Project Aims and Activities
Data4Water is a H2020 CSA project having as main activities the organization of workshops, summer schools, exchange and training of researchers, develop a roadmap for the UPB (the host institution of the project) in the area of IT for water management, development of a knowledge transfer and remote training system, and inclusion of UPB team in an operational research network. The scientific strategy of the UPB team will be oriented towards inter/trans-disciplinary and practical applicability, valorization and impact in water management, which also fits to the Smart Specialization Strategy of Romania. The main expected impact is the increase of publications number with high visibility, and the creation of an active network with relevant stakeholders.

Call: H2020-TWINN-2015
Topic: H2020-TWINN-2015
Type of action: CSA
Project number: 690900
Proposal acronym: DATA4WATER
Project website: http://data4water.eu
Networking and Knowledge Environment
http://data4water.pub.ro

OUR MAIN ACTIVITIES

- **Research QA Handbook.** The Research Quality Assurance Handbook provides a guide of best practices for the staff involved in teaching and research at department level, and for the faculty’s Quality evaluation and Assurance Commissions. The requirements, quality metrics and quality assurance models adopted in the Research Quality Assurance System (RQAS) are compliant with the H2020 research programs and with the European level KPIs. The Research Quality Assurance Handbook includes the background of QA, the experience of European partners in the D4W project, the Romanian QA of the research and education, the improvements proposed for QA in the research group, and the RQAS for Smart Data & Services research group. For more information please contact us at: d4w@cs.pub.ro.

- Development of a network of excellence and partnership through a Meetup networking event in Berlin (23. November 2017, 17:00 - 20:00, Fraunhofer FOKUS). The following topics and demos were presented:
  - **IoT Lab Demo** ([https://www.digitale-vernetzung.org/en/dv/transfer_centers/iot](https://www.digitale-vernetzung.org/en/dv/transfer_centers/iot)): enyCLS (Peter Hasse), Real-time Data Hub (Fabian Kirstein), Semantic Annotation (Raed Younes), Data Analytics Center Predictive Maintenance (Alexandru Todor)
  - **IT4Energy Lab** (Florin Popescu)
  - **Social Networking** "Future Directions of Smart Data for Water Management"

For more information please join the Data4Water NoE at: [https://www.linkedin.com/groups/13502078/](https://www.linkedin.com/groups/13502078/)
OUR MAIN ACTIVITIES

- **The second Summer School** took place from 12th June to 23th June 2017. The topic was ‘Using Data Science for Urban Water Management’. The second Summer School was organized by project partners from University of Milano-Bicocca and University Politehnica of Bucharest.

- The **4th training session** was organized in Bucharest by IHE Delft Institute for Water Education and University Politehnica of Bucharest. This training session has the following topics: Optimization and dynamic programming for water problems and took place from the 18th of October to the 20th of October 2017. The detailed syllabus of the training courses was as follows:
  - Introduction to optimization, Definitions (single objective, multiple objective, constrained-unconstrained, etc.), Traditional methods (Calculation by hand, linear programming, dynamic programming), Optimization for water related problems, Examples.
  - Model based optimization, Water case studies, Genetic algorithms.
  - Calibration in hydrological modelling.

- **PhD students involved** in research in smart data for water management domain
  
  Loredana-Marsilia Groza  
  Advanced Techniques for Big Data Processing in Smart Cities Platforms  
  Contact: groza.lore@gmail.com

  Claudia Ifrim  
  Data Reduction Analytics on Wireless Network Sensors  
  Contact: ifrim.claudia@gmail.com

  George-Valentin Iordache  
  Contact: george.iordache@cs.pub.ro

  Dan Huru  
  Scalable data processing in the Internet of Things  
  Contact: danut.huru@gmail.com

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**Research issues related to ICT for Water Management identified during networking sessions**

- Optimization of the water supply management  
- Improvement of the river monitoring  
- Public access to the hydrological data  
- Data infrastructure  
- Water Data Modelling, structure of the collected data  
- Algorithm for analytics to build smart decision systems  
- Data cleaning and aggregation  
- Ontologies on Smart Data for Water Management  
- Computing intensive algorithms  
- Standards and protocols for water resource management  
- Interoperability between different systems  
- E-Services for Water Management  
- Appropriate Sensors, Networks, Software  
- Big amount of data (smart analysis, smart insight, security)  
- Automatic data versus manual measurements  
- Satellite data  
- Data collections between different sites  
- Access to date provided by different companies  
- Internet of everything  
- Telemetry use cases


**Upcoming work, events and dates**

- **Info Day - Data4Water 2018 Research in Water Management**: this information and networking event shares your knowledge and open issues with all participants and find new collaborations through a network of excellence in this new exciting domain of ICT for water management, in Berlin, Fraunhofer FOKUS, on 15 February 2018. For more information, please access the link: [https://www.fokus.fraunhofer.de/en/data4water_2018](https://www.fokus.fraunhofer.de/en/data4water_2018).

- **3rd Summer School** - “Scientific Literature Analysis for Water Management” - Date: June 18-20, 2018 tutorial; June 20 - July 13th Summer School + final presentation on 23.07.2018. Contact us at: d4w@cs.pub.ro.


- **Scientific Challenges & Business Opportunities in Water Management** (SciBOWater 2018). The workshop intends to address the topics relevant for the BIS conference, but with a particular focus on water management, and will take place in Berlin, Fraunhofer FOKUS, 18-20 July 2018- [http://bis.ue.poznan.pl/bis2018/workshops/scibowater](http://bis.ue.poznan.pl/bis2018/workshops/scibowater) (April 15, 2018 – submission deadline for papers).

- **DC @ BIS 2018**: The Doctoral Consortium will be held in conjunction with BIS 2018 conference and provides doctoral students with the chance to present and obtain comment on their research, to hear about the work of their peers at other universities, and to interact today’s leading researchers from different universities and countries - [http://bis.ue.poznan.pl/bis2018/doctoral-consortium](http://bis.ue.poznan.pl/bis2018/doctoral-consortium) (Submission deadline: May 8, 2018).


- **13th International Hydroinformatics conference (HIC 2018)**, 1-6 July, 2018, Palermo, Italy.

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**DISSEMINATION AND NETWORKING ACTIVITIES**

**Big Data Value Forum 2017.** The EBDVF 2017 ([http://www.european-big-data-value-forum.eu/](http://www.european-big-data-value-forum.eu/)) on 12-14 Nov. 2018 in Paris was a key European event for industry professionals, business developers, researchers, and policy makers to discuss the challenges and opportunities of the European data economy and data-driven innovation in Europe. Dr. Yuri Glickman and Prof. Dr. Paschke attended the EBDVF 2017 event and disseminated the Data4Water project.

**STI2 Semantic Summit 2017.** Prof. Dr. Paschke was invited as an expert to STI2 Semantic Summit ([https://www.sti2.org/events/2017-sti2-semantic-summit](https://www.sti2.org/events/2017-sti2-semantic-summit)) on September 4-5 in Heraklion, Greece. The STI Semantic Summit is a bi-annual strategic event where key player within the Semantic Web and Linked Data community can come together to discuss medium and long-term research issues. Prof. Paschke presented about the Data4Water project and introduced the discussion topic for the working group identifying key scientific challenges: „Semantic data-driven e-services in water resource management“.


**Fraunhofer Big Data Alliance Meeting.** Prof. Dr. Paschke participated in the Fraunhofer Big Data Alliance Meeting on 10.5.2017 at the Fraunhofer-Institutszentrum Schloss Birlinghoven in Germany and presented the Data4Water project. Members of the Data4Water consortium disseminated the project at international conference and workshops such as the OnTheMove Conference (OTM2017), International Conference on Rules and Reasoning (RuleML+RR2017), 21st International Conference on Control Systems and Computer Science (CSCS21).