



PRESS RELEASE

EU re-opens the 'Farming by Satellite' Prize ... and extends it to Africa

Students and young farmers are invited once again to enter a major competition about how to use satellite technology in agriculture to improve production, efficiency, profit and to reduce environmental impact.

The €13,000 'Farming by Satellite Prize' is an initiative of the European GNSS Agency (GSA), the EU agency responsible for European satellite navigation activities, and is sponsored by CLAAS, a manufacturer of agricultural engineering equipment, and crop protection experts Bayer CropScience. The competition ran for the first time in 2012 and has now been expanded, with a special prize for submissions that address the needs of farmers and growers in Africa.

The aim of the competition is to promote the use of satellite navigation in agriculture and its benefits to end users. Individuals or teams can submit case studies of trials, or new ideas and innovations, particularly those relying upon European Geostationary Navigation Overlay Service (EGNOS), the forthcoming GALILEO system and COPERNICUS (the European Earth Observation Programme).

The winner of the inaugural 'Farming by Satellite Prize' was Robert Fillingham, a PhD student from Harper Adams University in the UK, who said: "Entering the competition provides a great chance to have your innovative ideas heard by leading industry experts and potentially taken on for further development. Winning the Farming by Satellite prize was an amazing experience which has opened up lots of opportunities, so don't hesitate and get writing!"

Gian-Gherardo Calini, Head of Market Development at the GSA says: "We want to build on the success of last year's prize and encourage even more entries of a high standard. Over 100 registrations were received from 25 countries, and this year with Africa included, we expect that to

grow again. We are looking for imaginative solutions that employ 'free' satellite technology that can help all the world's farmers. We anticipate entries from commercial teams as well as students of agriculture, horticulture and life sciences."

Full details on the competition are available at www.farmingbysatellite.eu. Interested parties should **register before 10th February 2014** to receive a full briefing pack and be prepared to submit their ideas by **14th April 2014**.

Ends 21st October 2014

Notes to editors:

The GSA has contracted UK consultancy Helios to manage the Farming by Satellite prize. For further information about the prize please contact Andrea King or Laurette Royer from Helios on 01252 451 651 or email: info@farmingbysatellite.eu.

About the GSA:

The GSA, a European Union agency, works with the European Commission on a range of market development activities aimed at helping European entrepreneurs and businesses commercially exploit EGNOS and Galileo. Such promotional activities will ensure that European industry maintains a competitive edge in the global satellite navigation marketplace.

For further information about the GSA contact: marie.menard@gsa.europa.eu

About the Prize

The competition will promote the use of GNSS in agriculture and its benefit to end-users. Entries must therefore clearly demonstrate how the use of GNSS is either a) already realising significant benefits to users or b) could enable new innovative services in the near future.

Particular attention should be paid to the additional value offered by EGNOS in providing a free-to-air higher accuracy augmentation to Global Positioning System (GPS) and the new European Galileo satellite service starting in 2014. Note also that EGNOS extended eastwards towards Central Europe during 2012. Galileo will provide global coverage.

Types of entry

Entries may take any of the following forms:

1. EITHER success stories of the application of GNSS and precision agriculture OR new ideas and innovations in different countries and land use types. Both types of entries are equally valid. These could include one or more of the following:

- Precision agriculture including application of seeds, fertilizers, fungicides, herbicides, insecticides, including variable rate technology, and irrigation, planting, tillage, harvesting, and the use of automatic guidance systems.
- Soil, vegetation, disease and yield mapping, (mobile) data collection, analysis and application in real time and historical.
- Traceability of products including crops and livestock, from field to fork for food safety and disease control by farmers, food companies, standards certification bodies, government agencies and safety authorities.
- Environmental management including ecological impact assessment and management by stakeholders including farmers, scientists, engineers and government agencies.

2. Technical proposals for equipment/software/systems applied to different crops/farm types including forestry and fisheries. You can propose the novel application of existing systems or a new product or products, describing their production, use and potential results. The technical proposal can target one specific issue or can be broadly targeting crop improvement or even farm improvement showing interaction between multiple services/equipment.

3. Applications for small producers and/or cooperative groups. This approach would involve simplified applications of GNSS and precision agriculture to farm situations with limited size and resources.

4. Wide area application of GNSS in agriculture, forestry, fisheries and the environment. This approach would involve mapping exercises using a geographic information system (GIS) – ArcView or open source software. Using country data, the report would show where the technology can be applied to different land uses and predict changes in production and market supply, together with changing revenue and incomes. Data can be obtained from FAOSTAT and other sources.

Entries must be submitted in electronic format. All entries must include an abstract (150-200 words) and a full description (between 3,000 and 10,000 words) written in MS Word or Open Office Writer. All entries must be presented in English and in the case of video supporting material with English subtitles. The full description can be supported by:

- A short video (maximum 5 min.) demonstrating the idea and incorporating: dialogue and/or field footage and/or computer screen recording (in .MP4 or .FLV format); or
- An MS PowerPoint or Open Office Impress slideshow; or
- A computer spreadsheet (using MS Excel or Open Office Calc).

The entry must be supported by references and justification for values used. Entries must be submitted by 14 April 2014.

All entries must include a form of presentation suitable for the prize awarding event. Shortlisted entries will be expected to present their ideas using an MS PowerPoint or Open Office Impress slideshow, prior to the final decisions from the judges.

Some examples of entries received for the 2012 Prize included:

- Integrated Farm Management Data and Information System
- Mobile Sample Collector
- Virtual Pastures
- Zero Draught and Scatter Robotic Seed Establishment
- Total Field Management Programme
- Vitismart: Digital Maps for limited-size vineyards
- Agroplanning: Integrated Precision Farming
- Advanced GPS guidance
- Accurate monitoring of the machinery movement
- Active sprayer boom levelling
- A satellite aided bale collection system

Who is eligible?

The competition is open to all students and young people below the age of 32 studying or resident in any of the following countries: Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lichtenstein, Lithuania, Luxembourg, Malta, Moldova, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Additionally, entries from African countries (either independent or with partners from the above countries) will be accepted for the 2013 Prize. A special prize will be awarded to ideas or applications relating to farming by satellite in African regions.

Individual or team entries are welcomed. A team may comprise up to 4 people.

About EGNOS and precision farming:

EGNOS is essentially Europe's 'pre-Galileo' system, its first concrete venture into satellite navigation. EGNOS delivers services based on GPS and GLONASS signals, providing augmentation signals re-transmitted by geostationary satellites and a network of ground stations.

EGNOS represents a European solution for the Satellite-Based Augmentation System (SBAS). There are also other SBAS systems in the world, e.g. Wide Area Augmentation System (WAAS) in the USA. EGNOS augments the two satellite navigation systems now operating, the US GPS and Russian GLONASS systems. Crucially for agriculture, EGNOS also increases the accuracy of existing satellite positioning services to about one metre or better.

Precision agriculture refers to the use of satellite navigation sensors, aerial images, and other tools to determine optimum sowing density, fertiliser cover and other inputs. It also refers to the use of GNSS for supporting machine guidance, virtual fencing, and land parcel identification. These techniques allow farmers to save money, reduce their impact on the environment and increase their productivity. EGNOS can offer an affordable precision solution.

EGNOS can support:

- Variable ploughing, seeding and spraying – Variable Rate Technology (VRT)
- Tractor guidance
- Individual livestock positioning
- Virtual fencing
- Land parcel identification and geo-traceability
- Post-harvest pick-up
- Supervised livestock tracking
- Field measurement
- Field boundary mapping and updating

EGNOS will help to:

- Enhance precision
- Eliminate waste and over-application of fertilisers and herbicides
- Save time

- Reduce fatigue
- Extend equipment lifetime by optimising its use
- Provide geo-traceability
- Optimise crop yields
- Increase profit margins

About Galileo

Galileo is a satellite system currently being built by the EU aiming to be the single European GNSS. Up to now, GNSS users in Europe have had no alternative other than to use American GPS or Russian GLONASS satellite signals. Yet the military operators of these systems can give no guarantee to maintain uninterrupted service.

Meanwhile, satellite positioning has already become the standard and essential tool for navigating and related applications. As the use of satellite navigation spreads, the implications of signal failure increase, jeopardising not only the efficient running of transport systems, but also human safety.

By being interoperable with GPS, Galileo aspires to be a new cornerstone of GNSS. This worldwide system will henceforth be under civilian control. And with its full complement of satellites, more than the current GNSS systems, Galileo will allow positions to be determined accurately even in high-rise cities, where buildings obscure signals from today's satellites.

Galileo will also offer several signal enhancements making the signal more easy to track and acquire and more resistant against interference and reflections.

By placing satellites in orbits at a greater inclination to the equatorial plane, Galileo will also achieve better coverage at high latitudes, making it particularly suitable for operation over northern Europe, an area not well covered by current GPS signals.

About Copernicus (formerly known as GMES)

The European Earth Observation programme (formerly known as Global Monitoring for Environment and Security or GMES) is an initiative led by the EU. The coordination and management of the Copernicus programme is ensured by the European Commission. The setting up of initial versions of the Copernicus services have been assigned to several projects partly financed through the 7th Research & Development Framework Programme of the EU, while the developments related to the observation infrastructure are performed under the aegis of the European Space Agency for the space component (i.e. Sentinel missions) and of the European Environment Agency and the Member States for the in situ component. The sustainability of Copernicus operational services will be ensured through public funding from the EU, intergovernmental agencies, and Member States. These services should be accessible to any organisation or citizen.

Copernicus consists of a complex set of systems which collects data from multiple sources (Earth observation satellites and in situ sensors such as ground stations, airborne and sea-borne sensors), processes these data and provides users with reliable and up-to-date information. Some of these

systems and data sources already exist today, as well as prototype services, but many developments are still required in all domains.

Policymakers and public authorities - the major future users of Copernicus - will use the information to prepare environmental legislation and policies with a particular focus on climate change, monitor their implementation and assess their effects. Copernicus also supports the critical decisions that need to be made quickly during emergencies, such as when natural or man-made catastrophes and humanitarian crises occur.

Users will be (and to a certain extent are already) provided with information through services dedicated to a systematic monitoring and forecasting of the state of the Earth's subsystems. The following six thematic areas are developed:

- Land monitoring
- Marine monitoring
- Atmosphere monitoring
- Emergency management
- Security
- Climate change

Based on Copernicus services, many value-added services tailored to more specific public or commercial needs (i.e. forecasting services with a local scope, services including socio-economic data, etc.) will certainly be developed.