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# Integrated system of data collection technologies for mapping soil properties

## Results in Brief

### New tool can map soils in depth

A recent research project has developed new technologies for soil mapping and used this to develop a superior mapping tool. Once completed, the tool will provide unprecedented detail on an area's soil quality and help maintain that quality for agriculture and other uses.



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Scientists have identified a need to assess the properties of soil in order to preserve it for agricultural activities and ecosystems. To do this in as much detail as possible, they need to use the latest mapping technologies.

In response to this need, the EU-funded DIGISOIL (Integrated system of data collection technologies for mapping soil properties) project looked to develop soil sensing and measurement technologies to

assess and prevent soil degradation. The consortium was tasked with finding the best available technologies for this purpose. The members ultimately aimed to generate detailed geophysical maps of soil quality.

The team started by identifying geophysical sensors that could be adapted for digital soil mapping. However, data from individual sensors are only estimations, so

DIGISOIL developed a method to integrate the data from several indicators. This ensured a far more accurate diagnosis of soil properties, threats and functions.

Researchers tested and improved upon a wide range of sensors, including magnetic, seismic and hyperspectral sensing instruments. These improvements were integrated into a single mapping tool that was tested and validated at numerous field sites. From these tests, researchers produced a number of detailed soil maps.

DIGISOIL created and shared a survey to understand the needs of the tools' end users in more detail. This provided project researchers with a clear picture of the type of user who would use their tool and what they would use it for.

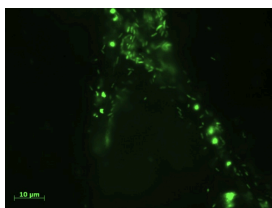
The consortium also developed a guide for users to exploit the new DIGISOIL mapping tool. Their work has been presented at conferences, and they have published their results in various international scientific publications.

The next step will be more business and technology development as well as economic studies, to ensure that DIGISOIL products are commercially viable. Future projects will be geared toward creating operational prototypes of the mapping tool.

## Keywords

Soils, soil mapping, soil quality, DIGISOIL, geophysical sensors

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### Project Information

**DIGISOIL**

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**Funded under**

Specific Programme "Cooperation": Environment  
(including Climate Change)

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Project closed

**Start date**

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**End date**

31 August 2011

**EU contribution**

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**Coordinated by**BUREAU DE RECHERCHES  
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