Public document

# Scientific publications in European and international conferences – Contribution to the handbook with iSoil consortium

FP7 – DIGISOIL Project Deliverable D6.1

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**N° FP7-DIGISOIL-D6.1**
January 2010

*The DIGISOIL project (FP7-ENV-2007-1 N°211523) is financed by the European Commission under the 7th Framework Programme for Research and Technological Development, Area "Environment", Activity 6.3 "Environmental Technologies".*

Geoscience for a sustainable Earth

Public document

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January 2010

**A.Vagner (BRGM)**
With the collaboration of
**All partners**

| **Checked by:** | **Approved by**: |
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| Olivier Cerdan | Name: G.Grandjean |
| Date:20/01/10 | Date: 26/01/10 |
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# Synopsis

This document is a short note to present for the first half-period of the DIGISOIL project:

- the list of publications done by DIGISOIL Consortium since the beginning of the project, and upcoming events to disseminate the project results.

- the collaboration with the iSoil project in terms of dissemination, and the preparation of a common Handbook

This note will be updated at the end of the project with future scientific valorizations.

# Contents

# 1. Scientific publications

Période: September 2008 – January 2010

## 1.1. IN BOOK:

Allred, B., J. Butnor, D. Corwin, R. Eigenberg, H. Farahani, K.H. Johnsen, S. Lambot, D. McInnis, E. Pettinelli, L. Samuelson, and B. Woodbury, Agricultural Geophysics, In Subsurface Sensing, Edited by Ahmet Serdar Turk, Wiley-Blackwell, Hoboken, NJ, USA, In Press, 2010.

Garfagnoli F., Chiarantini L., Innocenti L., Moretti S., Vettori S. (2009). "VNIR-SWIR spectral analysis and mapping of soil properties: preliminary results from the Chianti area. In: Epitome. Geoitalia 2009. Rimini. 9-11 settembre 2009. (vol. 3, 2009, p. 113). ISBN/ISSN: 1972-1552.

Grandjean, G., Cerdan, O., Richard, G., Cousin, I., Lagacherie, P., Tabbagh, A., Van Wesemael, B., Stevens, A., Lambot, S., Carré, F., Maftei, R., Hermann, T., Thörnelöf, T., Chiarantini, L., Moretti, S., McBratney, A., Ben Dor, E., 2010. DIGISOIL: an integrated system of data collection technologies for mapping soil properties, Chap 7, in Proximal Soil Sensing, Developments in Soil Science Series, Edited by R.A. Viscarra Rossel, A.B. McBratney, and B. Minasny, Springer, in press, 2010.

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Lambot, S., E. Pettinelli, S. Hubbard, and E.C. Slob, Hydrogeophysics, In Subsurface Sensing, Edited by Ahmet Serdar Turk, Wiley-Blackwell, Hoboken, NJ, USA, In Press, 2010.

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Richard G., Maud Séger M., Arlène Besson A., Cousin I., 200X. Electrical resistivity to assess soil properties. Encyclopedia of Agrophysics, Jan Glinski, Józef Horabik, Jerzy Lipiec (eds.) Springer

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## 1.2. ARTICLES

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Jadoon, K.Z., S. Lambot, E.C. Slob, and H. Vereecken, Analysis of Horn Antenna Transfer Functions and Phase Center Position for Modeling Off-Ground GPR, IEEE Transactions on Geoscience and Remote Sensing, Submitted, 2010.

Jonard, F., L. Weihermüller, K. Z. Jadoon, M. Schwank, H. Vereecken, S. Lambot, Mapping field scale soil moisture with L-band radiometer and off-ground GPR over a bare soil, IEEE Transactions on Geoscience and Remote Sensing, Submitted, 2010.

Lambot, S., Slob, E., Rhebergen, J., Lopera, O., Jadoon, K.Z. and Vereecken, H., 2009. Remote estimation of the hydraulic properties of a sandy soil using full-waveform integrated hydrogeophysical inversion of time-lapse, off-ground GPR data. Vadose Zone Journal, 8(3): 743-754, doi: 10.2136/vzj2008.0058.

Lavoué, F., J. van der Kruk, J. Rings, F. André, D. Moghadas, J.A. Huisman, S. Lambot, L. Weihermüller, and H. Vereecken, EMI calibration using ERT-based electromagnetic modelling, Near Surface Geophysics, Submitted, 2010.

Minet, J., Lambot, S., Delaide, G., and Vanclooster, M., 2010. A Frequency Domain Reflectometry Forward and Inverse Modeling Technique for Soil Electrical Properties Characterization. Geophysics, Vadose Zone Journal, Submitted, 2010.

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Soldovieri, F., O. Lopera, and S. Lambot, Combination of advanced inversion techniques for an accurate target localization via GPR for demining applications, In press, 2010.

Stevens, A., T. Udelhoven, A. Denis, B. Tychon, L. Hoffmann, R. Lioy, and B. van Wesemael, Measuring soil organic carbon in croplands at regional scale using Imaging Spectroscopy. Geoderma , in press, 2009. doi:10.1016/j.geoderma.2009.11.032

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Catani, F., L. Chiarantini, F. Garfagnoli, L. Innocenti, L. Mattiangeli, S. Moretti, F. Venerandi, S. Vettori, 2009, Studying soil threats using visible and near infrared spectral analysis, Proc. of “6th SIG IS EARSeL Workshop”, Tel Aviv 16-19 marzo 2009

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Cousin I., Frison A., Samouëlian A., Bourennane H., Guérin R., Richard G., 2009. Three-dimensional structure of a highly heterogeneous horizon described by Electrical Resistivity Tomography: consequences on the determination of effective hydraulic properties. EGU General Assembly, 19-24/04/2009, Vienna. (oral)

Cousin I., Séger M., Giot G., Mahu F., Boizard H., Richard G., 2009. Characterisation of the structural heterogeneity of the soil tilled layer in the field by 3D electrical resistivity measurements. 18th Conference ISTRO, 15-19/06/2009, Izmir, Turkey (poster)

Grandjean, G. and the DIGISOIL Team., 2009. First results of the DIGISOIL multi-sensor system for mapping soil properties. EGU 2009, Vienna, Austria; NOVCARE 2009, Leipzig, Deutchland.

Grandjean, G., G. Richard, B. Van Wesemael, S. Lambot, F. Carré, R. Maftei, T. Hermann, T. Thörnelöf, L. Chiarantini, S. Moretti. DIGISOIL: an integrated system of data collection technologies for mapping soil properties. EGU 2008, Vienna, Austria.

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Grandjean, G., O. Cerdan, K. Samyn, G. Richard, I. Cousin, J. Thiesson, B. Van Wesemael, S. Lambot, F. Carré, R. Maftei, T. Hermann, T. Thörnelöf, L. Chiarantini, S. Moretti, 2009. Premiers résultats du système multi-capteur DIGISOIL dédié à la cartographie des propriétés des sols. JNES 2009. Strasbourg, France.

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Proceedings of the 2009 EAGE, Near Surface Geophysics Conference, Edited by Peter O' Connor and Manuel J.S. Matias, paper A31, 5p, 7-9 September 2009, Dublin, Ireland.

Moretti, S., F. Garfagnoli, L. Innocenti, L. Chiarantini, 2009, Studying soil properties using visible and near infrared spectral analysis, Vol. 11, EGU2009-2522, EGU General Assembly, Vienna 19-24 April.

Samyn, K., O. Cerdan, G. Grandjean, A. Bitri, S. Bernardie, J.F. Ouvry, Soil depth mapping using seismic surface waves for the assessment of soil vulnerability to erosion. EGU 2009, Vienna, Austria.

Seger M., Cousin I., Giot G., Boizard H., Mahu F., Richard G., 2009. Characterisation of the structural heterogeneity of the soil layer by using in situ 2D and 3D electrical resistivity measurements. 7e Colloque GEOFCAN, 9-12/09/2009, Paris. (oral)

Stevens, A., and B. van Wesemael, Hyperspectral remote sensing for soil organic carbon mapping, European Geophysical Union (EGU) Conference 2009, Vienna, Austria, 20 April 2009

Stevens, A., T. Udelhoven, A. Denis, B. Tychon, R. Lioy and B. van Wesemael, Monitoring soil organic carbon in cropland using VIS-NIR imaging spectroscopy, European Geophysical Union (EGU) Conference 2009, Vienna, Austria, 23 April 2009

## 1.4. NEXT EVENTS

**EGU – European Geosciences Union**
Vienna, Austria, 02 – 07 May 2010
http://meetings.copernicus.org/egu2010/

A common session is scheduled with iSoil Consortium.

**CONSOIL**
Salzburg, Austria, 22 – 24 September 2010
http://www.consoil.olanis.de/

**Landslides Symposium**
Bucharest, Romania, June 2010
by the Institutul Geologic al Romaniei (GIR)

# 2. Collaboration with iSoil

## 2.1. BRUSSELS MEETING, JANUARY 13TH 2010

This meeting was just dedicated for DIGISOIL, iSOIL and EC-DG RTD.

It aimed at discussing the joint dissemination plan of both projects (as referred in the respective technical annexes).

The points that were discussed were:

- the outline and future roadmap for the handbook
- joint approach to workshops (including EGU and CONSOIL)
- eventual proposals for the SOIL technology cluster to be announced on the 14th (e.g. cluster web site, jointly organised soil conferences, open training, call for contributions ...)
- iSoil CEN workshop

*[minutes of the meeting available]*

The proposed schedule of the handbook is

- Summer 2010 formal description of responsibilities
- Book finalised by mid 2011
- Book printed end of 2011

P. Dietrich and U. Sauer (UFZ) are invited to the March 4th-5th plenary meeting to discuss in depth the content of the handbook.

## 2.2. DRAFT TABLE OF CONTENT FOR THE HANDBOOK

Proposed by ISOIL-UFZ

### Methods and Technologies for Mapping of Soil Properties, Function and Threat Risks

1. **Need of guidelines and best practice**

2. **Classical approaches**

3. **Soil threats and functions**

4. **Methods of determination of soil parameters and environmental covariates**

5. **Pedophysics**

6. **Digital Soil Mapping**

7. **Guidelines and examples**