THE RESULTS 2012

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GALILEO
Master

EUROPEAN
SATELLITE NAVIGATION
COMPETITION
2012

powered by HPI fleet unlimited

The European Satellite Navigation Competition
Fostering SatNav Business Applications for Europe

With EGNOS already operational and a clear timeline set for the implementation of Galileo, Europe is opening the door to a huge range of innovative applications. Tractors guided by satellites for higher crop yields using much less fertilizer, reductions in fuel and time consumption on the road thanks to better traffic management, safer flights and landings – sound like science fiction? These applications are already being developed now. Market opportunities exist in a wide range of domains, such as in personal mobility, precision agriculture, and virtually every mode of transport. In a global market for GNSS products and services currently valued at EUR 150 billion per year – a figure that will continue to grow rapidly for the next five years – European SMEs must seize their opportunity to take the lead.

This year, the ESNC has once again proven its ability to foster the commercialisation of GNSS-based applications. With the aim of supporting SMEs and other European businesses, the European Commission is working with the ESNC and has established the Galileo-EGNOS Prize Award Scheme (GEPAS) with currently 18 partners. The scheme supports new regions as well as existing partners of the ESNC in providing even more attractive prizes to their ESNC winners. Having started with nine partners in 2011, GEPAS is now set to benefit a significantly greater number of winners in implementing their business ideas and developing GNSS applications.

Congratulations to all the winners of the ESNC 2012 and all the best in your efforts to realise your ideas!

Antonio Tajani

Antonio Tajani
Vice-President of the European Commission

European Commission

The European Satellite Navigation Competition
Innovation on a Global Scale

With the Galileo Control Centre (located within the German Aerospace Center) in Oberpfaffenhofen and a series of renowned local companies, Bavaria is the leading SatNav hub in Germany and one of the top five aerospace hotspots in the world, with space initiatives based to a large extent on the European navigation programmes Galileo and EGNOS. One of the main points of emphasis in our space activities, meanwhile, is our support for company foundations. This is why we co-fund the ESA Business Incubation Centre Bavaria, including its head office in Oberpfaffenhofen and branch offices in Nuremberg and Berchtesgadener Land. At these three locations, we will have supported a total of 70 start-up companies by the end of 2013.

As in years past, I have gladly taken on the role of patron of the highly successful ESNC once again in 2012. In close cooperation with our European and global partners, an excellent network has been established to create added value for satellite navigation technology. The ideas competition has been unearthing innovative ideas for satellite navigation applications every year since 2004 and has also begun setting new trends with its challenges. The strong international response to this year's ESNC has once more proven its ability to boost entrepreneurship on a global scale.

My thanks go out to all of our partners and partner regions for their hard work and support in bringing the awarded ideas to fruition, and to all the participants for the excellent and promising ideas they submitted this year. Finally, congratulations to all the winners of the ESNC 2012 – I wish you every success in making your innovations a reality!

Martin Zeil

Martin Zeil
Bavarian State Minister for Economic Affairs, Infrastructure, Transport and Technology

The European Satellite Navigation Competition
Innovative Business Cases for an Emerging Market

The European Satellite Navigation Competition (ESNC) received a remarkable 406 complete business cases and application ideas from more than 40 countries in 2012. This increases its overall output to almost 2,000 submissions from more than 3,500 registered teams, resulting in a total of 171 awarded winners in the ESNC since its first round in 2004.

The application fields with the highest resonance in the ESNC 2012 were mobile location-based services (35% of all submissions) and smart moving (29%). According to the European GNSS Agency (GSA)'s 2012 market report, the GNSS sector is expected to grow from a current market size of EUR 150 billion to an estimated EUR 244 billion by 2020. The two sectors with the largest market revenues are road with a 54% share, followed by location-based services with 44%. This proves that the ESNC is meeting the market's requirements and validates its ability to boost entrepreneurship in the space-based downstream market. This year, more than 90% of all entries were submitted for a special prize or prototyping prize, further demonstrating the enormous potential satellite navigation has in providing solutions for specific industrial issues.

We are very pleased to have had the great support of the new ESNC title and special prize sponsor HPI Fleet & Mobility AG, which took advantage of the competition's creative impulses for the first time. Furthermore, we would like to emphasise the excellent assistance of the German Aerospace Center (DLR) and the European Space Agency (ESA), which have bolstered the competition since the very beginning in 2004 and both trusted in its innovation potential in awarding special prizes this year. Special thanks also go to the European GNSS Agency (GSA) for once again rewarding the most promising EGNOS application idea. We are honoured to have had the valuable support of the Industrial Technology Research Institute (ITRI) and the Taiwanese Ministry of Economic Affairs (MoEA), which for the second time were searching for the best prototypes promoting the trend towards connected vehicles. Further thank goes to the European Commission for supporting the European ESNC partner regions and sponsors in awarding prizes to their winners through the new Galileo-EGNOS Prize Awarding Scheme (GEPAS). Finally, we would like to thank Maiwald Patentanwaltsgesellschaft mbH, Awapatent AB, and the consortium of the FP7 project GENIUS for their continued support of the ESNC.

In 2012, seven new regional partners – Austria, Croatia, Finland, Ireland, North America, Poland, and Portugal – joined the ESNC network and awarded prizes to their local winners for the first time. With 24 global partner regions worldwide, the European Satellite Navigation Competition can boast a proven track record of success in fostering international networks and supporting the development of a future market. Together with an international network of more than 190 experts, these regions will continue to help the many applications and business cases submitted realise their full potential as successful products from exciting new companies.

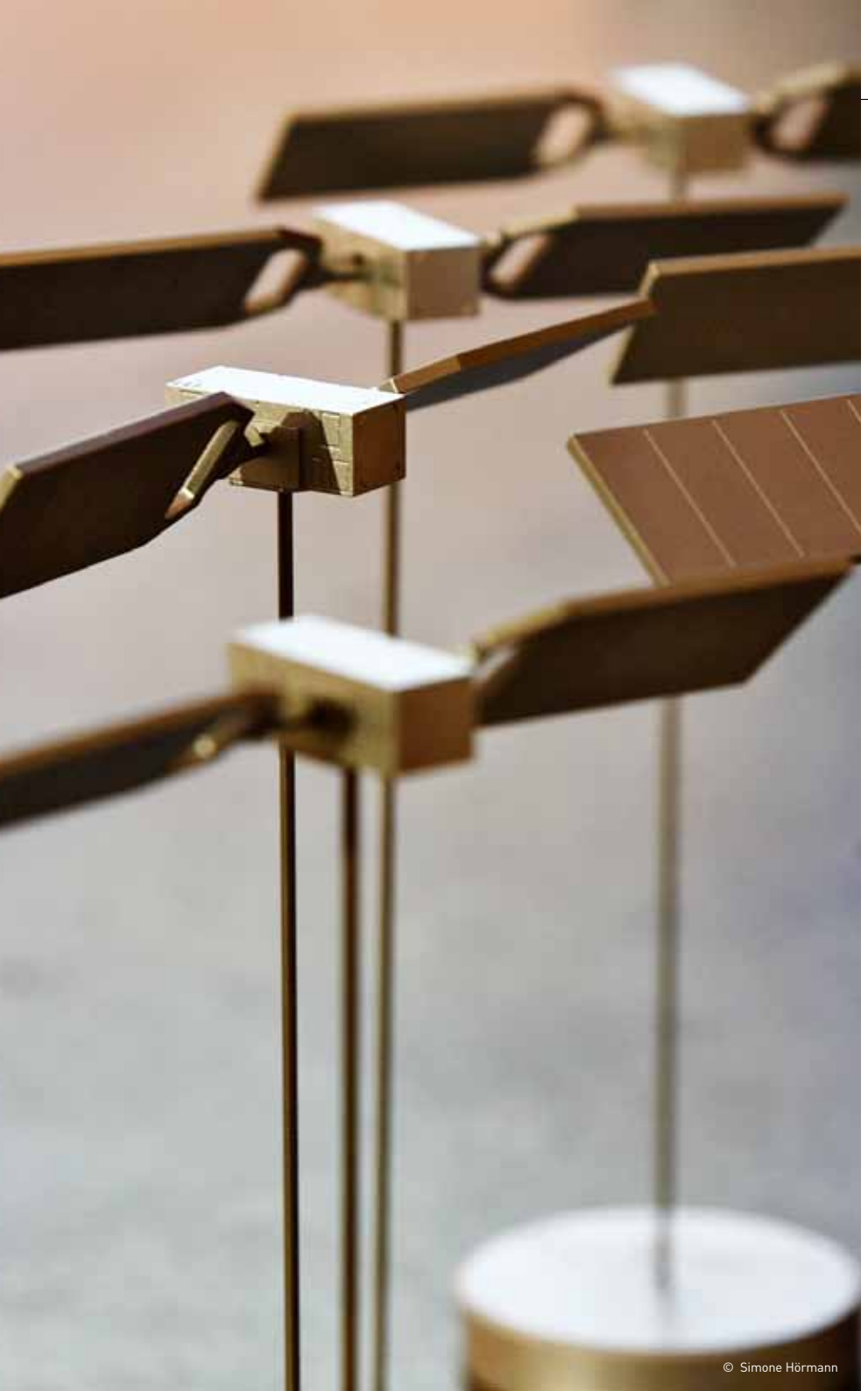
We would like to thank all our partners again for their outstanding support and are already looking forward to the exciting 10th jubilee of the European Satellite Navigation Competition in 2013. The submission phase will run from April to June 2013.

Thorsten Rudolph
Managing Director

Ulrike Daniels
Business Development

Andreas Dippelhofer
Project Management

Kathrin Sturm
Project Management
GEPAS



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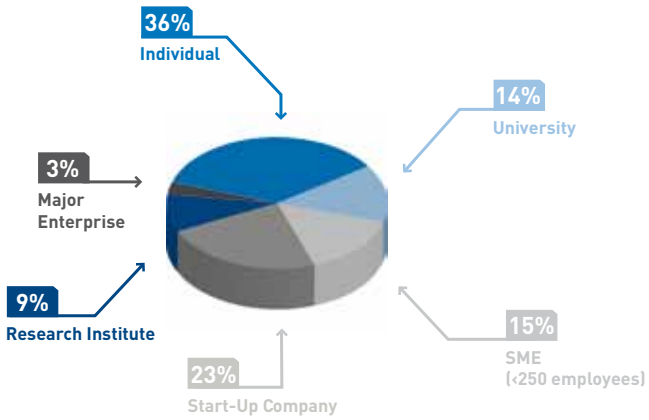
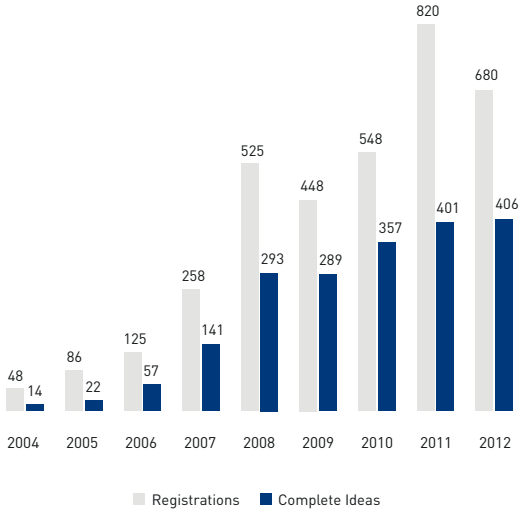
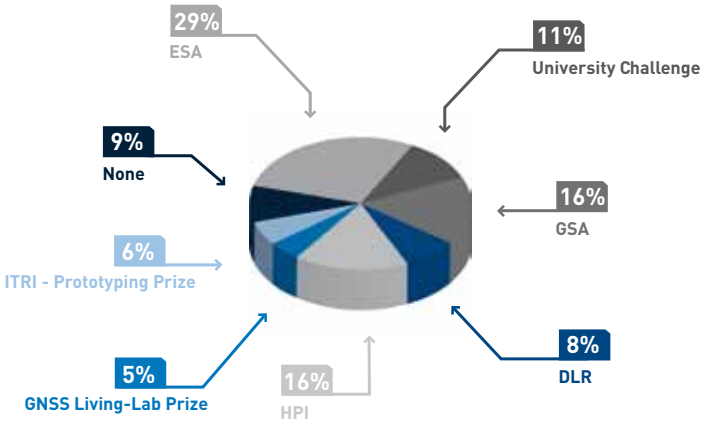
Form of Organisation



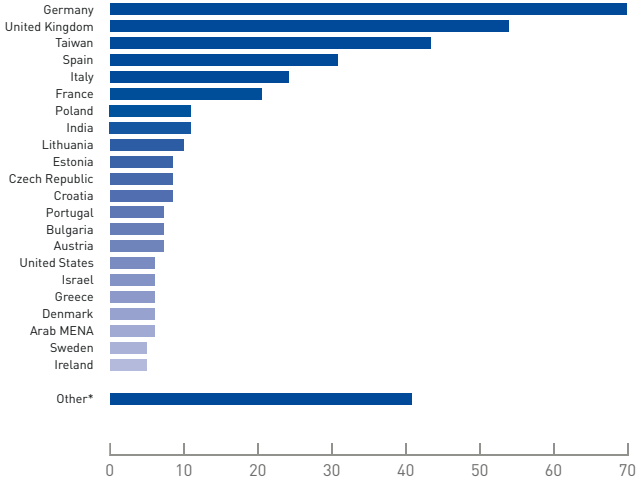
Participants 2004 – 2012



Participation in the 2012 Special Prizes and Prototyping Prizes



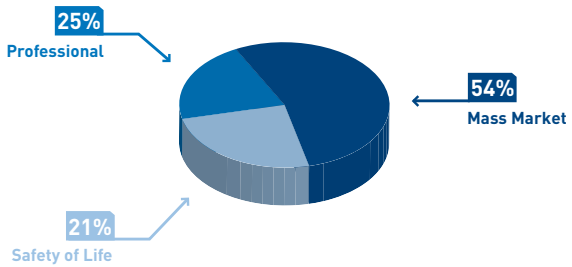
Ideas from Countries



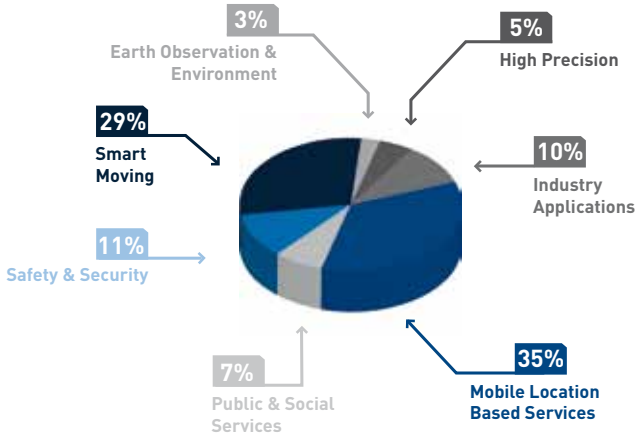
* Australia, Belgium, Brazil, Canada, Finland, Ghana, Hungary, Iceland, Iraq, Kenya, Latvia, Malta, Netherlands, Nigeria, Pakistan, Romania, Russian Federation, Slovakia, Sri Lanka, Switzerland, Ukraine

ESNC Total Market

406 Ideas



Application Fields



24 PARTNER REGIONS

ASIA
EUROPE
NORTH AMERIA
SOUTH AMERICA
ARAB MENA

10 SPONSORS

24 EVENTS
>2500 GUESTS

800 PARTICIPANTS AT REGIONAL KICK OFFS
100 PARTICIPANTS AT UNIVERSITY WORKSHOPS
500 INVITED GUESTS AT THE AWARDS CEREMONY & SUBSEQUENT STATE RECEPTION
EUROPEAN SPACE SOLUTIONS

>6000 PARTICIPANTS SINCE 2004

171 AWARDED WINNERS
1984 SUBMITTED IDEAS
PARTICIPANTS FROM **50** DIFFERENT COUNTRIES
3538 REGISTRATED TEAMS SINCE 2004

ESNC NETWORK 2012

66 PARTNERS

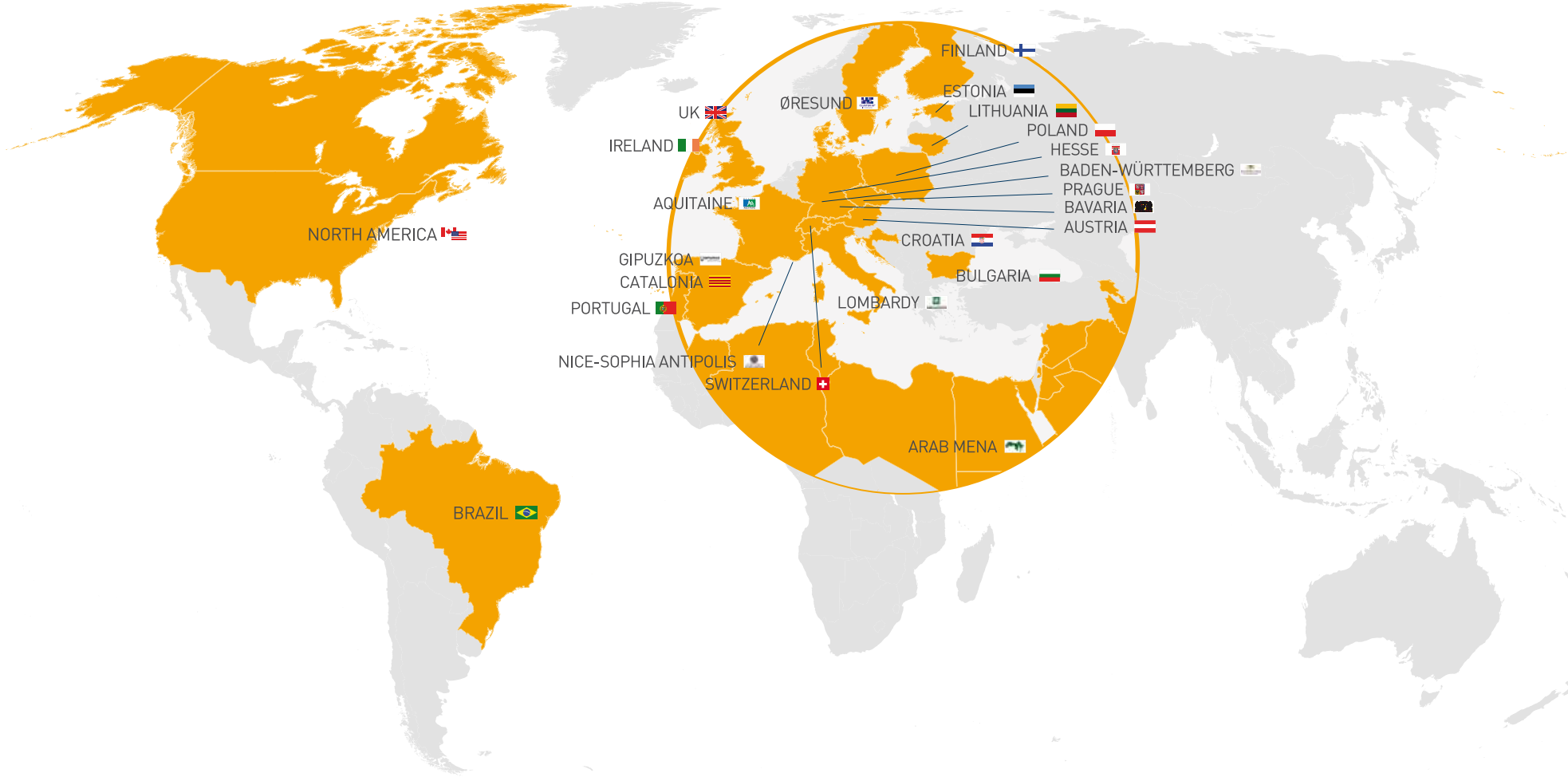
23 INCUBATORS
13 UNIVERSITY/RESEARCH
11 AUTHORITIES
4 LIVING LABS
10 COMPANIES
5 AEROSPACE AGENCIES/INDUSTRY
FURTHER PARTNERS

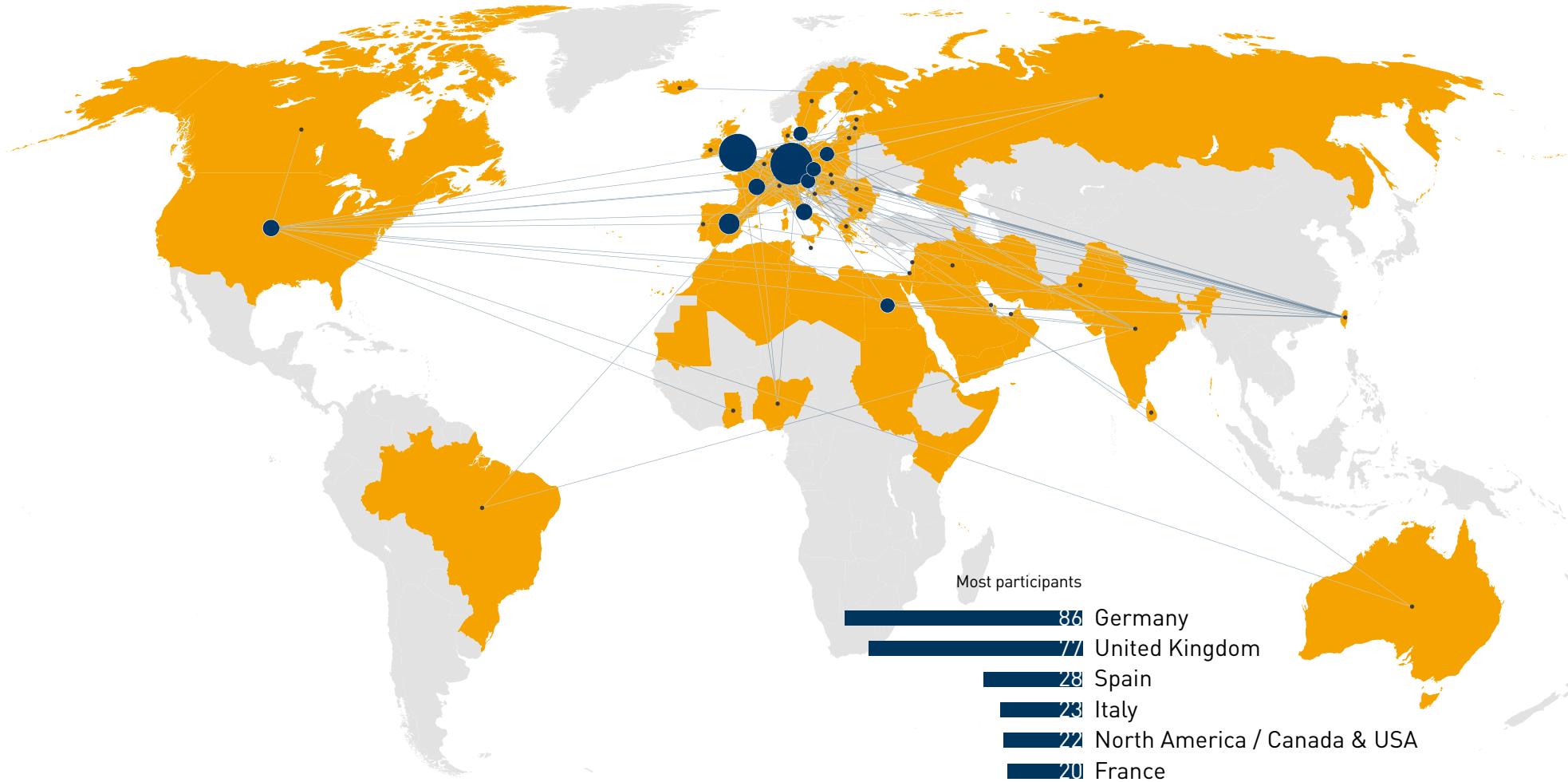
190 INT. EVALUATION EXPERTS

22 AEROSPACE AGENCIES
46 UNIVERSITIES/RESEARCH INSTITUTES
15 AEROSPACE INDUSTRY
19 POLITICS
14 ITC ..

MEDIA COVERAGE

1.1 MIO PAGE IMPRESSIONS
>260 SPECIALISED PRESS
>9.000 QUALIFIED MAILINGS
>2.3 MIO SOCIAL MEDIA


FINLAND
ESTONIA
ØRESUND
LITHUANIA
UK
POLAND
IRELAND
HESSE
BADEN-WÜRTTEMBERG
PRAGUE
AQUITAINE
BAVARIA
AUSTRIA
NORTH AMERICA
CROATIA
GIPUZKOA
BULGARIA
CATALONIA
LOMBARDY
PORTUGAL
NICE-SOPHIA ANTIPOLIS
SWITZERLAND
ARAB MENA
BRAZIL



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

Most participants

86	Germany
77	United Kingdom
28	Spain
23	Italy
22	North America / Canada & USA
20	France
15	Czech Republic
15	Øresund / Denmark & Sweden
15	Poland
15	ArabMENA
14	Austria

Seamless Navigation Through Ultra Low Frequency Magnetic Field Communication (ULF-MC)

Dirk Elias
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Finally, a solution that allows accurate indoor navigation with existing smartphones! ULF-MC will enable you to navigate indoors and receive location-based information relevant to you and your friends. It is as easy as using satellite-based navigation today. By extending outdoor navigation systems with simple, low-cost infrastructure for indoor areas, ULF-MC provides you with exact positions and related information via modulated magnetic fields and the mobile internet. The system is based on relative location IDs that are transferred to absolute positions involving the last GNSS fix. This technology has been designed for use on existing smartphones through utilisation of their three-axis hall sensors (electronic compasses). ULF-MC's primary application areas include:

- Indoor navigation
- Mobile payment apps for POS & ATM
- Individualised advertising

Though designed for indoor use by humans, ULF-MC can also be used to extend the reach of GNSS to tunnels for car navigation or to increase outdoor accuracy related to points of interest (e.g. for blind people). The technology has been tested and a demo is under development. A patent is pending in Europe and the United States.

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Portugal

© Tourism of Porto and North of Portugal

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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D.S.R.C.: Driving with Safety, Responsiveness and Courtesy!

Wei Li, Chih Han Chang, Chih-Che Lin, Ming-Fong Tsai, Yung Ping Lee, Chien Hsing Chen, Ping-Fan Ho, Chien-Kuo Lai, Chih-Wei Huang and their team
oda@haitec.com.tw, www.haitec.com.tw/en, www.itri.org.tw/eng

The design of the D.S.R.C. system was inspired by the daily driving experience. Over the years, vehicle manufacturers have developed very limited tools/methods to help drivers communicate – turn signals, brake lights, honking and gestures, and so on. The lack of efficient and informative communication tools can lead to uncertain driving situations and result in accidents. To address such issues, three state-of-the-art technologies are being smoothly integrated – DSRC communication, a novel software-based dead reckoning algorithm capable of reducing positioning error by two meters, and an in-vehicle CAN bus-monitoring scheme – to create a new communication model for everyday drivers. Drivers can send emergency warnings to others, and courteous "thank-you" messages can be sent back as acknowledgement. In addition, private honking and yield allow drivers to express their intentions more politely. With its highly integrated CAN bus scheme, this system can issue door-unlocking/door-opening warnings to following vehicles to enhance driving safety. It can also issue alerts that remind local drivers to switch off their high beams when oncoming vehicles are approaching.

© HAITEC ITRI

ITRI: Connect Autos Tightly to ICT from V2X

Industrial Technology Research Institute (ITRI) // Taiwan's leading research institute for technology advancement is a not-for-profit R&D organisation financed equally by Taiwan's Ministry of Economic Affairs and national industry. Founded in 1973, ITRI functions as an incubator for Taiwan's industries. ITRI initiated a prototyping prize to integrate GNSS technology into Wireless Access in Vehicular Environments/Dedicated Short-Range Communications (WAVE/DSRC). The concept of this prize focuses on "connected vehicle", expecting to enable the European Satellite Navigation Competition to inspire more innovative applications.

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3SOUND NAVIGATION: Track Navigation Solution Based on GNSS and 3D Acoustically Augmented Reality

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3SOUND is a personal navigation solution that integrates acoustic binaural technologies (3D sounds) and GNSS technologies to guide people along a predefined track. The system provides acoustic track perception based on the integration of an augmented acoustic reality application developed for smartphones and an accurate, reliable navigation solution that leverages GPS augmented with EGNOS/EDAS. The system identifies the position and orientation of the user and, using binaural sounds, improves on conventional waypoint or route navigation by providing innovative acoustic guidance via open earphones. The 3SOUND solution also includes a virtual guidance rope for the blind, others with sight impairments, and people working in low-visibility environments (emergency and rescue services, etc). The idea is being developed under the FP7 ARGUS project (www.projectargus.eu), which is designing, implementing, and demonstrating a personal navigation solution based on 3D sounds and acoustic track perception.

© ARGUS Project

GSA: The most promising EGNOS application idea

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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Citizen First Aid – Civic Behaviour Helping People in Distress

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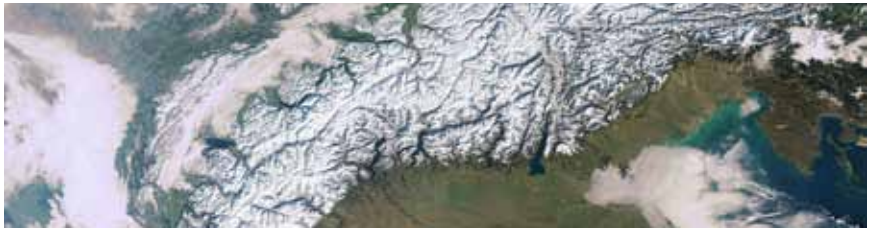
Healthcare, accidents, and security are global issues. Citizen First Aid is a mobile app that allows fast handling of emergencies and better support of people in distress, victims of medical problems or aggression, or others requiring urgent help. Much of the population has access to smartphones with geolocation tools that could be harnessed to tackle these problems. The app enables victims to alert people able to help nearby and ask them for necessary items. If a person is having an asthma attack, for example, someone nearby might have the Ventoline he or she needs. This person can be notified and guided to the person in need to provide help until professional aid arrives. This could be adapted to many situations: aggression, car accidents, diabetics in need of insulin... All around us, many people would be ready to intervene if alerted in time; these people have goodwill and, in some cases, knowledge of first aid, protection, specific medicine, and other skills that could be useful. This app provides great benefits: improving public health, encouraging civic behaviour, providing autonomy to the elderly or people with disabilities, and even saving lives.

© Jonathan Durant

ESA Innovation Prize



European Space Agency (ESA) // ESA, an international organisation comprising 19 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.

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GNSS Based Attitude Determination

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The proposed GNSS Based Attitude Determination (GBAD) technique exploits velocity information acquired by GNSS receivers. For this purpose, velocities are measured by one or two receiver antennas shuttled within the body coordinate system. If the components of vector are known in two coordinate systems, the attitude between these coordinate systems can be determined. GBAD uses velocity vector information in the body coordinate system (a priori known) and the geographic coordinate system (provided by the GNSS receiver). Pitch, roll, and heading are determined after the extraction of velocity components of the antenna in geographic coordinate system from the measured sum of body velocity and antenna velocity components in geographic coordinate system. This GBAD technique can be implemented within a GNSS receiver and

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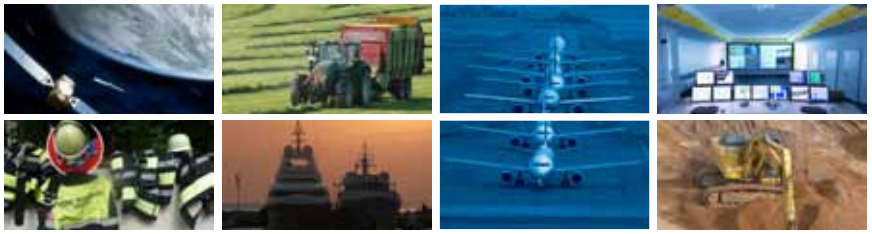
offers a number of advantages, such as high accuracy, a small size, reliability, and compatibility with unmanned aerial vehicles, airplanes, ships, and cars. The antenna motion within the body frame is also known, which makes it possible to filter velocity errors, improve the system's performance, and monitor its integrity.

DLR: SMART NAVIGATION – with enriched constellations



German Aerospace Center (DLR) // DLR is Germany's national research centre for aeronautics and space. Its extensive research and development work in aeronautics, space, transportation, and energy is integrated into national and international cooperative ventures. The German federal government has given DLR, as Germany's Space Agency, responsibility for the forward planning and implementation of the German space programme, as well as the international representation of Germany's interests. Furthermore, Germany's largest project management agency is also part of DLR, which invests in promising technologies and offers its research and development capacities to customers.

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immer MOBIL: Individual Mobility for Everybody due to Linked, Location-based Transportation Services

Nicole Wagner, Wolfgang Inninger, Stefan Pfennigschmidt, Gerd Waizmann
nicole.wagner@prien.iml.fraunhofer.de, www.prien.iml.fraunhofer.de
www.immermobil.org

In an ageing society, enhanced mobility solutions are needed to facilitate independent living and support the out-of-home mobility of all generations. The system immer MOBIL – be always Mobile enables citizens to use up-to-date and enhanced mobility services in rural areas in a very convenient and easy way. The key concept of immer MOBIL involves improving the matching of transportation needs and available transportation services. It is realised through intelligent use of specialised telematic, information, and communication technologies. In addition to traditional public transportation services, these new approaches provide alternatives like community transportation, private transportation services, and shared taxis. End-users can select and order individualised trips optimised to meet their per-

© tbel

sonal requirements at the push of a button. The location-based application can automatically transmit information to users based on their current position. Travel information, routing, and booking will be constantly supported via mobile devices and services. Ultimately, this system can lead to more economical and ecological mobility.

HPI: Seamless and Sustainable Mobility

HPI Fleet & Mobility AG // HPI Fleet & Mobility AG is Europe's leading independent fleet management company. In 16 countries, we offer a unique service portfolio that covers the entire value chain, from vehicle procurement to remarketing. Along the way, we manage all fleet-related activities for our clients and process their financial transactions. They thus benefit from one consolidated reporting and one collective invoice that meets their accounting standards. Our business strategy is driven by the aim of converting today's fleet management into a holistic approach centred around the individual's need for seamless and sustainable mobility.

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Access ON

Luis Gomes, Filipe Sousa
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Have you ever dreamt of living in an equal society? Are you willing to spend two minutes to make a change? If you answered „yes" to these two questions, Access ON is for you. The Access ON project offers the chance to solve the problems of accessibility in society. It will eliminate the gap between you and the entities responsible for such issues while taking current bureaucratic processes and inconveniences out of the picture. Participation is free; you only need to locate an accessibility problem, open the application provided by the project, and complete the three steps required (photograph, describe, and identify the inaccessibility). This entire process will take less than two minutes, during which the application will find, in the background, your location using your smartphone's GNSS functionality. You do not need an Internet connection; if none is available, the information will be stored on your device to be sent when your wireless service is restored. Access ON will have partnerships with the entities capable of correcting the problems you submit. This movement will have a real-world impact on society and, with time, could solve many accessibility problems. Make your choice!

© Access On

Vamos

David Prentell, Luis-Daniel Alegría, Jens Dressler, Erik Collinder
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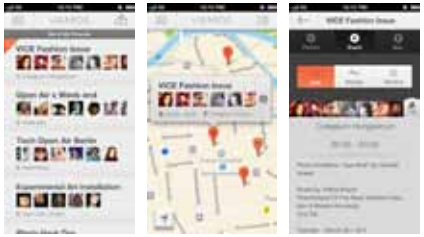
Vamos is a mobile application that combines the best of Facebook and Instagram in order to pry friends away from their screens and get them together in real life. We use geo-location-tagged Facebook events, Instagram photos, and information on event attendance and check-ins to find out where users' friends are going and what the day's most interesting local happenings are. The app works straight out of the box and all over the world, no matter if the user is looking for things to do in Bangkok, Barcelona, Boston, or Berlin.

- It's an easy way for people to get an overview of where their friends are going on Facebook, when and where events will start, and pictures taken there on Instagram
- It's a hyperlocal marketing platform for event promoters that want to reach people when they are looking for events

Give it a go! Let Vamos and your friends guide you to all the exciting stuff going on in cities all over the world. Vamos, via the App Store.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University Challenge


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 co-operation between education, research and business. The ESNC University Challenge is carried out by Anwendungszentrum GmbH Oberpfaffenhofen (AZO) with the support of GENIUS, Awapatent AB, and the Universität der Bundeswehr München. It connects innovative thinkers with the business community to pave the way from university to entrepreneurship.

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ESNC 2012
University Challenge

GNSS Living Lab Prize

Galileo Advanced INnovation Services (GAINS) // Living Labs are User Driven Open Innovation Platforms where stakeholders have formed a Public-Private-People-Partnership (PPPP) of firms, public agencies, universities, institutes and users all collaborating for creating, prototyping, and validating new service-products and societal infrastructures in real-life contexts. Currently 274 Living Labs are grouped under the European Network of Living Labs (ENoLL). Aiming at facilitating the emergence of User Driven Open Innovation Demand for services and GNSS applications Living Labs from 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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ESNC 2012
GNSS Living Lab Prize

RegiGolf objectively scores a game of golf by automatically geo-positioning and recording each shot

François Ducos, Magdalena Ducos Moeskops
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RegiGolf aims to record and objectively monitor games of golf by removing any player intervention in the scoring. The system integrates a number of technical components that gather and record the necessary data to render shot-by-shot accounts of games in its computer software. The system also allows participating clubs to upload certified scores to their local federation for immediate delivery of newly awarded handicaps. The system includes a custom GNSS/GPRS belt to be worn by the player, RFID-enabled golf balls, a software suite to be used by clubs and federations, and a centralised information base held by RegiGolf. RegiGolf's patented concept is based on the latest technological developments in automated identification, fine-grain geo-positioning, and automated mapping.

© Jaap Hart, spxChrome, iStockphoto

The keys to RegiGolf's success include:

- The SmartGolfBall, which carries a miniature identification chip without hindering golfing performance
- The SmartGolfBelt, which records and transmits data points gathered via GNSS with millimetre-level precision
- The open-source SmartRegiGolf software suite, which maps golf clubs, gathers player data, and passes it on

Aquitaine / France


© Gilbert

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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Spacecraft Control Using Adaptive Neural-Network Predictive Controllers (ANNPC) and GNSS Signals

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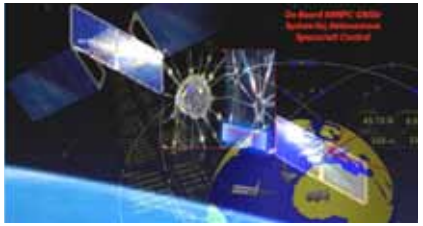
This idea makes use of Adaptive Neural-Network Predictive Controllers (ANNPC) in conjunction with GNSS signals to control the orbit and attitude of any type of Earth-orbiting spacecraft. The simulation models we have developed demonstrate that one can implement an orbital control system for spacecraft by combining ANNPC with input state vectors generated from GNSS signals received on board. The key advantage of using ANNPC is that it does not require highly accurate and costly dynamic models for specific spacecraft to enable orbital and attitude prediction and control for every new spacecraft design. Instead, a generic ANNPC algorithm can be developed and trained to learn the orbital and AOCS dynamics of spacecraft during their pre-operational and operational phases. The


© M.A. Zayan

simulations have demonstrated that using such a system optimises spacecraft thrust forces, thus reducing fuel consumption and prolonging missions by more than 30%. By using ANNPC-GNSS, it is possible to reduce, or even eliminate, the reliance on ground control station (GCS) telemetry and ranging and tracking antenna (TTAC) systems (TTAC accounts for up to 50% of GCS costs).

Arab Middle East & North Africa

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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BikeCityGuide – Bicycle Navigation

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BikeCityGuide is the first smartphone navigation app especially developed for cycling in cities. If you want to plan a route or discover a city on interesting tours, BikeCityGuide always knows the most bicycle-friendly route. Our app offers routing and A to B navigation with exact vocal instructions. Residents and tourists can thus cycle through cities comfortably and explore them along the best routes for cyclists. Having been launched in April 2012, BikeCityGuide is currently available in 24 cities in Austria, Germany, and Switzerland. The team's specially developed algorithm calculates bike-specific routes, guaranteeing the app's ability to automatically avoid main streets while favouring bike lanes and side streets. All of BikeCityGuide's navigation features rely solely on GPS to offer offline routing and navigation. All of its functions are also available without an active Internet connection, which saves on roaming charges and battery power. With BikeCityGuide, we are bringing GPS navigation to an area where it does not yet see widespread use. This is part of the goal, which is to make cycling accessible to more people by making it even more comfortable and stress-free.

© BikeCityGuide

EmoCityMapping – Unfolding Emotions in Living Spaces

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EmoCityMap (Emotional City Mapping) is a new technology for measuring people's emotions in situ. It extends socio-physical features based on geographical information systems (GIS) by incorporating data on the level and quality of emotions people experience in specific locations, such as stress, interest, balance, and retraction. This is achieved by continuously measuring emotional responses and geographical locations in tandem. In doing so, EmoCityMap integrates innovative technologies from Bodymonitor Systems (BMS), including:

- BMS Smartband GEO, a sensor wristband that captures psychophysiological parameters as reflections of neuro-affective changes in autonomous nervous system activity, as well as geographical positions captured by GNSS modules
- BMS EmoScore, a software solution that processes and classifies psychophysiological signals as types of emotional responses
- EmoCityMap GIS, a GIS environment for visualising the arousal of emotion types in a geo-referenced system

© Phillip Papastefanou

Austria

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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, 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

© Manuela Weschke

IHK Reutlingen // Baden-Württemberg, the federal state in the South West of Germany and home to 11 mio 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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Privacy-Protected Localisation and Authentication of Georeferenced Measurements with Galileo PRS

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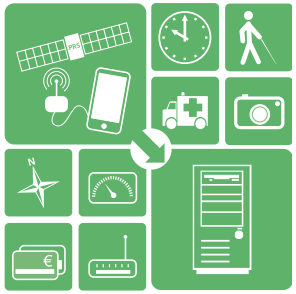
Fraunhofer IIS



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Galileo PRS is a special navigation service featuring encrypted signals, access restriction to specific authorised users, and high robust protection against signal spoofing. Standard users will not be able to access any Galileo PRS information. The idea shows how ordinary people can also profit from PRS without having to care about any security-related challenges with PRS receivers, and without jeopardising the security of the PRS system. The user equipment has to take a snapshot with sufficient bandwidth to include Open Service (OS) and PRS signals. In order to verify the recording of valid data, OS acquisition can be used. The OS components are removed from the snapshot with a high-pass filter to protect the user privacy. This means only those authorities with PRS keys and equipment will be able to reconstruct time and position from the modified snapshot. The snapshot can also be used to sign measurements, files, or objects just before they are transmitted to a server. This method can even add legal value to such measurements. Some possible further applications include the tracking of elderly people, e-call systems, road charging, environmental monitoring, and secure financial transactions.

Participative GIS for Natural Risk Assessment and Disaster Relief Using Satellite Navigation and Free Software

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SIG-Riscos (Risk-GIS) is a distributed, mobile, participative GIS consisting of a central database and a municipal GIS installed on mobile computers. It allows civil defense workers to make their own maps, monitor risk areas, and report disasters to central coordinators of mitigation measures. It can be adapted to any satellite navigation system. By educating civil defense workers, it can also enable them to guide the population in disaster situations and update the GIS. Risk-GIS was made by the Ribeira Valley GIS technical group. Available on a free-access website, the system is a public service that uses free gvSIG software, satellite images, and vector files of area maps to form local GIS. Local governments are the target market. There are 5,561 municipalities in Brazil and many more in other countries that need a practical system to deal with risk assessment and natural disaster management. The potential market is large due to the growing concern with natural disasters; in Brazil, recent federal regulations have mandated risk assessment and plans for disaster prevention and mitigation for all municipalities. The prototype is ready and running in 23 municipalities.

Bavaria / Germany

© Rudolf Sterflinger

Anwendungszentrum GmbH Oberpfaffenhofen (AZO) // AZO was set up in 2001 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 (Galileo Masters) and Earth monitoring (GMES 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.

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Brazil

MundoGEO // Brazil, the world's 5th largest country in area and population and the 8th largest economy in nominal GDP, has won new international recognition through economic reforms. MundoGEO Publishing, created in 1998, has the mission of bringing together the geomatics and location-based services communities, those with experience in trade, professional updating, and business generation. It participates in creating and maintaining the Galileo Information Centre for Latin America (GICLA), and started work on the project Enhanced Code Galileo Receiver for Land Management in Brazil (ENCORE) in 2010.

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iTur – Integrated Destination Management

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The iTur application software enables service providers to gather common their strengths under one unified interest and destination brand. The iTur software application is an innovative mix of ERP, CRM, billing, and payment systems packed into one back-office application. iTur enables efficient use of Internet-based marketing and sales tools for the tourism market. It also provides an effective back-office system that can serve as a primary source of data on customer histories. This data can then be used for further development of marketing and sales strategies for certain destinations. The iTur application is built on a basis of unique expertise and know-how. It combines best practices and functionality from similar BSS3 solutions and other industries with in-depth knowledge of the specifics of the

tourism industry. The iTur application software is a tool designed to help implement the iTur4us tourist concept. The implementation of ICT into the traditional tourism market is an inevitable and necessary step towards a fully integrated, customer-driven tourism service.

Bulgaria

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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GeoB2B – A Mobile Economic Observatory

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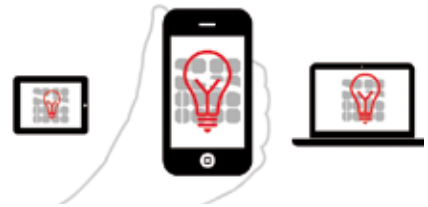
Someone once said that there are three important things to have in mind when starting a new business: location, location, and location. GeoB2B platform provides answers to some important questions, including:

- Where can I place my business?
- What's going on around my business (in the surrounding geographic area)?

GeoB2B is not just another geo-marketing solution; it's something different. What makes the difference? GeoB2B uses fresh, up to 90% reliable data that can be accessed no matter where you are. It combines several data sources, such as information collected during field work, data released by public administrations, and data flows from smart grids. All this results in a solution capable of providing precise terrain-related information right on your mobile device. GeoB2B can help you identify promising business opportunities wherever you are.



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Catalonia / Spain

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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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Mapping the World's Light Pollution

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It is a little-known fact that light pollution is one of the fastest growing and most pervasive forms of environmental pollution. It is defined as any adverse effect of artificial light – where light is wasted on illuminating the sky, surfaces and plants, or shining directly into the eye of bystanders, thus actually reducing visibility. Light pollution wastes energy, affects astronomers and scientists, disrupts global wildlife and ecological balance, and has been linked to negative consequences in human health. Monitoring the level of light pollution on a global scale is still an unsolved problem. Satellite imaging helps in estimating light pollution around the world, but only by modelling the amount of light scattered down to the Earth. This is why we are working on transforming smartphones

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into sensors for detecting light under low-light conditions. The mobile application will use phone cameras, gyroscopes, and GNSS to detect amounts of light, camera direction, and the observer's geolocation. This data will then be automatically sent to the central server, where information from all around the world will be collected and transformed into high-resolution light pollution maps.

Croatia

Technology Innovation Centre Medjimurje // The Republic of Croatia and its 4.2 mio citizens are ideally located on the intersection of several major European traffic corridors. The country also has an excellent fibre-optic infrastructure and a large, competent ICT workforce. Croatia has signed a treaty to become the 28th member of the European Union on 1 July 2013. Technology Innovation Centre Medjimurje, Science and Technology Park Rijeka (StepRI), Technology Park Varaždin, and Technology Development Centre Osijek are co-financed by Croatia's TEHCRO programme.

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Intelligent Cyclist Assistant (ICA)

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Intelligent Cyclist Assistant (ICA) is an app that offers ideal cycling support to children and amateurs, as well as to professional cyclists during training and competition. It turns a smartphone into a speedometer, a navigation device, and a support-calling device. When your water bottle is empty, a technical problem occurs, or medical help is needed, you can order assistance just by touching your device's screen. Other cyclists nearby or support teams and service providers will receive this information, enabling them to provide quick help. Dangerous sections of paths can even be

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saved to notify other cyclists using the app before they arrive there. The locations of bikes and cyclists are determined with the help of satellite navigation, while live information on other cyclists is provided by mobile internet connectivity.

Estonia

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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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Electric Vehicles Connecting the 5.9 GHz V2X and Smart Grid Domains

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Over the past decade, 5.9GHz cooperative systems have been developed for automotive applications. A major challenge in implementing large-scale vehicle-to-infrastructure communication technology lies in the effort and costs of deploying the necessary 5.9GHz road-side communication units. One straightforward solution involves utilising electric vehicles plugged in for recharging (or even public recharging stations) as road-side communications units, which maintain broadband connectivity with the infrastructure through the smart grid network. By realising this idea, it will be possible to maintain vehicle connectivity without the need for a dedicated subscription from a 3G network operator while eliminating roaming issues.

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Finland

© Lachlan Currie

Aalto Center for Entrepreneurship (ACE) // ACE is Aalto University's entrepreneurship, innovation, and technology transfer unit and located in Otaniemi, Finland – the largest technology, innovation, and business hub in northern Europe. There are some 5,000 researchers within walking distance. We aim to create business success stories from the fields of science and art within the Aalto community while serving as a catalyst for elevating ambitious entrepreneurship from Finland and throughout the Baltic region. ACE coordinates activities related to technology transfer, intellectual property management, startup companies, and the teaching and research of growth entrepreneurship at Aalto University.

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GNSS-PRS: Galileo-Based Solution from the Parking Regulation Service

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This application provides a convenient way to pay fees on cars parked in PRS (Parking Regulation Service) zones. Galileo makes it possible to know the amount of time a car has spent in a parking space and where it is located. Then, a device (TAG) can send this information via GPRS/GSM to the driver's smartphone, thus facilitating the transaction in question. This idea will offer better service to both customers and municipalities in the form of a fast means of monitoring who is paying parking fees. The PRS staff will know who is acting correctly thanks to the TAG, which will send information to their PDAs as they approach cars. Furthermore, it will provide many other applications, such as for outdoor parking at airports, theme parks, shopping malls and truck parking in motorway service areas. In the near future, the idea will be to unify the current systems used on toll roads – Electronic Toll Collection (ETC) technology – with the TAG in order to improve and adjust tolls depending on the current quality of service (factoring in traffic jams, speed, and so on). For all of these reasons, this solution will be a clear improvement on the remote payment systems that have recently appeared.

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Gipuzkoa / Spain

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VICOMTECH TECHNOLOGY CENTER // Gipuzkoa has Spain's highest density of universities, research and technology centres. With a turnover of more than EUR 13 billion in 2009 and more than 10,000 highly qualified professionals working in industrial research and the aerospace, ICT, and automotive industries, this small region has become a hub of technology and innovation. The key to this success is 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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ebuggy – A Global Solution for Long-Distance Electric Mobility

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ebuggy offers electric cars unrestricted mobility on motorways, with no range limitations. ebuggy is planning a network of ebuggy relay stations at which drivers of electric cars will be able to hitch up battery trailers. The prototype is finished and has proven effective. If required, an ebuggy battery trailer can be hitched up at an ebuggy relay station, enabling drivers to continue their journeys using the ebuggy's energy. Upon arriving at the destination area, they can then drop off the ebuggy at the final service station. An ebuggy can also be exchanged whenever necessary on longer journeys, which makes unlimited ranges possible – and all within two minutes! ebuggy will enable the automotive industry to build reasonably priced electric vehicles with smaller batteries thanks to its support for longer distances. As a result, electric cars will become cheaper than vehicles with combustion engines, which will promote the rapid and dynamic establishment of e-mobility. ebuggy will use the GNSS system to manage the ebuggy trailer fleet on a global basis.

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Hesse / Germany

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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.

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Electric Vehicle Journey Range Extension

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The adoption of electric vehicles is essential to the reduction of global dependence on fossil fuels. Governments have established many incentives to promote the sale of electric cars, and a broad range of vehicles are now available. Despite their benefits, widespread adoption of electric cars has been slow. The public perception is that these cars have limited driving range and are slow to recharge. A number of solutions are under development. These include proposals for the production of more powerful batteries, and increased public charging infrastructure. However, while such developments are beneficial, they do not address issues surrounding the excessive consumption of energy. Vicinity Systems are developing technologies that enable drivers of electrical vehicles to find the most power-efficient route to their destination. Through integration with vehicle SatNav, Vicinity's technologies analyse local topography in real time, thereby helping motorists avoid roads that will consume the most power and enabling them to drive further.

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Ireland

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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HeroHelp

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HeroHelp will enable official emergency services to react to all kinds of accidents with unprecedented preparation and precision. There are number of issues that can be solved by enabling emergency centres and smartphone users to exchange data in combination with voice calls. The precise locations of emergencies are the most important information for emergency services. 53% of people who experience emergency situations can't identify or explain their location correctly. This can be solved by utilising the potential of the GPS capability integrated in most smartphones. The average emergency call lasts 80 seconds due to procedures required to identify the exact location at hand and other personal information. This can be improved by adding a simple, instantaneous, one-click activation system to special emergency gadgets. People who have difficulty hearing, seeing, or speaking – as well as the elderly – are often unable to describe their location due to their impairments, especially if the location is new to them. Data transfer is universal through means such as text, media, video, voice, and location. Disabilities can be compensated with specially applied technology.

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Lithuania

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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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REeCORD – Renewable Energy eCars Optimal Routing Database

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Car mobility needs a change toward green energy consumption and a small carbon footprint. Electric vehicles (EV) integrated with a suitable recharging system constitute one of the best solutions. Coupled with renewable energy sources, they present a key pathway to achieving reductions in global warming, pollution, and oil dependence. The framework of such a system requires smart management of EV consumption and energy sources in order to overcome the technical limits stemming from both the use of electric batteries and the discontinuity of renewable energies. The solution REeCORD, developed in collaboration with the Energy Department of the Politecnico di Milano, is a platform that helps both drivers and suppliers take advantage of EVs. This package is suitable for enabling both private and municipal fleet managers to reach destinations in the most efficient way (taking into account time, traffic, battery limits, and effective exploitation of renewable energy). The software located at fleet control centres and remote sensors installed on board EVs guide the vehicles while attempting to optimise recharging and the use of fleet cars and stations.

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Lombardy / Italy

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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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Deal with the unexpected with Whoog!
You're stuck in a meeting; who can pick up Kate right now at school? It can be such a hassle to reach the right people in the right place, right when you need them! Wouldn't it be great if you could call on your close community (family, team members, etc.) to handle the unexpected? This is the issue that Whoog has addressed with its smartphone app, which helps find people available to step in for you when needed, all in a few clicks. It's a solution enabled by EGNOS and Galileo, which allow extensive coverage and indoor penetration! Creating a Whoog event sets up a dynamic forum complete with a geo-location map and context data, enabling select members of your "tribe" to decide together who will pick up Kate: Who's closest? Most easily available? And so on... Secure, time-saving, and easy to use, Whoog's vision has attracted key players in business and Oseo for funding. The solution is being developed by a team of senior engineers who work for leaders in the European telecom industry. They are backed by a Telecom R&D lab, and have a patent pending and a general public launch scheduled for 2013.

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ParkTrack

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Every day in the United States alone, over one million people "misplace" their vehicles and wander around frustrated, confused, and embarrassed. It's as if your car is playing hide-and-seek with you in the parking lot. For nearly 20 years now, auto manufacturers have been offering factory alarm systems operated by a remote key fob device that locates your vehicle in a parking lot by remotely honking the horn. Unfortunately, the range of alarm key fobs is short (approximately 15-30 meter). New products have recently been marketed to help people locate their parked vehicles primarily through GPS navigation. However, these products require users to remember to mark their parking location each time they leave their vehicle. ParkTrack comprises a combination of mobile application and Bluetooth sensor that users leave in their vehicle's glove compartment. ParkTrack automatically records a vehicle's location every time it is parked, which enables it to provide precise directions back to the vehicle if the user ever forgets its location. ParkTrack works anywhere – at any distance from the vehicle – and is also very reliable.

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Incubateur Paca-Est // The Côte d'Azur is designated as the "French Wireless Region" due to Sophia Antipolis technology park, that is home to 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 Satcom world leader Thales Alenia Space. The Regional Incubator, Incubateur Paca-Est (IPE), is organising this year's regional competition. Since 2001, it has incubated 110 projects, which led to 87 successful companies, 10 of them were acquired by major international firms. IPE is a member of ESINET (European Space Incubator Network).

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Wireless Industry Partnership (WIP) // WIP is an international company that builds mobile developer communities and amplifies the developer's voice in the ecosystem. Our WIPJam events are popular around the world as fun, interactive unconferences that are serious about No PPT, No Panels and No Ties! Other events include: networking receptions, code fests and the Muther! of all Hackathons! Our online Developer Resources and Global Partnerships, connect developers and start-ups to information, resources and tools that they need to reduce cycle times, increase innovation and get to market faster.

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Roadroid – The Global Road Monitoring System

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Roadroid seeks to create a global standard for better and more sustainable road quality. Monitoring road networks and planning their maintenance is a great challenge. Transport infrastructure is a key issue all around the globe – and an important tool for growth and democracy. Roadroid is a global solution for conducting extremely cost-efficient road surveys. With online smartphone maps, any road owner can plan activities and track the results in an objective dialogue among users, other owners, contractors, experts, and financers. This information can also be used for route guidance. Roadroid is 1) an app for measuring road quality with smartphones using built-in sensors, cameras, and GPS, and 2) an online system for analysing data and statistics. The product of research performed in Sweden since 2002, is not a substitute for advanced survey trucks or ocular inspections; it generates large amounts of data to create unique statistics that other methods cannot produce. Roadroid has been awarded in the Swedish Born Global program, is to present a paper at the World Congress for ITS (Vienna, 23 October), and is a national nominee for the World Summit Award in the category of mobile content.

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Øresund / Denmark & Sweden

© Johan Ramberg

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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Fast and Accurate Bathymetric Data Collection using Autonomous Measuring Platform

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The idea is to introduce a fast and accurate method of collecting inland bathymetric data in Poland by means of a specially equipped autonomous measuring platform. Thanks to newly developed, low-cost GNSS devices capable of high-frequency measurements, this system collects data on a predefined track with sufficient accuracy. In other words, the platform is navigated by a satellite positioning system, while the various tools and equipment installed on it make it possible to secure its movement and record depth data on the designated route. The result is fast and precise data collection, easy updating of existing datasets, and low-cost terrain campaigns. This data enables us to produce high-quality bathymetric maps for water navigation and angling. Such bathymetric maps could be easily implemented in most of the existing land-navigation software. This would give a huge group of users – especially sailors, anglers, and divers – access to a dual-use navigation system suitable for both routing on land and various activities on water.

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Poland

Astri Polska // In its innovation policy, Poland follows a concept of strategic thinking that is considered key to its economy's competitiveness. Among the numerous Polish organisations that perform a variety of innovative functions is Astri Polska, a research and development company that was founded in September 2010 by ASTRIUM and the Space Research Centre Polish Academy of Sciences. Its mission is to help develop Poland's space industry along with public and private space-oriented organisations. Astri Polska specialises in projects in fields such as electronics, satellite observation, telecommunication, and robotics. It also cooperates closely with the European Space Agency in supporting the Technology Transfer Programme.

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GINA – Geographical Information Assistant

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GINA is a technology that facilitates faster and better decision making in the field by allowing real-time exchanges of information through the map functionality on mobile devices. It thus improves lifesaving operations, increases staff capacity, and lowers costs related to administrational tasks. The GINA system interconnects a variety of mobile devices over the internet, but also provides the ability to work offline. Thanks to its usage of space technologies such as GPS and satellite maps, it increases the efficiency of field missions by:

- Preventing misunderstandings
- Shortening communication lines
- Protecting staff

GINA has been already deployed in real lifesaving missions – in Haiti in 2010 and Japan in 2011, for example, where it collected more than 2,000 situation reports that were also released to the general public in the form of web projects. It won the trust of ECHO Haiti in executive protection and has already gained its first customers. With GINA, they want to address the global market by building a network of business partners across the world to achieve our primary mission: protecting human lives and values anywhere in the world using modern technologies.

© GINA Software s.r.o

Prague / Czech Republic

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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CORE: Cooperative Rescue System

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Every year, more than 150 people fall victim to snow avalanches. The probability of survival is 90% during the first 15 minutes, but decreases quickly thereafter. The avalanche rescue systems available are limited in range accuracy and require complex usage and training. CORE has implemented a personal portable device that provides the general public – as well as mountain emergency groups, medical personnel, and rescue first responders – with an innovative safety and rescue solution for general or professional mountaineering or skiing. Based on a single hardware unit, CORE offers two operation modes: one for transmitting the locations of buried victims, and the other for accurately guiding nearby users to the corresponding positions. The resulting solution is tightly linked to previous studies and evaluations of GNSS signal propagation through snow; it also facilitates innovative navigation based on GNSS navigation performance and relative GNSS data compensation. The idea is being developed under the SICRA national research project (www.sicra.es).

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Switzerland

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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The Travel Time Platform – Time is More Valuable than Distance

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Today, the best search option for location-specific information is distance – "within X miles / kilometres". But wouldn't it be more useful to search by travel time and the modes of transport at your disposal? On a property web site, you could find suitable houses within "a 45-minute train journey to work, at 7:30 a.m." (or any combination of walking, driving, or taking public transport). That's exactly what the Travel Time Platform enables on any web site or mobile app with location-specific content (property, jobs, classifieds, directories, dating, vouchers, retailers, and much more). Searching by travel time typically doubles the number of relevant results. The Travel Time Platform is unique, commercially live across the UK, and has been successfully tested in most major European countries (and beyond).

Travel Time brings the economic, social, and environmental value of GNSS data to users of all the sites that reference it. The platform is not just a simple app; it is an end-to-end solution. It also powers several other business analysis tools that enable our customers to readily analyse their own data in terms of travel time. This is especially valuable in the logistics industry.

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United Kingdom

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 Nottingham Geospatial Institute which provides research, training and other support for industry, including SMEs and start-ups.

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