Cyber Attack Information System for National Situational Awareness"

Florian Skopik (Austrian Institute of Technology, Austria);
Zhendong Ma (Austrian Institute of Technology, Austria);
Paul Smith (AIT Austrian Institute of Technology GmbH,
United Kingdom); Thomas Bleier (AIT Austrian Institute of
Technology GmbH, Austria)
[Full-Paper, 20 min. presentation time]

"Towards Sound Forensic Acquisition of Volatile Data"

Sebastian Eschweiler (Fraunhofer FKIE, Germany);
Elmar Gerhards-Padilla (Fraunhofer FKIE, Germany)
[Full-Paper, 20 min. presentation time]

"An Approach for Independent Intrusion Detection Management Systems"

Björn-C. Bösch (Carl-von-Ossietzky-University Oldenburg, Germany)
[Short-Paper, 10 min. presentation time]

P.M.
2:00–3:30

ROOM D.3
CYBER DEFENSE AND INFORMATION SECURITY

Chair: *Jörg Eschweiler* (Cassidian, Germany)

"Modularizing Cyber Defense Situational Awareness - Technical Integration Before Human Understanding"
Gabriel Klein (Fraunhofer FKIE, Germany); Heiko Günther (Fraunhofer FKIE, Germany); Susan Träber (Fraunhofer FKIE, Germany) [Short-Paper, 10 min. presentation time]

P.M.
4:00–6:00

PLENARSAAL.PANEL SESSION II
IT CRISIS MANAGEMENT

ONLY IN
GERMAN
LANGUAGE

Moderator:
"Setup of a Key-Figures-Oriented Crisis Exercise Programme"
Timo Kob (HiSolutions AG / FH Campus Wien)

Attendees:
"Model-based Situation Picture and Decision Support
for IT Crisis Management"
Prof. Dr. Michael Meier (Fraunhofer FKIE)

Prof. Dr. Klaus Thoma (Director Fraunhofer EMI,
Chairman Fraunhofer Group for Defense and Security VVS)

"Cyber Security - a Topic of Civil Protection. Experiences
from LÜKEX 2011"
Ralph Tiesler (The Federal Office of Civil Protection and
Disaster Assistance / BBK)

"IT Crisis Management in Practice"
Dieter Zeller (Deutsche Telekom AG)

P.M.
4:00–6:00

ROOM A.4
MARITIME AND BORDER SECURITY (2)

Chair: *Dr. Wolfgang Jans* (BWB FWG, Germany)

"PITAS: Pirate and Terrorist Aversion System"
Boris Culik (F³: Forschung Fakten Fantasie, Germany);
Thomas Lehmann (Raytheon Anschütz GmbH, Germany);
Christoph Zebermann (Raytheon Anschütz GmbH, Germany)
[Full-Paper, 20 min. presentation time]

**"Small-Target Radar Detection and Tracking Within the
PITAS Hard- and Software Environment"**
Viet Nguyen (University of Kiel, Germany)
[Full-Paper, 20 min. presentation time]

**"Open and Interoperable Maritime Surveillance Framework
Set to Improve Sea-Borders Control"**
Cengiz Erbas (ASELSAN Inc., Turkey); Fulya Tuncer Cetin
(ASELSAN Inc., Turkey); Burcu Yilmaz (ASELSAN Inc., Turkey);
Erdem Akagunduz (ASELSAN Inc.,Turkey); Yildiray Kabak
(SRDC Ltd., Turkey); Aykut Bulca (SRDC Ltd., Turkey)
[Short-Paper, 10 min. presentation time]

"Threat and Potential of High Power Electromagnetics Technology (HPEM)"

Robert Stark (DIEHL BGT Defence, Germany); Frank Sonnemann (DIEHL BGT Defence, Germany); Juergen Urban (DIEHL BGT Defence, Germany); Dieter Weixelbaum (DIEHL BGT Defence, Germany) [Short-Paper, 10 min. presentation time]

**P.M.
4:00–6:00**

**ROOM B.4
DETECTION OF HAZARDOUS MATERIALS (2)**

Chair: *Dr. Dirk Schulz* (Fraunhofer FKIE, Germany)

"Research for the Detection of Explosives at CEA: Towards Operational Use"

Didier Poullain (CEA, France); Pierre Montmeat (CEA, France); Lionel Hairault (CEA, France); Thierry Maillou (CEA, France); Rodrigue Rousier (CEA, France); Anthony Larue (CEA, France); Aurélie Martin (CEA, France); Guillaume Lebrun (CEA, France); François Simoens (CEA, France); Jerome Meilhan (CEA, France); Claude Fermon (CEA Saclay, France); Myriam Pannetier-Lecoeur (CEA Saclay, France); Joachim Tabary (CEA, France); Caroline Paulus (CEA, France); Anne Sophie Lalleman (CEA, France); Gilles Ferrand (CEA, France); Guillaume Sannie (CEA, France); Bertrand Perot (CEA, France); Cedric Carasco (CEA, France) [Full-Paper, 20 min. presentation time]

"A Biophotonic Sensor for the Specific Detection of DMMP Vapors at the Ppb Level" Karine Bonnot (NS3E & UMR 3208 ISL-CNRS, France); Benny Siegert (CNRS UMR 3208, France); Nelly Piazzon (CNRS UMR 3208, France); Denis Spitzer (ISL CNRS-UMR 3208, France); Jose Sansano (Das Photonics, France); Manuel Rodrigo (Das Photonics, Spain); Francisco Cuesta-Soto (Das Photonics, Spain); Antonio Varriale (IBP CNR, Italy); Sabato d'Auria (IBP CNR, Italy); Nuria Sanchez (NTC UPV, Spain); Francisco Lopez-Royo (NTC UPV, Spain); Jorge Sanchez (Das Photonics, Spain)
[Short-Paper, 10 min. presentation time]

"Light-weight Optical Sensor for Standoff Detection of Fluorescent Biosensors"
Martin Wehner (Fraunhofer ILT, Germany); Ulrich Thombansen (Fraunhofer ILT, Germany); Nicole Raven (Fraunhofer IME, Germany); Christoph Kühn (Fraunhofer IME, Germany); Stefan Schillberg (Fraunhofer IME, Germany)
[Short-Paper, 10 min. presentation time]

"Detecting and Quantifying Toxic Industrial Compounds (TICs) with Proton-Transfer-Reaction Mass Spectrometry (PTR-MS)" Thomas Kassebacher (IONICON Analytik GmbH / University of Innsbruck, Austria); Philipp Sulzer (IONICON Analytik GmbH, Austria); Simone Jürschik (IONICON Analytik GmbH / University of Innsbruck, Austria); Bishu Agarwal (University of Innsbruck, Austria); Fredrik Petersson (IONICON Analytik GmbH,

Austria); Eugen Hartungen (IONICON Analytik GmbH, Austria);
Hans Seehauser (IONICON Analytik GmbH, Austria); Tilmann Märk
(IONICON Analytik GmbH / University of Innsbruck, Austria)
[Full-Paper, 20 min. presentation time]

P.M.
4:00–6:00   **ROOM C.4**
SENSOR DATA FUSION WORKSHOP

P.M.
4:00–6:00   **ROOM D.4**
FOOD CHAIN SECURITY
Chair: *Prof. Dr. Bernd Appel*
(Federal Institute for Risk Assessment (BfR))

**"Hurdles and Solutions on Feed / Food Chain Security Within
the EU and Sweden in the View of the SVA"** Invited Talk by
Rickard Knutsson (National Veterinary Institute (SVA), Sweden)

**"Improving the Security of Food Chains Against Natural,
Accidental and Deliberate Contaminations"**
Bernd Appel (Federal Institute for Risk Assessment, Germany);
Anneluise Mader (Federal Institute for Risk Assessment, Germany);
Juliane Braeunig (Federal Institute for Risk Assessment, Germany);
Heidi Wichmann-Schauer (Federal Institute for Risk Assessment,
Germany); Annemarie Käsbohrer (Federal Institute for Risk
Assessment, Germany) [Full-Paper, 30 min. presentation time]

"Model for the Assessment of Microbiological Risks Originating from Intentional Contaminations in Feed Chains"
Annemarie Käsbohrer (Federal Institute for Risk Assessment, Germany); Matthias Filter (Federal Institute for Risk Assessment, Germany); Angela Körner (Federal Institute for Risk Assessment, Germany); Anneluise Mader (Federal Institute for Risk Assessment, Germany); Jürgen Zentek (Freie Universität Berlin, Germany); Bernd Appel (Federal Institute for Risk Assessment, Germany)
[Full-Paper, 15 min. presentation time]

"An Open-Source Community Resource for Creating, Collecting, Sharing and Applying Predictive Microbial Models (PMM-Lab)"
Armin Weiser (Federal Institute for Risk Assessment, Germany); Matthias Filter (Federal Institute for Risk Assessment, Germany); Alexander Falenski (Federal Institute for Risk Assessment, Germany); Jörgen Brandt (Federal Institute for Risk Assessment, Germany); Annemarie Käsbohrer (Federal Institute for Risk Assessment, Germany); Bernd Appel (Federal Institute for Risk Assessment, Germany);
[Short-Paper, 15 min. presentation time]

"Exploitation of Commercial B2B Data for Risk Assessment Tasks in Foodborne Crisis Events"
Matthias Filter (Federal Institute for Risk Assessment, Germany);
Christian Thoens (Federal Institute for Risk Assessment, Germany);
Annemarie Käsbohrer (Federal Institute for Risk Assessment, Germany); Bernd Appel (Federal Institute for Risk Assessment, Germany)
[Short-Paper, 15 min. presentation time]

"Vulnerability Assessment in the Food Chain - A Way to Do It"
Anja Buschulte (Federal Institute for Risk Assessment, Germany);
Britta Müller-Wahl (Federal Institute for Risk Assessment, Germany);
Annemarie Käsbohrer (Federal Institute for Risk Assessment, Germany);
Bernd Appel (Federal Institute for Risk Assessment, Germany)
[Full-Paper, 15 min. presentation time]

P.M.
6:00–7:00   **LOBBY.**PLENARSAAL
POSTER SESSION

P.M.
7:00–11:00   **RESTAURANT AND PATIO**
SOCIAL EVENT

THURSDAY
6TH SEPTEMBER

A.M.
08:30-09:30 **PLENARSAAL.**PLENUM SESSION I
PUBLIC SECURITY - USER ASPECTS

Moderator:
Dr. Harald Olschok
(Association of German Private Security Industry, Bad Homburg)

Keynote:
"The User Perspective of the Police"
Klaus Neidhardt (President of the German Police University, Münster)

Invited Talk:
„Ganzheitlicher Ansatz in der Sicherheitswirtschaft:
Beratung, Technik, Dienstleistung"
Gregor Lehnert (Vice President, Association of German Private
Security Industry (BDSW), Bad Homburg)

"User-Centered Elaboration of an Integrated Crisis
Management Modeling and Simulation Solution"
Johannes Sautter (Fraunhofer IAO, Germany);
Wolf Engelbach (Fraunhofer IAO & University Stuttgart IAT, Germany);
Sandra Frings (Fraunhofer IAO, Germany)
[Short-Paper, 10 min. presentation time]

A.M.
09:30-10:45   **PLENARSAAL.**PLENUM SESSION II
PUBLIC SECURITY - SENSOR ASPECTS

Moderator:
Dr. Reinhard Ebert (Fraunhofer IOSB, Ettlingen)

Keynote:
"Electro-Optical Sensors and Sensor Data Processing for Security Applications"
Dr. Mario Münzberg
(Carl Zeiss Optronics GmbH, Oberkochen)

"Imaging Standoff Detection of Explosives by Diffuse Reflectance IR Laser Spectroscopy"
Frank Fuchs (Fraunhofer IAF, Germany); Jan Phillip Jarvis (Fraunhofer IAF, Germany); Stefan Hugger (Fraunhofer IAF, Germany); Michel Kinzer (Fraunhofer IAF, Germany); Quankui Yang (Fraunhofer IAF, Germany); Wolfgang Bronner (Fraunhofer IAF, Germany); Rachid Driad (Fraunhofer IAF, Germany); Rolf Aidam (Fraunhofer IAF, Germany)
[Full-Paper, 20 min. presentation time]

"Detector Array with Gas Chromatograph for On-Site Analyses"

Hendrik Fischer (Hamburg University of Technology, Germany); Jörn Frank (Hamburg University of Technology, Germany); Bert Ungethüm (Airsense Analytics GmbH, Germany); Matthias Drobig (Federal Office of Civil Protection and Disaster Assistance, Germany); Andreas Walte (Airsense Analytics GmbH, Germany); Gerhard Matz (Hamburg University of Technology, Germany) [Short-Paper, 20 min. presentation time]

A.M. – P.M.
11:15–12:30 **PLENARSAAL.**PLENUM SESSION III
PUBLIC SECURITY - SYSTEM ASPECTS

Moderator:
Dr. Andreas Meissner (Fraunhofer IOSB, Karlsruhe)

Keynote:
"When the budgets get smaller we need a more systematic approach"
Tjien-Khoen Liem
(European Commission, DG ENTR / Security Research)

"User-centric Protection and Privacy in Smart Surveillance Systems"
Hauke Vagts (Karlsruhe Institute of Technology & Fraunhofer IOSB, Germany); Erik Krempel (Fraunhofer IOSB, Germany); Jürgen Beyerer (Fraunhofer IOSB, Germany)
[Short-Paper, 20 min. presentation time]

"Safety and Security, Dealing with Risks"
Kurt Osterloh (BAM Federal Institute for Materials Research and Testing, Germany); Norma Wrobel (BAM Federal Institute for Materials Research and Testing, Germany)
[Short-Paper, 10 min. presentation time]

P.M.
2:00–3:30

ROOM A.5
AVIATION SECURITY

Chair: *Prof. Dr. Joachim Ender* (Fraunhofer FHR, Germany)

"Micro Aerial Vehicles in Disaster Assessment Operations - the Example of Cyprus 2011"
Martin Frassl (DLR, Germany);
Michael Lichtenstern (DLR, Germany);
Michael Angermann (DLR, Germany);
Giulio Gullotta (Federal Office of Civil Protection and Disaster Assistance (BBK), Bonn, Germany
[Short-Paper, 10 min. presentation time]

"Lighter-Than-Air UAVs for Surveillance and Environmental Monitoring"

Michael Gerke (University of Hagen, Germany); Ulrich Borgolte (University of Hagen, Germany); Ivan Masár (University of Hagen, Germany); Frantisek Jelenciak (University of Hagen, Germany); Pavol Bahnik (University of Hagen, Germany); Naef Al-Rashedi (University of Hagen, Germany)
[Short-Paper, 10 min. presentation time]

"Protection of Spaceborne Systems"

Jan Eilers (German Aerospace Center DLR, Germany); Thomas R. Neff (German Aerospace Center DLR, Germany)
[Short-Paper, 10 min. presentation time]

"CHICAGO - an Airborne Observation System for Security Applications"

Hartmut Runge (German Aerospace Center DLR, Germany); Josef Kallo (German Aerospace Center DLR, Germany); Philipp Rathke (German Aerospace Center DLR, Germany); Thomas Stephan (German Aerospace Center DLR, Germany); Franz Kurz (German Aerospace Center DLR, Germany); Dominik Rosenbaum (German Aerospace Center DLR, Germany); Oliver Meynberg (German Aerospace Center DLR, Germany)
[Short-Paper, 10 min. presentation time]

"Analysis of Future Threats to Civil Aviation Within the Project COPRA (Comprehensive European Approach to the Protection of Civil Aviation)"
Julia Ziehm (Fraunhofer EMI, Germany); Frank Radtke (Fraunhofer EMI, Germany); Tobias Leismann (Fraunhofer EMI, Germany) [Short-Paper, 10 min. presentation time]

P.M.
2:00–3:30

ROOM B.5
SECURITY SITUATIONAL AWARENESS (2)
Chair: *Prof. Dr. Albert Heuberger* (Fraunhofer IIS, Germany)

"Image-based Situation Assessment in Public Space"
Hagen Borstell (Fraunhofer IFF, Germany); Bernd Gebert (Fraunhofer IFF, Germany); Liu Cao (Fraunhofer IFF, Germany); Cathrin Plate (Fraunhofer IFF, Germany); Klaus Richter (Fraunhofer IFF, Germany)
[Short-Paper, 10 min. presentation time]

"DSO Cognitive Architecture for Mobile Surveillance"
Gee Wah Ng (DSO National Laboratories, Singapore); Yuan Sin Tan (DSO National Laboratories, Singapore); Xuhong Xiao (DSO National Laboratories, Singapore); Rui Zhong Chan (DSO National Laboratories, Singapore)
[Short-Paper, 10 min. presentation time]

"Using NMF for Analyzing War Logs"
Dirk Thorleuchter (Fraunhofer INT, Germany);
Dirk Van den Poel (Ghent University, Belgium)
[Short-Paper, 10 min. presentation time]

"SECURITY2People - Functionality of the Final Demonstrator"
Wolfgang Raskob (Karlsruhe Institute of Technology, Germany);
Ellen Gers (Federal Office of Civil Protection and Disaster Assistance,
Germany); Peter Meyer zu Drewer (CAE, Germany);
Stefan Moellmann (KIT, Germany); Lars Tufte (PRO DV AG &
Germany, Germany); Frank Ulmer (Dialogik, Germany)
[Short-Paper, 10 min. presentation time]

**"Moving Advanced Safety to the Cloud: Some Outcomes of
SafeCity Project"**
Roberto Gimenez (Hi-Iberia Ingenieria y Proyectos SL, Spain);
Diego Fuentes (Hi-Iberia Ingenieria y Proyectos SL, Spain);
Daniel Oancea (Hi-Iberia Ingenieria y Proyectos SL, Spain);
Diego Giménez (Isdefe, Spain); Judith Pertejo (Isdefe, Spain);
Tassos Dimitriou (Athens Information Technology, Greece);
Sakis Giannetsos (Athens Information Technology, Greece);
Sofia Tsekeridou (Athens Information Technology, Greece);
Mario Carabaño (Everis, Spain); Sofia Virgos (Everis, Spain)
[Short-Paper, 10 min. presentation time]

P.M.
2:00–3:30   **ROOM C.**5
SENSOR DATA FUSION WORKSHOP

P.M.
2:00–3:30   **ROOM D.**5
ERGONOMIC ASPECTS
Chair: *Prof. Dr.-Ing. Christopher Schlick* (Fraunhofer FKIE, Germany)

"Cross-Organizational Preplanning in Emergency Management with IT-Supported Smart Checklists"
Gertraud Peinel (Fraunhofer FIT, Germany);
Thomas Rose (Fraunhofer FIT, Germany);
Alexander Wollert (Fraunhofer FIT, Germany)
[Full-Paper, 20 min. presentation time]

"Resilience: Approach, Definition and Building Policies"
Leire Labaka (Tecnun - University of Navarra, Spain);
Josune Hernantes (CEIT, Spain); Ana Laugé (Tecnun - University of Navarra, Spain); Jose M Sarriegi (Tecnun - University of Navarra, Spain) [Short-Paper, 10 min. presentation time]

"Towards a Real-time Situational Awareness System for Surveillance Applications in Unconstrained Environments"
David Münch (Fraunhofer IOSB, Germany);
Stefan Becker (Fraunhofer IOSB, Germany);
Wolfgang Hübner (Fraunhofer IOSB, Germany);
Michael Arens (Fraunhofer IOSB, Germany)
[Short-Paper, 10 min. presentation time]

"ISPS Port Risk Assessment: Is the True Value in the Numbers or in the Process?"
Gina Linkmann (Fraunhofer FKIE, Germany);
Eric Holder (Fraunhofer FKIE, Germany)
[Short-Paper, 10 min. presentation time]

"Securing Area with Robots Under BML Control"
Thomas Remmersmann (Fraunhofer FKIE, Germany);
Ulrich Schade (Fraunhofer FKIE, Germany)
[Short-Paper, 10 min. presentation time]

P.M.
4:00–6:00   **ROOM C.6**
SENSOR DATA FUSION WORKSHOP

POSTERS

P1   **Canceled !**

P2   **HoneypotMe: Extending Honeypot Sensors to
                  Production Systems**
                  Jan Gassen (Fraunhofer FKIE, Germany);
                  Elmar Gerhards-Padilla (Fraunhofer FKIE, Germany)

P3   **Technological Implications for a "post-fossile Bundeswehr"**
                  Jürgen Kohlhoff (Fraunhofer INT, Germany)

P4   **Bonn.realis - Innovative Cluster in the Area of Future Food
                  and Human Safety**
                  Jana-Christina Gawron (GIQS, Germany)

P5   **Canceled !**

P6   **Automated Software Analysis of Gamma Spectra -**
           Potential and Limitations
           Wolfram Berky (Fraunhofer INT, Germany);
           Sebastian Chmel (Fraunhofer INT, Germany);
           Hermann Friedrich (Fraunhofer INT, Germany);
           Theo Köble (Fraunhofer INT, Germany);
           Monika Risse (Fraunhofer INT, Germany);
           Wolfgang Rosenstock (Fraunhofer INT, Germany);
           Olaf Schumann (Fraunhofer INT, Germany)

P7   **Analyzing Website Content for Improved R&T**
           Collaboration Planning
           Dirk Thorleuchter (Fraunhofer INT, Germany);
           Dirk Van den Poel (Ghent University, Belgium)

P8   **SecMan - Road Infrastructures Security Manual**
           Harald Kammerer (ILF Consulting Engineers, Austria);
           Bernhard Kohl (ILF Consulting Engineers, Austria);
           Ingo Kaundinya (The Federal Highway Research Institute, Ger-
           many); Jakob Haardt (The Federal Highway Research Institute,
           Germany)

P9   **Acoustic Monitoring of Real-life Environments**
           Frank Kurth (Fraunhofer FKIE, Germany);
           Dirk von Zeddelmann (Fraunhofer FKIE, Germany);
           David Damm (Fraunhofer FKIE, Germany);
           Miriam Häge (Fraunhofer FKIE, Germany);
           Marc Oispuu (Fraunhofer FKIE, Germany)

P10 **UGV Reconnaissance of Areas Contaminated with Hazardous Materials**
Bernd Brüggemann (Fraunhofer FKIE, Germany);
Thomas Barz (Fraunhofer FKIE, Germany);
Dennis Wildermuth (Fraunhofer FKIE, Germany);
Frank E. Schneider (Fraunhofer FKIE, Germany);
Dirk Schulz (Fraunhofer FKIE, Germany)

P11 **Detection and Localisation of Illicit Bomb Factories in Urban Areas - EMPHASIS**
Frank Schnürer (Fraunhofer ICT, Germany);
Moritz Heil (Fraunhofer ICT, Germany);
Horst Krause (Fraunhofer ICT, Germany);
Hans Önnerud (Swedish Defence Research Agency, FOI, Department of Energetic Materials);
Henric Östmark (Swedish Defence Research Agency, FOI, Department of Energetic Materials)

P12 **Transfer of Security Research Results Through Standardization "Case Studies from the Project InfraNorm"**
Simone Wurster
(Technical University of Berlin, Germany)

P13   **Integrated Optical Sensor Platform for Multi-Parameter
Detection of Hazardous Substances**
Daniel Pergande (Fraunhofer HHI, Germany);
Peter Lützow (Fraunhofer HHI, Germany);
Rozalia Orghici (Fraunhofer HHI, Germany);
Martin Weiland (Fraunhofer HHI, Germany);
Dominik Gausa (Fraunhofer HHI, Germany);
Helmut Heidrich (Fraunhofer Institut für HHI, Germany);
Wolfgang Schade (Fraunhofer HHI, Germany)

P14   **Intelligent Support of Video Surveillance at Airports**
Matthias A. Grimm
(University of Applied Sciences Ruhr West, Germany);
Veit Voges (European Aviation Security Center e. V., Germany);
Sebastian Hommel
(University of Applied Sciences Ruhr West, Germany);
Uwe Handmann
(University of Applied Sciences Ruhr West, Germany);
Uwe Weigmann
(European Aviation Security Center e. V., Germany)

P15   **Canceled !**

P16   **The Defense Technologies Forecast 2011+ (WTV 2011+)**
Matthias Grüne (Fraunhofer INT, Germany);
Ulrik Neupert (Fraunhofer INT, Germany)

P17　　　　**3-D X-Ray Imaging for Sea Freight Container Inspection**
　　　　　　Frank Sukowski (Fraunhofer IIS, Germany);
　　　　　　Randolf Hanke (University of Würzburg & Fraunhofer IIS, Germany);
　　　　　　Ulf Haßler (Fraunhofer IIS, Germany);
　　　　　　Petra-Maria Keßling (Fraunhofer IIS, Germany);
　　　　　　Michael Maisl (Fraunhofer IZFP, Germany);
　　　　　　Markus Rehak (Fraunhofer IIS, Germany);
　　　　　　Tobias Schön (Fraunhofer IIS, Germany);
　　　　　　Christian Schorr (Fraunhofer IZFP, Germany);
　　　　　　Stefan Schröpfer (Fraunhofer IIS, Germany);
　　　　　　Norman Uhlmann (Fraunhofer IIS, Germany)

P18　　　　**Development of a Fully Automated Lab-on-a-Chip System**
　　　　　　for Rapid Field Testing of Biological Threads
　　　　　　Thomas van Oordt (HSG-IMIT, Germany);
　　　　　　Oliver Strohmeier (University of Freiburg - IMTEK, Germany);
　　　　　　Daniel Mark (HSG-IMIT, Germany);
　　　　　　Felix von Stetten (University of Freiburg - IMTEK, Germany)

P19　　　　**C-Band UAV Synthetic Aperture Radar for Border Control**
　　　　　　and Disaster Monitoring
　　　　　　Helmut Essen (Maxonic GmbH, Germany);
　　　　　　Voon Chet Koo (Iradar, Germany)

P20   **Forest Fire Monitoring with Millimeter Wave Radiometer**
            Onboard of a Gyrocopter
            Helmut Essen (Maxonic GmbH, Germany);
            Ingolf Willms (University of Duisburg-Essen, Germany);
            Jens Bongartz (Hochschule Koblenz, Rhein-Ahr-Campus, Germany);
            Denis Noetel (Fraunhofer FHR, Germany)

P21   **Multi-Camera Human Tracking at Airports Based on an**
            Intelligent System Architecture
            Matthias A. Grimm
            (University of Applied Sciences Ruhr West, Germany);
            Sebastian Hommel
            (University of Applied Sciences Ruhr West, Germany);
            Uwe Handmann (University of Applied Sciences Ruhr West, Germany);
            Veit Voges (European Aviation Security Center e. V., Germany);
            Uwe Weigmann (European Aviation Security Center e. V., Germany)

P22   **ACCIS - Development Status of a Neutron-**
            and Gamma-based Cargo Inspection System
            Benjamin Bromberger (Physikalisch-Technische Bundesanstalt
            (PTB), Germany)

P23   **Canceled !**

P24   **Statistical Evaluation of the Security Chain for Airports**
Daniel Fratzscher (BAM Federal Institute for Materials Research
and Testing, Germany); Norma Wrobel (BAM Federal Institute for
Materials Research and Testing, Germany); Kurt Osterloh (BAM
Federal Institute for Materials Research and Testing, Germany);
Uwe Ewert (BAM Federal Institute for Materials Research and
Testing, Germany)

P25   **Distributed Cooperative Monitoring for
Network Anomaly Detection**
Till Elsner (University of Bonn & Fraunhofer FKIE, Germany);
Michael Meier (University of Bonn & Fraunhofer FKIE, Germany);
Matthias Wuebbeling (Fraunhofer FKIE, Germany)

P26   **Canceled !**

P27   **Fast Laser-Spectroscopic Screening of Swipe Samples for
Uranium Isotopes**
Cord Fricke-Begemann (Fraunhofer ILT, Germany);
Reinhard Noll (Fraunhofer ILT, Germany);
Andrew Maddison (International Atomic Energy Agency, Austria);
Martin Dürr (Forschungszentrum Jülich GmbH & Institute of Energy
and Climate Research, Germany)

P28   **SiLeBAT - Securing the Feed and Food Supply Chain in the Event of Biological and Agroterrorism (BAT) Incidents**
Anneluise Mader (Federal Institute for Risk Assessment, Germany);
Anja Buschulte (Federal Institute for Risk Assessment, Germany);
Matthias Filter (Federal Institute for Risk Assessment, Germany);
Bernd Appel (Federal Institute for Risk Assessment, Germany)

P29   **Innovation in Security Organisations - Introducing the InnoSec Project**
Milos Jovanovic (Fraunhofer INT, Germany)

P30   **Rapid Analysis Technique for Pharmaceutical Products Without Sample Preparation: Desorption-Electrospray-Ionization-Mass Spectrometry (DESI-MS)**
Sara Harkai (Forensic Science Institute & Bundeskriminalamt, Germany)

P31   **Mobile FT-IR and Raman Spectroscopy for Rapid Detection of Synthetic Cannabimimetics**
Sara Harkai (Forensic Science Institute & Bundeskriminalamt, Germany)

P32   **Canceled !**

P33   **Detection of Radioactive and Nuclear Materials: A Link from Non-Proliferation and Nuclear Safety to Security**
Martin Dürr (Forschungszentrum Jülich GmbH & Institute of Energy and Climate Research, Germany);
Cord Fricke-Begemann (Fraunhofer ILT, Germany);
Eric Mauerhofer (Forschungszentrum Jülich GmbH, Germany);
Irmgard Niemeyer (Forschungszentrum Jülich, Germany);
Matthias Rossbach (Forschungszentrum Jülich GmbH, Germany)

P34   **Human Systems Integration for Cyber Security: Initiation of a Socio-technical System Analysis**
Susan Träber (Fraunhofer FKIE, Germany);
Oliver Witt (Fraunhofer FKIE, Germany);
Carsten Winkelholz (Fraunhofer FKIE, Germany);
Frank Flemisch (Fraunhofer FKIE, Germany)

P35   **Detection of Liquids Based on Reflectance Measurements with High-Temperature Superconducting Sensors Onboard of a Gyrocopter**
Yuriy Divin (Research Centre Juelich, Germany);
Matvei Lyatti (Kotel'nikov Institute of Radio Engineering and Electronics, Russia);
Valery Pavlovskiy (Kotel'nikov Institute of Radio Engineering and Electronics, Russia);
Ulrich Poppe (Research Centre Juelich, Germany);
Knut Urban (Research Centre Juelich, Germany)

P36   **An Open-Source Community Resource for Epidemiological**
               Modelling in Bioterroristic or Agroterroristic Crisis Situations
               Alexander Falenski (Federal Institute for Risk Assessment, Germany);
               Christian Thoens (Federal Institute for Risk Assessment, Germany);
               Matthias Filter (Federal Institute for Risk Assessment, Germany);
               Annemarie Käsbohrer (Federal Institute for Risk Assessment, Germany);
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               Judith Douglas (IBM Almaden Research Center, USA);
               Kun Hu (IBM Almaden Research Center, USA);
               Bernd Appel (Federal Institute for Risk Assessment, Germany)

P37   **Public Private Approach to**
               Make Food Chains Resilient to Bioterrorist Attacks
               Tilman Wilke (University of Bonn, Germany);
               Sophia Schulze-Geisthövel (University of Bonn, Germany);
               Brigitte Petersen (University of Bonn, Germany)

P38   **Canceled !**

P39   **Canceled !**

P40   **3D-Tomography for Security Applications with Focus on Sea Freight Containers**
Stefan Moser (Fraunhofer EMI, Germany);
Siegfried Nau (Fraunhofer EMI, Germany);
Manfred Salk (Fraunhofer EMI, Germany);
Victoria Heusinger (Fraunhofer EMI, Germany);
Klaus Thoma (Fraunhofer EMI, Germany)

P41   **Canceled !**

P42   **The SAVASA Project: Standards Based Approach to Video Archive Search and Analysis**
Roberto Gimenez (HI-Iberia Ingenieria y Proyectos SL, Spain);
Inmaculada Luengo (HI-Iberia Ingenieria y Proyectos SL, Spain);
Raul Santos (Hi-Iberia Ingenieria y Proyectos SL, Spain);
Anna Mereu (Hi-Iberia Ingenieria y Proyectos SL, Spain);
Hui Wang Wang (University of Ulster, United Kingdom);
Bryan W. Scotney (University of Ulster, United Kingdom);
Jun Liu (University of Ulster, United Kingdom);
George K Xilouris (NCSR Demokritos, Greece)

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Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institute, EMI
Eckerstraße 4
79104 Freiburg, Germany
Phone +49 761 2714-351
klaus.thoma@emi.fraunhofer.de

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Prof. Dr.-Ing. Jürgen Beyerer
Fraunhofer Institute for Optronics, System Technologies and Image Exploitation IOSB
Fraunhoferstraße 1
76131 Karlsruhe, Germany
Phone +49 721 6091-210
juergen.beyerer@iosb.fraunhofer.de

CENTRAL OFFICE

Dr. Tobias Leismann
Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institute, EMI
Eckerstraße 4
79104 Freiburg, Germany
Phone +49 761 2714-402
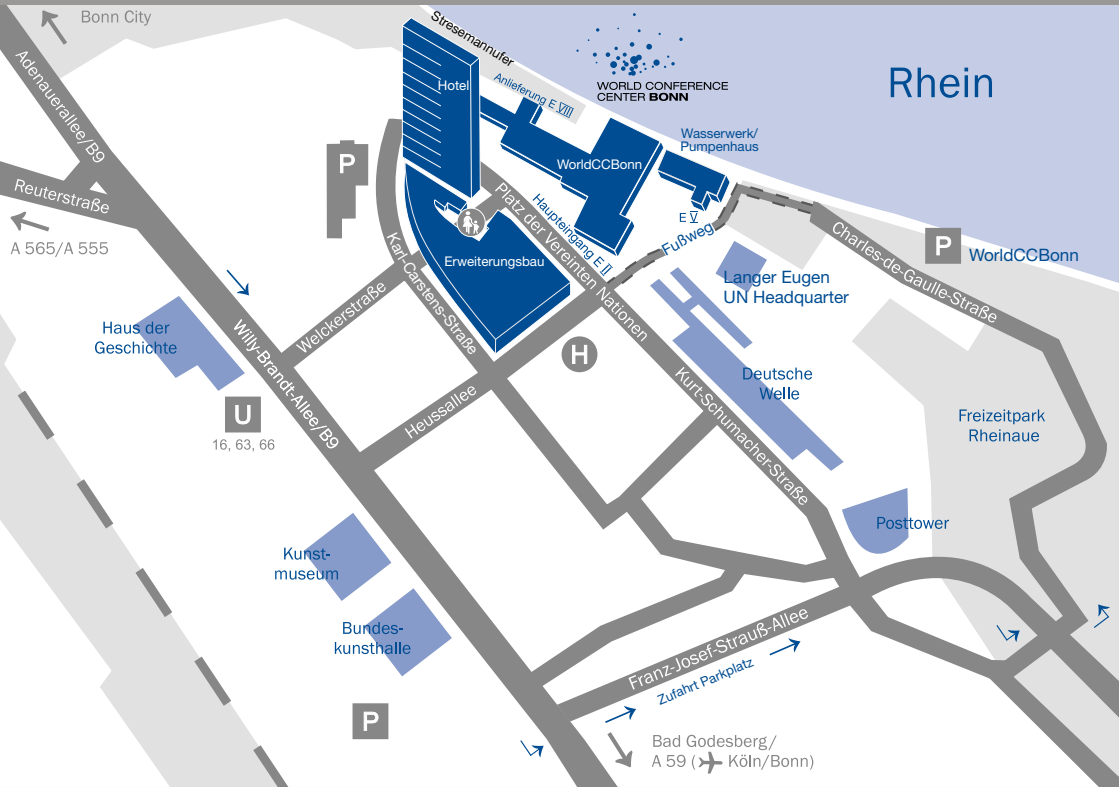tobias.leismann@emi.fraunhofer.de

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Phone +49 228 9267-0
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7TH WORKSHOP SDF 2012

SENSOR DATA FUSION: TRENDS, SOLUTIONS, APPLICATIONS

TECHNICAL PROGRAM

Prior to its technological realization or the scientific reflection on it, sensor data fusion is an omnipresent capability. In fact, all living creatures by nature or intuitively perform sensor data fusion. Each in their own way, they combine or sensations provided by different and mutually complementary sense organs with knowledge learned from previous experiences and communications from other creatures. The result is a mental model of their individual environment, the basis of behaving appropriately. As a sophisticated technology with significant economic implications, sensor data fusion aims at automating this capability in various areas.

SDF 2012, the 7th in a row of annual workshops, addresses numerous application aspects of sensor data fusion, as well as methodology oriented topics. Its 26 presentations are grouped into 6 sessions. Particular emphasis is placed on Random Finite Set methods, emitter localization and tracking, ground surveillance, resource management, and selected aspects of higherlevel fusion. 15 of the papers were contributed by authors from abroad (Australia, France, Korea, Singapore, South Africa, NL, UK, USA). The contributions from industry, academia, and research institutions let us expect an exchange of ideas, lively discussions, and mutual crossfertilization.

For more detailed information see: **www.fkie.fraunhofer.de/sdf**

TECHNICAL PROGRAM

ORGANIZATION

Priv.-Doz. Dr. Wolfgang Koch

Fraunhofer Institute for Communication,
Information Processing and Ergonomics FKIE / University of Bonn
w.koch@ieee.org

Peter K. Willett

University of Connecticut, USA
p.willett@ieee.org

Felix Govaers

Fraunhofer Institute for Communication,
Information Processing and Ergonomics FKIE, Germany
felix.govaers@fkie.fraunhofer.de

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Anthony Weiss (Tel Aviv University, ISR)

Abdelhak Zoubir (Technische Universität Darmstadt, GER)

110 ADVANCES IN METHODOLOGY

Chair:
Priv.-Doz. Dr. Wolfgang Koch (Fraunhofer FKIE / University of Bonn, Germany)

2:00 p.m.   **"Sensor Data Fusion: Trends, Solutions, Applications"**
Priv.-Doz. Dr. Wolfgang Koch (Fraunhofer FKIE / University of Bonn, Germany)

2:20 p.m.   **"Simultaneous Localization and Mapping for Non-parametric Potential Field Environments"**
James Murphy, Simon Godsill
(University of Cambridge, United Kingdom)

2:40 p.m.   **"Track Maintenance Using the SMC-Intensity Filter"**
Christoph Degen, Felix Govaers, Priv.-Doz. Dr. Wolfgang Koch
(Fraunhofer FKIE / University of Bonn, Germany)

3:00 p.m.   **"A Particle Filter for Target Arrival Detection and Tracking in Track-Before-Detect"**
Alexandre Lepoutre, Olivier Rabaste, François Le Gland
(Office national d'études et de recherches aérospatiales Onera, France; Institut de recherche en informatique et en automatique INRIA, France)

120 **RANDOM FINITE SET METHODS**

Chair:
Lyudmila Mihaylova (Lancaster University, United Kingdom)

4:00 p.m.   **"On the Performance of the Box Particle Filter for Extended Object Tracking Using Real Data"**
Nikolay Petrov, Lyndmila Mihaylova, Amadon Gning (Lancaster University, United Kingdom)

4:20 p.m.   **"Calibration of Tracking Systems Using Detections From Non-Cooperative Targets"** Branko Ristic (Defence Science and Technology Organization DSTO, Australia); Daniel E. Clark, Neil Gordon (Heriot-Watt University, United Kingdom)

4:40 p.m.   **"A Probabilistic Hypothesis Density Filter for Traffic Flow Estimation in the Presence of Clutter"**
Matthieu Canaud (University of Lyon & IFSTTAR, France);
Lyudmila Mihaylova (Lancaster University, United Kingdom);
Nour-Eddin El Faouzi (IFSTTAR, France);
Romain Billot (IFSTTAR, France); Jacques Sau (IFSTTAR, France)

5:00 p.m.   **"Ground Moving Target Tracking Using Signal Strength Measurements with the GM-CPHD Filter"**
Michael Mertens, Martin Ulmke (Fraunhofer FKIE, Germany)

5:20 p.m.   **"Graffic Mapping Filters for Multisensor Fields"**
Roy Streit (Metron Inc., USA)

210 SELECTED ASPECTS OF MULTISENSOR FUSION

Chair:
Darko Musicki (Hanyang University, Korea)

2:00 p.m.	**"Creating a Likelihood Vector for Ground Moving Targets in the Exo-Clutter Region of Airborne Radar Signals"** Dieter Nagel (Cassidian Ulm, Germany)
2:20 p.m.	**"Finding Sensor Trajectories for TDOA Based Localization - Preliminary Considerations"** Regina Kaune (Fraunhofer FKIE / University of Bonn, Germany)
2:40 p.m.	**"Track Segment Association with Classification Information"** Benjamin Pannetier (Onera, France); Jean Dezert (Onera, France)
3:00 p.m.	**"Towards an Online, Adaptive Algorithm for Radar Surveillance Control"** Fotios Katsilieris (Thales Nederland BV & University of Twente, The Netherlands); Alexander Charlish (Fraunhofer FKIE, Germany); Yvo Boers (Thales Nederland BV & University of Twente, The Netherlands)

220 EMITTER LOCALIZATION AND TRACKING

Chair:
Benjamin Pannetier (Onera, France)

4:00 p.m. **"Wi-Fi Azimuth and Position Tracking Using Directional Received Signal Strength Measurements"**
Jochen Seitz, Thorsten Vaupel, Stephan Haimerl,
Javier Gutiérrez Boronat, Jörn Thielecke (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) / Fraunhofer Institute for Integrated Circuits IIS, Germany)

4:20 p.m. **"Distributed Time and Frequency Difference of Arrival Tracking in Clutter"**
Darko Musicki, Taek-Lyul Song, Hyoung Won Kim
(Hanyang University, Korea)

4:40 p.m. **"FDOA Determination of ADS-B Transponder Signals"**
Christian Steffes (Fraunhofer FKIE, Germany);
Sven Rau (University of Bonn, Germany)

5:00 p.m. **"Multipath Detection in TDOA Localization Scenarios"**
Christian Steffes (Fraunhofer FKIE, Wachtberg);
Sven Rau (University of Bonn, Germany)

5:20 p.m. **"Target Maneuver Detection Using a Particle Filter with Spawn Model and Particle Labeling"**
Julian Hörst (Fraunhofer FKIE / University of Bonn, Germany)

310 SELECTED ASPECTS OF MULTISENSOR FUSION

Chair:
Adnan Bubalo (Air Force Research Laboratory, USA)

THURSDAY 6ᵀᴴ SEPTEMBER 2:00 – 3:20 P.M.

2:00 p.m.   **"ISR Analytics: Architectural and Methodical Concepts"**
Jennifer Sander, Gerd Schneider, Barbara Essendorfer,
Achim Kuwertz (Fraunhofer IOSB, Karlsruhe, Germany /
Karlsruhe Institute of Technology, Germany)

2:20 p.m.   **"Road Network Identification by Means of the
Hough Transform"**
Eric Salerno (University at Buffalo, USA); Tarunraj Singh (University
at Buffalo, USA); Puneet Singla (University at Buffalo, USA);
Maria Scalzo (AFRL, Information Directorate, USA); Adnan Bubalo
(Air Force Research Laboratory, USA); Mark Alford (Air Force
Research Laboratory/RIEA, USA); Eric Jones (Air Force Research
Laboratory/RIEA, USA)

2:40 p.m.   **"DSO Cognitive Architecture in Mobile Surveillance"**
Gee Wah Ng, Yuan Sin Tan, Xuhong Xiao, Rui Zhong Chan
(DSO National Laboratories, Singapore)

3:00 p.m.   **"The JDL Model of Data Fusion Applied to
Cyber-Defence - a Review"**
Sabine Schreiber-Ehle, Priv.-Doz. Dr. Wolfgang Koch
(Fraunhofer FKIE / University of Bonn, Germany)

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