H2020 Project Nr: 641821. Project start date: 01 Mar 2015
Acronym: **WaterInnEU**
Project title: **Applying European market leadership to river basin networks and spreading of innovation on water ICT models, tools and data**
Theme: WATER-4a-2014. Water Innovation: Boosting its value for Europe

EU Framework Program for Research and Innovation (WATER-4a-2014 - H2020)

Project Nr: 641821

Applying European market leadership to river basin networks and spreading of innovation on water ICT models, tools and data.

Deliverable D7.2
Tutorials and Multimedia Products

Version 1.1

Due date of deliverable: 31/12/2016
Actual submission date: 16/01/2017

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1 Introduction

Work package 7 is responsible for the creation of multimedia products, tutorials and participative e-learning platform and the development of activities aimed to facilitate and increase the use of the marketplace.

It will also consider the possibility to conduct competitions and youth involvement measures. The specific objectives of this WP are:

- To promote multi-directional learning among the project partners, entities and actors.

- To raise awareness and promote a bottom-up approach within the business community and market actors for identifying opportunities and supporting their implementation processes.

- To improve the interactions between the user and practitioner community, the society and ICT business WaterInnEU and market community.

The WP includes 5 different tasks and 3 deliverables. The planning is the following:

Task	WP	WP title	Task	Month																							Start	End
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
7	1	E-learning	Raw material production															x	x				x	x				15	24
7	2		Multimedia products																x	x	x				x	x	x		
7	3		Tutorials																x	x	x				x	x	x		
7	4		Skills exchange and mentoring															x	x	x									
7	5		Competitions and youth involvement																					x	x	x	x		

This report concern the description of the deliverable "D 7.2 Tutorials and multimedia products" to be submitted at month 22nd based on "D 7.1 Draft tutorials and multimedia products" submitted on the project month 18th.

This deliverable includes the final tutorial and multimedia material concerning a series of products selected by the consortium through a process of screening the EU funded innovative solutions relevant to water basin management to be promoted by the WaterInnEU project. The deliverable describes the list of courses available in the market place under the e-learning section: https://marketplace.waterinneu.org/en/e-learning.

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This deliverable in then constituted by this report and by the tutorials and the multimedia products annexed.

2 Task 7.2 Tutorials and multimedia products

The e-learning courses and the multimedia products were designed in order to comply with the objectives of the project and of this specific Work Package.

The information and data gathered in previous WPs were used to develop training materials in order to carry out different e-learning courses. These courses will have also to contribute to a worldwide dissemination of EU funded activities in the water sector and promote the use of relevant international water standards.

The final list of e-learning courses that have been included in the e-learning platform of the WaterInnEU Market place are the following:

2.1 AquaSurvey

AQUASURVEY is a software to manage field campaigns for data collection. AQUASURVEY supports users through all the necessary steps to carry out field data campaigns such as: the design of the survey, the management of the field operators, the collection of data using mobile devices, and the integration of data collected in GIS or statistical software. This process does not need an Internet connection during data collection. In fact, the mobile app includes several offline options to overcome Internet connection problems or absence during the implementation of field campaigns.

This tool allows to monitor and geo-reference ongoing survey, and to integrate data collected by different surveyors. It can also produce customised graphs and statistics, which can provide an overview of collected datasets through automatic reporting.

The AQUASURVEY consists of two components: one desktop component for designing the survey, assigning the work to surveyors and managing results; and a mobile app for Android devices for carrying out the actual data collection in the field.

AQUASURVEY is an open-source application, developed with European Union funding, and is free of charge.

The e-leaning course is structure as follows:

- Doc_0_introduction_to_the_e-learning_course.pdf

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- Doc_1_theory_-_households_surveys.pdf: a theoretical presentation on how to design field surveys with questionnaires with elements of statistics
- Doc_2_tutorial_presentation.pdf: a presentation on how to use the different components of the software to accompany the video tutorials
- Doc_32_aquasurvey_user_manual_v1_5_8.pdfA detailed manual for reference
- 7 video tutorials:
    1. An intro to the software
    2. Desktop component – settings
    3. Desktop component – managing users
    4. Desktop component – creating surveys
    5. Desktop component – deploying surveys
    6. Mobile app – data collection
    7. Desktop component - reporting and exporting results

The course about AquaSurvey together with all the training materials can be found at: https://marketplace.waterinneu.org/en/course/aquasurvey.

2.2 REFRAN-CV

REFRAN-CV is a software to process time series of data from ground meteorological stations (precipitation or temperature data), in order to generate spatially-explicit products (return period maps) based on the L-moments statistics. This tool and the associated products at local and regional scale can be used in the development planning process and, concretely, to prepare investment in multi-purpose (irrigation, flood and drought prevention, environment protection) hydraulic infrastructure. L-moments statistics are used to estimate the probability distribution function of precipitation data. The L-moments have the advantage of being less susceptible to the presence of outliers and performing better with smaller sample sizes. This is of particular interest in the case of datasets where the time series lengths are heterogeneous as this is usually the case in developing countries.
REFRAN-CV is an open-source application, developed with European Union funding, and is free of charge.

The e-leaning course is structure as follows:
- Doc_0_introduction.pdf

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- Doc_1_theory_l-moments_statistics.pdf: a theoretical presentation on the L-moments statistics
- Doc_2_use_of_refran.pdf : a presentation on how to use REFRAN-CV
- Doc_3_manualrefrancv.pdf: a detailed manual for reference
- 2 video tutorials including:
    1. How to install the software
    2. The use of the REFRAN-CV software for a case study in Venezuela

The course about REFRAN-CV together with all the training materials can be found at:

https://marketplace.waterinneu.org/en/course/refran-processing-time-series-meteorological-stations-data

2.3 GUIDOS Toolbox

GuidosToolbox (Graphical User Interface for the Description of image Objects and their Shapes) contains a wide variety of generic raster image processing routines, including related free software such as GDAL (to process geospatial data and to export them as raster image overlays in Google Earth), and FWTools (pre/post-process and visualize any raster or vector data). All tools are based on geometric principles and can thus be applied at any scale and to any kind of raster data. GuidosToolbox also includes MSPA (Morphological Spatial Pattern Analysis), a customized sequence of mathematical morphological operators targeted at the description of the geometry and connectivity of the image components. MSPA features and application examples are described on the MSPA-website (http://forest.jrc.ec.europa.eu/download/software/guidos/).

GuidosToolbox is an open-source application, developed with European Union funding, and is free of charge.

The e-leaning course is structure as follows:
- Introduction_to_the_e-learning_course_guidos_toolbox.pdf
- GWS1_Introduction.ppt: an introduction to GUIDOS
- GWS2_MSPA.ppt: a theoretical presentation on MSPA (Morphological Spatial Pattern Analysis)
- GWS3_Features.ppt: a presentation on GUIDOS' features

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- GWS4_Examples.ppt: a presentation on GUIDOS' examples
- 3 video tutorial including:
    o Guido lecture part 1 and part 2: Overview of GUIDOS
    o Guido tutorial: how to use the GUIDOS software

The course about GUIDOS together with all the training materials can be found at:

https://marketplace.waterinneu.org/en/course/guidostoolbox-gis-and-classification-tool

2.4 WEISS

WEISS is a Life+ project co-financed by the European Commission. WEISS or the Water Emissions Inventory is a planning Support System aimed at reducing the pollution of water bodies.

The WEISS software operates at a high geographical resolution (1 ha grid) and integrates all relevant emission sources (both diffuse and point), all transport routes, and a planning support module. It also enables the assessment of various technical and policy measures aimed at reducing the pollution loads in the water bodies.

For more information about the WEISS software http://weiss.vmm.be/documents

This e-learning course is about the WEISS DEMO version.

Structure of e-learning course

- Introduction_to_the_e-learning_course-weiss.pdf, introduction to the course.
- Theoretical presentation about the theory behind WEISS and how it works.
- Tutorial_presentation.ppt, how to use the different components of the software to accompany the video tutorials
- 4 video Tutorials:
    1. Filling an empty WEISS system with emission sources
    2. Adding a diffuse source
    3. Adding the year 2012 in WEISS and importing the list of E-PRTR point sources of 2012 and adding new estimations
    4. Analysis of WEISS calculations: computation and viewing results.

The course about WEISS together with all the training materials can be found at:

https://marketplace.waterinneu.org/en/course/weiss-water-emission-inventory-planning-support-system

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In addition to this, a full package including the software and all training materials can be downloaded from: http://waterinneu.org/deliverables/Contents_e-learning.zip.

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