Program and logistic associated to field testing

FP7 – DIGISOIL Project Deliverable D3.1

N° FP7-DIGISOIL-D3.1
December 2009

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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

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Synopsis

The delivery of Task 3.1 is the description of an application for site logistics and field trip planning. The newly developed web portal is suitable to be used by the Digisoil Consortium for data management. Its purpose is to handle and visualize data and metadata produced by the Digisoil project, and to make sharing of up-to-date data possible. The DIGISOIL-UPA portal system is a web-based application that is delivered to your computer via your standard Browser.

Contents

List of illustrations

1. Introduction

The goal of the European FP7 project – Digisoil is to enhance digital soil mapping by using and validating cutting edge geophysical sensing technologies. We have placed great emphasis on solving security issues related to the sharing of research results, and on supporting the scientific exchanges within this project by using means of data storage and management in the form of a web-based portal. The realization of field information subsystems visualizing soil information was also part of the development of this portal.

For what concern the definition of the portal, it was essential to use existing open source software adapted to the system's complexity. We needed to pick up comprehensive competences on the field of up to date web-technologies like AJAX, JavaScript, PHP and CSS. A state of the art on GIS tools (handling field data tables, conversion between projection systems) allows selecting several technical solutions for integrating field information subsystems – integrated in the portal system – and makes the function enhancement possible.

2. The web portal

2.1. LOGIN SCREEN

DIGISOIL portal system is a web-based application that is delivered to your computer via your standard Browser for example Mozilla, Internet Explorer, Opera, Netscape. Before you can do anything else, you must login to the portal system. Using your web browser application, you should go to digisoil.uni-pannon.hu.

Figure 1: The front page of the portal system

On the front-page you can find the login window on right (Figure 1). Enter the username and password that you received via e-mail, remembering that the password will show as a line of ****** as a security precaution. After first login, you must change your password and fill out your contact details.

There are a range of filters at the top of many of the main display screens throughout the portal system. The content or options in these filters will change depending upon the screen that you are displaying.

The Today and Todo Views are basic work list views of the task assignments per individual user. They can be used to manage your day to day work, to get a view of what tasks are currently assigned to you, and by using the key at the bottom of the view, to monitor the due dates and status of tasks.

2.2. PARTICIPANT SCREEN

There are many possibilities to reach information about the goals of project, the users and the participants. The Participant record is the central component of the portal system. In some cases, the term “Participant” can be misleading as it is possible to use the participant record to reflect internal departments, associate organisations, partners, community groups or any other “entity” under which you would like to group WPs, Users, Contacts and other portal system Elements.

Once a participant record has been established, it can have as many users, WPs, contacts etc. associated with it as required. In the DIGISOIL-UPA portal system, there is no possibility to create new participant since the participants of the consortium are already established. To display the details of any participant in your listing, click on the participant full name and the portal system will take you straight to the detailed participant display (Figure 2).

The detailed participant displays shows all the information recorded for a particular participant record. The display is broken into two sections down the screen - the header showing the Details and Description of the participant and then the Tabs listed at the bottom of the screen.

Figure 2: Participant display

A User was also predefined in the Portal System who is somebody with login access to the portal. They can have a contact record associated with their username and password or login record. Users can be assigned to work on tasks as they have access to the portal system and can manage their workload. A contact person is not somebody who can login to the portal system, but has an address “card” recorded. Contacts can be attached to WPs and/or tasks to receive general updates, but they cannot be assigned to actively work on any tasks.

2.3. TASK MANAGEMENT SCREEN

Tasks are the work elements that are required to make up or deliver the WP as a whole. Defining tasks is partially a portal system job (in entering and structuring them) and partially a matter of planning and designing your WP. No task can exist without it

being attached to a WP. Tasks are created from within the WP display screen (not the WP listing - but when the WP itself is displayed on the screen), as well as from individual task detail displays (Figure 3). In the main WP details display screen the "new task" option is on the right hand side of the screen.

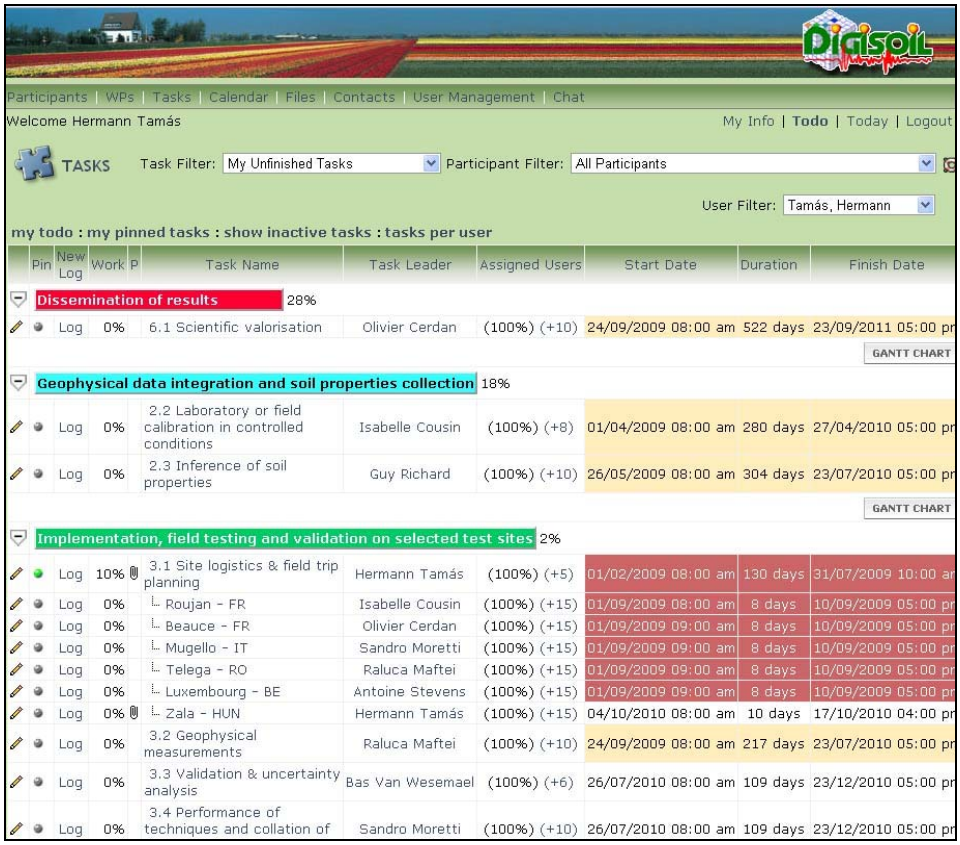

Figure 3: Task display

You can also edit the details of a task by choosing the Crumb "edit this task" whenever it is available or clicking on the pencil icon (normally to the left of the task name) in many displays such as the Today Listing, todo, a WP listing and so on.

When you click on the New Task button or select an existing task to edit, the portal system will display a form that you can complete. The form is divided up into a header section and then a series of tabs that divide up the rest of the required data. As with WPs, many of these fields have a direct impact on the workings of the portal system so we are going to provide a detailed outline of them.

Gantt Charts (Figure 4) are commonly used graphical representations of WPs, showing tasks durations as horizontal lines indicating starting and ending times as well as providing details such as assigned resources etc. The portal system provides a series of Gantt Chart views of WPs. Looking at a Gantt Chart via the Gantt Tab on the WP

Detail view, for example, will give you the chart for that particular WP. If you were to select the Gantt tab on the main WP Display (WP Module) however, it will list all active WPs. All Gantt chart displays have options that allow you to configure the display / details incorporated in the Gantt chart.

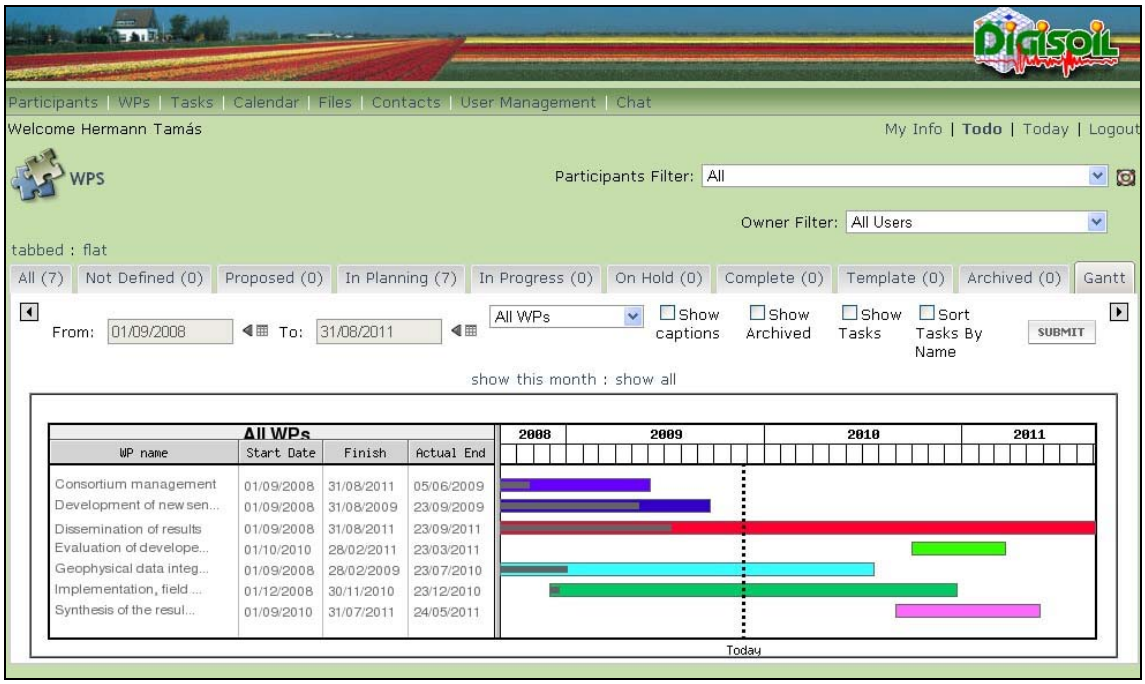

Figure 4 :Gantt charts

On the Main WP / All WPs Chart, the dropdown option All WPs, Show Tasks Option will expand the Gantt Charts to a detailed display for all WPs, rather than just a specific one.

Turning on captions shows listing of task assignee names against the bar chart element for each task.

2.4. DATA MANAGEMENT SCREEN

The main files module display lists all files uploaded to the portal system. As with most portal system displays, there are tabs that divide the view of files into the available file types. You'll also notice that each file type tab has a number in brackets after the type which indicates the number of files listed in that type.

The simple files type are: Unknown, Document and Application (Figure 5).

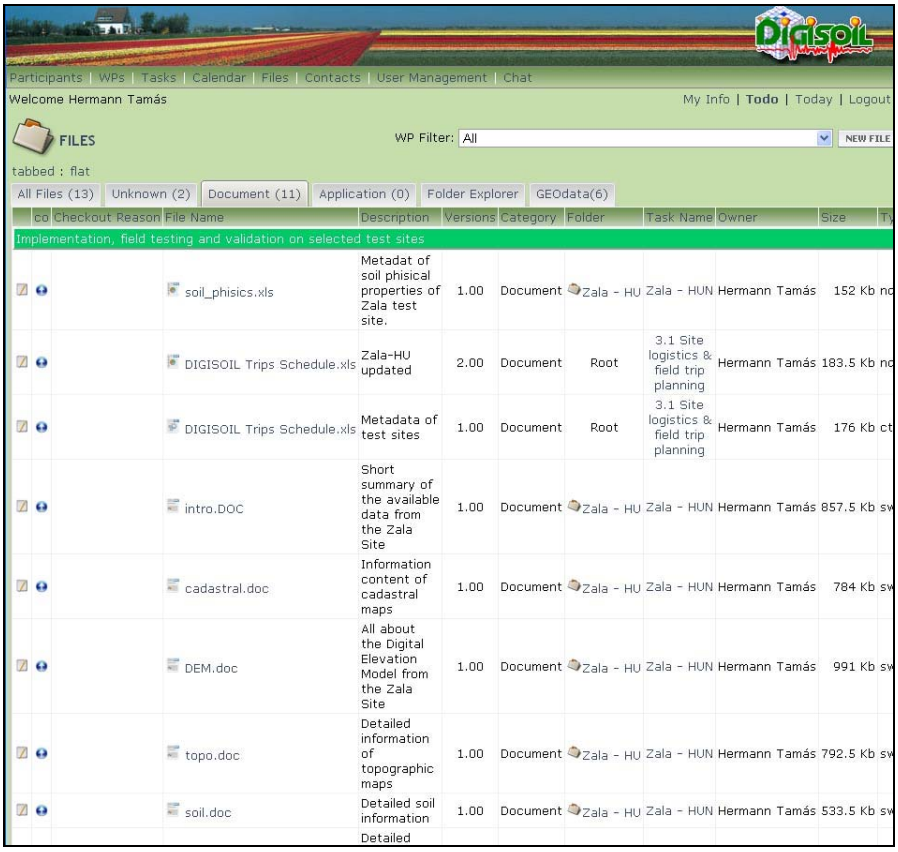

Figure 5: File structure

The GeoData (Figure 6) files type are vector based - like shape files - or raster based - like tiff and geotiff files.

In related files column by clicking on details link a floating window will be appear contains all available metadata of current GeoData (Figure 7). When some not mandatory metadata was not uploaded the system will be display N/A (Not Available) beside them.

The related files can downloaded also from this window by clicking on them, or in case of image files (like .tiff, .geotiff) using right click and Save As.

		num	Uploader	Date	Resource title	Version	Keyword	Type	Related Files
		1.	JákóiKrisztina	2008-10-21 21:18	Profile Data	2	Profile2	Shape	details
		2.	AntoineStevens	2009-11-18 13:42	Field borders of the Luxembourg test site	1	Fields	Shape	details
		3.	SpeiserFerenc	2009-07-29 15:19	Soil polygons	2	large scale, soil map, polygon	Shape	details
		4.	AntoineStevens	2009-11-18 14:05	Gamma-ray spectrometry measurements of field test site in Luxembourg	1	gamma-ray spectrometry	Shape	details
		5.	SpeiserFerenc	2009-08-06 14:54	parcels	1	parcels	Shape	details
		6.	AntoineStevens	2009-11-18 13:39	Sampling positions of the Luxembourg test site	1	OC; ON; Sampling positions	Shape	details

Figure 6: GeoDATA file structure

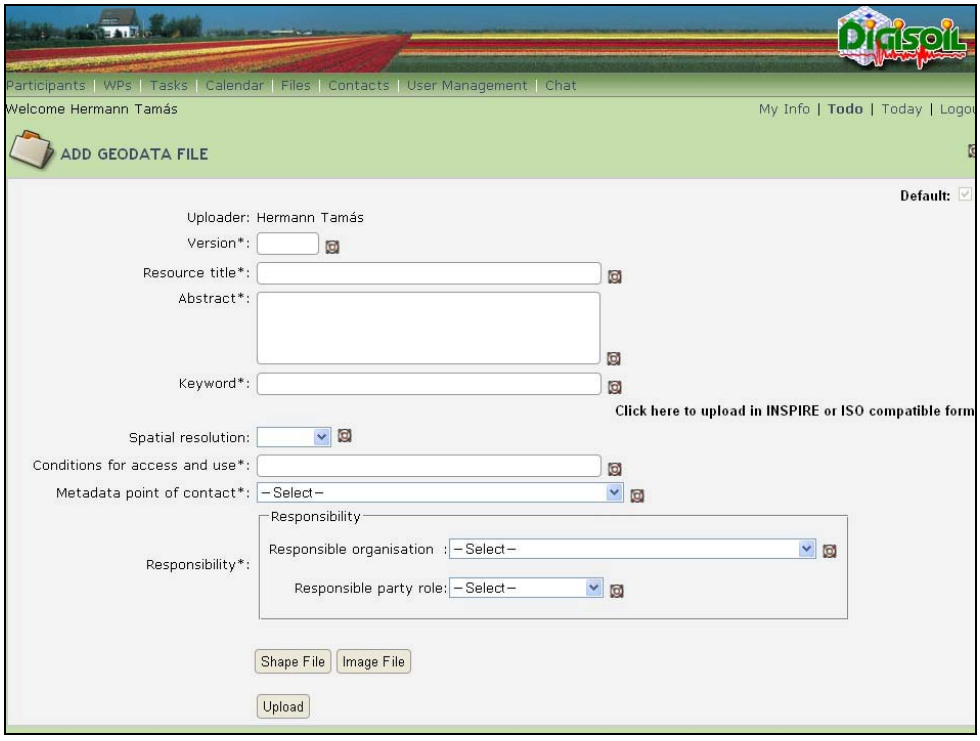

Figure 7: Metadata of GeoDATA

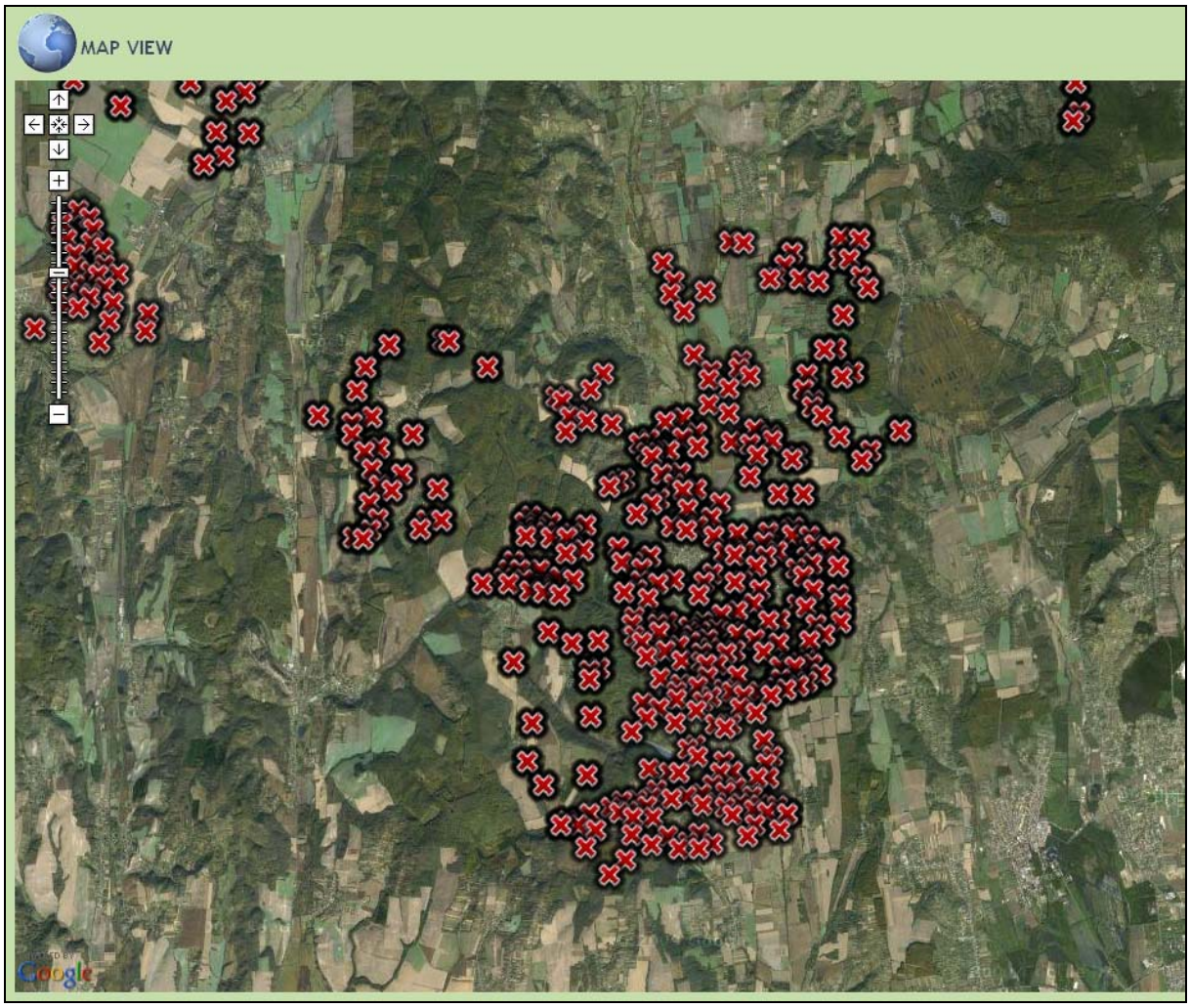

Figure 8: Map View

In Map column by clicking on earth icon the Map View (Figure 8) will be open. This module will show you the current GeoData on map, and you are able to use all the benefits of the well known Google Maps. There is a list of available GeoData on the right so you can switch between GeoData without go back to file list.

3. Conclusions

The DIGISOIL-UPA web portal offers an easy to use communication interface to the project participants. It also enables research institutes and scientist to share their research results. The system provides a great tool for: up- and downloading, safe storing, publishing and vieing geographical data. The above mentioned usability and funcions of the Digisoil web portal will hopefully garanty that a lot of participants will benefit from it. And the grater the number of users, the more useful and valuable the system will prove to be.

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