Project information:

Project acronym	**INTCATCH**
Title	**Development and application of Novel, Integrated Tools for monitoring and managing Catchments**
Call	**H2020-WATER-2014-2015, H2020-WATER-2015-two-stage, WATER-1b-2015**
Grant agreement no	**689341**
Starting Date	**1/7/2016**
Duration	**44 Months**

Project abstract:

INTCATCH will instigate a paradigm shift in the monitoring and management of surface water quality that is fit for global waters in the period 2020-2050. INTCATCH will do this by developing efficient, user-friendly water monitoring strategies and systems based on innovative technologies that will provide real time data for important parameters, moving towards SMART Rivers. The business model will transform water governance by facilitating sustainable water quality management by community groups and NGOs using a clouds data linked to a decision support system and eco-innovative technologies.

The INTCATCH project will use demonstration activities to showcase eco-innovative autonomous and radio controlled boats, sensors, DNA test kits and run-off treatment technologies. Actions which develop and evaluate these in a range of catchments will address the important innovation barriers to uptake, notably, a lack of knowledge of new technologies and their capabilities, identified by the European Innovation Plan (EIP) on water. By conceptually moving the laboratory to the 'field', the monitoring techniques that will be developed aim to supersede the inefficient, time dependent, costly and labour-intensive routine sampling and analysis procedures currently deployed to understand the quality of receiving waters. It will compliment routine monitoring that is required for baseline datasets, but also enable cost-effective impact and management investigations.

INTCATCH will incentivise stakeholder innovation in monitoring and will facilitate new financing for innovation through its innovative franchise business model and empowerment of community groups and NGOs. The market ambition is that the INTCATCH business will facilitate an eco-innovative approach to deliver good quality water bodies across Europe and beyond. This will support green growth, increase resilience to climate change and capture greater market-share for Europe's innovative industries.

Activities of EYDAP in the project:

- Working towards an innovative approach regarding water quality monitoring (Monitoring strategies and tools, Social dimensions of water quality monitoring and management, Innovative investigation monitoring strategies for surface water involving a range of stakeholders.
- Development and validation of water quality model and DSS in order to develop monitoring strategies for lakes on catchment scale based on water quality indicators and water quality by developing an hydrodynamic water quality model and setting-up of a DSS software with the integration of water quality model.
- Exploring transferability of the innovative water quality monitoring and management system by demonstrating its versatility and transferability with potential end-users in the demo site of Lake Yliki (Greece) and by evaluating the benefits of the monitoring and management system compared to existing ones in real environment. Yliki Lake, is the most important water supplier of drinking water in case of emergencies for the cities of Athens and Piraias (4.5 million inhabitants). Yliki is a natural lake located in central Greece and covers an area of 19.1 km². The Lake is characterized by a very high quality as it conforms with the EC and national directives' requirements. Both conventional sensors as well as sensors for non-conventional parameters will be integrated in robotic boats. Existing data of the Lake's quality will be uploaded in the DSS and the Data Management System and operational procedures and rules will be modified according to the indications and

requirements provided by local stakeholders and water authorities.

Benefits of EYDAP from the project:

Within the framework of the program, the application of the robotic boats will allow monitoring of water quality in a large area of the lake with far greater frequency than the current sampling methods. This will provide EYDAP with the opportunity to have a more comprehensive picture of the quality of the lake in real time. The systematic, full scale application of robotic boats in the future can replace a significant part of the current analyses for monitoring the quality of the lake, greatly reducing the cost. The possible effect of from human generated pollution on the lake can be thoroughly investigated with the use of the robotic boats and their integrated sensors. The application of robotic boats and the subsequent monitoring of the quality of the lake in real time can detect in time potential pollution of the lake allowing EYDAP to take immediate countermeasures through the development of an appropriate Decision Support System (DSS).

Additionally through this project EYDAP is gaining recognition on a research and development level and is building strong collaborations sharing expertise and know-how with prominent stakeholders in the water industry.

List of Participants:

No	*Name*	*Short name*	*Country*
1	Brunel University London	UBRUN	UK
2	Università degli Studi di Verona	UNIVR	Italy
3	Fundacio Universitaria Balmes	UVIC-UCC	Spain
4	National Technical University of Athens	NTUA	Greece
5	Technital SpA	TECHNITAL	Italy
6	Istituto Superiore di Sanitá	ISS	Italy
7	**Etairia Ydreyseos Kai Apochetefseos Proteyousis Anonimi Etairia**	**EYDAP**	**Greece**
8	Georg-August-Universität Göttingen	UGOE	Germany
9	Universitaet fuer Bodenkultur Wien	BOKU	Austria
10	GO-Systemelektronik GmbH	GOSYS	Germany
11	Fundació Institut Català de Nanociència i Nanotecnologia	ICN2	Spain
12	Center for the Study of Mediterranean Rivers - Ter River Museum	CERM-MTer	Spain
13	The Environment Agency	EA	UK
14	THAMES 21	Thames21	UK
15	Environmental Sustainability Associates Ltd	ESAL	UK
16	Downstreams Solutions Community Interest Company Ltd	DS CIC	UK
17	Personal Genomics SRL	PG	Italy
18	Azienda Gardesana Servizi SpA	AGS	Italy
19	Algorithmica SRL	ALG	Italy
20	SALSNES Filter AS	SALSNES	Norway