NEC and Dacom Collaborate on Precision Farming Solution to Maximize Yields and Reduce Costs

Thursday 23 October, 2014

Tokyo and London – October 23, 2014 – NECCorporation (TSE: NEC 6701) and Dacom, the agri-IT company (Holland-based industry-leading company), are today announcing the results of a "precision farming solution" trial in Romania that uses environmental sensors and big data analytics software to maximize yields at a reduced cost. By accurately measuring and responding to the variation in growing conditions within each field, the solution helps to minimize fertilizer, pesticide, water and fuel usage and costs while maximizing crop yields. The companies are now working to bring the Crop Decision Support System (DSS) to market, focusing initially on the Europe, Middle East and Africa (EMEA) markets.

The solution provides farmers with accurate planting, fertilizer, irrigation, protection and harvesting guidance via a user-friendly application that uses data from in-field soil sensors and weather stations, combined with local weather forecasts and aggregated, regional multi-year agronomy datasets. The sensors automatically record soil moisture and temperature on a 24/7 basis. Wind speed, direction, temperature, humidity, rain and sunlight levels are also captured across the farm. This is supplemented by visual inspections and reports by the farmers on crop growth rates and signs of insects and disease.

The real-time data from the sensors and weather stations is automatically collected via the mobile network and compared to growth, fertilizer, pesticide and water absorption models for the region to deliver advice on the ideal spraying time and dosage levels that reflect highly localized needs. This avoids the wastage that occurs when chemicals are applied too late or early in the crop or larvae growth cycle or are affected by wind drift or rainfall wash-off.

The trials were carried out in Brasov, one of the main potato growing areas in Romania, this season. The research suggests farmers can reduce expenditure on chemical inputs by up to 40% per hectare compared to non-DSS benchmark farms. There is additional margin for improvement if farmers follow the guidance exactly rather than erring on the side of caution and applying additional doses. The solution is also expected to enhance the inherent quality of farm products, for example the protein level in maize or the symmetrical shape of the potatoes.

Terabytes of crop production data need to be analyzed and modelled on an ongoing basis over many years to maximize the success of precision farming solutions. In the next phase of the project, NEC will leverage its big data analytics capabilities to accelerate the complex process of assessing the Dacom's diverse data sets and search for hidden patterns relating to crop growth cycles. NEC is also looking at opportunities to create new crop yield data services to help support banks' farm investment decisions and enable food exchanges to have more accurate crop yield data in the future.

Naoki Iizuka, President & CEO, NEC Europe Ltd, commented, "The increasing demand for food and crops for bio fuels is outpacing land availability and yields at a global level. This new precision farming solution from NEC and Dacom will enable farmers to fine-tune their production process throughout the growing season and make economically sound and responsible use of agri-inputs like fertilizers and water to grow more food with fewer resources."

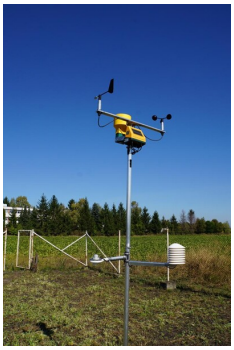
Janneke Hadders, CEO at Dacom commented, "Dacom has been helping farmers around the world increase yields and profits with the use of advanced data sources and online services since the 1980s. We're delighted to be partnering with NEC as we look at how a new generation of emerging data analytics solutions can help further reduce the use of agricultural inputs to ensure the sustainability and cost-effectiveness of food production over the long term."

Dr Sorin Claudian Chiru, General Director at the National Institute of Research and Development for Potato and Sugar Beet Brasov in Romania, which manages one of the pilot farms, commented, "These latest trials are helping to create confidence in the effectiveness of these precision farming technologies. Traditionally, farmers either apply a high dosage or a high number of repeat sprayings of chemicals as they do not want to risk any disease or damage to the crops on which their livelihoods depend. This trial shows that an evidence-based approach to farming, which takes into account highly localized weather, soil data and insights from across the agriculture industry, is a proven means to help farmers to be more efficient in their operations and make more precise decisions, while maximizing yields and profit margins."

This solution is being introduced at the Food and Agricultural Conference at the Toranomon Hills Forum

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on 31 October 2014 as an example of business cooperation between Japan and the Netherlands and included in the "Sustainable food security – opportunities in agribusiness in Japan" program attended by King Willem-Alexander of the Netherlands.

The world's population is expected to increase by about 2 billion more by 2050, to between 9 and 10 billion – an increase of around 30%. Many people will have the opportunity to improve their diets and global food demand actually will increase much more quickly – by 70%, according to the UN's Food and Agriculture Organization (FAO). This makes the innovative use of agri-IT solutions essential to support sustainable growth and economic development.

About NEC Corporation
NEC Corporation is a leader in the integration of IT and network technologies that benefit businesses and people around the world. By providing a combination of products and solutions that cross utilize the company's experience and global resources, NEC's advanced technologies meet the complex and ever-changing needs of its customers. NEC brings more than 100 years of expertise in technological innovation to empower people, businesses and society. For more information, visit NEC at http://www.nec.com.

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About Dacom
Dacom is an innovative high-tech company that develops and supplies specialized hardware, software and online advisory services to arable farms and the agribusiness around the world. By combining sensor technology, internet and scientific knowledge, growers can continuously monitor and fine-tune their production process throughout the growing season. The agribusiness can continuously anticipate and optimize raw material supply through the consultation of field data and smart modules. This results in the maximum yield achievable through the economically sound and responsible use of agri-inputs like chemicals, water and nutrients.

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