



**FREEWAT**  
Free and Open Source Software Tools for Water Resource Management  
EU HORIZON 2020 Project



 **ict4water.eu**

## **Open Workshop**

***Fostering inclusive and sustainable economic growth, employment and decent work (SDG#8) through ICT job creation tools for ensuring water security (SDG#6)***

**September 30<sup>th</sup> 2016**

**UNESCO – Room IX**

**7 Place de Fontenoy - 75007 Paris**

***Smart Water Projects Funded by the EC, links to sustainable water management developments***

**EIP Water** Online Market Place  
Matchmaking for water Innovation

**MAR Solutions - Managed Aquifer Recharge Strategies and Actions (AG128)**

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United Nations  
Educational, Scientific and  
Cultural Organization



International  
Hydrological  
Programme

# *ICT for Water Management- EC perspective*

Smart technology and ICT related to smart technology is a major current research and investment field internationally

Part of the “**smart city**” grid and initiatives

**Smart energy** starting first

- Pioneers in smart technology applications for domestic and industrial users
- Legislation related to smart energy meters already exists in some EU countries (e.g. France, UK)

**Smart water** follows, especially research around **smart water AND energy**, a major research issue for the EC

# *ICT for Water Management- EC perspective*

## Links to the Juncker agenda priorities:

1. A new boost for Jobs, Growth and Investment
2. A connected Digital single market
  - Better online access to digital goods and services
  - An Environment where Digital Networks and services can prosper
  - Digital as a driver to growth.
3. A Resilient Energy Union with a forward-looking Climate Change policy
4. A Deeper and Fairer Internal Market with a Strengthened Industrial Base

# ICT for Water Management- EC perspective

Part of the H2020 Digital Perspective for Europe

Smart technologies:

To increase water efficiency

To improve water management

To manage water demand

To reduce leakage

To reduce energy for water utilities and households

To increase end user awareness

To affect end user behavioural change

with (near) real time surveillance and feedback



# *ICT and Water Management under FP7 and H2020*

## Targets

- Assets management
- Business models
- Decision support system and monitoring
- End-user awareness
- Geographic Information Systems (GIS), OGC, Sensors
- Modelling, real-time process, knowledge extraction, stream data mining
- Ontologies, semantics, interoperability, standards
- Water regulation



[www.ict4water.eu](http://www.ict4water.eu)



## The vision:

to establish a thriving and interconnected **ICT for the Water Community** with the **main objective of promoting synergies and knowledge exchange among all actors involved in water sector.**

## This vision is twofold:

- in one hand, contribute to advance in the **consolidation of an ICT for the Water Community** that will be better informed, defined and integrated than today;
- on the other hand, will help the **results and outcomes from current research projects improving their exploitation plans and increasing their dissemination potential.**

The target community will be mainly composed by different stakeholders including **Water Authorities, Water Operators, System Integrators, ICT for Water technologies professionals, Policy Makers, and the relevant industry at large.**

# Background FP7/H2020: Funding on ICT and Water Management

**2011-2012:** CIP-ICT-PSP Thematic network

**2012-2013:** Five (5) Collaborative EU projects

**2013-2014:** Five (5) more Collaborative EU projects

**2015:** Five (5) Coordination and Support Actions (CSA)

**2016:** ...

**Similar themes and targets:** All targeting water authorities/utilities and end users

1<sup>st</sup> group: Emphasis (rather) on water authorities/utilities

2<sup>nd</sup> group: Emphasis (rather) on end users and their behavior

3<sup>rd</sup> group: Horizontal actions, dissemination

4<sup>rd</sup> group:...

**Interdisciplinary approach**

**Partnerships** between ICT equipment providers, Water Domains Experts, software companies and water authorities/utilities, and users

# *ICT for Smart Water Management Alignment EC perspective*

## Smart technologies:

- To **increase water efficiency**
- To **improve water management**
- To **manage water demand**
- To **reduce leakage**
- To **reduce energy** for water utilities and households
- To **improve coordination** among actors
- To advance in the **Nexus** concept (water-energy-Land)
- To cover **agricultural, urban and industrial** needs
- To increase end **user awareness**
- To affect end user **behavioural change**

## ict4water.eu EIP Water



**EIP Water** Action Group  
Pooling resources – innovating water

Development of the Roadmap “ *Emerging Topics and Technology Roadmap for Information and Communication Technologies for Water Management*” 2014/2015/2016

### Actions

Exchange of information- Common website-Contacts

Special sessions in Conferences/Publications

Common development of standards and standardisation

Common papers

Links with/participation in Water EIP relevant action groups

Lots of synergies

# PROJECTS WatERP

Physical Representation  
(*Karlsruhe*)

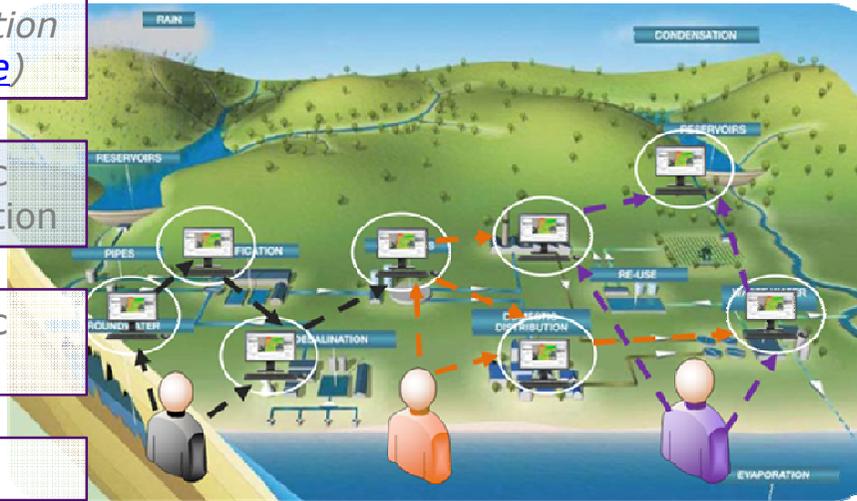
Semantic Representation

Hydraulic Model

Alerts

DSS / Simulator

Meteorological Forecasting



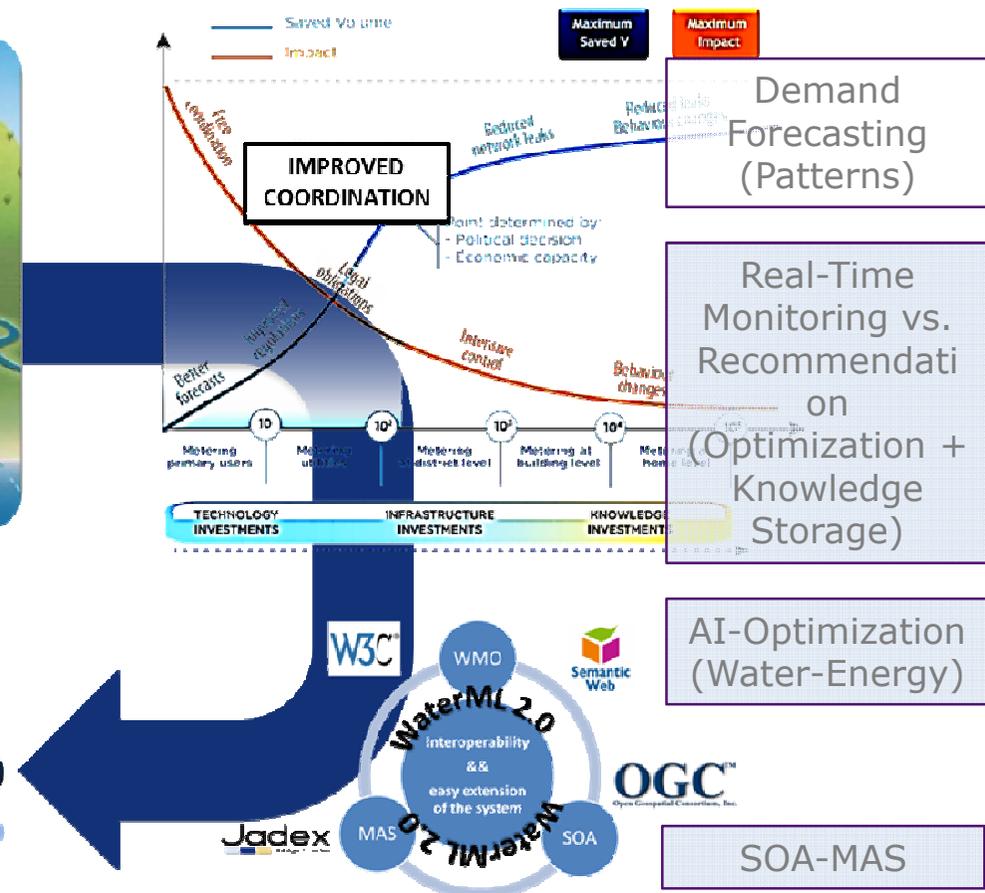
**8% Water Saving**

Scarcity Regions

**5% Energy Saving**

Abundance Regions

Where water supply meets demand  
**WatERP**





# WIDEST

## Water Innovation through Dissemination Exploitation of Smart Technologies

H2020-Water4a-2014





# WIDEST



## RESULTS EU FUNDED ACTIVITIES

promote exploitation of relevant ICT-based tools and platforms and their integration for market, develop appropriate policy briefs, and foster knowledge



Technology Portfolio

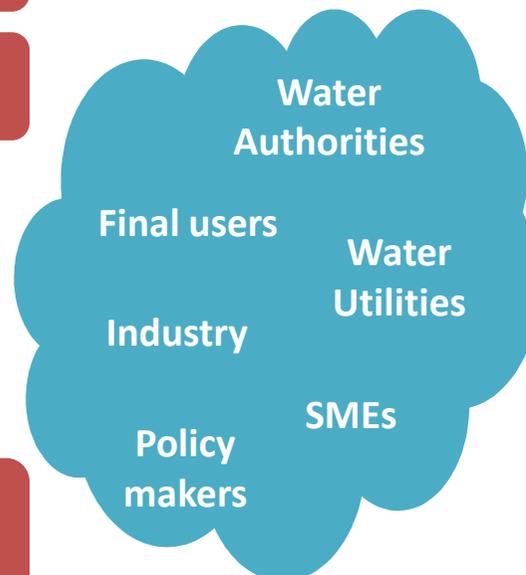
Smart Water Grids Roadmap

Semantic Interoperability Roadmap

Events, conferences, workshops, web lectures, seminars, MOOCs

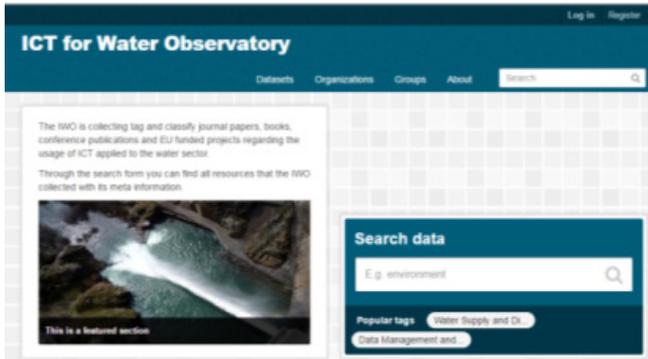
Smart City Connection Roadmap

Products





# WIDEST



<http://iwo.widest.eu>



## Roadmaps Downloads

### WIDEST ROADMAPS

- "Semantic Interoperability and Ontologies" topical roadmap (Available from July 2016)
- "Smart City Connection" topical roadmap (Available from July 2016)
- "Smart Water Grids" topical roadmap (Available from July 2016)



<http://www.widest.eu>

### Other Roadmaps

- Strategis Implementation Plan
- ICT4WATER Resource Consultation 31/01/2013
- ICT4WATER Resource consultation 04/02/2014
- IBM - Water



## ICT4WATER Downloads

### User requirements and market studies

- iWIDGET - D1.1.1 – Requirements Analysis
- DAIDA - D1.1 – State of the art Report
- IceWater - D2.1 – State of the Art Analysis
- KINDRA - D1.1.1 – Requirements Analysis
- iWIDGET - D1.2 – Harmonised Terminology and

### Data Management PI

- DAIAD - D1.2 – Requirements
- Wateromics - D1.3 – System
- iWIDGET - D2.2.1 – Methodological architectural design
- IceWater - D5.1 – Multiple consumption patterns identification



## Technology Downloads

### Software

- Menyanthes
- HyCA
- SIPAID - CAFCA - COWAMA - SONDEA - METRESA - SAED
- Aquology Technologys
- LanddisGyr Technologys
- Work Wise
- SIG OGC RADIAM
- ADMET

### GroundWater Markup Language

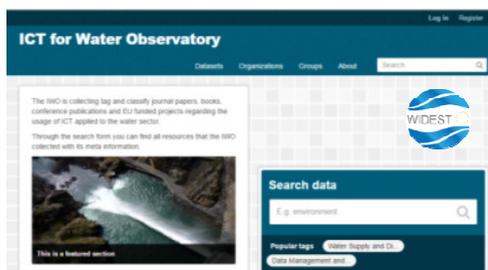
- GroundWater Markup Language Index
- XSD Schema
- XML Examples

### Devices

- Amphiro B1
- HyCA
- WiSense



# Information Sources



<http://iwo.widest.eu>



<http://www.widest.eu>

[ICT and Water Management Roadmap 2016](#)



<http://www.widest.eu>

[2016 Rolling Plan on ICT Standardisation](#)

[Recommendations for Standards and Standardisation in the European SMART Water Market](#)



# THANK YOU FOR YOUR ATTENTION

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