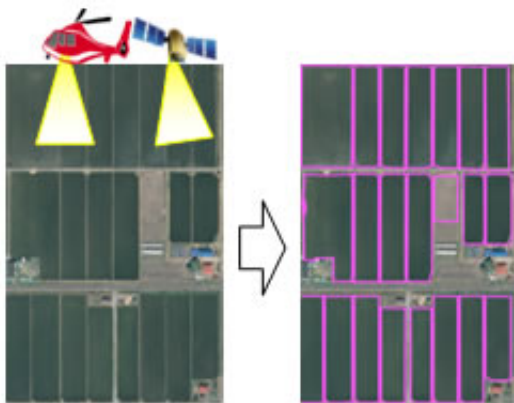


# Fujitsu uses image analysis technology to generate rice paddy parcel maps from satellite images and aerial photos

August 17 2012

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Extracting rice paddy parcels from images of farmland.

Fujitsu today announced that, in collaboration with the Federation of Hokkaido Agricultural Mutual Aid Association (Hokkaido NOSAI) and the Kamikawa Chuo Agricultural Mutual Aid Association (Kamikawa Chuo NOSAI), it will aid in creating maps of rice paddy parcels using proprietary Fujitsu image analysis technology. The technology will utilize satellite images and aerial photographs to recognize the boundaries between rice paddies and the embankments that separate them. From August 9 to October 31, Fujitsu will be conducting a field test to evaluate the technology's usefulness in confirming the crop area of new members when they join NOSAI, as well as other applications.

Since agriculture depends heavily on natural conditions, Japan's agricultural mutual aid system helps provide relief to farmers by compensating them based on the area of the land and the type of crops they are cultivating when fields are damaged by [typhoons](#), severe rainfall or other [natural disasters](#). In order to operate, each year federations of agricultural mutual aid associations throughout Japan (NOSAI) are required to quickly identify newly added farmland and [crop rotations](#) by working with member farms and affiliated organizations to check each of a vast number of rice paddies and manually update rice paddy parcel maps. This is usually performed based on farmer-submitted crop change reports that provide information about farmland that has been converted from rice paddies to another kind of crop, and vice versa. At the same time, due to Japan's aging farmer population and a lack of new farmers, these activities represent a substantial workload for member farmers, while also presenting a significant burden to NOSAI, in terms of both labor and cost. To preserve Japan's agricultural mutual aid system, streamlining the process of updating agricultural parcel maps is a significant priority, and NOSAI is actively engaged in efforts to improve agricultural parcel mapping through the use of Geographic Information System technology.

## **Overview of the Field Testing**

Fujitsu is currently engaged in efforts to leverage its ICT in upgrading and improving the efficiency of environmentally friendly farming practices. Beginning this January, the company explored how it could leverage its technology, together with technology from Hokkaido NOSAI, to produce agricultural parcel maps and to improve operational efficiency through the use of these maps.

As part of the field testing, Fujitsu will employ its proprietary high-precision image analysis technology, which brings together filtering processing for highlighting the contours of an image with an edge

extraction technique that can recognize essential shape features. This enables images captured by satellites or aircraft to be used for recognizing boundaries between rice paddies and the embankments that separate them. The resulting data can then be used to automatically produce maps of rice paddy parcels. Going forward, by comparing the new maps to rice paddy parcel maps that have been produced by hand, Fujitsu will examine the usefulness of this technology in the operations of agricultural mutual aid associations.

## Future Development

Based on the results of the [field test](#), Fujitsu will aim to develop a commercial service for generating rice paddy parcel maps using its image analysis technology by April 2013. The company will also investigate new applications for the technology, including support for other kinds of farmland parcel mapping beyond [rice paddies](#), as well as applications in areas outside of agricultural mutual aid associations, such as for discovering abandoned arable [farmland](#). Moreover, Fujitsu is working to extend the use of the technology to a wide range of areas and tasks, such as for discovering ways to improve land use efficiency in urban areas.

Provided by Fujitsu

Citation: Fujitsu uses image analysis technology to generate rice paddy parcel maps from satellite images and aerial photos (2012, August 17) retrieved 26 April 2024 from <https://phys.org/news/2012-08-fujitsu-image-analysis-technology-rice.html>

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