

## WaterSpy

# High sensitivity, portable photonic device for pervasive water quality analysis

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#### WaterSpy news

With the aim to develop the first operational and integrated version of the WaterSpy device, during this period, the consortium has been working on the development of the different modules.

**Figure 1** presents the automated incubator module developed by AUG and tested by CNR. The three bacteria strains (Fig. 2 A) targeted by WaterSpy were grown both using laboratory equipment and using the automated incubator and the obtained results were compared (Fig. 2B).



Fig. 1 Automated incubator module



Fig. 2 Bacteria strains (A) and growth comparison (B).

Figure 3 presents the acoustofluidic-cell developed by TUW and the smarts beads approach bacteria detection.



**Fig. 3** Acoustofluidic-cell module: Acoustofluidic-cell principle (A) trapped beads in the Acoustofluidic-cell (B) and IR spectra of the enzymatic reaction used for the E. coli detection.



The WaterSpy 18M meeting was hosted on the 3<sup>rd</sup> and 4<sup>th</sup> of April 2018 in Vienna (Austria), where TUW is based. All partner organizations attended the event. During the first day of the meeting, administrative procedures were discussed, while an overview of main active and completed tasks took place.



M18 M24 D3.3 D4.1 D3.4 D4.2 18M Meeting 24M Meeting Wien, Austria Athens, Greece 18M 24M D8.4 D4.3 D5.2 D6.1 M24 M19 M24

#### Fig 5. WaterSpy deliverables roadmap

#### Deliverables D3.3 Lasers optimized for full spectral coverage more detailed and open technical discussion on the D3.4 Packaged optimized lasers integrated with driving electronics D4.1 Integrated photodetector preliminary version D4.2 Photodetector final version D4.3 Integrated photodetector and electronics D5.2 WaterSpy device modules v2

- D6.1 Mid-project testing output report
- D8.4 Dissemination and communication plan V4

#### WaterSpy and AQUARIUS Workshop

period.

Fig. 4 M18 meeting

The second day of the meeting was dedicated to a

main issues that have to be dealt with in the next

In combination with the M18 technical meeting, a Mid-IR Sensing workshop was organized by TUW together with the AQUARIUS project consortium.









#### MID-PROJECT INTEGRATION WEEK

The first integration week was hosted by TUW in Wien from 28<sup>th</sup> May to 1<sup>st</sup> of June 2018. All partners involved in the integration attended the event.

During the integration week the partners finalized the first integrated system layout, including:

- (A) hardware configuration,
- (B) fluidic system setup,
- (C) communication and control setup,
- (D) power supply to each module.



Fig 6. Total setup of all WaterSpy modules.

#### **REVIEW MEETING IN BRUSSELS**

The second WaterSpy review meeting took place in Brussels on the 26<sup>th</sup> of September 2018. The project officer and the reviewers provided valuable comments for improving the system and keeping in track for a future WaterSpy-based product.

#### PLANNED EVENTS:

The next WaterSpy consortium meeting (M24) will take place in Athens, Greece, where NTUA is based.





### Dissemination Activities



- ✓ AUG participated in Photonics North 2018, Montreal, Canada (Fig. 7).
- ✓ TUW participated in the Acoustofluidics conference 2018 in Lille, France (Fig 8).
- ✓ **Two videos were prepared**: one to describe the WaterSpy approach and a second one in the occasion of the M18 Vienna meeting. Both are posted on WaterSpy's YouTube channel (Fig 9).









Fig. 7





## WaterSpy Consortium

