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EUROPEAN
SATELLITE NAVIGATION
COMPETITION 2014

THE RESULTS 2014

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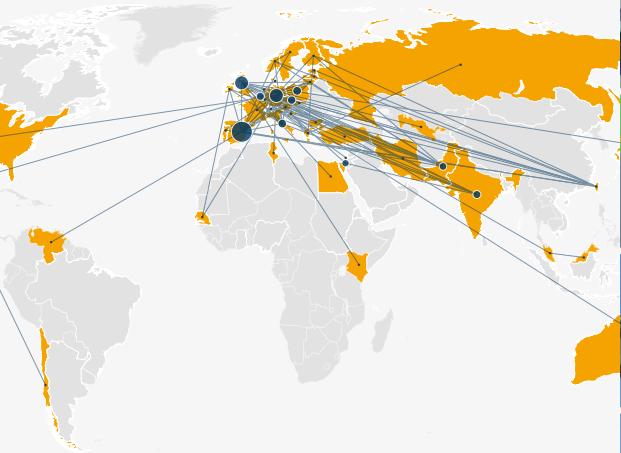


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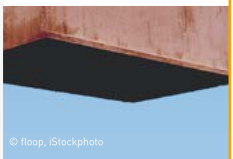
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innovation IT partner schaltzeit

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prize awarding partner

special prize partners

TABLE OF CONTENTS

"Galileo: For a thriving EU industry"

Matthias Petschke
Director for the European Satellite Navigation Programmes of the European Commission

For years, the European Commission has helped EU enterprises thrive, even beyond Europe's borders. With Horizon 2020, the biggest EU Research and Innovation programme ever, nearly EUR 80 billion of funding will be available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. Horizon 2020 is an important tool to promote Galileo and support applications using this technology. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market. Galileo's capabilities will have a ripple effect throughout the European economy. For example, more efficient transportation could reduce logistic costs, with savings then passed along to European consumers. The same holds true for precision agriculture, which will enable newfound efficiency in food production. Galileo will act as a catalyst for a variety of economic activities and help European businesses reach new heights. By 2020, Galileo will boast 30 satellites, which will help Europe tap into the booming downstream market for navigation satellite products and services, expected to hit EUR 244 billion by the end of the decade. It is thus the right time to focus on creating tangible benefits for European citizens and businesses. The ESNC provides a vital contribution in mobilising entrepreneurs to imagine and invent GNSS-based applications in a great variety of sectors. The Commission is proud to be associated to this competition. This year's competition has attracted an amazing 434 submissions. This great interest and the innovation potential in this year's winning ideas, indicates that European entrepreneurs are ready to enter the global GNSS market. Let me also say a word about the launch anomaly we have encountered in August this year with two of our satellites. Whilst this was an unfortunate event, I would like to underline that the Commission remains fully committed to the Galileo programme. Through the signature in August this year of a contract for three launches with the European launcher Ariane 5, we will be able to double our launch capabilities and ensure the completion of the constellation.

I wish to express my sincere congratulations to all winners of the ESNC and also to its organising team of Anwendungszentrum GmbH Oberpfaffenhofen, who have, once again surpassed the success achieved in the previous years.

Matthias Petschke

European Commission

"Galileo – business opportunities at global level"

Alexander Dobrindt
Member of the German Bundestag, Federal Minister of Transport and Digital Infrastructure

Satellite navigation is one of the key technologies of the 21st century. It is an attractive growth market with a lot of potential, particularly for innovative start-ups, but also for small and medium-sized enterprises. This applies especially to the development of products and services which will be based on the Galileo system. It is essential for the German economy that new businesses will be set up in these growth areas. New products, services and innovations which apply satellite navigation in everyday life are in the limelight. This is exactly where, for the past 11 years, the "European Satellite Navigation Competition" (ESNC) has been proving its capacity to provide an important impetus. For good reasons, its funding focuses on the actual benefits for the people as well as on supporting business start-ups and innovative business models. I was delighted to become the patron of this successful ideas competition. The ESNC was initiated in 2004 by Germany. Since then, it has become a leading network for downstream satellite applications and the number of partner regions has increased to 26 this year. I am very pleased that Germany is well represented with a special award, together with the regional partners of Bavaria, Baden-Württemberg, Hesse and North Rhine-Westphalia and the German Aerospace Centre (DLR). As soon as Galileo can be deployed, a whole range of navigation services will be provided, tailored to the different needs of users. The Federal Government is actively involved in this. The Galileo Public Regulated Service (PRS) is one of the main pillars of future satellite-based services. It is intended to be used primarily by government bodies of the member states, such as the emergency services or police. In order to further examine possibilities for the use of PRS applications, the Federal Ministry of Transport and Digital Infrastructure (BMVI) and the Federal Ministry for Economic Affairs and Energy (BMWI) have introduced a new special award to the „European Satellite Navigation Competition". I am delighted to see that this award is already providing an important impetus to the promotion and development of innovative applications of the future Galileo PRS in its first year. In this context, I am more than happy to host the first Satellite Masters Conference in our Ministry. It will provide the awardees with a good opportunity to introduce their projects to the public.

I would like to congratulate this year's winners. I wish you every success in materialising your promising innovations!

Alexander Dobrindt

Federal Ministry of Transport and Digital Infrastructure

"A Step Ahead with Galileo"

Thorsten Rudolph
Managing Director
Anwendungszentrum GmbH Oberpfaffenhofen

In 2014, the highest number of submissions in the ESNC's 11-year history was dedicated to applications for Galileo (compared to general applications for previous Global Navigation Satellite Systems, GNSS). This indicates that European entrepreneurs are ready to enter the market in anticipation of Galileo becoming operational. Such positive feedback is what helps drive us to continue our success story, which has already chronicled 241 winners, 2,828 ideas submitted, and a total of more than 9,200 participants over the past 11 years. When we established the ESNC in 2004, GPS just started to allow for quite limited commercial applications. First car navigation systems or mobile location-based services were being offered, but still far from being applicable for everyday use. Since then, the market experienced an incredibly fast-paced development.

Together, with its European and global partners the ESNC has acted as a catalyst for economic activities that lead to new companies, new jobs, and new application fields. We are confident that with Galileo becoming operational, the ESNC is poised to truly hit its stride and unearth further out-standing innovation and unexpected trends in the rising downstream satellite market. We call upon our partners, especially the European Commission and the GSA, to continue on this path towards tapping the full innovation potential of the ESNC for Europe's economy and beyond. This year, we received a remarkable 434 submissions from more than 40 countries. The business potential of Galileo is reflected in the diverse scope of these entries, which includes unmanned aerial vehicles (UAVs), GNSS receivers, and smart mobility, to name just a few. This year's submissions have since been evaluated by an international jury of more than 240 experts from institutions, research and industry. The ESNC 2014 has taken the next step by moving its Awards Ceremony to the start-up hotbed of Berlin. We would like to thank the German Federal Ministry of Transport and Digital Infrastructure (BMVI) for taking over the patronage of this year's competition and hosting the first Satellite Masters Conference on its premises in parallel with the Awards Ceremony. Over the past decade, the ESNC has become the world's largest innovation network in the field of satellite navigation applications. The conference will bring together this excellent global network and showcase some of the most exciting innovations the competition has produced in space-based technology and infrastructure. Since the ESNC's inception, a majority of the submissions received have been transformed into profitable businesses. The competition comprises the world's largest space-related incubation network, with more than 40 incubators all over Europe. From regional incubators to ESA Business Incubation Centres, the ESNC thus provides an excellent framework for supporting start-ups and fostering the creation of new ventures.

In addition, I would like to take this opportunity to thank all our regional partners for their dedicated support. As the backbone of the global ESNC network, they ensure that participants can get their businesses off the ground. The 2014 edition featured 26 partner regions, more than ever before. Special thanks go out to our longstanding partners, as well, which continue to be truly pivotal in making the ESNC a success every year: Austria, Baden-Württemberg, Bavaria, Catalonia, the Czech Republic, Estonia, Flanders, Gipuzkoa, Hesse, Ireland, Lithuania, Mexico, The Netherlands, Nice / South France, North Rhine-Westphalia, Norway, Portugal, Switzerland, and the United Kingdom. We send further thanks to our new partner regions – Greece and the Valencian Community – which received considerable numbers of submissions in their first year. I was also pleased to see our partnerships renewed with Finland, Israel, Poland, Madrid, and Wallonia for the 2014 iteration. Meanwhile, nearly every entry (95%) was submitted to be considered for a special prize in addition to one of the regional prizes. This clearly demonstrates the relevance of the ESNC in providing solutions to specific commercial needs. This year's special prizes were awarded by key institutional stakeholders: The European GNSS Agency (GSA), which reached a new all-time high of 152 submissions with its focus on applications for European GNSS; the German Aerospace Center (DLR), which was searching for satellite navigation applications in particular contexts; the European Patent Office (EPO), which sought the best patented GNSS innovation; and the German Federal Ministry of Transport and Digital Infrastructure (BMVI) in association with the Federal Ministry for Economic Affairs and Energy (BMWi), which centred their prize around the Galileo Public Regulated Service (PRS). Further prizes were awarded by our five GNSS Living Labs and the GENIUS project partners of the University Challenge.

Additional thanks are due to the European Commission (EC) for supporting us and 18 of our partners within the Galileo-EGNOS Prize Award Scheme (GEPAS). We have also been delighted with the huge amount of media interest and would like to thank our media partners for spreading the word about the ESNC. Finally, I would like to congratulate all the winners of the 2014 competition – I wish you all the best in realising your excellent services, products, and applications! We are already looking forward to the next exciting iteration of the European Satellite Navigation Competition, which is scheduled to run from April to June 2015.

Thorsten Rudolph

ANWENDUNGSZENTRUM
Oberpfaffenhofen

SPECIAL PRIZE PARTNERS 2014

Fostering Innovative Solutions

Over the past decade, the ESNC has become the world's largest innovation network in the field of satellite navigation applications. Some of the most relevant European GNSS stakeholders – from industrial and institutional partners to research and academia – support the ESNC with one common goal: promoting innovation and entrepreneurship along the GNSS value chain to benefit the citizens of Europe and beyond.

REGIONAL PARTNERS 2014

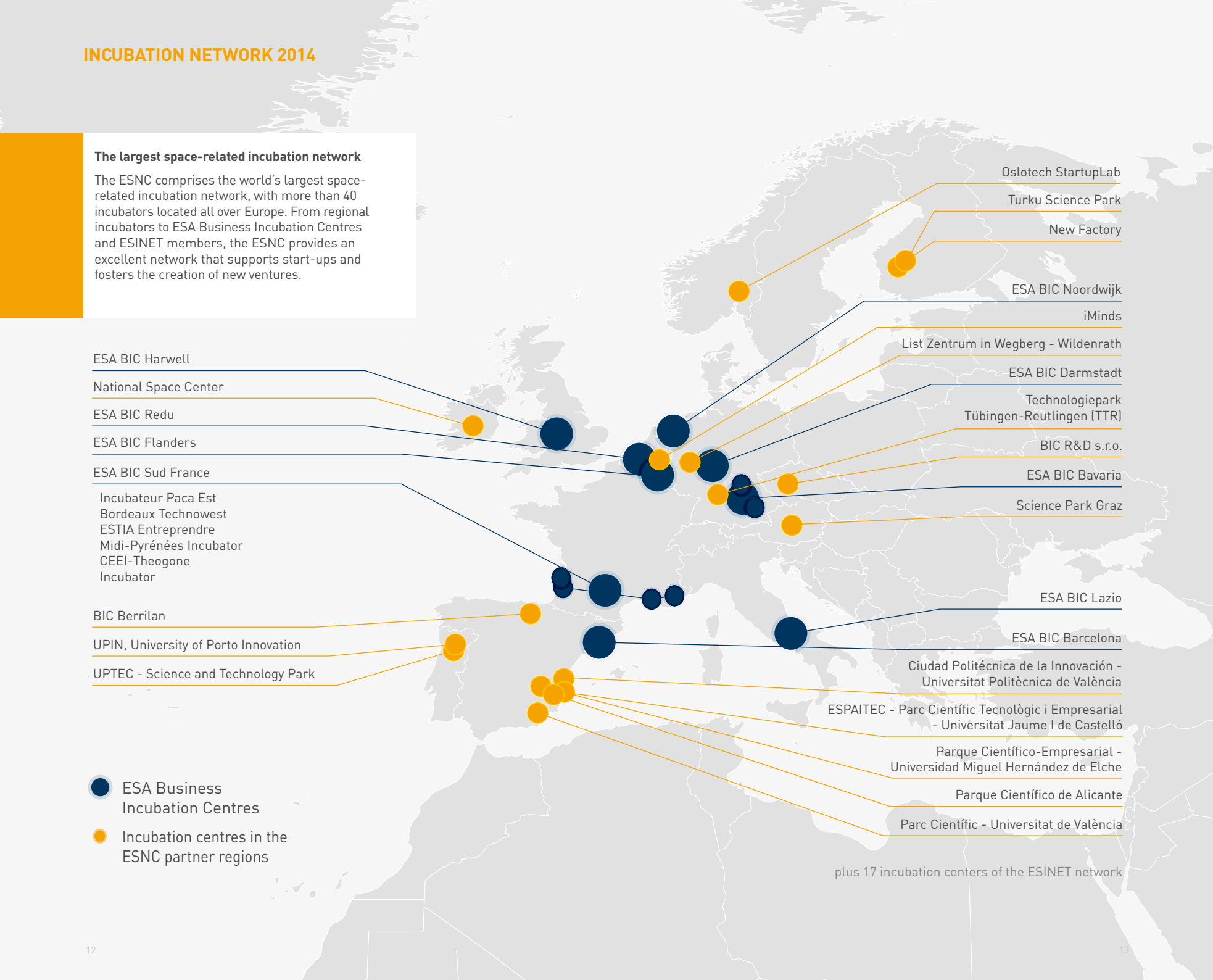
The regional partners – the keys to success

In the 2014 edition, more regional partners supported the competition than ever before. This excellent network, which comprises 26 partner regions and over 130 regional stakeholders, proves that Europe is prepared for its venture into space. These partners form the backbone of the competition's global network and ensure that participants can get their business off the ground.

INCUBATION NETWORK 2014

The largest space-related incubation network

The ESNC comprises the world's largest space-related incubation network, with more than 40 incubators located all over Europe. 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.



VOICES FROM PREVIOUS YEAR'S WINNERS

Voices from the ESNC 2013 winners

Since its beginning, the competition has welcomed more than 9,200 participants from 4,263 registered teams. A total of 238 winners have been awarded within the framework of the ESNC. Listen to past winners about how they have succeeded in bringing their business ideas to life.

SUCCESSFULLY LAUNCHED IN A WIDE RANGE OF APPLICATION FIELDS WITH SEVERAL NEW CUSTOMERS

Since winning the ESNC 2013, KINEXON has made another huge technological breakthrough: The centimetre-accurate 3D localisation solution (accuracy <10 cm) can now be used not only outdoors, but indoors as well! Having been launched at the world's biggest industrial fair, Hannover Messe 2014, the solution is currently being used by renowned customers from various industries. This includes professional sport clubs (athlete monitoring), retailers (business intelligence), hospitals and care homes (asset and patient tracking, fall detection), and manufacturers (smart factories, automation). The success of the technology has also led to significant growth in their team and further accolades, such as the Idea Challenge Award 2014 on Cyber Physical Systems from EIT ICT Labs.

Oliver Trinchera, Alexander Hüttenbrink, KINEXON
Overall Winner & Regional Winner Bavaria 2013

GSA WINNER TAKES OFF: COMPANY FOUNDED, PROTOYPE RELEASED, FIRST CLIENTS ACQUIRED

After being named the „Most Promising EGNOS Application Idea" of the ESNC 2013, JOHAN started developing its prototype system in February 2014. In addition to implementing prototype tracking devices and online analysis software, the team has commenced a testing effort with three professional soccer clubs, three hockey clubs, and the Dutch national rugby team to improve the software's user interface. In August, JOHAN also became an official incubatee of the ESA Business Incubation Centre in Noordwijk. The company has already hired its first employees and is now looking to go to market in summer 2015.

Jelle Reichert, Robin van Kappel, JOHAN
Special Prize Winner GSA 2013

ESA BIC PROGRAMME AS MAIN DRIVER TO ESTABLISH COMPANIES

Following their successful participation in ESNC 2013, six winners and finalists have founded companies with the support of an ESA Business Incubation Center (BIC). In addition to the GSA Special Prize winner, both the winners – Jan Walter Schröder and his team from Sensovo Navipal (ESA BIC Darmstadt) – as well as the runners-up for the ESA Special Prize Koen Beyers and his team (ESA BIC Flanders), have meanwhile entered the incubation programme. Other new incubatees include Willem Folkers, winner of the Netherlands' regional prize, at ESA BIC Noordwijk; Frank Englert and his team from Hesse's winner, Notificatio UG, at ESA BIC Darmstadt; and Mirko Antonini and his team from SpaceEXE Srl, winners of the Lombardy prize, at ESA BIC Lazio.

READY FOR TESTING: PROTOTYPE DEVELOPED, NEW PARTNERSHIPS ESTABLISHED AND NEW EMPLOYEES HIRED

Through the ESNC, QraQon found the right partners to help realize its vision, gained opportunities to pitch to potential new partners, and acquired funding from the Flanders Agency for Innovation by Science and Technology (IWT) and S2G2M2. The company has also established a new partnership with the German company ARIC. QraQon has now scheduled tests of its device in ARIC's recently opened railGATE, where GALILEO-based rail applications can be tested under real-world conditions. With the support of ARIC and other companies – Zenso, Soltech, Pirmatech (Belgium), and Ropet (the Netherlands) – QraQon has readied a prototype, and is currently working to commercialise the device during Q2 2015. The company has hired two new employees to help further improve its software with an eye towards dead reckoning and wagon load estimation.

Joeri Spitaels, QraQon
Regional Winner Flanders / Belgium 2013

FINALIST'S REALITY CHECK TRIAL LEADS TO SEVERAL NEW PARTNERSHIPS

After being selected as a finalist for the GNSS Living Lab Prize, SellNews GmbH got the chance to conduct a reality check trial at the Digital Spaces Living Lab in Sofia, Bulgaria. This resulted in a new partnership with PayPal for its online auction platform. In addition, SellNews has acquired two new major clients: Frankfurter Societäts Medien GmbH and OBCC Business & Community. The first will involve a pilot with the newspaper Frankfurter Neue Presse, while a pilot with Fuldaer Zeitung and two online news portals is foreseen for the latter. SellNews recently also started working with the Bulgarian News Agency. Its platform has been translated into several languages, with the international launch scheduled for end of 2014. Funding, meanwhile, has been acquired from ESA BIC Darmstadt and other investors.

Slawomir Rybarczyk, SellNews GmbH
GNSS Living Lab Prize Finalist 2013

IRELAND'S WINNERS SET TO ENTER TOURISM MARKET WITH NEWLY FOUNDED COMPANY

Since being named Ireland's winner last year, the team behind CarSafari has taken the plunge and founded its very own limited company. One staff position dedicated to the company's development is to be financed until the end of 2014 by Enterprise Ireland, a government organisation responsible for the growth of Irish businesses. Meanwhile, CarSafari's initial prototype is set for completion in autumn 2014 for its first client, a niche-market tour operator. To meet this target, the founders have formed new partnerships with several developers. Their model-view-presenter (MVP) for the larger app will be finalised by 31 March 2015 and then rolled out to Ireland for a 200-kilometre tour.

Paula Kelleher, James Mannix, CarSafari
Regional Winner Ireland 2013

ØRESUND WINNER RELEASES PLATFORM & RAISES INITIAL CAPITAL

For Øresund's 2013 winner, taking home a regional prize in the ESNC was a major breakthrough. It resulted in many meetings and shows that have made Apptimate AB what it is today: a start-up with a fully released platform and multiple prospects. While not yet profitable, the company is gaining international exposure at events like Startup Europe. Its current focus is on developing a combination of positioning and messaging using geolocation as a security mechanism, as well as a new demo app for iPhone. Meanwhile, the company succeeded in raising EUR 100,000 in initial capital in spring 2014, which is now mainly being used for business development. It was also named to ALMI's Tech 20, a list of the top companies among the some 800 organisations undergoing incubation in Sweden.

Fredrik Beckman, Apptimate AB
Regional Winner Öresund / Denmark & Sweden 2013

THE 2014 WINNERS

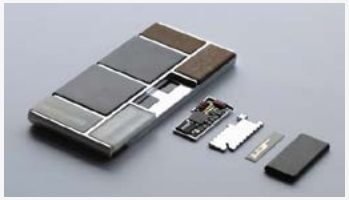
Since 2004, the ESNC is rewarding the best services, products, and business cases that use satellite navigation in everyday life. Meet this year's winners – the best of a remarkable 434 submissions – and learn about the drivers of innovation in the global GNSS market.

THE MOST PROMISING APPLICATION IDEA FOR EUROPEAN GNSS

GSA SPECIAL PRIZE WINNER

Galileo for ARA / A New Galileo Module for the ARA Platform

Modular phones are the next future solution for users who need maximum flexibility and personalisation at minimal cost. The concept is to adapt the ARA platform to individual needs. Such phones will be very cheap compared to current smartphones and reduce e-waste over the long term. GALILEO for ARA is a solution for demanding smartphone users looking to use one of GALILEO's most important features – the E5 signal. The idea is to develop an E5 GALILEO receiver modules for the ARA platform. While most mass market smartphones will still be focused on E1, the availability of high end phones offering enhanced accuracy will be appealing for many users. In addition another module is foreseen, implementing an external antenna module interface that could be used with existing phones GNSS components and providing better performance to a specialised GNSS unit. The ARA phone will offer these components to those who need better precision (centimetre-level accuracy) in positioning, a multipath-resistant solution designed for pedestrians and urban environments. Much has already been achieved using smartphones; now it is time to create new possibilities for the development of applications that require high accuracy.



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elecnor deimos

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.

organised by

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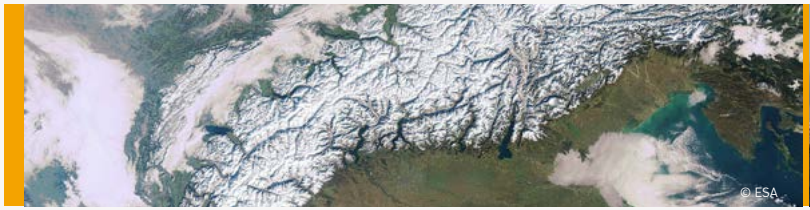
GSA

ESA INNOVATION PRIZE
ESA SPECIAL PRIZE WINNER

FLANDERS / BELGIUM
REGIONAL WINNER

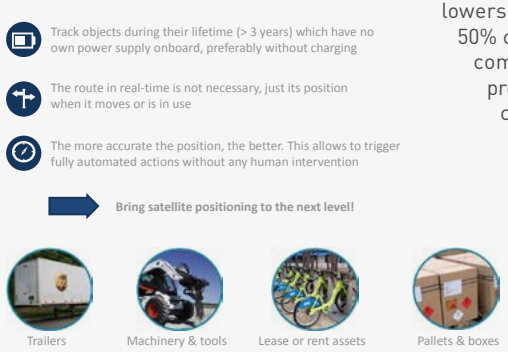
3RD OVERALL RANKING

DOUBLE WINNER



The Next-Generation Location Tracker – Just stickNtrack

stickNtrack is a disruptive innovation that opens up an abundance of new business opportunities in tracking trailers, containers, machinery, tools, bikes, and more. It is a plug-and-play location tracker that includes acceleration and tilt sensors. It functions for up to 10 years without the hassle of charging batteries, managing SIM cards, or any intrusive installations (no wiring and no professionals required). Its intelligent combination of technology and software provides a tracking solution that consumes up to 40 times less power and lowers life-cycle costs by 50% compared to existing compact GPRS/GPS products. This solution communicates on a commercial Ultra Narrow Band (UNB) radio network, which significantly reduces its power needs and recurring communication costs.



Future accuracy and availability improvements based on GNSS will trigger additional advancements, such as by automating supply chains for packages and their delivery. Ultimately, stickNtrack is a next-generation location tracker that significantly lowers the barriers to embedding even more GNSS technology into our daily lives.

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.

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 2014, 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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INNOTEK

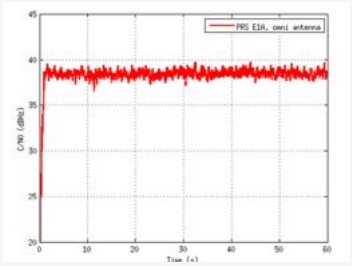
PRS APPLICATIONS – EXPLORING THE POTENTIAL
PRS SPECIAL PRIZE WINNER

BAVARIA / GERMANY
REGIONAL WINNER

DOUBLE WINNER

Low-Cost PRS Receiver for Positioning and Timing Enabled by an Assistance Server

Many applications require a trustworthy, spoofing-resistant navigation and timing solution like the one provided by the Galileo Public Regulated Service (PRS). However, the use of Galileo PRS signals adds complexity to a PRS receiver, making it more difficult to use for public authorities and organisations such as the police and fire brigades. This idea describes the architecture of a network-based PRS receiver that accounts for all of the security aspects of the Galileo PRS system. The system consists of a secured assistance server and user terminals. The server broadcasts historical and therefore unclassified PRN code chip sequences to the user terminals via a secure communication link, which is also used for access control. This data allows the user receiver to generate suitable replicas for correlation with the PRS signal received, which facilitates Performance Verification Test (PVT) calculation when combined with the navigation message (also provided). This concept significantly reduces the complexity of the user terminals, which do not require their own security module or PRS key handling, while fulfilling the security requirements of a secure server and a secure communication link. As a further advantage, the required communication bandwidth does not grow with the number of user terminals. This receiver will facilitate broader use of PRS in the realm of public security. This could include the police, fire brigades, and emergency rescue teams while still allowing for controlled denial of individual users and entire networks.



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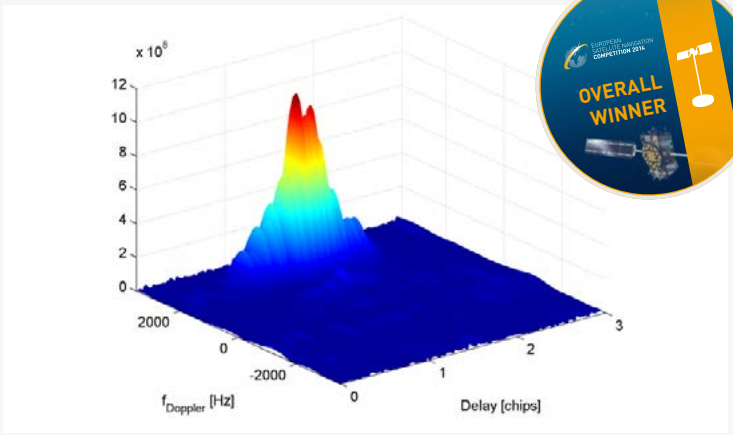

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OVERALL WINNER

BMVI / BMWi

The German space industry is playing a key role in Europe's future Galileo system, with OHB System AG (Bremen) and Astrium GmbH (Munich) constructing 32 Galileo satellites and one of the two main Galileo control centres being operated in Oberpfaffenhofen. The German Federal Ministry of Transport and Digital Infrastructure (BMVI) supports high-quality economic growth by ensuring a sophisticated infrastructure for smart mobility and development in modern society. The German Federal Ministry for Economic Affairs and Energy (BMWi), meanwhile, works to pave the way for economic prosperity by supporting research and development in space technologies. Such innovations are essential to innovation, competitiveness, and the success of industrial nations and help address today's fundamental challenges.

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.

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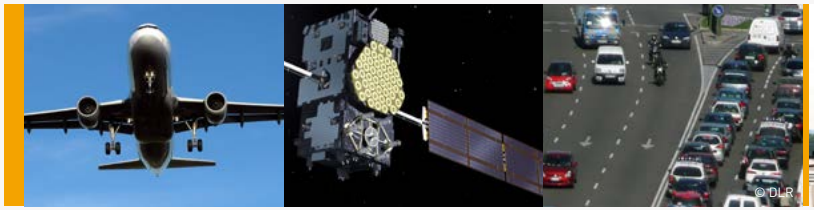
GNSS RELOADED – APPLICATIONS IN CONTEXT
DLR SPECIAL PRIZE WINNER



SBAS Retranslation / Pseudolite System for Precision Approach and Air Navigation

The European Union has deployed EGNOS in part to provide for safe, cost-efficient instrument landing systems (ILS). Due to the fact that the EGNOS satellites travel in geosynchronous orbit, not every airport can truly benefit from the current system. At those located in the far north, in the mountains, or in highly urbanised areas, safe landings with EGNOS assistance can be impossible due to a lack of signal coverage. This idea presents possibilities for every airport in Europe by incorporating a Satellite Based Augmentation System (SBAS) retranslation pseudolite. With a retranslation station acting as an artificial satellite on the ground, SBAS corrections can be received from the peak of the nearest mountain and retransmitted to the approaching aircraft to ensure safe landing. Similar systems provide their own DGPS corrections through additional VHF data links, but this entails additional equipment. The proposed system is innovative in that it always provides up-to-date EGNOS services using the L1 band as a pseudolite. Users do not need any additional equipment to receive DPGS corrections and can benefit from them even at the ground level. This system is intended to work with any SBAS system and receiver.

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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UNIVERSITY CHALLENGE
SPECIAL PRIZE WINNER

Hail Navigator and Precipitation Reporting System for Hail Suppression Aircraft

Hail damage is a severe problem people have been trying to combat for decades, especially in the southern regions of Upper Bavaria. Hail Navigator, which combines said navigation with a precipitation reporting system for hail suppression aircraft, is a unique and novel system designed to protect the citizens of southern Bavaria by warning them of potential hail damage. It is meant to support pilots of hail suppression airplanes by guiding them to optimal locations for injecting silver iodide into clouds. The tiny particles of this substance prevent water crystals from transforming into hail. Hail Navigator provides real-time information on these flights to the local population, which in turn can deliver weather reports. The reports generated by the app serve as a means of validating weather prediction models. These models are one important factor in deciding whether a hail suppression flight is necessary or not. RO-BERTA, the greater project involving this system, provides a closed-loop framework for providing and obtaining support in the fight against hail. The entire process can be observed by the public at www.roberta.fh-rosenheim.de/live-flug

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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. It connects innovative thinkers with the business community to pave the way from university to entrepreneurship.

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GNSS LIVING LAB PRIZE
SPECIAL PRIZE WINNER

EGNOS & the REAL Internet of Things: Developing Spatial Intelligence at the ADEPT™ Living Laboratory

To help build a future where everything is location-aware and digitally interconnected – the Internet of Things (IOT) – trakkies has developed IOT smart nodes with ambient intelligence, a smartphone app, and a back-end cloud system for digitally interacting with people, places and things (PPTs). The trakkies platform enables users to keep better track of belongings, events, tasks, appointments, and other important PPTs. First, users attach a node to a PPT they want to interact with. Next, they select a default profile (child, pet, keys, car, home, etc.) – or create a unique profile and assign it to the node. Users can then observe and learn from the node's location, physical activity, and interaction with other nodes; update profiles; and find and communicate with other tagged PPTs. With the trakkies platform, users can innovate new ways of interacting with PPTs, thus seamlessly merging virtual and real-world relationships. To better anticipate market applications, the system functionality and usability of trakkies needs to be tested in a Living Lab environment. The team will be its own first use case and plans to build a reconfigurable Living Lab at new offices in Amsterdam.

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), France (Integrative Usage Lab), Spain (espaitec Living Lab), and Finland (Forum Virium Helsinki) are now prepared to conduct a reality check trial with the winning application and up to four finalists.

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AUSTRIA
REGIONAL WINNER


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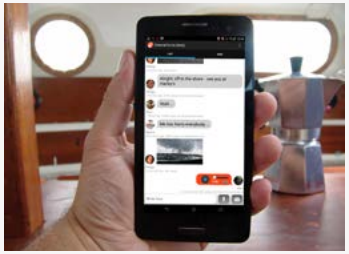
Channel16.me – Smart City Messenger

Smart City Messenger from Channel16.me is the world's first true walkie-talkie for smartphones. With it, messages can be broadcast to other people in your vicinity. Traditional walkie-talkies broadcast radio waves on a certain frequency; no additional network is required, but dedicated hardware is. These devices connect people simply because they are within the range of each other. Since almost everyone has a smartphone these days, mobile networks are sufficiently available, and mobile devices offer plenty of functions (maps, photos, GPS etc.), the logical next step is to bring Location-Based Broadcasting to smartphones and wearable devices. There are hundreds of use cases for Location-Based Broadcasting, from public safety to smart cities and generally connecting people in urban environments. With Smart City Messenger, volunteer workers, sports communities, neighbourhoods, and small businesses can reach members and customers in the immediate neighbourhood. The general market for Location-Based Services is expected to generate EUR 10 billion from consumers and advertisers by 2016.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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, 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

3RD OVERALL RANKING


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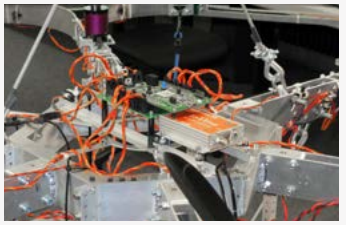
NAVKA – A New Generation of Low-Cost Multisensor Navigation Technologies based on GNSS/MEMS/MOEMS

The expansion of GNSS, such as through GALILEO and global positioning services, has made satellite positioning the driving force behind innovative navigation technologies. Here, the algorithmic fusion of GNSS data with Micro-Opto-Electro-Mechanical Systems (MOEMS) / Micro-Electro-Mechanical Systems (MEMS) sensors is the only way to fully exploit the development and market potential at hand. The NAVKA navigation algorithms have been developed on a new multisensor, multiplatform lever-arm design and work optimally with closely coupled and distributed GNSS/MEMS/MEOMS single sensors and platforms. Smartphones are integrated as a sensor and ICT component to offer people and vehicles multimodal mobility in modern society. A general M-estimation concept provides for optimal sensor accuracy, robustness, and self-calibration. This helps NAVKA exploit movement modes, dynamic state-detection data, constraints, and inequalities on the fly during navigation state estimation. Meanwhile, the team is also developing bootable navigation box firmware for ground/water/air robotics, flight control of manned aerial vehicles, in/outdoor personal navigation, structural monitoring, and mobile GIS. Concerning GNSS, it focuses on OPPP and ambiguity solutions for low-cost systems.


© NAVKA

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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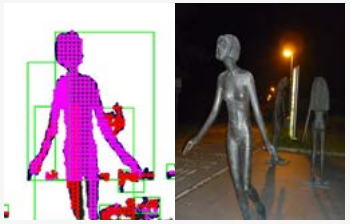
CZECH REPUBLIC
REGIONAL WINNER

4vision

4vision is a system that uses Kinect technology to identify the obstacles in the way of visually impaired people and navigate them around such hindrances. The underlying software was developed to be fast in identifying objects. The system thus provides real-time information about the positions and sizes of obstacles around the user. Its core component links Kinect to detection software, navigation software, and sound navigation. The navigation aspect deals with two situations: The first is classic navigation from a current position determined by GNSS and Points of Interest (POI). The second situation involves the user being unable to negotiate the obstacle and requesting an alternate route. The navigation then computes a different path. Since the aim is to adjust such outcomes to the needs of visually impaired people, all communications are handled using audible signals. The user, meanwhile, controls the whole system via a mobile application. The solution is focused on helping visually impaired people in unfamiliar environments. It can help to prevent unexpected situations and injuries and accelerate users' movement, as well.



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ESTONIA
REGIONAL WINNER

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Smart Tour Pass: Prepaid Travel Package Management and Redemption System Based on Location and Time

Smart Tour Pass is a smartphone app that enables tourists to purchase, manage, and redeem prepaid travel packages. Users can buy prepaid travel packages online, carry them on their smartphones and receive corresponding notifications regarding coupons or must-see sights nearby. They can obtain detailed information on admission rules and redeem prepaid admissions or travel tickets. Smart Tour Pass comprises a mobile app, endpoint redemption systems, and a backend payment system. The prepaid travel packages are encrypted and securely stored on tourists' smartphones. The encryption is based on time and location information included in the packages users' purchase, which can then only be decrypted when they arrive at their destination on the specified day. Prepaid tour passes will be activated directly by means of GNSS, which will also be used to notify tourists when they near points of interest in their packages and to validate the redemption of passes. Smart Tour Pass thus provides tourists with an all-in-one solution for prepaid travel packages. Using their own smartphones, they will be able to enjoy affordable and comfortable travel experiences. Bon voyage!

© Chu Yi-Hong

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.

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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FINLAND
REGIONAL WINNER

Develop Local Applications with Local Knowledge Utilising Global Technologies

Our planet is varied and home to a multitude of different forests, deserts, and urban and agricultural surroundings. Consequently, individuals require more than just information to gain knowledge about their environs. The ongoing process of climate change urges us to ponder how we can access local knowledge whilst simultaneously celebrating the uniqueness of a particular location through the use of tools that support us to gain awareness about the milieu while we are in it. In collaboration with local partners, Ubium aims to build contextual applications that encourage end users to play, learn, and act in their current space while gaining environmental awareness and knowledge of specific topics. Ubium helps to create enjoyable experiences in people's surroundings by combining global positioning data with contextual information, along with environmental sensors and different socio-cultural elements.

ubium's vision

© Ubium

Turku Science Park Ltd.

Turku Science Park is a regional development organisation that was established by the city of Turku, academic institutions such as the University of Turku and Abo Akademi University, and local authorities to contribute to the region's welfare and help utilise available expertise. Its mission is to provide the environment, infrastructure, and services needed to attract and retain new business, knowledge, and ideas to facilitate future success stories in the global high-tech industry. Turku Science Park has over 10 years' experience in space technology projects, as they managed the Space Technology Transfer Finland and the Business Opportunities from Space Technology programme (AVALI). Since 2011, it has been carrying out the TEKES-funded Space Sector Activation project, which aims to initiate technology transfer activities for Finnish space companies.

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EUROPEAN SATELLITE NAVIGATION COMPETITION 2015

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Gain access to a truly unique global innovation network in the field of satellite navigation applications. Over the past decade, the ESNC has grown into a leading global network of innovation and expertise in the field of Global Navigation Satellite Systems (GNSS). It connects some of the most relevant European GNSS stakeholders and experts with outstanding entrepreneurs and start-ups worldwide.

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GIPUZKOA / SPAIN
REGIONAL WINNER

LostAndFound Virtual Offices: Collaborative Location-Aware Searching

LostAndFound Virtual Offices (LFVO) is the logical evolution of the services offered by physical offices that handle mislaid objects. Using cutting-edge technologies, including mobile apps and geo-location, LostAndFound Virtual Offices not only makes it possible to publish information on mislaid items. LFVO apps also combine to form a collaborative, location-aware alert network in which users will be able to report their lost possessions in real-time and answer others' alerts in case they can provide any help. When an object (or even a person) is missing, promptly alerting people in the surrounding area within the first several minutes leads to a greater probability of success. The aim of LFVO is thus to develop an alert network that can be a highly useful tool in these critical situations.

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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GREECE
REGIONAL WINNER

YOOR: Yachting, Mooring, Exploring, Sharing – Exchanging Experiences

YOOR is a personalised social app for recreational boating. To address the lack of real-time information on congestion at mooring locations, it helps users find appropriate places to anchor and promotes safety and recreation based on user recommendations, current needs, and weather conditions. The application provides comprehensive information to maritime tourists in real-time and expands on the shared experiences of the coastal tourist community. As a user-oriented service application, YOOR will be enhanced by location-specific features on GALILEO enabled smartphones. Its initial resources, meanwhile, are drawn from maps, navigation guides, GNSS signals, weather reports, and social networks. As use of the application spreads, the sharing of user-generated data (such as advices, ratings, real-time information on congestion at mooring spots, and weather conditions) will supply information that is too often missing in conventional guides. YOOR is designed to meet the needs of the 350 million maritime tourists who frequent the coastlines of the EU. In doing so, it adds value by augmenting the local business ecosystems of the continent's bays, ports, and marinas.

Hellenic Association of Mobile Application Companies (HAMAC)

HAMAC is a non-profit organisation comprised of high-tech companies that develop advanced mobile applications, offer assistance to telecommunication providers, and render innovative communication, content, and application services. It represents a vibrant sector of more than 80 participating companies that account for approximately 90% of the total turnover in Greece's mobile industry and employ more than 4,000 people, including a thousand professionals. These companies are active in more than 40 countries, which has enabled some of them to expand and distinguish themselves as global leaders in the mobile services market. HAMAC's members also provide services to the world's largest telecom operators (which are listed on the LSE/AIM stock exchanges) and promote substantial growth at both the national and international level.

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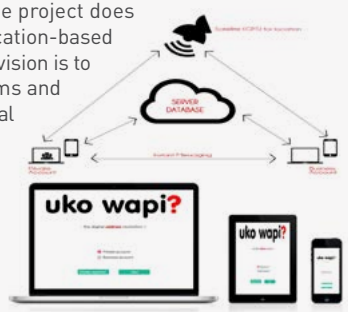
HESSE / GERMANY
REGIONAL WINNER

2ND OVERALL RANKING

IRELAND
REGIONAL WINNER

Uko wapi? – The Digital Address Revolution

"Uko wapi?" is a Swahili phrase that means "Where are you?" In many countries in Sub-Saharan Africa, there is a complete lack of a functional physical address system. To overcome this, the Uko wapi? project provides digitalised address information through a mobile and web application. Uko wapi? is designed for mobile subscribers with GNSS-enabled smartphones and uses location intelligence to create a location-based social network. The core service includes reliable and verifiable addresses, which will facilitate the e-commerce industry and enable the development of innovative business models. Uko wapi? also provides a low-cost advertising platform for small business owners. Meanwhile, the project does not seek merely to bring yet another location-based social network to market; its long-term vision is to completely revolutionise address systems and communication. This GNSS-based digital alternative to physical address systems is an innovative solution that will help accelerate the establishment of infrastructure in the developing world, thus giving rise to a safer, more connected, and more accessible world.



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eTinada – Enabling Taxation in the Digital Age and Using GNSS to Determine Place of Supply

Recent EU regulations on VAT (2008/08/EC) due to take effect on 1 January 2015 impose several obligations on suppliers of telecommunication, broadcasting, and electronic (TBE) services. First, they must collect VAT from consumers according to their location at the time of sale. They must then remit VAT to the relevant EU tax authority with an option to avail of a simplifying Mini-One-Stop-Shop (MOSS) electronic portal. The new 2015 scenario will also require the supplier to identify and collect evidence regarding the customer's location. This may prove challenging for TBE suppliers, with the prospect of GNSS and other geo-location technologies playing a significant role: The relevant legislation provides for the use of commercially relevant evidence capable of being satisfied, at least in part, by the use of GNSS technology. eTinada seeks to license a GNSS-based application programming interface (API) solution that will enable online B2C merchants to identify the point of sale for VAT purposes. Using GNSS tools to identify the location of devices (e.g. mobile phones, tablets, PCs, or wearable technology) being used for B2C purchases would provide greater certainty around customer locations than can currently be provided by available solutions.

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.

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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ISRAEL
REGIONAL WINNER

SAT406M – Wrist-Worn Personal Locator Beacon (PLB)

The Cospas-Sarsat satellite system supports Search-and-Rescue (SAR) efforts, particularly for marine personnel, by providing location data from beacons to national SAR authorities. It will soon also be augmented by GPS, GALILEO, and GLONASS. Mobit's SAT406 is the world's first certified Personal Locator Beacon (PLB). It implements a patented method to communicate data beyond the standard to SAR ground stations. The marine version, SAT406M, will use three GNSS services: navigational signals, distress signal relay, and the Return Link Service (RLS) provided by GALILEO. RLS and the patented method enable a two-way communication protocol between PLB and the SAR centre. In particular, upon proper sensing and processing, SAT406M will report the user's physiological status to the SAR centre, indicate the custom equipment or medication required, and receive suitable medical advice in return. In addition, SAT406M will integrate a marine very high frequency (VHF) radio, thus enabling distress calls in the Digital Selective Calling (DSC) format supported by almost every vessel today. Hence, while satellites provide worldwide coverage, nearby ships could possibly provide immediate assistance, resulting in enhanced chances of rescue.

© Mobit Telecom Ltd.

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Israel Europe R&D Directorate (ISERD)

Israel is a world leader in national investment in R&D. Its expenditures accounted for 4.4% of its GDP in 2011, placing it ahead of countries such as the UK, the US, Japan, and Sweden. The country also represents a unique blend of academic excellence, scientific innovation, and entrepreneurial experience in basic and applied research across the various stages of product development. ISERD is an inter-ministerial directorate operated through Israel's Ministry of Economy that promotes the participation of Israeli entities in R&D ventures within the European Research Area. It operates through various channels, such as HORIZON 2020, Eureka, binational programmes, EEN, and endeavours co-funded by Israel and the EU. In the European Commission-funded EGNIS project, ISERD serves as the European GNSS coordinator for Israel.

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LITHUANIA
REGIONAL WINNER

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BMWare

BMWare is a software platform that enables communication among pedestrians, automobiles, and emergency vehicles to minimise the danger of collision. All you need is a smartphone running the BMWare application, which monitors the direction, speed, and pace of everyone using it. When a potential collision between app users is detected, a warning is issued by the smartphones or vehicle stereos of those involved. Under busy urban conditions, for example, drivers experience difficulties spotting emergency vehicles and clearing the way for them to pass by. In extreme cases, failure to do so can cause accidents. BMWare solves this issue with prioritised warning queues. Other potentially dangerous situations occur on rural roads, such as when visibility is poor at night. BMWare also provides a key service to delivery truck drivers. Pedestrians, cyclists, skaters, and pets, and other elements are hard to spot on road sides or unregulated pathways, especially when drivers are blinded by passing cars, fog, rain, or snow. Here, BMWare has a smart threat-warning filter based on geo-locations that takes road type, speed, and threat density into account to eliminate false alarms.

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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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organised by

MADRID / SPAIN
REGIONAL WINNER


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GATA – Wayfinding Services for Accessible Tourism in the Cloud

Despite recent advances in mobile tourism systems, how many of them can be used by people with sensorial or physical disabilities? According to the United Nations Development Program, people with disabilities represent around 10% of the world's population, or around 650 million people. Most of them still have to deal with some problems: a huge amount of tourist information, dynamic environments and users, barriers to people with disabilities, designs that are not universally accessible, and managers who need to have programming knowledge. The idea behind GATA-wayfinding presents a universal solution for managing smartphone apps through an online management service with a focus on accessible tourism. The online service generates information and routes with accessibility criteria for people with disabilities. The aim is to integrate GALILEO and GPS to obtain an accuracy of few centimetres, which is essential for blind users. Moreover, the idea can be applied to indoor spaces and emergency situations, which makes it relevant for smart cities and managers seeking to put accessible tourism in the hands of users.

© wayfinding_GATA

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madri+d Foundation

The Madrid region represents the primary hub of Spanish industry, research, and education in the aerospace sector. It accounts for around 92% of the country's aerospace activity, both in terms of direct employment and turnover. The Madrid region is also home to a large number of public and private universities and boasts Spain's highest level of investment in R&D. The madri+d Foundation, meanwhile, supports the creation and early consolidation of new technology-based firms. Since 2002, it has supported 460 newly founded firms, which have generated more than EUR 150 million in total turnover and directly created more than 2,800 highly skilled jobs. In its various endeavours, madri+d works very closely with its network of university, incubation science, and entrepreneurial institutions.

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MEXICO
REGIONAL WINNER

Mexico City Smart Metropolitan Mobility

This proposal aims to improve public transportation and mobility in Mexico City by incorporating the positions of buses (including electric variants) into an intelligent transport system. This will reduce uncertainty in passengers, allowing them to plan their trips more efficiently. Passengers will be able to use their mobile phones to determine when to arrive at bus stops instead of waiting in line in unsafe places or during unpleasant weather. This idea promotes the use of public transportation and helps to reduce car use, which in turn lowers carbon emissions, as well. The GNSS-based system involved will also improve security and lower crime rates. For example, it is possible to automatically track and detect buses that have been forced to stop for long periods or to deviate from their original route by criminals. Transportation authorities, meanwhile, will have the capability to monitor and plan routes with increased efficiency while factoring in transit times, demand, and route traffic. This regional project is designed to raise awareness of the importance of intelligent transportation systems within the Mexico City local government.


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Mexican Space Agency (AEM)

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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THE NETHERLANDS
REGIONAL WINNER


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Location-based Language Learning App

Globally, people are spending USD 1.8 billion on digital English language learning alone, but classroom-only learning is not producing the results needed for the real world. What is needed are more opportunities to practice that are actually enjoyable for the learner. This is why Linguistadores.com engages language learners by focusing on their personal interests. It is now hitting the streets to engage people everywhere to take language learning to the next level. Here, research suggests that the best way to memorise new vocabulary is to connect it with real life. The most effective method is thus to learn or practice new vocabulary for a particular situation by being in that situation. Imagine sitting down at a restaurant and receiving a notification on your mobile phone a moment later that prompts you to review five words related to the context you are in – a restaurant. The geolocation is linked to the type of establishment, not the country itself, so friends learning different languages can meet for lunch and get different word prompts.

© Marco Derksen

The Netherlands Space Office (NSO)

The Netherlands Space Office (NSO) was established by the Dutch government to develop and implement its country's long-term space programme. In addition to serving as the Dutch space industry's representative in international 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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NICE - SOUTH FRANCE / FRANCE
REGIONAL WINNER


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USea, the Innovative Maritime and Social GPS Network Solution

Small pleasure boats are not detectable by maritime traffic systems because they are currently not required to carry location transmitter devices. Indeed, most of these boats have no radio devices at all at their disposal for communication purposes, which isolates them from each other. USea is an innovative maritime and social GPS network solution that uses mobile phone networks to enable all of its users to share information on their location, identification, travels, and social status. It thus provides real-time snapshots of small boat traffic and serves as a database for pleasure boats all around the world. The application is designed to increase safety and security at sea by creating an interconnected network for maritime enthusiasts. Thanks to USea, no boat captain will ever have to feel alone again.

© USea

Incubateur Paca-Est

The regional incubator Incubateur Paca-Est is now organising the region's ESNC competition for South France on behalf of ESA BIC Sud France. Founded in 2013, ESA BIC Sud France - which is managed by Aerospace Valley in association with the CNES and Pégase - is France's first ESA BIC incubator. Its organisation is based on three main regions: Aquitaine, Midi-Pyrénées, and Provence Côte d'Azur (PACA). It is also driven by support structures dedicated to the creation of innovative companies, such as ASTIA Entreprendre, Bordeaux Technowest, CEEI Théogone, Midi-Pyrénées Incubator, and PACA-Est Incubator. Incubateur Paca-Est, meanwhile is based at the Sophia Antipolis Technology Park – the home of 1,300 multinational companies, SMEs, labs, and international institutes representing 30,000 employees of 68 different nationalities.

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NORTH RHINE-WESTPHALIA / GERMANY
REGIONAL WINNER


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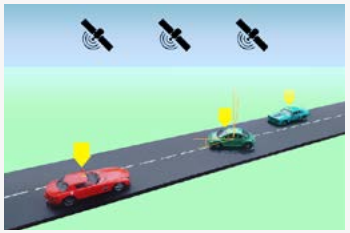
Dynamic Stability Control Using GNSS and INS

The next generation of driving assistance systems benefits from aviation by using GNSS and inertial navigation systems (INS) to offer a method of controlling vehicle driving dynamics – especially for single- and dual-track vehicles. These dynamics are controlled by way of brake and engine intervention based on how the vehicle's motion changes in three-dimensional space relative to the global coordinate system and the effective direction of gravity or the Earth's gravitational pull. The dynamic stability control (DSC) system combines GNSS and INS to track the vehicle's position, attitude, and speed vector, as well as the direction of gravitational force. It facilitates orientation of the vehicle by detecting sliding, twisting, tilting, skidding, and external impacts. Position and attitude data can still be collected even when, in extreme situations, the vehicle is no longer in contact with the ground. It is thus still possible to predict the direction of the vehicle's flight/movement. Since vehicles constantly communicate their current orientation, position, speed vector, and attitude to other linked cars through car2car and car2x infrastructures, DSC also serves as an accident avoidance system.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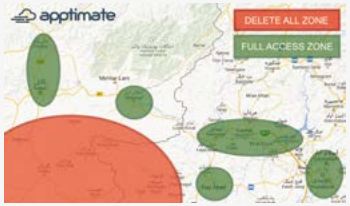
NORWAY
REGIONAL WINNER

Positioning as a Security Mechanism for Mobile Messaging

Apptimate integrates positioning as a security mechanism for message-based communication. By applying self-deletion and user authentication based on positioning data, it achieves a new level of secure communication in mobile apps. Today, Apptimate (formerly PingPal) offers completely secure and encrypted point-to-point messaging as a service. When a message has been delivered, however, it will remain in the history of the receiving device. In addition, geo-positioning triggers can be used for automated message management. Apptimate is also developing a Software Developer Kit (SDK) that simplifies the implementation of this self-deleting mechanism in any app.

Some planned implementations:

- Restricting the sending and reading of messages to specific locations
- Deleting messages when the user crosses a geo-fence ("This information is not allowed to leave this building/country/etc.")
- Enabling the user to draw a route on a map and set an alarm that will be activated if a monitored individual deviates from the route and deletes all related classified data
- Confirming transactions with messages from specified locations



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Automotive & Rail Innovation Center (ARIC)

ARIC is a business division of AGIT mbH, the regional development agency for the Technology Region Aachen. This region is one of the leading hubs of vehicle technology in Europe and the site of a unique testing environment for satellite navigation in connection with ground-based transportation. AGIT supports start-ups and entrepreneurs, provides access to facilities at the Technology Centre Aachen, and offers answers in all matters concerning patents, business development, and expansion. ARIC, meanwhile, deals with satellite navigation applications, advanced driver-assistance systems, intelligent energy management, and e-mobility; it also supports users during trials at the Galileo test beds railGATE and automotiveGATE. ARIC's participation in the ESNC is being facilitated by AutoCluster.NRW and Elektromobilität.NRW.

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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POLAND
REGIONAL WINNER


© Christian Thiele

HYENT: The World's First Mobile App That Rewards Your Lifestyle

HYENT is for #hyting – the aspiration to profit from one's own passions and lifestyle while inspiring others. HYENT is the first mobile app in the world that connects real life with the virtual world like never before. At first glance, it's a mobile app for smartphones and tablets that runs on the most popular software in the world (iOS, Android, Windows Phone). However, that's just the tip of the iceberg. HYENT is also the first mobile app that rewards people for living their lives and encourages them to achieve more. The app solves problems involved in escaping into virtual worlds. In particular, it addresses related addictions in young people: misguided patterns in social relations (Facebook), mindsets that prevent users from meeting new people due to different fears, lack of awareness of self-potential, low self-esteem, and more. HYENT has found a way to generate money for people based on their relationships, activities, self-growth, education, and other aspects of real life. This innovative algorithm – HYNet 5D – is a premium function of the app, whereas everything else is free of charge. HYENT even has a storyline that is arranged in seasons, much like a TV series.

© HYENT

Kosmonauta.net Ltd.

Poland is one of the biggest markets for IT, mobile, transport, and entertainment products and services in the European Union. It has a very vibrant investment scene with an increasing interest in funding new applications and technological solutions. Having joined the European Union in 2004 and become a European Space Agency member-state in late 2012, Poland is now in a position to realise, fund, or co-fund several space-related programmes. Kosmonauta.net Ltd. is a Polish space-sector SME that provides information and consulting services in connection with its regional space sector, including partner/project matching, market strategies, and technology assessment studies. The company also serves as a central information hub for developments in spaceflight and the greater space industry, both in Poland and its region of Europe.

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PORTUGAL
REGIONAL WINNER


© Tourism of Porto and North of Portugal

Eye2Map Agriculture

Eye2Map Agriculture is based on the idea of using Unmanned Aerial Vehicles (UAVs) guided by GNSS for precision agriculture. The project consists in gathering aerial data that will be useful to farmers and will increase their efficiency and profits simply by using the information gathered. Since traditional aerial data is very expensive, UAVs provide an affordable alternative solution that can reach a wider range of businesses. This presents the chance to provide them with new advanced technology and specialised data. Farming operations will thus be able to access land relief information, measurements of sunlight on soil, and significant statistics on health, growth, and vegetation. All of this data can be used in many ways, such as to indicate how healthy a crop is, how well it is growing, when the optimal harvest time has arrived, the direction in which groundwater is flowing, and what measures to take to redirect it as needed. Since the UAVs and cameras are equipped with GNSS receivers, Eye2Map Agriculture provides geo-referenced data that can be mapped and delivered to the client on specific areas requiring resources and mobilisation.

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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SWITZERLAND
REGIONAL WINNER

CATOS – Convict Authentication Tracking and Observation System

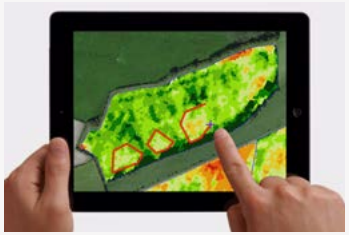
The CATOS project aims to resolve the lack of authenticated GNSS positioning in the field of Localisation Based Services (LBS). With authenticated position, SpaceEXE is working towards an effective solution based on integrated usage of GNSS (GPS, GALILEO, and EGNOS) that involves aspects of security, safety, and certification. The growing number of services available for mobile users in the emerging field of safety, security, and pay-per-use services need new ways to authenticate positioning information. This is especially true when such services involve the monitoring of convicts who are under house arrest or other restrictive measures and are thus forbidden from approaching certain areas or people. Here, CATOS is designed to reduce the possibility of fraudulent attacks aimed at altering positioning information obtained by GNSS. The main objective of CATOS is to build a reliable authentication system that ensures highly secure user positions by exploiting features of EGNOS/EDAS. This involves distributing complexity across the entire system and optimising the design of corresponding user equipment.

© Space EXE

UNITED KINGDOM
REGIONAL WINNER

seeCrop – The Crop Recording App for Targeted Application of Crop Protection Chemicals

The IPF Toolbox, the UK's first web-based precision farming system, now has over 130,000 hectares subscribed to the service. One of the key features of the Toolbox is its integration of high-resolution, multispectral satellite imagery. This is processed as a vegetation index and allows farmers to monitor the progress of their growing crops. The satellite data can be viewed on a tablet device, which makes it possible to identify areas of interest while out in the field. This project aims to develop this one step further: The new seeCrop app will enable farmers to pinpoint areas of crop damage and record their location using the tablet's GNSS receiver. After the type of damage is selected (pest, weed, or disease), a list of the most likely options will appear depending on the crop type and time of year. These agronomic observations will synchronise with the cloud-based IPF Toolbox, thereby allowing targeted applications of crop protection chemicals. This will save the farmer time and money and reduce the negative environmental impact of unnecessary chemical applications. Aggregated observation data from app users also has huge potential to facilitate pest and disease forecasting in the UK and abroad.



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.

The Satellite Applications Catapult

The Satellite Applications Catapult is a new type of independent innovation and technology company, created to foster growth across the economy through the exploitation of space. Catapult helps organisations to make use of and benefit from satellite technologies, and bring together multi-disciplinary teams to generate ideas and solutions in an open innovation environment. Their world-class facilities and expertise enable the best businesses, researchers and end-users to work together to develop new satellite-based products, services and applications, translating ideas from concept to market. The involvement of the Catapult has allowed the UK to boost the business support provided to all entrants, and vastly expand on the range of available programmes such as fora for investor readiness, ideas accelerator and business breakfast clubs.

VALENCIAN COMMUNITY / SPAIN
REGIONAL WINNER


© Johan Ramberg

FOCUS: A System for Investigating the Cause and Origin of Forest Fires

Every year, 20,000 wildfires in Europe devastate 100,000 hectares of land. Of these fires, 90% are caused by people and 54% are intentional. Most of these fires require legal investigations to determine their origin, cause, and starting time. The starting point is located based on traces left by a fire in a process called the Physical Evidence Method. To identify a fire's path, investigators use markers (small red and white flags) as indicators of direction, locations of evidence, and starting points. The high degree of vulnerability of forest areas and the difficulties encountered by investigation teams require new technical solutions to improve procedures in fire origin location and data registration. FOCUS proposes the development of an integrated forest-fire investigation system that provides real-time data interpretation for identifying fires' starting points, along with reliable information based on accurate field measurements and field data registration. Through integration of different functionalities in a single portable electronic device, one single unit can replace the entire field investigation kit.


© John McColgan

Val Space Consortium

Boasting an excellent communications network, modern infrastructure, quality industrial land, and skilled entrepreneurs, the three provinces of Valencia, Castellon, and Alicante offer an ideal place for companies to settle and grow. Val Space Consortium was created in 2010 to combine all of Valencia's efforts in the space sector and increase their impact and international competitiveness. Composed of Generalitat Valenciana, the city administration of Valencia, Universitat Politècnica de València, and Universitat de València Estudi General, it performs scientific research and renders technological development services in space-related fields. Through collaborations with the European Space Agency (ESA) and other Spanish and international institutions, the consortium promotes activities and provides services designed to facilitate European space development.

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WALLONIA / BELGIUM
REGIONAL WINNER

GNSS-Air

To feed an additional two billion people by 2030, water needs to be used more efficiently. Agriculture is the biggest water consumer, accounting for around 70% of all freshwater withdrawals worldwide. It is estimated that water demand will grow by 45% by 2030. As a consequence, farmers now face the challenge of producing "more crop per drop". They need to provide the right amount of water at the right time and in the right place to optimise irrigation. In doing so, better insights into the spatial patterns of soil moisture content are essential. Farmers currently use information from a single sensor point - or even worse, they rely on the nearest hydrological or meteorological station, which can be too far away to be representative. The aim of the GNSS-AIR proposal is to commercialise a service capable of providing soil moisture maps. To achieve this, GNSS-AIR will develop and demonstrate a prototype of a GNSS Reflectometry (GNSS-R) sensor, which can then be embedded on a dedicated, Remotely Piloted Aircraft System (RPAS) platform to measure soil moisture using the reflected GNSS signature.


© MISTRALE

WSLlux – ESA BIC Redu

Wallonia, the southern region of Belgium, developed a plan of action in the 2000s to stimulate its economy. After identifying aerospace as a strategic sector, the region established the aerospace cluster Skywin Wallonia – a group of companies, training centres, and research units engaged in public and private partnership with the goal of building synergies around innovative projects. WSLlux is the result of a partnership involving WSL, the Walloon incubator for engineering sciences; IDELUX, the business development agency for Belgian Luxembourg; and Luxembourg Développement. WSLlux also manages ESA BIC Redu, the sixth member of the network of incubators recognised by the European Space Agency (ESA), and supports start-up and spinoff companies in their creation and development through a wide range of services.

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ESNC MEDIA PARTNERS

The ESNC in the limelight

Our thanks go out to the various GNSS magazines and stakeholders active in space-related fields that support the ESNC as media partners. They help spread the word about the ESNC and have achieved impressive numbers in doing so, including more than 600 publications.

ESNC SOCIAL MEDIA CHANNELS

YouTube

ESNC MEDIA OUTREACH

>17,000 MAILING RECIPIENTS
GNSS-related contacts
Specific GNSS multipliers
(Potential) participants

10 TOPIC RELATED NEWSLETTERS
>4,000 SPECIALISED CONTACTS

693,265 PAGE VIEWS
333,392 VISITS
ESNC Website (2013)
www.esnc.eu

>60 EVENTS
23 Regional Kick-off events
4 University workshops
18 Conferences attended
14 Further events involved

>130 MULTIPLIERS
Regional Partners incl.
(e.g. National Space Agencies, Universities, Ministries, Incubators)
Stakeholders

6 MEDIA PARTNERS
InsideGNSS, Telematics Update, Coordinates, RE-WORK, IAF, PROOF COMMUNICATION

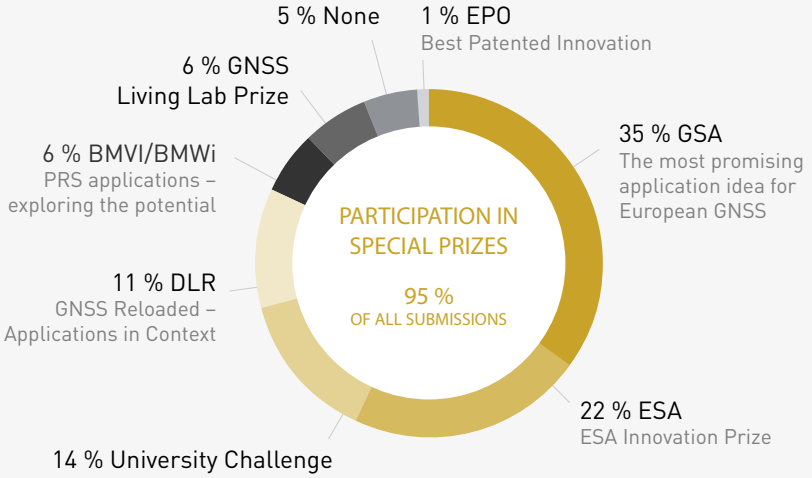
>600 PUBLICATIONS IN SPECIALISED PRESS
GIS Cafe, GPS World, MundoGEO, Coordinates, GPS Daily, Satellite Today, GPS Integrated, Satellite, Directions Magazine, student competitions.com

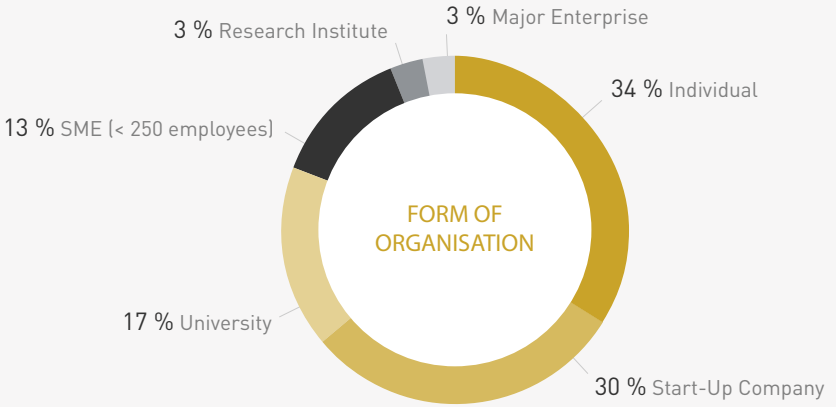
Become a media partner for 2015.
Contact us lena.klemm@anwendungszentrum.de

ESNC STATISTICS 2014

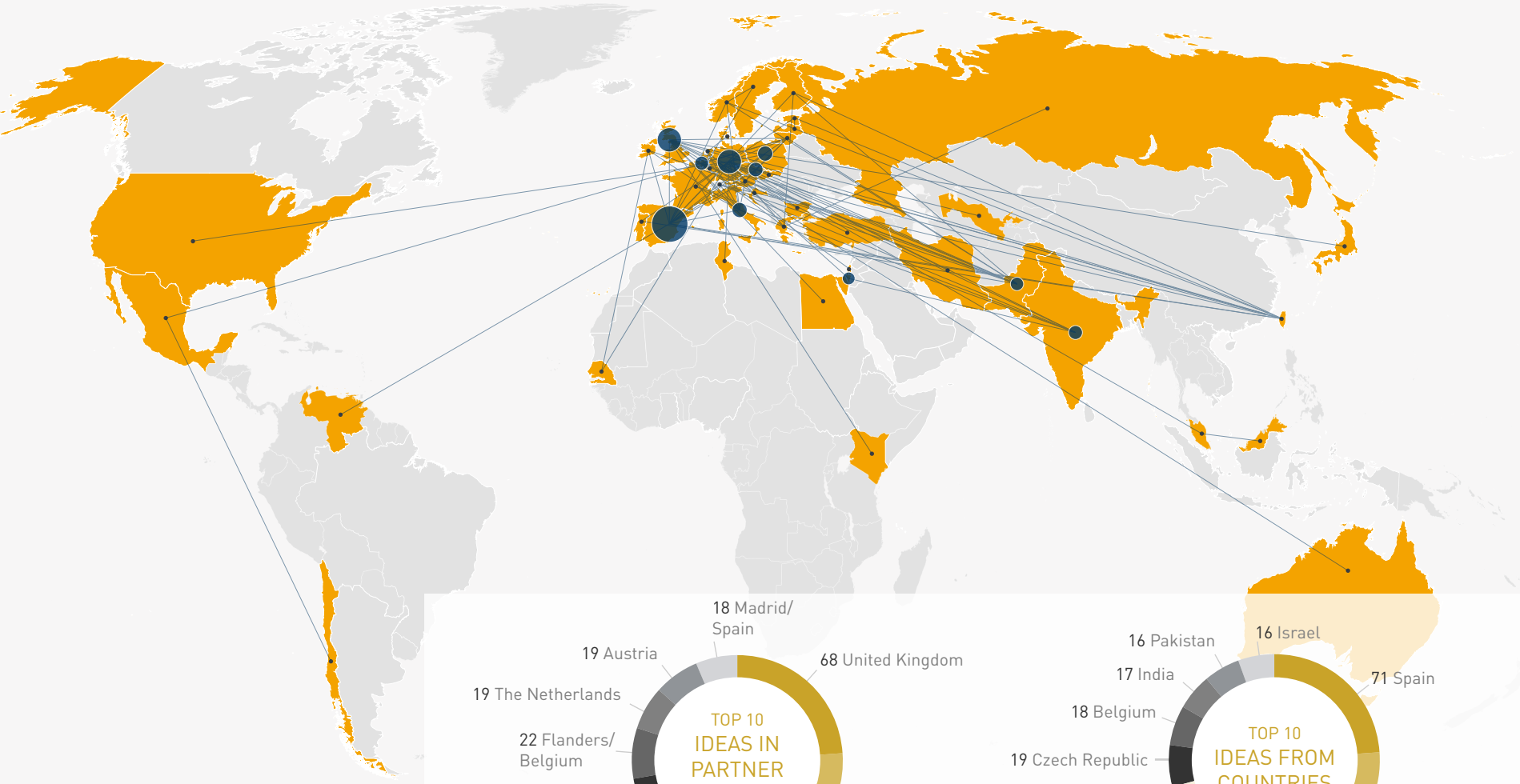
Recording innovation in numbers

Already in its 11th year, the ESNC has again met with considerable interest among GNSS developers in 2014 and addressed participants from 44 different countries. A remarkable 434 complete submissions from various fields of application were submitted by teams comprising more than 1,000 participants.



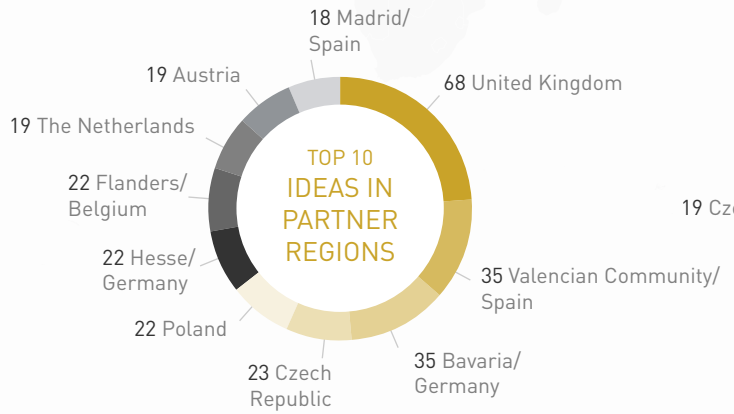


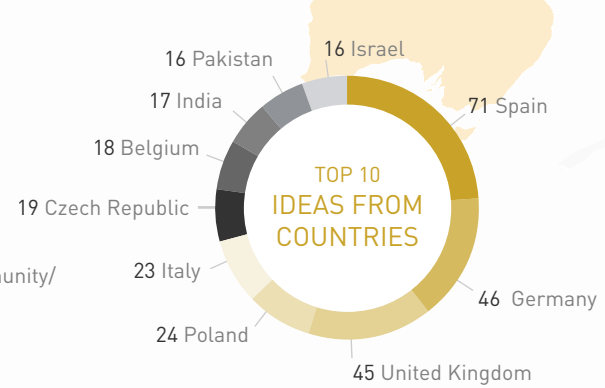
CROSS-REGIONAL IMPACT 2014



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

Size proportional to number of ideas submitted from countries





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Mr Pablo Martinez	Bic Berrilan
Dr Oihana Otaegui	Vicomtech-IK4
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The company specialises in building and maintaining international innovation networks that enable it to support product innovations and company foundations based on space technologies and infrastructures. The market for aerospace applications in other sectors – robotics, automotive, or healthcare, for example – is highly diverse and witnessing tremendous growth. This presents a great deal of potential, particularly for start-ups and SMEs.

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www.european-space-solutions.eu
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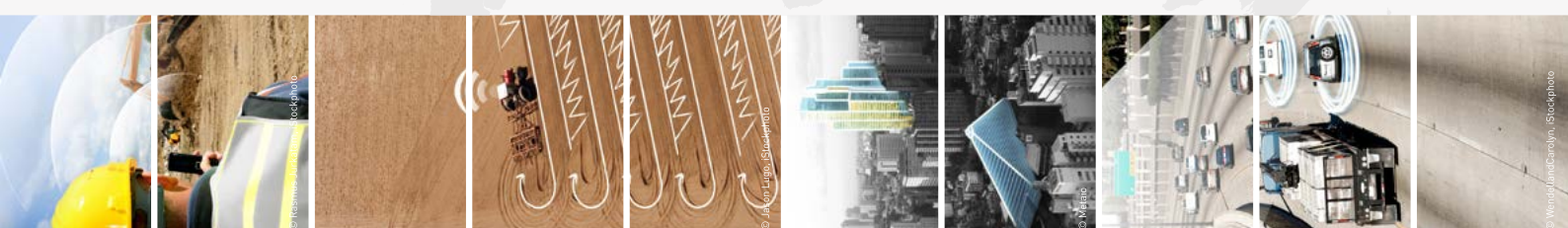

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