in cooperation with

EUROPEAN
SATELLITE NAVIGATION
COMPETITION 2013

10th Anniversary

THE RESULTS 2013

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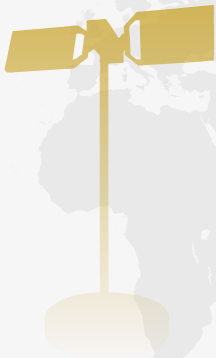

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special prize partners

GALILEO
Master

"The European Satellite Navigation Competition – A Boost for European Economic Growth"

Antonio Tajani
Vice-President of the European Commission

This summer, I witnessed a concrete proof of Galileo's ability to provide highly accurate positioning data, which was demonstrated in the Galileo Control Centre in Fucino. As the benefits of Galileo become tangible, it is now time for SMEs and industry to start preparing for future market opportunities. We expect EUR 90 billion in benefits to be reaped by industry as a return of Europe's EUR 11 billion investments in Galileo. Like the Internet, a Global Navigation Satellite System (GNSS) is a service enabler rather than a standalone service. It acts as a catalyst for economic activities, leading to the creation of added value and jobs in a wide range of connected sectors.

Today, positioning and timing signals provided by GNSS are used in many critical areas of the economy, including electronic trading, mobile phones, and search and rescue services to name but a few. Since its very beginning in 2004, the European Satellite Navigation Competition (ESNC) has motivated entrepreneurs to imagine and invent. The rising numbers of submissions for the ESNC over the last 10 years reflects a growing commercial interest for Galileo and GNSS in Europe and beyond. This is why the EC is actively supporting 18 European partners of the competition in providing services to their winners.

The ESNC has helped to exploit a growing market through fostering a variety of applications and has always led the way in detecting trends.

Since 2004 the competition has already attracted about 260 EGNOS applications for the GSA's special prize ranging from advanced driver assistance systems, assistance for vision impaired persons, to effective transport management systems. This year, the ESNC received ideas in more than 60 different fields of application.

I am happy to see the innovation potential in this year's winning ideas and wish all winners every success in realising their projects!

Antonio Tajani

European Commission

“Satellite Navigation Made in Bavaria”

Ilse Aigner
Bavarian State Minister of Economic Affairs and Media,
Energy and Technology

The European Satellite Navigation Competition is celebrating its 10th anniversary this year with a new all-time submission record. First of all, I would like to congratulate Anwendungszentrum GmbH Oberpfaffenhofen and its entire team on this success!

I have gladly taken on the role of patron of the highly successful European Satellite Navigation Competition in its jubilee year. The Free State of Bavaria has supported the competition since its inception in 2004. From its origins in the State, the European Satellite Navigation Competition has evolved into a unique global network with 25 partner regions and participants from 50 countries. Over the past 10 years, it has proved to be one of the strongest drivers behind innovative applications of satellite navigation technologies and fertile ground for successful start-up companies.

From its position on the cutting edge of commercial satellite-navigation applications, Bavaria is contributing actively to the future of the European navigation satellite system Galileo. To strengthen its place as a hub of space entrepreneurship and create added value for satellite navigation technologies, the Free State of Bavaria established the first German incubator for this emerging market in 2001. This incubator has since been managed by Anwendungszentrum GmbH Oberpfaffenhofen and became part of the ESA Business Incubation (BIC) programme in 2009. This summer, we celebrated the 1,000th high-quality job created in Bavaria through this incubation programme. I am more than pleased to announce that we, along with the German Aerospace Center (DLR) and the European Space Agency (ESA), have agreed to extend the Bavarian ESA BIC programme to 2019. This is an important next step in the further promotion of applications based on space technology, which adds much to the growing strength of the Bavarian high-tech industry. The consistent commitment of the Free State of Bavaria has effectively helped start-up companies leverage the potential of satellite navigation technology and shortened the critical path to marketable products. With Galileo about to enter its operational phase, the European Satellite Navigation Competition is actively encouraging its future utilisation. I would like to thank all the supporters who have contributed to the competition’s success over the past 10 years. My sincere congratulations to this year’s winners and all the best in making your innovations a reality!

Ilse Aigner

Bavarian Ministry of
Economic Affairs and Media,
Energy and Technology

"10 Years of the ESNC – 2,400 Innovative Business Cases for Satellite Navigation in Everyday Life"

Thorsten Rudolph
Managing Director
Anwendungszentrum GmbH Oberpfaffenhofen

This year, we are celebrating the 10th edition of the European Satellite Navigation Competition, which we and our visionary partners initiated in 2004. On this momentous occasion, please allow me to first thank two people in particular: Peter Seige from the Bavarian Ministry of Economic Affairs for the initial idea for this competition, and Christian Stammel for his support in making it a reality. Since day one, our common aim was to support innovative entrepreneurs to create added value for satellite navigation in everyday life.

The ESNC has grown into the largest innovation network for satellite navigation by bundling a great variety of knowledge and expertise.

Therefore, I would like to take this opportunity to also thank the entire AZO team for their commitment to building up this competition, as well as all our partners for their faith in its promise and their outstanding support from the very beginning. One key to the ESNC's success has been the dedication of its worldwide partner regions. My thanks go out to all our current and former regional partners for their efforts to mobilise local entrepreneurs and innovators.

In establishing its special prize categories in 2007, the ESNC demonstrated its potential to provide solutions to specific industrial needs. Key institutional, research, and industry stakeholders have since unearthed innovative commercial opportunities to use satellite navigation and set trends by establishing new application fields. T-Systems, for example, has used its special prize to encourage innovation on the cutting edge of seamless navigation. DHL revolutionised transport logistics with its 2007/08 challenge, while DLR has identified numerous innovative solutions for signal verification – and the list goes on. Special thanks are also due to our longstanding institutional partners, the Bavarian State Ministry of Economic Affairs and Media, Energy and Technology, the European Commission (EC), the European Space Agency (ESA), the European GNSS Agency (GSA), and the German Aerospace Center (DLR), which have made the competition possible and provided both financial and technical support to help bring the awarded ideas to fruition.

10th Anniversary

In the last 10 years, we have selected and rewarded 204 winners from 2,397 ideas submitted by a total of 8,200 participants. More than 130 industry and research partners are now supporting past participants in taking the next steps with their business cases.

Furthermore, with 40 incubators from 17 countries – including regional incubators, ESA Business Incubation Centres, and ESINET – the ESNC comprises the largest space-related incubation network promoting start-ups and fostering the creation of new ventures.

In this anniversary year, the success story of the ESNC has continued. We received a remarkable 413 complete submissions, and the European Patent Office (one of our new partners) has added another facet to the competition with its Best Patented Innovation prize. The ideas came from teams with a total of 1,200 participants from almost 50 countries, demonstrating the truly international impact of the ESNC.

Finally, I would like to thank all our participants for trusting in the potential of this competition and placing their excellent services, products, and application ideas at its disposal. We are already looking forward to the next exciting iteration of the European Satellite Navigation Competition, scheduled to run from April to June 2014.

Thorsten Rudolph

ANWENDUNGSZENTRUM
Oberpfaffenhofen


AWARDS CEREMONY 2013
ALTE KONGRESSHALLE MUNICH
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ESNC NETWORK

Largest innovation network for satellite navigation

Since 2004, the ESNC has become the world's largest innovation network in the field of satellite navigation. More than 130 partners, including the most relevant European GNSS stakeholders, support participants in taking the next step with their business cases. They all share a common goal: promoting innovation and entrepreneurship along the GNSS value chain to benefit the citizens of Europe and beyond.

ESNC FOR ECONOMIC GROWTH

"The European GNSS Agency has been cooperating with the ESNC for the past six years. We are convinced that the European Satellite Navigation competition has provided an excellent platform for promoting EGNOS and Galileo. In addition to helping establish a European Galileo user community the ESNC also provides the gateway to a wide range of unique business applications for the GNSS programmes."

Carlo des Dorides
Executive Director
European GNSS Agency (GSA)

ESNC FOR INCUBATION

"As the world's largest space-related ideas competition, the ESNC is an important source for ESA's Business Incubation Centres. Around one-third of all ESA BIC incubatees are generated by the ESNC, which has also helped to foster industry to use our assets. Already now LBS are the main driver of the mobile and mobility sectors – with space providing the infrastructure for this to happen. "

Frank Salzgeber
Head of Technology Transfer Programme Office
European Space Agency (ESA)

ESNC FOR EXPERTISE

"Just a few of us supported the ESNC's initial efforts 10 years ago, and its success was hardly a given. The team's commitment eventually paid off, however: Its achievements have grown each year, and many companies have been founded or reinforced. Perhaps most tellingly, more and more investors and market actors now want to support the ESNC. It has indeed become a comprehensive network, comprising over 200 experts from various fields. Participants can thus benefit from a broad range of knowledge in the evaluation of their ideas. I'm very proud to have written a small part of this European – and now global – success story."

Jean-Claude Dardelet
Vice President, European Affairs
Thales Alenia Space

ESNC FOR INDUSTRY

"The ESNC has delivered on its great potential as a tool for scouting innovation and promoting our expertise to the relevant GNSS stakeholders. We have benefited from sponsoring the ESNC by receiving innovative solutions to specific industrial needs. We have experienced tremendous interest from the entrepreneurs, and working with the winners has thus far lead to gainful cooperations."

Jurry de la Mar
Head of International Sales, Public Sector
T-Systems International GmbH

ESNC FOR REGIONS

"Participating as a partner region has finally put Øresund on the GNSS map and helped greatly in positioning our ICT cluster activities. All in all, the ESNC has enhanced our international collaboration and led to a high degree of visibility in Europe and beyond."

Micael Gustafsson
Managing Director
Cluster 55°

ESNC FOR INNOVATION

"European satellite technologies are world class. The dynamic and innovative companies driving this sector, creating jobs and prosperity, need protection and support. Patents are a great way to protect this vital industry, raise capital for future projects and share information. This is why we are pleased to support the ESNC and to applaud these inspirational inventors."

Oswald Schröder
Principal Communications Director/Spokesperson
European Patent Office (EPO)

ESNC FOR POLITICS

"The market potential for GNSS products is tremendous. Now that Galileo is becoming a reality, it is increasingly important to stimulate the uptake of new businesses. That is why I am grateful for initiatives such as the ESNC, which is supported by the European Commission as part of its application action plan for Galileo, to showcase the most innovative projects and foster new ideas."

Dr Paul Weissenberg
Deputy Director-General, DG Enterprise and Industry
European Commission

ESNC FOR RESEARCH

"Through the ESNC, AZO has successfully generated a unique community in the field of satellite navigation and its applications. It is a source for international collaboration in research and especially new ideas for GNSS based products. DLR as a key player in forward-thinking knowledge in the European aerospace sector and beyond appreciates the ESNC´s entrepreneurial spirit towards the markets."

Dr Rolf-Dieter Fischer
Head of Technology Marketing
German Aerospace Center (DLR)

SUCCESS STORIES

PROJECT PARTNERSHIPS & INTERNATIONAL COLLABORATION

"We have greatly benefited from the ESNC's extensive network for satellite navigation applications. Along with the pleasant networking, the ESNC was instrumental in arranging a trip to meet the winning team from Catalonia. They initially aided our pilot activities and have been working with customers in Spain on integrating data into their specific contexts. We are also helping them plan a pilot here in Sweden."

Lars Forstlöf, Roadroid &
David Nogue, Planol
Øresund / Catalonia winner 2012

Support for more than 200 winning teams

Since its beginning, the competition has welcomed more than 8,000 participants from 4,263 registered teams. A total of 204 winners have been awarded within the framework of the ESNC. Around one-third of all the winners have gone on to found a company as a result of the ESNC, and 78% of all the ideas have already been realised or are under development.*

* survey 2004-2010

RESEARCH PROJECTS & ACCESS TO EXPERTS

"Winning the DLR special prize in 2010 was a great experience and opened a lot of doors for our start-up. The prize helped us develop our project VADASE (Variometric Approach for Displacements Analysis Stand-alone Engine) further and led to a strong collaborative relationship with DLR, which has given us access to tremendous technical advice and insights into DLR's technical infrastructure. Thanks to the improvements we have achieved, Leica Geosystems AG contacted us about integrating the VADASE algorithm into their reference station's GNSS receiver. This could lead to the production of independent, portable devices capable of providing tsunami warnings in real time."

Gabriele Colosimo
University of Rome "La Sapienza"
DLR winner 2010

PROMOTION & MEDIA COVERAGE

"Thanks to the strong media coverage after our success in the ESNC, we started to notice a serious rise in awareness of our indoor navigation project. Through this new keen interest in our idea, we were able to generate multiple new contacts and even concrete business opportunities."

Dirk Elias
Fraunhofer Portugal
Overall winner 2012

JOB CREATION & ECONOMIC GROWTH

"Winning the ESNC introduced us to lots of people within the space community and led to considerable media coverage. I'd been trying to see a big potential client – without success. But when we won the UK leg in 2012, we were written up in the Guardian newspaper and within one hour they called us and asked to see Travel Time. They're now our largest customer – thanks to the ESNC. With the valuable support through the ESA BIC, we have recently also been able to hire six new team members."

Peter Lilley
iGeolise
UK winner 2012 & Alumni ESA BIC Harwell

FUNDING & EU PROJECTS

"For our idea, the ESNC was a stepping stone that helped us reach the next level. In addition to a support package valued at EUR 20,000 we also won the chance to complete a six-month incubation programme, which helped us gain credibility. We are now proud to say that the 3SOUND navigation concept is being developed and validated under the FP7 project ARGUS (Assisting personal Guidance System for people with visual impairment)."

Rafael Olmedo
GEKO NAVSAT
GSA winner 2012

INCUBATION & VENTURE CREATION

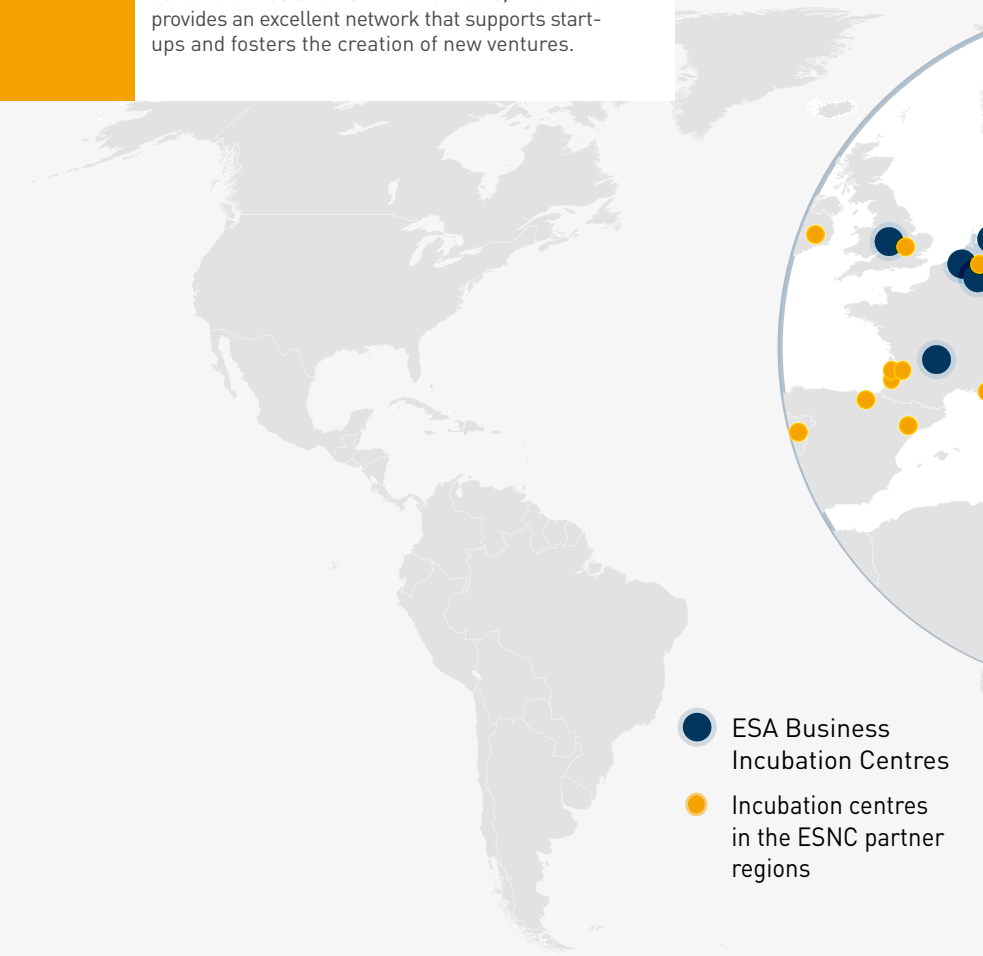
"The incubation programme we entered after winning in the ESNC really helped us take off. We obtained access to experts and received valuable business support to bring our idea to market. Our resulting cooperations with BMW, Sixt, and NAVIGON represent a further step for us."

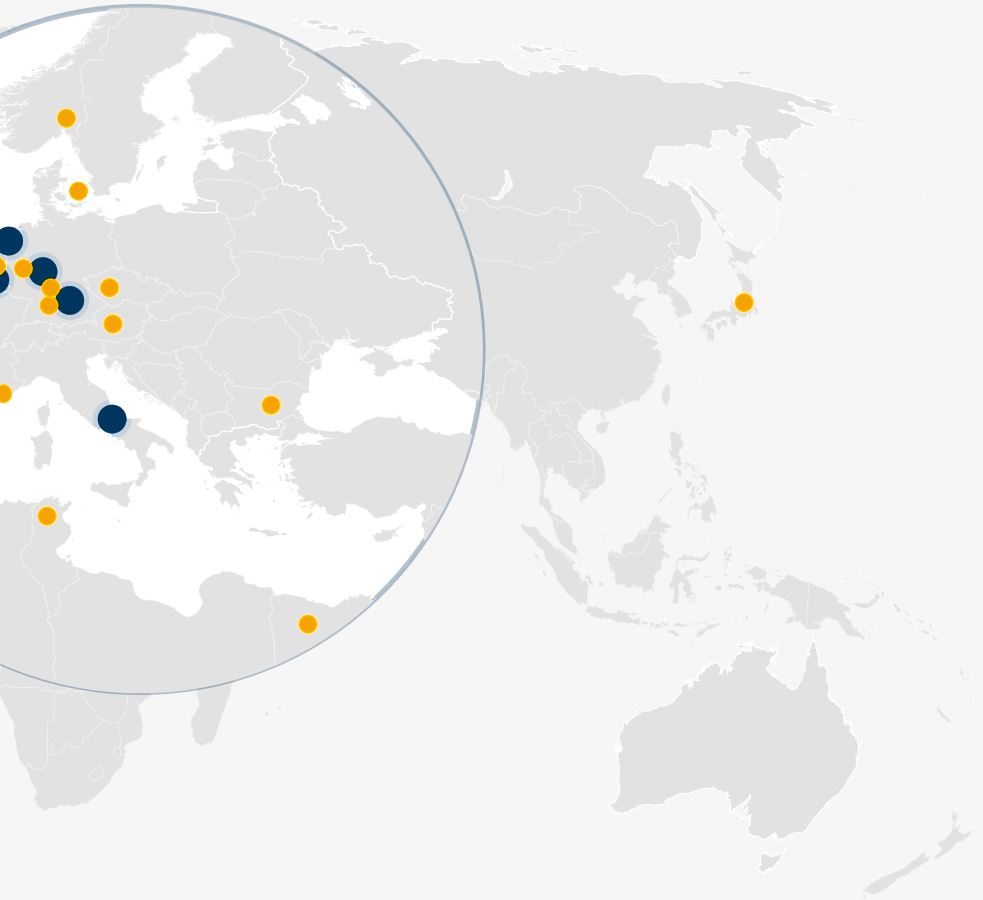
Dr Klaus Dibbern
flinc
Hesse winner 2010 & Alumni ESA BIC Darmstadt

INCUBATION NETWORK

The largest space-related incubation network

The ESNC comprises the world's largest space-related incubation network, with more than 40 incubators from 17 countries around the globe. From regional incubators to ESA Business Incubation Centres and ESINET members, the ESNC provides an excellent network that supports start-ups and fosters the creation of new ventures.





EXPERTS NETWORK

Bundled expertise at an international level

The ESNC comprises a unique international network of innovation and expertise, with more than 200 specialists worldwide hailing from sectors such as industry, research, and politics. This growing network bundles a great variety of expert knowledge from any relevant field.

ENTERPRISE ESTONIA
IHK REUTLINGEN
INVENT BALTICS
INVESTINBAVARIA
WFG BGL
ECONOMIC DEVELOPMENT AGENCY
TEAM CÔTE D'AZUR
ENTERPRISE IRELAND
EU-JAPAN CENTRE FOR INDUSTRIAL COOPERATION

ANWENDUNGSZENTRUM GMBH OBERPFAFFENHOFEN
LE GRAND DAX / PULSEO
AUSTRIAN RESEARCH PROMOTION AGENCY (FFG)
TRIANGLE VENTURE CAPITAL GROUP
PITTORESQUE
CESAH GMBH CENTRUM FÜR SATELLITENNAVIGATION HESSEN
INNOVATION AGENCY
AGENCY FOR SCIENCE, INNOVATION AND TECHNOLOGY
INTERNATIONAL SPACE INNOVATION CENTRE
SATELLITE APPLICATIONS CATAPULT

C DARMSTADT
BIC HARWELL
ZIO

CUBATOR
SCIENCE PARK GRAZ GMBH
BERRILAN
SBIC
INCUBATOR PACA-EST
THER INCUBATORS
NOTEK
BORDEAUX TECHNOWEST

LITHUANIAN ROAD ADMINISTRATION
MINISTRY OF ECONOMY OF LITHUANIA
UNIDO
AJUNTAMENT DE TERRASSA
POLITICS
GIPUZKOAKO FORU ALDUNDIA
MINISTRY OF TRANSPORT OF THE CZECH REPUBLIC
EUROPEAN COMMISSION
RUSE CHAMBER OF COMMERCE AND INDUSTRY
BAVARIAN STATE MINISTRY OF ECONOMIC AFFAIRS, INFRASTRUCTURE, TRANSPORT AND TECHNOLOGY
FEDERAL MINISTRY FOR TRANSPORT, INNOVATION & TECHNOLOGY
HESSIAN STATE AUTHORITY FOR REAL ESTATE MANAGEMENT AND GEOINFORMATION
MINISTERIUM FÜR FINANZEN UND WIRTSCHAFT BADEN-WÜRTTEMBERG
MINISTRY OF INFRASTRUCTURE & ENVIRONMENT

ER (DLR)
EUROPEAN SPACE AGENCY (ESA)
ROPEAN GNSS AGENCY (GSA)
OCIATION

ASCAMM
R & D
BIC-R&D, S.R.O.
TECNALIA
SKYTEK

ESTIA
CUDI
AUTOMOTIVE & RAIL INNOVATION CENTER AACHEN
FONDATION SOPHIA ANTIPOLIS
FZI
INRIA SOPHIA ANTIPOLIS
FRAUNHOFER IIS
CICESE RESEARCH CENTER
INSTITUT POLYTECHNIQUE DE BORDEAUX
ESTONIAN RESEARCH COUNCIL
ASTRIUM / ASTF
INSTITUTE OF PHOTONICS AND ELECTRONICS AS CR
IFSTTAR GEOLOC LABORATORY
RESEARCH
INSTITUTO POLITECNICO NACIONAL - IPN
OSLOTECH AS
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USTER
LUFT- UND RAUMFAHRT BADEN-WÜRTTEMBERG E.V.

MOBILE HEIGHTS
TYNDALL NATIONAL INSTITUTE
PRECUBATOR
VICOMTECH-IK4
PMV
INSTITUT CARTOGRÀFIC DE CATALUNYA (ICC)
ROYAL JORDAINIAN GEOGRAPHIC CENTER

CLUSTER 55°
BICC NET
PÔLE SCS
AIR VERBAND
CLUSTER

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ICT
RESEARCH
IMINDS

AUGMENTED REALITY
METAIO GMBH

IT
CGI

DYNAMICS ANYWHERE NORDICS
MOBILE

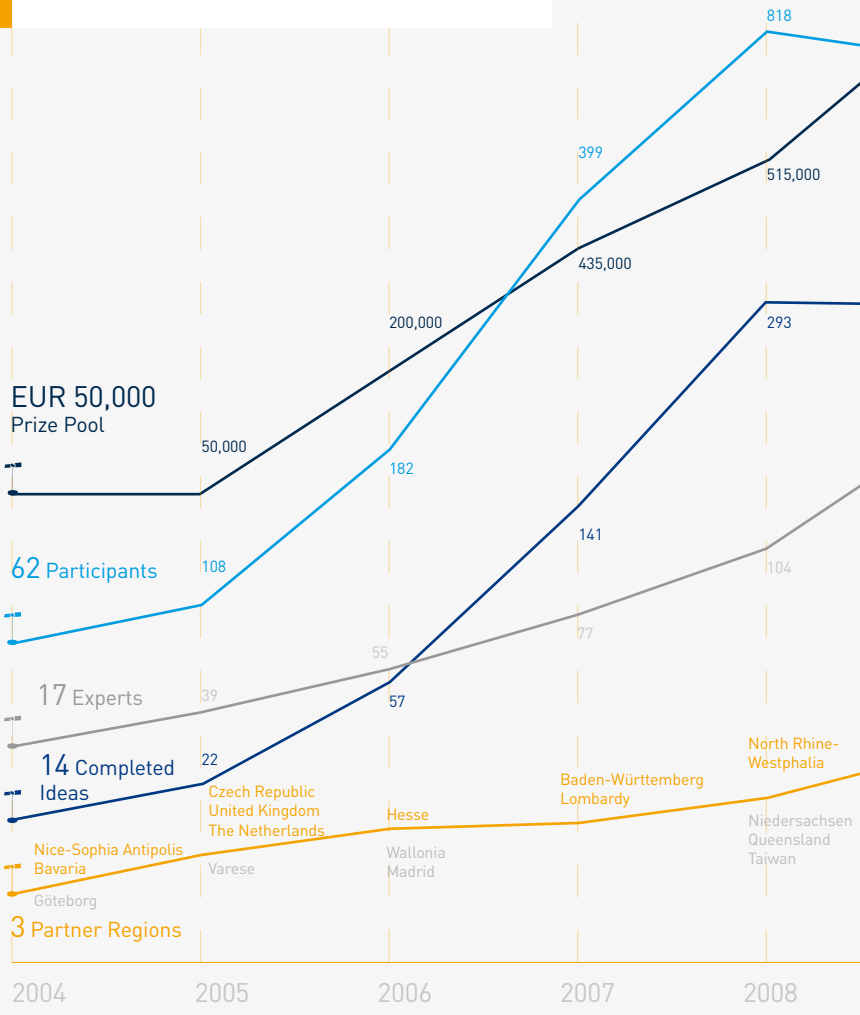
ITS NETWORK GERMANY
ADAC E.V.
AGIT
AUTOMOTIVE

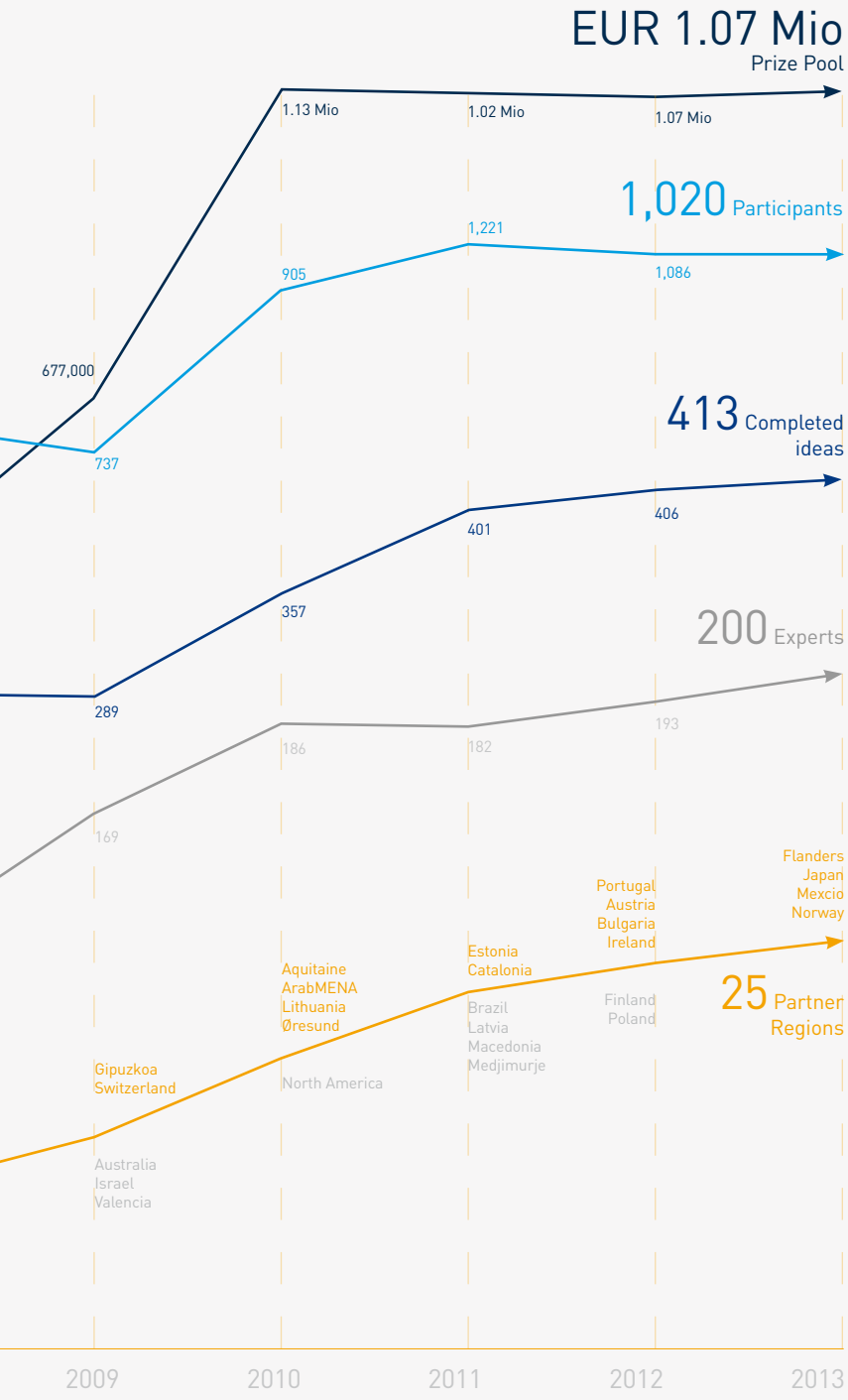
KONGSBERG SEATEX
MARITIME

MICROELECTRONICS
IMEC

An ongoing success story

Over the past decade, the ESNC has proven to be an excellent tool for promoting the use of GNSS and helping to leverage its growing market potential. Thanks to a constant effort to support those behind the ideas, both the number of prizes on offer and the value of the overall prize pool have significantly increased.




EUR 1.07 Mio
Prize Pool
1.13 Mio
1.02 Mio
1.07 Mio
1,020 Participants
1,221
905
1,086
677,000
737
413 Completed ideas
406
401
357
200 Experts
289
193
186
182
169
Flanders
Japan
Mexcio
Norway
Portugal
Austria
Bulgaria
Ireland
Estonia
Catalonia
Aquitaine
ArabMENA
Lithuania
Øresund
25 Partner Regions
Finland
Poland
Brazil
Latvia
Macedonia
Medjimurje
Gipuzkoa
Switzerland
North America
Australia
Israel
Valencia
2009
2010
2011
2012
2013

GALILEO MASTER
OVERALL WINNER


© Rudolph Sterflinger

KINEXON: Precise Localisation and Monitoring for Sports and Healthcare

Many applications require tracking solutions that are precise, but at the same time affordable and small. Our new precision tracking solution fulfils these needs perfectly. The KINEXON CELL is a revolutionary wearable sensor that uses the latest space technology to track the positions of individuals and objects with centimetre accuracy. The corresponding KINEXON APP is a secure cloud-computing platform with a smart analytics application. It transforms big sensor data into valuable information in real time. Our first product is a portable, cloud-based athlete monitoring system designed for all types of sports, including football, tennis, and American football. A tablet PC provides coaches with real-time insights into the performance, tactics, technique, and health of athletes and teams. They can measure, analyse, and improve athletes' performance to reach their full potential. Meanwhile, dedicated statistics help prevent injuries and support the rehabilitation process. Users access their data from any smartphone, tablet, or PC. The system's flexible and scalable architecture ensures quick adaptation to other use cases in the healthcare, logistics, and unmanned aerial vehicle sectors.

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Anwendungszentrum GmbH Oberpfaffenhofen (AZO)

AZO was set up in 2004 by the German Aerospace Center (DLR) and the Bavarian Ministry of Economic Affairs at the prominent aerospace location Oberpfaffenhofen, located near Munich. The company's main goal is to drive innovation and incubation in the commercial use of space technologies and infrastructures. Through the leading innovation networks for satellite navigation (ESNC) and Earth monitoring (Copernicus Masters), AZO drives the creation of innovative products, services, and business concepts for these emerging market segments. The underlying business concepts are realised in the form of company foundations as part of the incubation programme at ESA BIC Bavaria.

prize awarding partner

organised by

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www.anwendungszentrum.de

BAVARIA / GERMANY
REGIONAL WINNER


© Simone Hörmann


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The Galileo Master

receives an additional cash prize of EUR 20,000 as well as the chance to realise the awarded idea as part of a six-month incubation programme. The prize is provided by Anwendungszentrum GmbH Oberpfaffenhofen and the European GNSS Agency (GSA).

KINEXON is a young start-up company located in Munich, Germany. They are specialised in the development of smart wearable devices and embedded systems with a clear focus on applications in the healthcare and professional sports sector. Their aim: shaping the future of tracking technology.

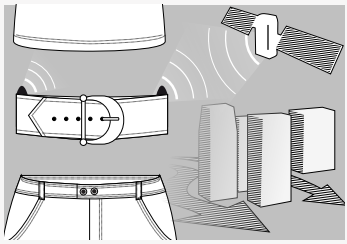
contact winner
Dr Oliver Trinchera, Dr Alexander Hüttenbrink
oliver.trinchera@kinexon.com
www.kinexon.com
KINEXON

ESA INNOVATION PRIZE
ESA SPECIAL PRIZE WINNER

2ND PLACE

Sensovo Navipal: A New Way to Feel Directions with a Wearable Tactile Navigation System

Sensovo is working on the world's first tactile navigation system that is both wearable and commercially available. Our preliminary operational prototype utilises a smartphone as a medium to run a navigation application that allows the user to specify destinations based on the mobile phone's internal GPS receiver. The app communicates via Bluetooth with our wearable accessory, a waist belt that is equipped with eight vibration motors placed at equal distance from each other. The belt provides tactile navigation by vibrating one or more motors in the target direction. The vibration intensity and duration changes according to the distance to the next destination point. Through sensory substitution, the human brain has the ability to incorporate this additional tactile information, which makes the device a "sixth sense" for the wearer. Many people can benefit from this innovative way of navigation, such as tourists, geocachers, emergency services, cyclists, motorcyclists, and the visually impaired. The product is a technical intersection of geolocation (GNSS), navigation, wearable technologies, mobile phone accessories, sensory enhancement, tactile feedback, and ubiquitous computing.



© Haze McElhenny, iStockphoto

contact winner
Jan Walter Schroeder, Ulrich Straus, Rashid Bakirov, Manuel Martin-Salvador
jan.walter.schroeder@sensovo.com
www.sensovo.com

European Space Agency (ESA)

ESA, an international organisation comprising 20 member states, is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. The mission of ESA's Technology Transfer Programme Office is to facilitate the use of space technology and space systems for non-space applications. The office is responsible for defining the overall strategy for transferring space technologies, including the incubation and funding of start-up companies.

organised by
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www.esa.int

HESSE / GERMANY
REGIONAL WINNER

3RD PLACE


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AlarmApp: Location-based Emergency Notification System

Most of the fire departments in Germany rely on volunteer fire fighters. In case of an emergency, these fire fighters leave their homes or workplaces, drive to the fire department, man a fire truck, and drive to the scene of action. Currently, alarms are transmitted via one-way communication systems. While this can result in fire fighters receiving emergency calls in time, their emergency control centers may not have information about the participating fire fighters. This can be a problem if too few fire fighters answer a call. To solve this problem, we developed AlarmApp – a smartphone-based fire fighter notification system. In the event of an emergency, the system notifies fire fighters by smartphone and asks them to explicitly accept or reject the call. The system then transfers the information on the participating forces back to an online alarm management server, which enables the emergency control center in question to access it. This will help to better coordinate the costly human resources involved. Many other civil protection organisations (including some German Red Cross departments), security services, and other companies are already using AlarmApp to alert their members.

contact winner

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support@alarmapp.org
www.alarmapp.org

AlarmApp.org

Centre for Satellite Navigation Hesse (cesah)

The ESA Business Incubation Centre (BIC) Darmstadt is managed by cesah. Located in the vicinity of the European Space Operations Centre (ESOC), cesah supports the development and marketing of business ideas and start-up companies in the satellite navigation domain. cesah is supported by Hessen-IT, a programme of the Hessian Ministry of Economic Affairs that supports the Hessian information and communication technology (ICT) sector in its market development, as well as SMEs in their efficient and creative use of ICT.

organised by

Dr Frank Zimmermann, +49 61 51 39 21 56 12
zimmermann@cesah.com
www.cesah.com

cesah Centre for Satellite Navigation Hessen

GNSS LIVING LAB PRIZE
SPECIAL PRIZE WINNER

3RD PLACE


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© NTFH

Parking?
Let ampido Find the Next Free Parking Space

ampido is the first German parking lot finder that enables owners of driveways, garages, or parking lots to rent out their spaces on a flexible short-term (instant booking) or long-term basis. Using our app (iOS) or the responsive mobile website www.ampido.com (Android/Microsoft), users can find the next free parking space in a few seconds and pay easily online.

© ampido GmbH

Anwendungszentrum GmbH Oberpfaffenhofen (AZO)

Having been initiated as part of the FP7 project GAINS (Galileo Advanced INnovation Services), the GNSS Living Lab Prize is now being continued by AZO with the support of the EC-funded GEPAS project (Galileo-EGNOS Prize Award Scheme). The GNSS Living Lab Prize seeks to facilitate the emergence of user-driven, open-innovation demand for services and GNSS applications. Living Labs – Public-Private-People-Partnerships (PPPP) of firms, public agencies, universities, institutes, and users – in Bulgaria (Digital Spaces Living Lab), Sweden (New Tools for Health), and France (Integrative Usage Lab) are now prepared to conduct a reality check trial with the winning application and two finalists.

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www.anwendungszentrum.de

organised by

ESNC 2013
GNSS LIVING LAB PRIZE

NORTH RHINE-WESTPHALIA / GERMANY
REGIONAL WINNER


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After the start of their closed beta in May 2013, they were covered by many German TV channels (ARD, ZDF, WDR, RTL, Sat.1, N-TV, etc). They were also recognised by the German government as a solution for the issues of future cities ("Land der Ideen") and won the Vodafone Smart Solution Award. In addition to having been part of the first ProSiebensat.1 accelerator class (p7s1accelerator.com) in Q2 2013, they received EUR 100,000 in funding from Monkfish Equity, the founders of trivago. Next, they will integrate their solution into their first car park in Cologne, Germany, which will use ampido to optimise revenue. They are also discussing possible ampido cooperations with the municipal authorities in Cologne and Düsseldorf in the context of their respective Smart City projects.

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Anwendungszentrum GmbH Oberpfaffenhofen (AZO)

The ESNC North Rhine-Westphalia Challenge is coordinated by the Bonn subsidiary of Anwendungszentrum GmbH Oberpfaffenhofen and supported by strong regional partners. The user forum for integrated spatial information and technologies, AIR e.V., combines and concentrates North Rhine-Westphalia's competencies in navigation, spatial data solutions, GMES/Copernicus, ICT, remote sensing, and telematics. The NRW challenge is furthermore partnered by AGIT, the regional development agency for the Technology Region Aachen and its Automotive & Rail Innovation Center ARIC as well as RWTH Aachen University represented by the Institute of Automatic Control (IRT), which is leading the construction of two Galileo Test and Development Environments – automotiveGATE and railGATE.

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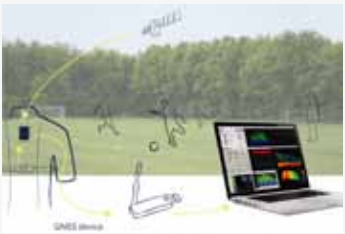
THE MOST PROMISING EGNOS APPLICATION IDEA
GSA SPECIAL PRIZE WINNER

JOHAN: The Digital Oracle for Field Sports, Including GNSS Player Tracking in Real-Time

The idea is to develop a system to track players real-time during field sports by the use of the EGNOS system and, in the future, Galileo. Existing tracking technologies are too expensive (video-based systems) or not precise enough (GPS-based systems). By making use of the EGNOS system and Galileo, greater precision (< 1 meter) and reliability can be achieved. The system must be affordable, portable, small, and robust. In this way, it will be an improvement on existing technologies in terms of both precision and costs. In the concept, every player will wear a GNSS device to track his or her movements, accelerations, and heart rate. The data will be transferred wirelessly to coaches' laptops and processed into useful information, such as on distances run, speed (minimum, maximum, average), collisions, and maximum heart rate. The data can also be viewed online or on a mobile app after matches. This kind of system is highly valued by sports teams and academic institutes. The information can be used to analyse each player's performance and as a form of tactical support. The development of this system will be relatively cheap and feasible because it only uses existing technology.



© JOHAN

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European GNSS Agency (GSA)

The GSA, a European Community agency, works with the European Commission on a range of activities aimed at helping European entrepreneurs and businesses – especially high-tech SMEs, business incubators and related networks – commercially exploit EGNOS and Galileo. These marketing, promotional and R&D activities help ensure that European industry maintains a competitive edge in the global satellite navigation market. EGNOS is Europe's first venture into satellite navigation and is available free of charge. It augments GPS and makes it suitable for safety-critical applications. It will be followed by Galileo, a full-fledged global navigation system.

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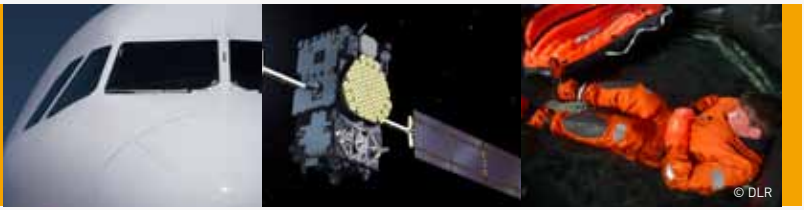
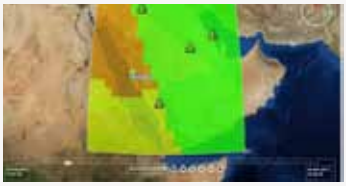
ROBUST GNSS – SAFETY FOR SUCCESS
DLR SPECIAL PRIZE WINNER



Galileo-Based Ionospheric and Interference Monitoring for Aviation


© DWI

The GNSS Performance Monitoring System (GPMS) is used by airports and governments to monitor and record GNSS signals in support of aviation operations. Recorded data can be used to investigate accidents, and real-time monitoring allows air traffic control to detect unavailability and alert users. As aviation becomes more and more dependent on GNSS positioning, the threats to GNSS must be better understood and mitigated. With the help of DLR experts, Integricom and DWI will further expand the system to develop state-of-the-art ionospheric delay and scintillation models and detection capability for both unintentional and intentional jamming. The team will expand GPMS to monitor signals from all GNSS (including Galileo) and will also exploit these signals to further improve its ionospheric monitoring capabilities. GPMS is suitable for a wide range of applications in any area where interference threatens the availability of services or security. This includes domains such as maritime, communications, logistics, and military. It can use a dedicated receiver, but can also be integrated with existing receiver networks to collect, monitor, and analyse data from a wide range of sources.

German Aerospace Center (DLR)

DLR is the national aeronautics and space research centre of the Federal Republic of Germany. Its extensive research and development work in aeronautics, space, energy, transport and security is integrated into national and international cooperative ventures. In addition to its own research, as Germany's space agency, DLR has been given responsibility by the federal government for the planning and implementation of the German space programme. DLR is also the umbrella organisation for the nation's largest project execution organisation.

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BEST PATENTED INNOVATION
EPO SPECIAL PRIZE WINNER


© ESA

Enhanced GNSS Signals to Improve the Galileo System Performance


© ESA/ZigZag-DR

The patents disclose a clever signal design that optimises the Galileo space segment and spectrum use, allowing for better measurement accuracy (noise and multipath) for high-end receivers. CBOC Patent (EP1836778): Better signal performance by adding a high-frequency component to the BOC (1,1) baseline signal in the E2-L1-E1 band. Compatibility and interoperability with the future baseline GPS civilian L1C signal. Alt-BOC patent (EP1570287): Allows transmission of a total of four navigation codes in the E5a and E5b bands with constant envelope modulation. This results in high efficiency for the E5A/E5B transmission chain and minimised inter-frequency bias. This technology has been demonstrated with a number of initial satellites as part of Galileo Signal Standard Worldwide availability and is expected to be part of the European Commission's final Galileo programme. Signals are available right away from the Galileo satellite infrastructure. This system is compatible with existing receivers and improves on high-end receiver accuracy. CBOC: uses the high-frequency component in addition to the BOC (1,1) component Alt-BOC: processes Alt-BOC as a very wideband signal.

European Patent Office (EPO)

The European Patent Office (EPO) offers inventors patent protection in up to 40 European countries. The European Patent Convention was signed in Munich in 1973, laying the foundation of the European Patent Organisation. The Office is its executive arm. Its two core activities are examining patent applications and granting European patents, and also include publishing documents related to inventions filed with the EPO. It provides the most comprehensive patent information databases worldwide and also offers free translation into 30 different languages. The EPO is recognised by its users for delivering the highest quality and efficient services.

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THE MOST INNOVATIVE LOCATION-BASED AR APPLICATION
METAIO SPECIAL PRIZE WINNER

WinterVision: Winter Road Safety and Emergency Location Through Augmented Reality (AR) and GPS

During severe winters, roads can become buried under snow to such an extent that drivers, pedestrians, and road workers find using and maintaining them extremely difficult. Accidents and incidents of people becoming stranded are major concerns under these conditions. Methods to mitigate these problems would therefore be a positive step forward. Our WinterVision system is designed to offer two new service options that will allow a safer use of road networks following occurrences of heavy snowfall.
1. Driven by GNSS positioning data, the primary element of the system will offer an Augmented Reality overlay to drivers by projecting the exact edge and path of the road. This will enable users to drive even when the road is buried and thus indistinguishable under the snow.
2. The secondary use of the system involves utilising the distress messaging feature present in GNSS to call for help when a severe collision is detected. In addition, the beacon can be used by search-and-rescue teams (and perhaps an extended version of Astrosat's Augmented Reality system) to help locate stranded travellers or other emergencies should it become buried under snow.

© Stevenson Astrosat

Metaio

metaio is a fast growing technology company located in Munich, Germany and San Francisco, USA. As the global leader in Augmented Reality, the metaio software and solutions are used by more than 30,000 professionals including a strong user base in the development, creative and engineering space. Today metaio's AR technology is helping brands and business all around the world to bring exciting digital experiences and/or educational tools to over 30 million consumers. AR professionals choose metaio as it is the only AR company that can guarantee a seamless AR workflow with solutions specific for AR hardware and devices, software and applications, content creation as well as content distribution and monetisation. metaio was founded in February 2003 and currently employs more than 90+ team members with a multinational and multidisciplinary background.

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metaio

UNIVERSITY CHALLENGE
SPECIAL PRIZE WINNER

GeoAgenda

This project offers a new agenda concept that, based on the perception of the environment, can remind a person what needs to be done in the right time and place.

© Outcapsa

GNSS Education Network for Industry and Universities (GENIUS)

The FP7 project GENIUS focuses on building strong links between universities, research institutes and industry. It provides direct benefits to industry through implementing measures to strengthen GNSS education and through the fostering of cooperation between education, research and business. The ESNC University Challenge is carried out by Anwendungszentrum GmbH Oberpfaffenhofen (AZO) and the GNSS Research & Applications Centre of Excellence (GRACE) with the support of GENIUS, and Awapatent AB. It connects innovative thinkers with the business community to pave the way from university to entrepreneurship.

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ESNC 2013 UNIVERSITY CHALLENGE

PORTUGAL
REGIONAL WINNER


© Tourism of Porto and North of Portugal

© Outcapsa

GeoAgenda combines GNSS data and POI database information to provide reminders and warnings about what needs to be done when and where. For instance, if you need to buy milk, how can you set a reminder to alert you at the right moment? GeoAgenda will connect the act of purchasing milk with supermarkets and display a corresponding reminder to the user when he or she is near a supermarket location. GeoAgenda can also deal with meetings by, for example, alerting the participants to the delays others may be facing. Using GNSS signals and the Google Maps API, GeoAgenda can calculate the delays of each person (e.g. resulting from traffic jams) and allow the others to better manage their waiting time.

› GeoAgenda will save you time every day!
› GeoAgenda will use GNSS signals to change your way of life.
› GeoAgenda can deal with meetings, such as by displaying the delays people are facing.
› GeoAgenda calculates delays resulting from traffic jams.
› GeoAgenda will eliminate the phrase "I forgot..." from your life!

UPorto – University of Porto

Portugal's research in the satellite navigation domain started in the 1980s. Since then, national and international projects involving different GNSS applications have produced successful results recognised around the world. With excellent domestic and international contacts, with private and public institutions, and experience in the application of research results, the University of Porto – with the support of its technology transfer office (UPIN) and the Science and Technology Park – provides background assistance for the development, testing, and further commercial exploitation of innovative GNSS applications.

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AQUITAINE / FRANCE
REGIONAL WINNER


© Gilbert

Physiotrack: Sport Performance, Functional Readaptation, and Training Monitoring System

It is not easy to monitor physical activity or control recovery during a sequence of sporting exercises. The answer: Physiotrack, a predictive monitoring system for multiple activities. Physiotrack provides realistic predictions of physiological parameters and energy consumption during outdoor activities. It uses both Galileo and physiological sensors to monitor the performance of the user on a track in real time. Physiotrack: much more than a sport watch. Through the combined analysis of physiology and planned activity, Physiotrack helps the user choose the right track and/or intensity of effort. The system provides an estimation of duration, power, speed, energy, or water consumption. While using Physiotrack during an activity, the user is advised in real time how to safely reach the end of the track with the best efficiency. This is an innovation no other system can claim. A simple solution that makes comprehensive health improvement possible during outdoor activities. Convalescent, athletes who want to respect their limits or improve their performance, professionals looking to take full control of their training...

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TOPOS

Aquitaine, bordered by the Atlantic and the Pyrenees, offers a mix of economic dynamism, fascinating landscapes, and a cultural heritage that contributes to the success of entrepreneurial ideas. Aquitaine is a leading region in R&D investment; Aquitaine promotes start-ups in the avionics, aerospace, composites, and photonics sectors. TOPOS is an Aquitaine cluster whose activities focus on Galileo and other GNSS systems. More than 40 entities are already partners of the cluster. Meanwhile, TOPOS is also in charge of organising the 2015 World Wide ITS Conference in Bordeaux.

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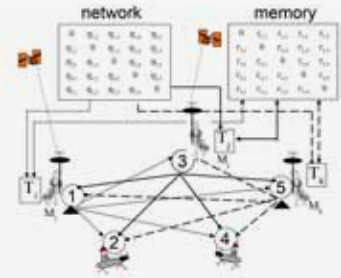
ARAB MIDDLE EAST & NORTH AFRICA (MENA)
REGIONAL WINNER

Designing Early-Warning GNSS Networks Using Dynamic Optimisation for Disaster Risk Management

The problem: Geo-information applications aimed at solving real large-scale problems based on GNSS networks must deal with huge volumes of dynamically varying data; multiple, potentially conflicting, and often changing objectives; and highly complex models for describing the problem environment. For critical real-life applications, the ability to rapidly develop an efficient, robust, and accurate working model that quickly produces solutions is essential for their outcome to be of value. Even a few minutes' delay in reaching a decision could make the difference between life and death. The solution: Our idea, a generic GNSS network for disaster monitoring and a management-modelling tool that combines large-scale database searches with artificial intelligence techniques at the core of its decision-making calculation engine.



This system is capable of dealing with dynamically evolving and potentially unpredictable environments and constraints. Key to the capabilities of this tool is real-time dynamic optimisation and the development of an intelligent self-learning system upon which the decision-making criteria are based. The system can easily be modified and adapted in near real time.

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Arab Science and Technology Foundation (ASTF)

ASTF is an independent, non-governmental, non-profit international organisation formed in April 2000 by a group of Arab scientists and engineers from all over the world. Its primary directive is to promote science and technology by supporting and facilitating scientific and technological innovation in the Arab Middle East and North Africa (MENA) region. ASTF serves as a mediator between those who conduct and develop scientific research and those who fund it, as well as those who benefit from it. At present, ASTF has branch offices in many Arab states.

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AUSTRIA
REGIONAL WINNER


© Josef Muellek

ENViGUARD

ENViGUARD is a system for dealing with pollution that endangers the environment and public health. No matter if the problem is illegal dumping of waste, oil spills or even unexploded ordinance – ENViGUARD is the first point of contact for citizens. The primary intent of the system is to form a link between citizens and authorities charged with keeping the environment clean and safe. Citizens can use the web app on their smartphones to determine the location of a hazard using GNSS and a compass, classify it, and document it by taking a photograph. The app automatically transmits the report to the authority responsible for the case of pollution in question. In cases involving potentially hazardous waste, citizens' reports will trigger professional intervention by the authorities responsible for disposal. The system aids the professionals by displaying the situation and providing guidance, while the citizens interested receive progress reports. If the pollution is not hazardous, the system encourages the citizens to deal with it by pointing them to the next waste bin or organising a waste collection party. With ENViGUARD, we can all be guardians of our environment.


© Gander, Hollinger

Austrian Research Promotion Agency (FFG)

The national funding institution for applied research and development in Austria offers a comprehensive range of services for enterprises, research institutions and researchers. Its Aeronautics and Space Agency connects such entities with the international aerospace world, implements Austria's aerospace policy, and represents the country at international aerospace committees – incl. ESA. Austria's ASAP programme, meanwhile, funds research on space science, technology, and applications. Finally, the agency acts as the central interface between Austrian interests and European programmes, FFG's Galileo contact point supports Austria's competencies in the field of satellite navigation and interacts with the GNSS community.

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BADEN-WÜRTTEMBERG / GERMANY
REGIONAL WINNER


© Manuela Weschke

SaltHawk: Self-learning Swarm Intelligence for Winter Road Service

Winter road service is an important issue in the field of traffic safety. It is also a cost-intensive endeavour, however, meaning that any optimisation is beneficial for both the environment and public expenditure. Currently, drivers select their dispenser's settings on their own depending on their individual experience. Road conditions, temperatures, and so on can nonetheless vary locally and be subject to sudden changes. Since no global and centralised "boss" can be appointed to control everything, we decided to find a different approach. This led us to investigate how ants would behave if they were given this task, and thus was the SaltHawk swarm born. The idea behind SaltHawk involves forging a group of individual dispensers into a swarm of computers with local intelligence using an artificial intelligence approach and communicating over a secure and reliable network. The swarm learns from experienced drivers, weather, and road topology; each on-board computer knows its EGNOS/GPS location and decides on its own if and when to share information with the others.


© AFUSOFT GmbH

IHK Reutlingen

Baden-Württemberg, the federal state in the South West of Germany and home to 11 million inhabitants, is famous for its tourist highlights, such as the Black Forest and Lake Constance, its universities in Heidelberg, Freiburg, Karlsruhe, Constance, Stuttgart, Ulm, and Tübingen; as well as the companies Daimler, Porsche, SAP and Bosch. The state is known for its great writers like Friedrich Schiller ("Wilhelm Tell") and its people are known as „Tüftler", a term indicating a great enthusiasm for technical problems and their solution. Thanks to its open-minded spirit, Baden-Württemberg is ideally positioned to participate in the ESNC.

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BULGARIA
REGIONAL WINNER

Mobilly: A Next-Generation Travel Planner

Mobilly is the first geolocation-based aggregator to combine hotels, private rentals, and daily deal offers for travel and other purposes. Our mission is to give the individual traveller full control over the flow of information on accommodation offers. We promise you'll be able to travel and never miss a deal. Mobilly allows for more intelligent travel that will eliminate more than half of the 9.5 research sessions currently required on average for planning. It has several innovative features, two of which can clearly distinguish it from competitors. One is myMobilly, an algorithm that allows users to set deal alerts for a specified area of travel. The other is the 3Check algorithm, which corrects inaccurate/missing geolocation info in deal feeds. No service like Mobilly exists at the moment due to different data feed formats, incompatibility, and GNSS issues (incompatible longitude/latitude data and low accuracy). The closest example is the US-based Hipmunk, which aggregates hotels and private rentals but not travel deals from providers like Groupon and Living-Social. Mobilly will be available as a web service and through mobile applications for Android, iOS, and Windows Phone.

© Mobilly

Ruse Chamber of Commerce and Industry (RCCI)

RCCI is the oldest Chamber of Commerce and Industry in Bulgaria. It enjoys a reputation for delivering high-quality business services on a local, national, and international basis. Its member-companies represent all key sectors of the regional economy. The principle activities of the Ruse Chamber of Commerce and Industry are: promoting the economic development of the Ruse region, lobbying local and central government and other public authorities to promote an understanding of the role and needs of business and providing a wide range of services to member and non-member companies to help develop their businesses both in Bulgaria and abroad.

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CATALONIA / SPAIN
REGIONAL WINNER


© Reinhardt Altmann / iStockphoto

NAVMATE: Wearable Personal Assistant for Collaborative Navigation

Based on the integration of GNSS and wearable and wireless communication technologies, NAVMATE implements an innovative, low-cost solution that allows a group to move safely in mountainous and other natural scenarios, even without mobile coverage. This enables your own colleagues to make an initial emergency intervention or rescue if necessary. Each person provided with a NAVMATE user terminal will be able to share his or her position, receive the positions of other members, and implement specific functionalities based on the processing of the shared information, which will facilitate faster and more effective emergency procedures. The user terminal is a dedicated electronic unit that integrates a low-cost GNSS multi-constellation receiver (GPS/GLONASS/Galileo/EGNOS) for accessing raw GNSS data and implements advanced relative and absolute navigation performance in combination with motion and orientation MEMs sensors (MARG [IMU+Mag], barometric altimeter, three-axis accelerometer, giros and magnetometers). This makes it possible to achieve accurate relative navigation even in hostile environments and conditions.

© GEKO NAVSAT

Ascamm Technology Centre

The Catalonia Challenge is organised by Ascamm, a non-profit organisation that focuses strongly on creating proprietary technology for the creation of high added-value, market-oriented products and processes for sectors such as aeronautics. It offers applied R&D, innovation, and top-class services with an intensive technological and material component. Ascamm is an advanced technology centre within the red TECNIO that is promoted by the ACC1Ó agency, the Government of Catalonia, and registered as a Centre of Technology and Support for Innovation by the Spanish Ministry of Science and Innovation.

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CZECH REPUBLIC
REGIONAL WINNER

Augmented Prague

Augmented Prague is an adventurous quiz game with elements of Augmented Reality. Through smartphones and tablets, a new dimension of reality is being opened by this AR application. It displays 3D objects in the real world against the background of Prague's Renaissance story in the time of Rudolf II. GNSS navigation is utilised as a tourist guide in the city's mysterious and scenic Old Town. In the role of alchemists, tourists can explore the area and try to discover the stone of a wise man. Instead of being focused solely on foreign tourists with access to modern technologies, Augmented Prague caters for schools (history gameducation) and businesses (corporate marketing and team-building). Thanks to its multiplayer functionality, it can enable families, friends, and larger groups to play on one device. The app also allows for more freedom in tourism by offering the chance to choose your own path – no opening times or poor guides, just a new and exciting experience in a new city. Augmented Prague represents a first step toward creating a universal game platform for other cities that attract a large number of tourists. Augmented Cities will be an exciting way to discover new places.

© Be Interactive

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The Ministry of Transport of the Czech Republic

The Czech Ministry of Transport has a mandate given by the Czech Government to coordinate all space activities in the Czech Republic. It is responsible for Czech membership in the European Space Agency, EU space policy, satellite navigation development, space applications and partnership with the European GNSS Agency (GSA). It also acts as a point of contact for the Galileo programme.

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ESTONIA
REGIONAL WINNER


© Steven Heap / iStockphoto

LAISIK: A Smart Way to Optimise Children's Physical Activity Schedules and Computer Time

This solution helps raise children by allowing them to earn computer time with physical activity. It aids to prevent and relieve computer addiction. Rather than being based on continuous prohibition by parents, LAISIK helps children to make their own choices. It connects two components, one of which is a child's GPS-enabled smartphone. The corresponding app registers physical activities like cycling, walking to school, running, or playing outside and marks it on a calendar. The computer the child uses then receives this information and adds it to his/her account. A program calculates the activity data into minutes and allows the amount of computer time earned. Parents can also add weekly activities like piano or swimming lessons into their child's LAISIK schedule. Children who are not active enough but do not have a smartphone can use the program as part of scheduled book club meetings, physical training, etc. If using a computer every day is important to them, children will be willing to walk, run, and play outside to earn computer minutes. Problems like nervousness, obesity, and laziness will diminish. LAISIK is a guide towards physical activity, health, and calm family life.

© Mari Loorman

Enterprise Estonia (EAS)

Estonia is a small country located in the heart of the Baltic Sea Region. It is a country characterised by political and economic stability, as well as its low cost and ease of doing business. It belongs to the group of countries most integrated in EU structures. ESNC's partner Enterprise Estonia (EAS) promotes business, technology and regional development. EAS is the largest institution within the national support system for entrepreneurship, providing financial assistance, advisory services, cooperation opportunities, and training for entrepreneurs, research establishments, and the public and third sectors. EAS also acts as the National Space Office.

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FLANDERS / BELGIUM
REGIONAL WINNER


© Sarah Blee / Neutelings Riedijk Architects

Winnetou: An Easily Installable, Solar-Powered Tracker for Freight Wagons

Winnetou is a new solar-powered device for tracking individual freight-railway wagons. It will continuously:

- Capture a wagon's precise on-track position, orientation, and speed
- Register shocks and vibrations
- Record the outside temperature
- Weigh the wagon's load

It will then send all this data to a central server in a secure fashion over the GSM network, either after an interval set by the end user or immediately in the event of an alarm condition. These can include an intense shock or a speed limit violation. Thanks to its solar energy supply and operational storage between -40°C and 65°C, Winnetou will be able to report back every 15 minutes, night and day, winter through summer, all over Europe and beyond - even when standing still. Since it combines GPS, GLONASS, Galileo, and EGNOS, Winnetou can tell exactly which track a wagon is on, even when obstacles partially block its view of the sky or when other tracks are close. Therefore, it can be easily mounted on all types of wagons, even low ones. It does not require a particular mounting position and can be welded or bolted. Winnetou contains no valuable components or data, no removable SIM card, and has no visible cables.


© QraQon

Innotek

Innotek is a non-profit organisation that supports new business start-up initiatives and offers innovative companies flexible office and lab infrastructures in the cities of Geel and Mol. In doing so, Innotek seeks to contribute to the development of high-level employment in Flanders. iMinds, a partner of Innotek in the ESNC 2013, is an independent research institute that stimulates innovation on information and communication technology (ICT). This research is interdisciplinary and demand-driven, and takes place in close collaboration with both local and international businesses and governments. Its aim is to provide solutions to complex problems and thus help meet society's future challenges.

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GIPUZKOA / SPAIN
REGIONAL WINNER


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BimOn! A Location-Based AR Application for Visualising BIM/IFC Models on Construction Sites

BimOn! is a location-based Augmented Reality application that makes it possible to visualise 3D representations of buildings and their components in their exact positions on construction sites. It has been designed to serve every stakeholder in the construction sector, including architects, engineers, construction companies, real-estate developers, and facility managers. BimOn! is made possible by a combination of high-precision Galileo GNSS, location-based Augmented Reality, the hardware capabilities of current mobile devices, and a BIM (Building Information Modelling) / IFC (Industry Foundation Classes) open data model. BimOn! helps to improve the construction management process by facilitating decision making and enabling users to detect problems at early stages, which ultimately leads to significant savings of time and financial resources. It is offered as a web application that takes advantage of modern browser technologies like HTML5 and WebGL. The user just needs to upload an IFC/BIM model to a server; once he or she is on the construction site in question, the app will display an Augmented Reality image of the building.

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Provincial Council of Gipuzkoa

The province of Gipuzkoa, located in the Basque Autonomous Community of Spain, has Spain's highest density of universities and research and technology centres. With four universities, almost 40 research centres, more than 10,000 people working in R&D, and two technology parks, Gipuzkoa invests 2.57% of its GDP in R&D and is deeply involved in innovation. The key to this success lies in an industrial framework that actively promotes research and enjoys the full support of the local public administration. Gipuzkoa is not only home to large integrators, but also to many other specialised SMEs covering the entire supply chain.

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IRELAND
REGIONAL WINNER

CarSafari: An Interactive GNSS Guide that Entertains and Educates Car Passengers

Inspired by the need for alternative means of entertaining children on long car journeys, CarSafari is a unique way for passengers – both young and old – to interact with the locations and environments they travel through. Using a combination of current in-car entertainment and GNSS technologies, CarSafari will encourage interactivity with local landmarks and other geographical and historical features. As the car moves along a route, CarSafari will prompt passengers to react to points of interest determined by line-of-sight analysis and the vehicle's horizontal and vertical position, thus providing users with information about their surroundings. CarSafari will overlay topographical base maps with geographic data that has already been accumulated by third parties. This is primarily an open source, and includes information that has been created by the public through a web map. This will provide visitors with personal experiences as they drive through an area and expose them to plenty of local information not currently available with in-car entertainment or satnav technologies. With its patent currently pending, CarSafari will be piloted in Ireland in 2014 and rolled out globally by 2015.

National Space Centre

Supported by a highly skilled workforce, Ireland's knowledge-based economy and strong technology sector have given the country the highest concentration of ICT activity and employment in the OECD. Ireland's ICT sector also attracts global investment, with seven of the world's top 10 companies now operating from the country. ICT also accounts for EUR 50 billion in Irish exports. The National Space Centre, located in the South of Ireland, is Ireland's only teleport. It is involved in emerging satellite technology projects – including the development of S-AIS and marine mapping projects with ESA – and has provided technical support services for the Galileo satellite programme.

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JAPAN
REGIONAL WINNER


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TrustSync

GPS and other navigation satellite systems are widely used for positioning and navigation applications, but they also play a very important role in providing precise time and frequency information around the world. As GPS time and frequency services rapidly expand their support to the vast majority of critical infrastructure sectors, their vulnerabilities are being overlooked. False time information may lead to financial and social confusion, or even worse, loss of life. TrustSync is a secure time and frequency synchronisation service that leverages authenticated QZSS signals. The TrustSync receiver works in a very similar way to existing GPS timing receivers. However, instead of unprotected and insecure GPS signals for time synchronisation, TrustSync will use the authenticated digital signature in QZSS L1-SAIF and the new L1S channels. TrustSync will be the world's first GNSS service to provide secure time and frequency data to critical infrastructures in the Asia Pacific region.


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The EU-Japan Centre of Industrial Cooperation (EUJCIC)

As a joint-venture between the European Commission and the Japanese Government, the EU-Japan Centre for Industrial Cooperation formulates and develops analytical capacity with regard to industrial and other public policies that have an impact on business in the EU and Japan. The Centre is a non-profit organisation aimed at improving EU and Japanese companies' competitiveness and cooperation by facilitating exchanges of experience and know-how between EU and Japanese businesses. The EU-Japan Centre has its head office in Tokyo and an office in Brussels. It is headed by two General Managers, Mr Silviu Jora and Mr Hiroshi Tsukamoto, and has a total staff of 30 employees.

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LITHUANIA
REGIONAL WINNER


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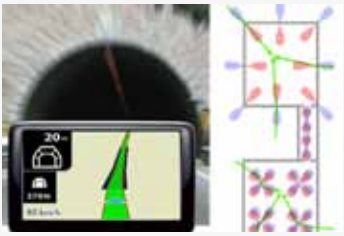
Indoor or Underground GNSS Repeater System Based on Directional Antennas

The idea offers a exceedingly accurate indoor navigation system. Indoor systems based on GNSS repeaters conventionally consist of an omnidirectional receiving antenna, a signal amplifier, and an omnidirectional transmitting antenna. Systems currently in use return the same coordinates in opposite directions because the path to the repeater's antenna is of the same length, regardless of direction. If the receiver is on the satellite(s) side from the repeater antenna, the receiver will return false coordinates. In order to provide more accurate navigation results, the unwanted signals need to be eliminated while ensuring that the navigation devices receive only those satellite signals that form as straight a path to the device as possible. To achieve this, it is necessary to use opposite-pointing directional antennas for both receiving and transmitting. In a configuration of this nature, directional antennas keep the satellite signal path virtually straight. This results in greater navigation accuracy. Higher directional antenna gain allows for wider coverage areas and requires fewer installation points, meaning system setup costs may be lower than those required for conventional repeaters.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prize awarding partner

Agency for Science, Innovation and Technology (MITA)

Lithuania, situated on the East coast of the Baltic Sea, boasts a rich history, unique traditions, Eastern Europe's oldest university, a highly educated workforce, and the highest mobile-phone penetration and densest broadband internet coverage in Europe. Lithuania promotes R&D in biotech, lasers, ICT, nanotech, mechatronics & electronics. The Ministry of Economy of the Republic of Lithuania is responsible for developing a legal and economic framework boosting economic development; it ensures public welfare and employment. Its tasks include the promotion of innovation, SME development, the administration of EU structural funds, the country's space policy, etc.

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LOMBARDY / ITALY
REGIONAL WINNER


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COPPI: Cycling Observed with a Positioning Prototype of Innovation


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Professional cycling teams pay a great deal of attention to technological innovation in terms of both their principal work instrument – the bike – and accessories, seats, helmets, and lenticular wheels. Recently, their focus has increased on all technologies that help improve team management during races and enable team directors to check predetermined tactics and take prompt decisions based on real-time strategic advice. COPPI is an innovative system for real-time monitoring and tracking of cyclists during training and competitions. Some of the key parameters are: Positioning and kinematics (speed, acceleration, vibrations, slope), bike telemetry (cadence, power on crank, gearing), biometry (heart rate, temperature, breathing frequency) and environmental (wind pressure and direction, barometric pressure, humidity, external temperature). A multi-constellation (Galileo + GPS/EGNOS) receiver is used for positioning and kinematics, and also DGPS corrections are broadcast for increased accuracy. COPPI addresses many potential markets, such as athletes in training, television (telemetry, statistics, and real-time tracking), anti-doping monitoring, tactics and strategy, betting, and video games.

Navigate Consortium

The ENSC Lombardy Challenge is organised by the Navigate Consortium and sponsored by the Italian Space Agency (ASI), which was set up in 1988 to coordinate and manage all of Italy's national space activities. With 22.2% of the country's total GDP, the Lombardy region is Italy's leading region in terms of innovation, boasting a strong research and innovation infrastructure (with 12 universities and private R&D centres), abundant human capital and knowledge, and a strong presence of industry. The region, with its capital Milan, is also home to several leading national aerospace companies.

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MEXICO
REGIONAL WINNER

Integration of AMBER Alerts through GNSS

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Missing persons represent a serious problem around the world. AMBER Alert is a protocol that broadcasts information about missing children in order to enable society to help find them. The integration of GNSS with the AMBER Alert protocol would function as follows: If a parent is unable to locate his/her child, he/she will immediately open the AMBER Alert application and enter a recent photograph of the child, his/her dress and facial features, and the location where he/she was lost. From this location, the proposed system will disseminate the information to users with the application, social media, and police officers who are close to the position. This information should also be disseminated to bus stations, airports, and major road access points. Anyone who locates the child within the radius in which the alert was issued will be able to report it via the application or alert a police officer within the warning area. With reports prompted by possible sightings of the child and the implementation of estimation algorithms similar to those used in GNSS navigation, police officers will be able to follow potential paths and track down the missing child with this application.

Mexican Space Agency

Mexico has consolidated its aerospace sector as a global leader in the field. It has registered around 20% annual growth in the last seven years. Currently, there are 249 companies and support entities in the country, most of which are NADCAP- and AS9100-certified. They are located mainly in six states and employ more than 31,000 high-level professionals. By 2011, exports from the Mexican aerospace industry had reached a value of USD 4.3 billion. Foreign and domestic investment in the sector exceeded USD 1 billion in 2010 and USD 3 billion over the last three years. The mission of the Mexican Space Agency (AEM) is to transform Mexico into a country with scientific and technological development activities that can compete at the international level, articulated industrialisation programmes and frontier-technology services, and high levels of social development impact.

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organised by

THE NETHERLANDS
REGIONAL WINNER


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Anti-Spoofing GNSS Receiver

The idea comprises hardware and an operational concept. The hardware will contain a small module with an antenna, flash memory, a battery, an A/D converter, and an interface that can be utilised in a covert fashion. The operational concept involves employing this module to record periodically encrypted signals in space using the Galileo Public Regulated Service (PRS), and over time, enabling customers or other governmental agents to read and decrypt the data. Agents will then be able to confirm manifests by comparing them with actual location data. Extensive other uses are possible, from maritime, aviation, and road contain-ers to rental equipment (boats, planes, and cars), fisheries, and electronic tagging. The module's key features include the ability to record encrypted PRS signals over time and decrypt them with a PRS test user receiver at an early stage, which will ultimately be possible on-site. For purposes of verification, open signals will also be recorded. Customers will be provid-ed with proof that their data is authentic based on the comparison of both of the positions in question. The form factor of this module should be approximately equivalent to a small GPS re-ceiver, such as the Bad Elf GPS Receiver for iPod.


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Folkline

The Netherlands Space Office (NSO)

The Netherlands Space Office (NSO) was established by the Dutch govern-ment to develop and implement its country's long-term space programme. In addition to serving as the Dutch space industry's representative in inter-national space organisations like ESA and NASA, NSO forms the central point of contact for the space community within the Netherlands. Moreover, NSO also seeks to educate the general public – and specifically students and teachers – about space (science, applications, and exploration) in an open and innovative manner. Finally, NSO invests in programmes that foster the commercial market for applications based on the utilisation of space data.

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Netherlands Space Office

NICE-SOPHIA ANTIPOLIS / FRANCE
REGIONAL WINNER

Real-Time Solutions for Public Transport Passengers Based on Bus and Smartphone Locations

Except for in very large cities - such as Paris - public transport is neglected in favour of individual cars, resulting in painful congestion and greenhouse gas emissions in cities and their surroundings. The main hindrance expressed by those who would otherwise make use of public transport is an ignorance of schedules, stops, lines, and connections, which leads to a total lack of control of travel time. Cars and their navigation systems, meanwhile, offer total comfort with guidance and time-of-arrival functions that are becoming ever more precise.
This advantage is critical in a professional context. The project aims to provide solutions that free travellers from such supply problems and make public transportation more attractive by emphasising the space and freedom available during trips without the stress of traffic jams.
The solution will provide:

1. Real-time schedule information
2. A real-time route planner offering functions similar to car navigation
3. A dynamic carpooling solution

Incubateur Paca-Est

The Côte d'Azur is known as the "French Wireless Region" due to Sophia Antipolis Technology Park – the home of 1,300 multinational companies, SMEs, labs, and international institutes representing 30,000 employees from 68 different nationalities. In Cannes, an important space sector has emerged thanks to the manufacturing sites of Thales Alenia Space, a world leader in satellite communications. The regional incubator Incubator Paca-Est (IPE), meanwhile, is now organising the region's ESNC competition for the second year. Since 2001, it has incubated 120 projects that have led to 96 successful companies. Of these companies, 11 have been acquired by other companies, including a number of major international firms. IPE is also a member of the European Space Incubator Network (ESINET).

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NORWAY
REGIONAL WINNER

Satellite Navigation as a Core Technology for Do-It-Yourself Insurance Claims on Smartphones

Using a smartphone app, insurance clients can provide trusted and reliable loss notifications. When integrated into claims management, this reduces processing costs, time, fraud, and ultimately the cost of insurance. First deployed to manage traffic accidents in Thailand, this system also covers domestic claims. The estimated annual cost of claims management is EUR 37 billion. We work with the second-largest players in Europe and Thailand and are connected to the US market. The main requirement is trust in claim correctness. Along with accurate time- and geo-tagging via GNSS, fast, robust communications for interacting in real time and the ability to study regions of interest at a high level of quality (e.g. for tags and information details) are key. The idea is based on professional disaster management and crowdsourcing. Trusted observations are used to validate satellite images. Rapid and robust transfer functionality was developed to facilitate working anytime and anywhere. We are now also working with the United Nations and the World Bank to provide rapid damage estimates after major disasters. Farmers, for example, can receive lost crop compensation quicker than they do today.

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Norwegian Space Centre

The Norwegian Space Centre (NSC) is a government agency under the Ministry of Trade and Industry. Its mission is to ensure that Norway benefits as much as possible from its space activities. NSC's areas of focus include activities in which Norway can compete in the global market for space-related goods and services, and which to a great degree are based on national qualifications and needs. In addition to promoting the development, coordination, and evaluation of the country's space activities, NSC supports Norwegian interests through the European Space Agency (ESA). Norway's participation in the EGNOS and Galileo programmes is also actively managed by NSC.

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ØRESUND / DENMARK & SWEDEN
REGIONAL WINNER


© Johan Ramberg

PingPal: Privacy-Protected Positioning of Friends for Any Mobile App

Knowing where our friends and family are is a basic human need. If nothing else, the many related apps and services available today serve as proof of this point. But positioning can also be misused. Posting updates on social media with location tagging has become a stalkers favourite tool, and let's not forget the never-ending debate on government agencies spying. There is clearly a need for an easy-to-use, privacy-protected alternative. Positioning as a dialog – a revolutionary but simple positioning technology: Positions are only shared when requested and only between two mutually consenting pals. No constant tracking. No central storage. Just people meeting their basic need to know where others are. Maximum privacy – protected positioning: We only store phone numbers on our servers as user IDs. Positions, pings, and so on are never stored unless they are needed for technical purposes. The pinged end-user controls when and with whom his or her positions are shared. Cross-plattform, Cross-App positioning: The PingPal API has been implemented with native modules for iPhone, Android, and web technologies with fully transparent functionality. Any platform or PingPal-based app can ping any other.


© Pingpal

Cluster 55°

Linking the south of Sweden and the Copenhagen area of Denmark, the Øresund region delivers unique value by combining the best of the Swedish and Danish systems. The region has one of the densest ICT concentrations in Europe, with over 100,000 workers, 10,000 companies, 8,000 students divided between 12 universities, and about 13,000 private researchers. The region has a long tradition of advanced ICT solutions, including satellite navigation applications and research. Through its network, Cluster 55° cooperates closely with, for instance, satellite navigation clusters, a large number of companies, as well as various universities and research institutes in these fields.

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SWITZERLAND
REGIONAL WINNER

See-Through

Recently, a number of collaborative vehicle-safety systems have been proposed. Information on vehicle location can be periodically exchanged by V2V communication devices to avoid emergency events. In a typical traffic accident, a vehicle suddenly slows down or stops in front of another vehicle. The following vehicle cannot respond quickly enough because the blind spot resulting from the body of the vehicle ahead fully or partially blocks the following vehicle's field of view when the distance in between them is close. See-Through can blend video streams captured by both vehicles to render the vehicle ahead "transparent" for the vehicle behind when the vehicle ahead is close. The safety of both vehicles will then be greatly enhanced, with rear drivers better able to interpret road conditions without any visual obstruction.

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swiss aerospace cluster

The swiss aerospace cluster is an agile network and non-profit organisation for pooling information across companies and organisations, thereby increasing development potential and promoting innovative products. Switzerland ranks first among 125 economies in terms of innovation levels (Global Innovation Index 2011). The cluster's members include academic and research organisations, as well as companies in the field of aerospace technologies, such as satellite navigation. The cluster supports access to attractive future markets and boosts the competitiveness of the industry and research in Switzerland.

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UNITED KINGDOM
REGIONAL WINNER

ManagePlaces: Location-Based Project Management

Today, it is common practice for companies both big and small to have team members working away from their central office. Managing workflows within these geographically disparate teams is often a chore involving email chains, constant instant-messaging, and the sharing of documents. Cloud computing has made this vastly more efficient, but there is a long way to go in the realm of remote team management. To simplify this process, ManagePlaces stores all of an organisation's data in one system and provides a customisable dashboard that lets managers see the information they actually need. It deals with all possible kinds of remote working scenarios, including project, document, asset, team, task, and location management. Using ManagePlaces leads to better workflows, less downtime, and increased task transparency. The live mapping function dynamically maps all tasks and assets, showing their exact location and status.

© ManagePlaces Limited

The mapping functionality allows users, for example, to view hotspots where overdue projects are located. Additionally, users can track all their assets, such as vehicles and devices, in one system. ManagePlaces has a utility for almost any business that runs remotely.

GRACE

GRACE is an internationally recognised centre of excellence focusing on downstream satellite navigation technologies and applications. It enables the GNSS community to develop world-class products and services and provides access to state of the art testing facilities, including a mobile laboratory, a roof-based test-track, GNSS simulators, and a RTK test-bed. GRACE combines the globally renowned research and high-calibre teaching of the University of Nottingham's Geospatial Insitute which provides research, training and other support for industry, including SMEs and start-ups.

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GRACE

esa **business incubation centre**
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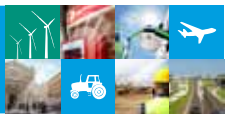
ANWENDUNGSZENTRUM
Oberpfaffenhofen

START-UP? START HERE!

1



SPOT THE SPACE RELATION IN YOUR BUSINESS!

We seek entrepreneurs using space technologies in a non-space environment. That doesn't mean rocket science, but applies to multiple application fields such as navigation and positioning, communications techniques, Earth observation, materials, processes, signals or robotics. So let´s see how much space is hidden in your innovative business idea!

2

EXPLORE YOUR BENEFITS

- access to the European ESA BIC network coordinated by ESA's Technology Transfer Programme
- cash incentives
- business and technical support from the local partners
- international contacts to industry players, research institutes and universities
- access to other sources of funding

3

INTERESTED? CONTACT US!

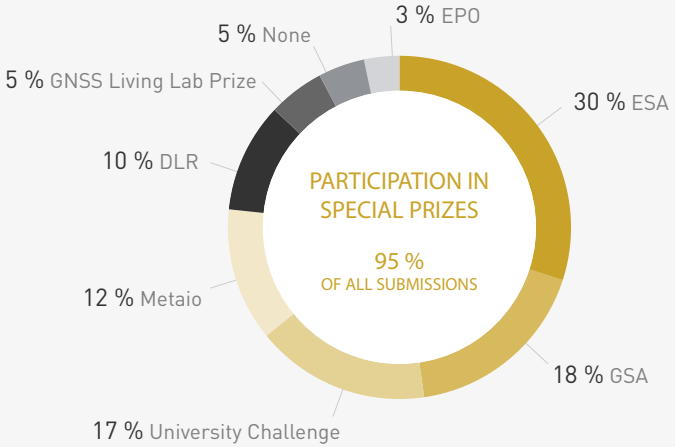
Get in contact with us to see how we can support you
esa-bic@anwendungszentrum.de
www.esa-bic.de

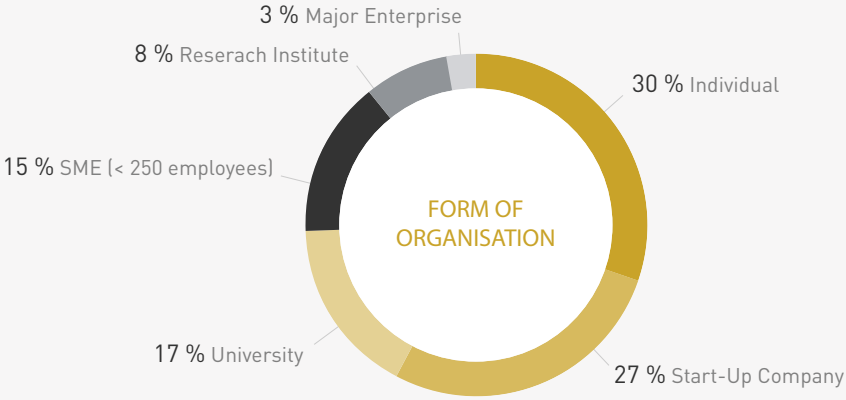
follow us on:

STATISTICS 2013

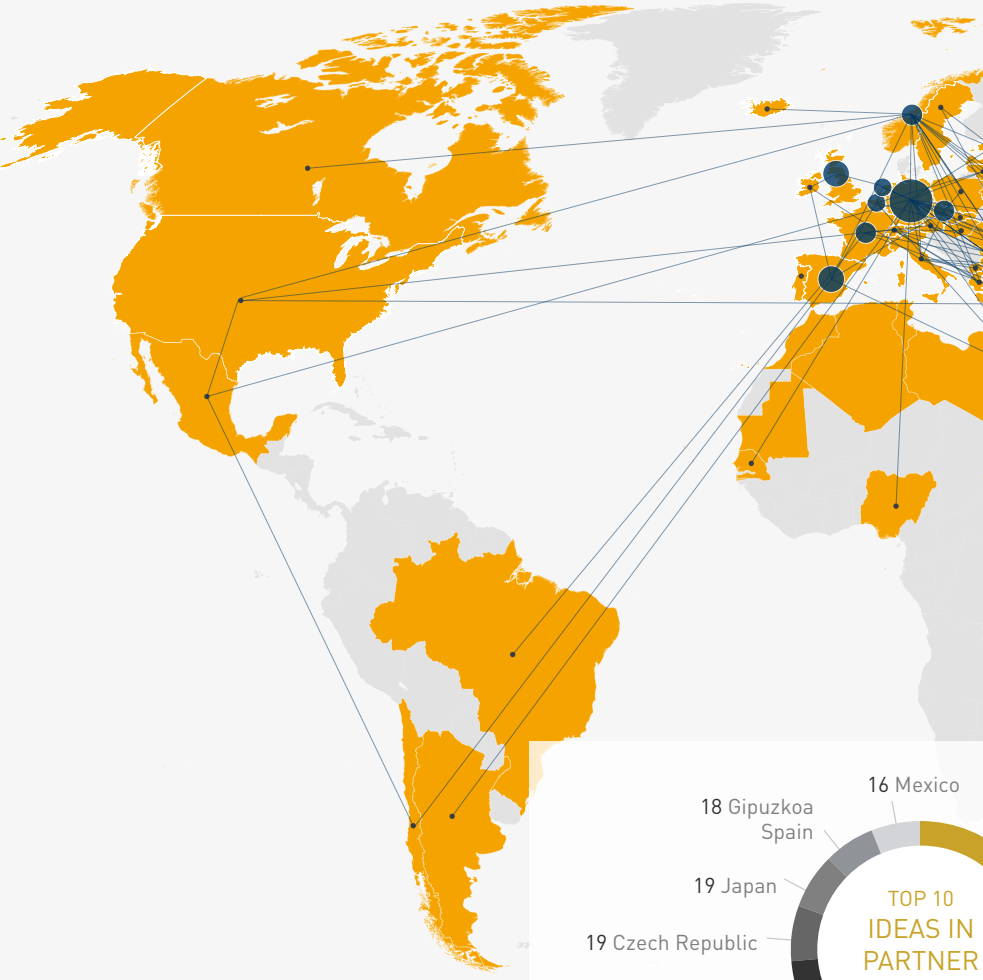
Recording innovation in numbers

Already in its 10th year, the ESNC has met again with great interest in 2013 and addressed participants from almost 50 different countries. A remarkable 413 complete submissions for various fields of application were received from teams comprising a total of 1,200 participants.


3 % EPO
5 % None
5 % GNSS Living Lab Prize
30 % ESA
10 % DLR
PARTICIPATION IN SPECIAL PRIZES
95 %
OF ALL SUBMISSIONS
12 % Metaio
18 % GSA
17 % University Challenge

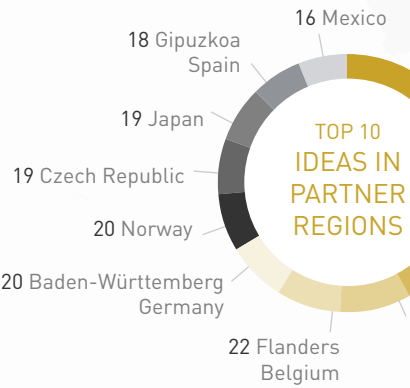

3 % Major Enterprise
8 % Reserach Institute
30 % Individual
15 % SME (< 250 employees)
FORM OF ORGANISATION
17 % University
27 % Start-Up Company

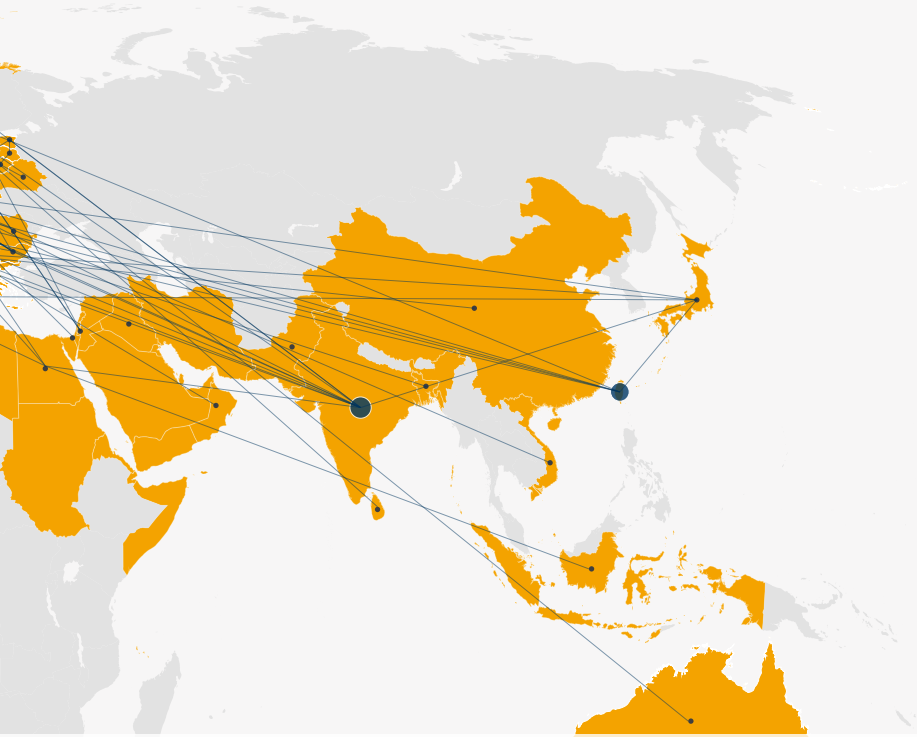
CROSS-REGIONAL IMPACT 2013



Countries from where ideas have been submitted to other countries than their own

Size proportional to number of ideas submitted from countries





68 United Kingdom

47 Bavaria Germany

25 Hesse Germany

15 The Netherlands

16 Norway

17 Czech Republic

18 Belgium

21 France

23 India

14 Taiwan

79 Germany

47 United Kingdom

34 Spain

TOP 10
IDEAS FROM COUNTRIES

EXPERTS

European GNSS Agency (GSA)

Ms Carmen Aguilera	European GNSS Agency (GSA)
Mr Reinhard Blasi	European GNSS Agency (GSA)
Ms M. Krywanis-Brzostowska	European GNSS Agency (GSA)
Mr A. Fernández Wyttenbach	European GNSS Agency (GSA)

European Space Agency (ESA)

Mr Bruno Naulais	European Space Agency (ESA)
Ms Elke Daniels	ESA BIC Bavaria
Mr Koen Debeule	European Space Agency (ESA)
Mr Niels Eldering	European Space Agency (ESA)
Dr Bernd Geiger	Triangle Venture Capital Group
Mr Roberto Giuliani	ESA BIC Lazio
Mr Herve Joumier	European Space Agency (ESA)
Mr Martijn Leinweber	ESA BIC Noordwijk
Mr Luc Peters	ESA BIC Flanders
Mr Michel Ponthieu	ESA BIC Redu
Mr Rob Postema	European Space Agency (ESA)
Mr Ian Tracey	ESA BIC Harwell
Dr Javier Ventura-Traveset	European Space Agency (ESA)
Dr Frank Zimmermann	ESA BIC Darmstadt

German Aerospace Center (DLR)

Mr Robert Klarner	German Aerospace Center (DLR)
Dr Rolf-Dieter Fischer	German Aerospace Center (DLR)
Dr Michael Meurer	German Aerospace Center (DLR)
Mr Walter Päffgen	GfR Gesellschaft für Raumfahrtanwendungen (GfR) mbH
Dr Klaus-Dieter Rockwitz	German Aerospace Center (DLR)
Dr Ulrich Theis	German Aerospace Center (DLR)

European Patent Office (EPO)

Mr Jeremy Philpott	European Patent Office (EPO)

metaio GmbH

Mr Kevin Nelly	Metaio GmbH
Mr Christopher Zak	Metaio GmbH

GNSS Living Lab Prize

Mr Thorsten Rudolph	Anwendungszentrum GmbH Oberpfaffenhofen
Mr Anders Carlsson	New Tools for Health
Mr Ugo Celestino	European Commission (EC)
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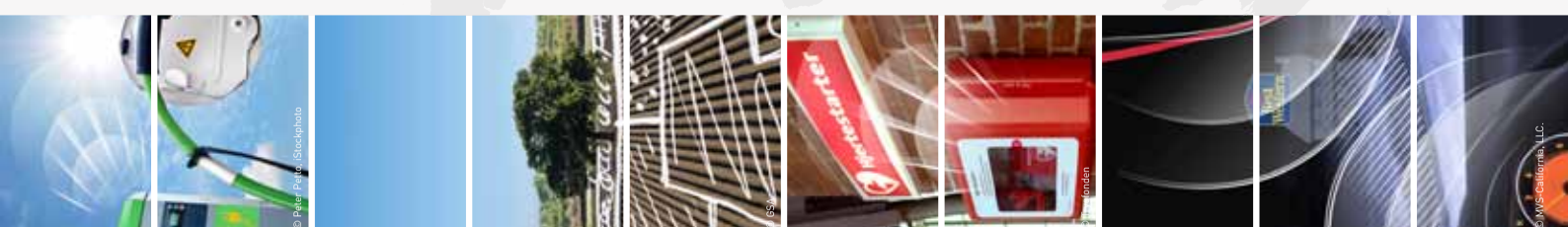

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