

WaterSpy – first year of research and development

The WaterSpy project is developing water quality analysis photonics technology suitable for online, field measurements. WaterSpy technology will be integrated, for validation purposes, into an existing, commercial water quality monitoring platform, in the form of a portable add-on. WaterSpy will be used in the field for the analysis of critical points of water distribution networks. This will be demonstrated in two different demo sites in Italy.

The project has recently concluded its first year of research and development activities. The project's duration is three years. During this first year, the WaterSpy team has focused its efforts on:

- (a) The definition of the user requirements and the detailed description of the demonstration locations.
- (b) An analysis of existing water quality analysis instrumentation and current practices, including an evaluation of the innovation potentials of the WaterSpy technology.
- (c) Performing experiments for facilitating the drafting of the WaterSpy technical specifications and for understanding the limitations of today's technologies.
- (d) Preparing the WaterSpy device system requirements, target specifications and first conceptual designs. First versions of all system sub-modules are being studied and prepared.
- (e) Preparing the evaluation metrics for the WaterSpy device.
- (f) Performing preliminary measurements with the bacteria strains of interest.
- (g) Developing a preliminary version of the Quantum Cascade Lasers and Photodetectors to be used in the WaterSpy device for validation experiments.
- (h) Setting-up an optical test setup using an ATR-cell (attenuated total reflection) for facilitating experimentation. First measurements are promising. Simulations on the optical setup gave hints for further improvements.
- (i) Developing an ultrasound-based particles pre-concentration module (preliminary version).
- (j) Disseminating the project: through newsletters, leaflets, social media, the project website and other forms of communication.

During the next six months, the project efforts will be concentrated on the development of the first operational version of all main system submodules. The aim is to have a preliminary prototype ready for M18 of the project.

The WaterSpy project is funded by Horizon 2020, the EU Framework Programme for Research and Innovation for 2014-2020 and is an initiative of the Photonics Public Private Partnership (www.photonics21.org). The WaterSpy project consortium includes 9 partners from 7 different European countries, coordinated by CyRIC, Cyprus Research and Innovation Center Ltd. The project was launched in November 2016.

More information about the project and the partners can be found on our website: www.WaterSpy.eu.