EU-US Expert Meeting on Critical Infrastructure Protection  
Budapest, 9/6/2011

STA Unit participated in the 2nd EU-US Expert Meeting on Critical Infrastructure Protection. The meeting was led by plenary talks by Hungarian DG for Disaster Management, US Office of Infrastructure Protection in DHS, and DG HOME Unit on Crisis Management and Fight against Terrorism. Also spoke the Canadian Director for CIP and Hungarian national coordinator for CIP. A joint statement was issued at the end of the meeting which stressed the need for transatlantic collaboration in this area. The experts agreed on working together on further development of an Infrastructure Security Toolkit which has been under development in the US by DHS.

Pravir.Chawdhry@jrc.ec.europa.eu

Space Weather Awareness Dialogue  
Brussels, 25/10/2011

JRC and DG Enterprise and Industry jointly hosted the first EU Space Weather Awareness Dialogue in Brussels on 25-26 October.

Our modern technological infrastructures on the ground and in space are vulnerable to natural events, among them adverse space weather is an important emerging threat. The UK Government has already recognised the space weather as one of the Top 10 risks to the national infrastructure.

Following the previous meetings with NOAA (Boulder Workshop on Space Weather in February 2010) and AAAS symposium jointly organized by JRC and NOAA on this subject in February 2011, Space Weather has been discussed in the White House with key participants from the US and the EU side, amongst them the JRC.

Politically, all of the JRC research activities are dedicated to support the agenda Europe2020, where space is one of the key elements of the flagship initiative “An industrial policy for the globalization era”.

The aim behind this Dialogue was to highlight the potential impact of extreme space-weather events on modern technological infrastructures in space and on the ground, to identify related scientific, operational and policy challenges for disaster prevention, preparedness and response, risk mitigation and to make recommendations for concrete actions to protect susceptible infrastructures.

The present Dialogue was attended by about 70 high-level representatives from industry, infrastructure operators, government agencies and research organizations. The Dialogue was structured as five sessions in the form of panel discussions, followed by conclusions. Panelists were high-ranking representatives and experts from stakeholder groups.

The Dialogue was jointly hosted by the JRC Director General Dominique Ristori with DG-ENTR Deputy Director General Paul Weisenberg. Sessions were supported by senior officials of the JRC, DG-ENTR, DG-MOVE, DG-ECHO and NOAA.

Alois.Sieber@ec.europa.eu

Software Defined Radio (SDR) Standardization Workshop  
Ispra, 17/11/2011

The purpose of the workshop was to identify a roadmap for the development and use of SDR and Cognitive Radio (CR) in Europe, including the need for accelerated standardisation. The attendees strongly endorsed the forthcoming standardisation mandate by the European Commission covering harmonization needs for SDR and CR in the commercial, public safety and military areas. This mandate will be addressed to the European Standards Organisations (CEN, CENELEC and ETSI). The JRC has been working on the research and standardization of Reconfigurable Radio Systems (RRS) since 2008 by contributing directly to ETSI Technical Committee. In particular, the JRC is chairing the Working Group 4 focused on the Public Safety domain, which has produced various technical reports to identify user requirements, has defined potential system architectures and has provided a techno-economic analysis on the impact of these new technologies. The standardization mandate is the logical evolution of this activity. JRC has supported DG Enterprise and Industry and the European Defence Agency in the identification of the key elements of the mandate in the Public Safety domain and will closely work with European standardization bodies for the successful execution of the mandate.

Gianmarco.Baldini@jrc.ec.europa.eu

Visit by Commissioner Vice President Tajani  
Ispra, 18/7/2011

During his visit to the JRC Ispra site on 18 July, Commissioner Antonio Tajani made a brief stop at the European Microwave Signature Laboratory of the IPSC. CORSA scientists explained the scope of tests and measurements carried out in the 20 m anechoic chamber of the EMSL, for EU policy support in wireless communications and radio-navigation domains.

Pravir.Chawdhry@jrc.ec.europa.eu
GNSS technologies

CEPT Working Group SE40 Meeting: Compatibility of Pseudolites with GNSS Receivers
Biel (CH), 4/7/2011

CORSAs action attended the meeting of the Conference of European Posts and Telecommunication Administrations (CEPT) where it presented the results obtained from the compatibility analysis between pseudolites and GNSS services. This is part of the support JRC has been offering to CEPT (SE40 group) since November 2010 in the preparation of a formal report (ECC 128) on pseudolite compatibility issues. CORSAs presented the main results obtained during the recent test campaign carried out in the EML Laboratory which involved real pseudolites and different GPS and GALILEO receivers. The theoretical model developed by the JRC for predicting the loss caused by a pseudolite signal on non-participating GNSS receiver was discussed. The model will be likely adopted by CEPT for setting power and distance limitations for pseudolite transmitters. The results shown have been considered extremely useful for the regulatory activities of the CEPT and will be included in the new draft of the ECC 128 report, as an impact to the European Radio Spectrum Policy in relation to the deployment of pseudolites.

Joaquim.Fortuny@jrc.ec.europa.eu  
Daniele.Borio@jrc.ec.europa.eu  
Cillian.Odriscoll@jrc.ec.europa.eu

ICT Knowledge Transfer Network Workshop on Pseudolites, Teddington (UK), 17/8/2011

National Physical Laboratory hosted the UK ICT Knowledge Transfer Network (KTN) Workshop on Pseudolites. Its aim was to help determine the UK position in the Commission’s preparation towards regulatory approach to the deployment of pseudolites technology. The purpose of the workshop was to bring representatives of the UK PL community together in a neutral venue to discuss a possible united UK contribution to this process. In view of the work by JRC in the past 12 months on the compatibility of pseudolites with non-participating GNSS receivers, CORSAs action was invited to contribute to this discussion. CORSA gave a brief overview of the recent results obtained at JRC on the impact of PLs on GPS and Galileo receivers. A number of attendees expressed interest in the results obtained, particularly in relation to the impact of the choice of PRN code on the results.

Cillian.ODriscoll@jrc.ec.europa.eu

ION-2011 International Conference on Navigation
Portland, 20/9/2011

The Institute of Navigation (ION) GNSS conference is the primary conference in the field of satellite navigation, with over 3000 attendees and many exhibitors. Cillian O’Driscoll attended the ION GNSS conference, to present two technical papers and to attend the presentations of other papers which may be of interest to the CORSA action. The JRC’s work on GNSS currently focuses on three primary aspects: pseudolites, interference and ionospheric effects. The conference consisted of 6 parallel streams, with 16 presentations per stream per day over 3 days. In addition, two ½ day panel discussions were held each day, with an additional panel session on Wednesday evening. There was a significant increase this year in the number of papers presented on the topics of interference (primarily jamming), anti-spoofing and ionospheric scintillation monitoring. In particular, there were 11 papers on the topic of anti-spoofing, compared with only 3 last year. CORSAs presented a paper on scintillation and one on pseudolites which were attended by approximately 30 people.

Cillian.ODriscoll@jrc.ec.europa.eu

Conference on Indoor Positioning and Indoor navigation
Guimarães (Portugal), 21/9/2011

The Indoor Position and Indoor Navigation (IPIN) is a conference the main focus of which is indoor location technologies. Among those technologies, pseudolites play a significant role and are seen as one of the potential solutions of the location/navigation problem in difficult environments such as indoors. Daniele Borio presented the paper entitled “Pulsed Pseudolite Signal Effects on Non-Participating GNSS Receivers”.

Daniele.Borio@jrc.ec.europa.eu

JRC Supports EU in GNSS Interference Tests in the USA
Ispra, 12/10/2011

In support to DG ENTR EU Satellite Navigation Programmes Unit, CORSAs has provided a professional Galileo GNSS receivers to the US Department of State for interference tests between Galileo and LightSquared signals. LightSquared is a new licenced broadband service in the USA which is causing considerable controversy and interest on both sides of the Atlantic. The reason for this is the potential interference with the GPS signal that can be caused by LightSquared signals due to the latter’s very close proximity to the frequency band of GPS. Similar risks are associated with the layout of Lightsquared on the Galileo signals.

Joaquim.Fortuny@jrc.ec.europa.eu

Polish Presidency Seminar on Space Situational Awareness
Warsaw, 29/9/2011

In view of the strategic importance of European Space Situation Awareness (SSA) capability, including the need for ensuring the optimal use of existing SSA assets and capabilities for the benefit of all Member States and the EU itself as well as the necessity of an adequate data policy, Poland as current EU Presidency promoted this topic. The aim of this event was to take stock of the progress made so far in the discussions between Member States, the EU and ESA and to exchange opinions on a possible way forward. CORSAs action attended this event organised jointly by DG ENTR and the Polish presidency and attended by leading policy makers and scientists in the field of Space Situational Awareness (SSA). CORSAs is working on a specific aspect of SSA, namely the Space Weather and its impact on the GNSS receivers.

Pravir.Chawdhry@jrc.ec.europa.eu
Test campaign on wireless communication standards for road tolling devices
Ispra, 6/7/2011

CORSA hosted in its EMSL laboratory, a group of experts from ETSI-TC-ITS who participated in two comprehensive test campaigns, during the summer months of July and August, each campaign lasting a week. The objective of the tests was to look at the possible interference between the existing and newly proposed road tolling devices that use wireless communication in 5.8Mhz and 5.9 Mhz bands.

Within the standardization organization ETSI, the technical committee TC-ITS is developing communication standards for Intelligent Transport Systems (ITS) as well as standards for ITS applications and security issues in close cooperation with strategic partners such as the vehicle manufacturers and global supplier companies. The current standards developments are based on the European Commission Mandate M/453 on Cooperative ITS requiring a set of standards for interoperability to be developed by mid 2012. The results of the test campaigns are being analysed and will be delivered by ETSI in a technical report towards the end of 2011.

Joaquim.Fortuny@jrc.ec.europa.eu

ETSI TC RRS Meeting
Sophia Antipolis, 8/9/2011

ETSI Technical Committee (TC) Reconfigurable Radio Systems (RRS) is composed by four working groups: WG1 (System Design), WG2 (Handheld terminals, WG3 (Functional architecture) and WG4 (Public Safety). CORSA presented the current progress in WG4. There is currently a work item on network and spectrum sharing. The current draft of the Technical Report (TR) has been presented and discussed. The TR is mostly based on the work done in the FP7 HELP project.

Gianmarco.Baldini@jrc.ec.europa.eu

Multiaccess Communication Conference
Trento, 12/9/2011

The aim of the MACOM 2011 was to discuss both multi-user communications theory and multiple access techniques and standardization activities in areas related to PHY and MAC layer protocols - and their interactions - for contemporary networks. The conference intended to provide the experts from both the academic institutes and industry with an opportunity to present their state-of-the-art results and exchange the ideas on multiple access techniques and related areas. CORSA participated in the MACOM 2011 conference and presented two papers on Cognitive Radio technology:

- Design of a robust cognitive control channel for Cognitive Radio Networks based on Ultra Wideband Pulse Shaped Signal. In this paper, we use the theoretical framework developed by the JRC to design an innovative approach to the Cognitive Control Channel.

- An Urn Occupancy approach for Cognitive Radio Networks in DTVB white spaces. In this paper, we present a new statistical model for collaborative spectrum sensing.

Gianmarco.Baldini@jrc.ec.europa.eu

CEPT FM49 Meeting on Radio Spectrum allocation for Public safety communications
Berlin, 27/9/2011

Conference of European Posts and Telegraph Administrators (CEPT) is the main policy making group representing MSs mandated by the Commission to develop technical proposals towards the EU Radio Spectrum Policy.

This was the Kick-Off Meeting of the project team CEPT FM49, which is focused on radio spectrum issues concerning Public Safety and Disaster Relief (PPDR) applications and scenarios, in particular concerning the broadband high speed communications as requested by PPDR organisations.

Gianmarco.Baldini@jrc.ec.europa.eu

Workshop on Platforms and Networks for Interoperable and Efficient Public Safety Communications
10/11/2011

This Workshop constituted a key event within the overall strategy followed by Project HELP towards the development of the envisioned solution framework. Within this strategy, the workshop was aimed at providing an independent validation process and fostering the dissemination of the project objectives and developments with representatives from end-users, regulatory, industry and research entities. To this end, the first outcomes of the Project HELP were presented and discussed.

In turn, the workshop provided a discussion panel for interested organizations and experts which presented their views and experimental platforms for ICT interoperability in public safety and security and the applicability of resource sharing principles (network & spectrum) to improve the operational capabilities of public safety organizations in Europe.

The workshop provided important feedback to Project HELP on the needs of Public Safety organizations, the evolution of Public Safety communications technologies and the feasibility of network and spectrum sharing solutions investigated in Project HELP.

Gianmarco.Baldini@jrc.ec.europa.eu
International Conference on Ultra Wideband (ICUWB)
Bologna, 14/9/2011

CORSAn participated to the International Conference on Ultra-Wideband Communications (ICUWB), which is a major event in the field of Ad-Hoc networks. This year’s event has seen almost three hundred participants from different parts of the world. ICUWB has represented an excellent occasion to meet representatives from other scientific institutions working in related fields. A considerable fraction of the research community working in communications is nowadays tackling the problem of more efficient usage of spectrum resources. This particular aspect seems to be crucial in the near future. Several approaches are now ongoing (e.g. cognitive radio system), which differentiates also in terms of the potential fields of application. The event has represented a good opportunity to disseminate part of the research activity done at the JRC but also to remain tuned on some aspects of a cutting edge technology.

Leonardo.Goratti@jrc.ec.europa.eu

European Radar Conference
Manchester, 12/10/2011

A paper on “Efficient signal processing in MIMO radars” by P.F. Sammartino, J. Fortunya-Guasch and D. Tarchi was presented at The 8th European Radar Conference (EuRAD 2011). European Radar Conference is the major forum for the current status and the future trends in the field of radar technology, system design and applications.

Pier-Francesco.Sammartino@jrc.ec.europa.eu

IEEE APWC 2011 and ICEAA 2011 Conferences
Torino, 15/9/2011

A paper on “Wireless interference effects in MIMO radars” by P.F. Sammartino, D. Tarchi and G. Baldini has been presented at the first IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC 2011) on 12th-16th September 2011, Turin, Italy.

Another paper on “MIMO radar topology: A systematic approach to the placement of the antennas” by P.F. Sammartino, D. Tarchi and C.J. Baker was presented at the 13th International Conference on Electromagnetics in Advanced Applications (ICEAA 2011), which was taking place in the same premises and on the same dates as the two conferences shared a common organization.

P.F. Sammartino chaired the Session of “Active and Smart Antennas” of APWC, together with Prof. H. Nakano.

Pier-Francesco.Sammartino@jrc.ec.europa.eu

ACROPOLIS FP7 NoE General Assembly
Barcelona, 14/10/2011

The Centre Tecnologic de Telecomunicacions de Catalunya (CTTC, Spain) hosted the general assembly of the FP7 network of excellence Acropolis. This network of excellence comprises a large number of universities all over Europe with the aim of establishing scientific collaborations between scientific institutions operating in the field of cognitive radio.

Leonardo.Goratti@jrc.ec.europa.eu
Gianmarco.Baldini@jrc.ec.europa.eu

MOSARIM
Project Workshop
Gothenburg, 23/10/2011

PF. Sammartino took part as JRC delegate to the MOSARIM plenary meeting. MOSARIM aims to tackle unwanted mutual interference between vehicular radar systems. Mitigation countermeasures evaluated in the MOSARIM project so far have the potential to even avoid any automotive radar malfunction. The contribution of the JRC in measuring the Radar Cross Section of cars in the anechoic chamber of the EMSL was a milestone for the work-to-be-done and allowed to develop additional techniques for radar interference mitigation, which have been discussed in the plenary meeting. Together with the rest of industrial and academic partners, the JRC is also developing the hardware setup, the software and the techniques to eventually propose a standard to use in any future automotive radar.

Leonardo.Goratti@jrc.ec.europa.eu
Gianmarco.Baldini@jrc.ec.europa.eu