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# Standardization in research and innovation projects

Success story: **environment**

## AQUAVIR:

AquaVir, a joint effort of 14 partners from 9 European countries, is a 3-year FP7 (7<sup>th</sup> European Research Framework Programme) project which started in November 2013. The project aims to develop a novel, cost effective, portable, on-site detection system capable of monitoring human enteric viruses in different water bodies. This equipment will radically improve the water quality testing. The project involves a partner (DIN Deutsches Institut für Normung e. V.) that is responsible for the preparation of worldwide standards in water monitoring. Standardization of methods and equipment will be an important tool for bringing the results beyond their research community and facilitating exploitation and the access to markets.

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

## THE PROJECT

Water-borne viral diseases pose high risks for public health worldwide. The urban wastewater contains large numbers of pathogen viruses, and even the most advanced wastewater treatment cannot fully remove all virus particles. The conventional biological water quality indicators do not provide adequate information about the presence of pathogenic viruses. The currently available reliable virus test - based on molecular biology - is expensive, time consuming and labor intensive, thus the use of this test is limited to a few laboratories.

The AquaVir project aims to develop a novel, cost effective, portable, on-site detection system, which is capable of monitoring human enteric viruses in different freshwater bodies. The approach is based on a "plug-and-play" disposable microfluidic chip, in which the virus particles can be up-concentrated and detected, which is integrated into a measurement unit that sends the data to the monitoring station, enabling the authorities to take action in case of epidemic risk. The project will include the application of the test method at end-users' sites on a larger scale, allowing an economic assessment of the test.

## STANDARDS: A SOLUTION FOR MARKET UPTAKE

It can be foreseen that the developed system will be commercially interesting after the end of the project. The project will use the possibility to formally link with CEN and ISO Technical Committees (TCs), e.g. by directly participating in the TC, thus ensuring synergies between research and standardization work and proposing new work items (standards) to the TC.

Currently no standards exist on the pathogen virus content of the different water types and on the water sampling methods and equipment in virus testing. The AquaVir research for the testing method is planned to lead to specifications to be fed into standardization. The establishment of such new standards in this field will be the precondition for the market uptake of the developed water monitoring system.

□□ The new standards will provide the community with the best practice approach for water quality testing and will enable the better comparison of measurements done in different places and at different times helping the on-going implementation of the Water Framework Directive in Europe. □□

## HOW WILL THE STANDARD BE DEVELOPED?

DIN is involved as a partner with the task to prepare standards. DIN holds the secretariat of the CEN Technical Committee which deals with the development of standards for water analysis (CEN/TC 230), including the standard test methods for biological and microbiological examination of water quality and the methods for sampling, quality assurance, classification and performance requirements for water monitoring equipment.

DIN will assist AquaVir in the development of the methods and equipment, relevant in view of standardization, e. g. ensuring conformity with existing standards. The project partners as well as representatives from the end-users will provide DIN with inputs for the development of future standards.

DIN will set up the standardization strategy for the project by identifying the type of standards to be developed and by involving relevant stakeholders. DIN will initiate the standardization activity by integrating all interested experts and by managing the formal processes.

## BENEFITS OF LINKING WITH STANDARDIZATION

For the introduction of a new technology on the market it is very important that the used methods and equipment are compatible with existing and future standards. The involvement of a standardization body (DIN) in AquaVir is the key to achieve this aim.

## LONG-TERM EXPECTED IMPACT

The new water monitoring system will be ready for commercialization at the end of the project.

The system will provide knowledge for standardization, enabling industry to take up the system and place it on the market for the benefit of citizens' health and the economic growth in Europe.

The monitoring system developed in this project can be adapted for detection of any contaminants in water. Thus, the development of a portable multi-sensor system using cost-effective sensor chips can reduce the costs of the on-going implementation of the Water Framework Directive, and can have an impact on future standards for water quality.

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The involvement of a standardization body (DIN) from the early phase of the development will ensure that the methods and equipment used are compatible with the existing and future standards. Standardization is a facilitator and supporting strategy for the exploitation of the new technology. All project partners will benefit from the collaboration with DIN and from standardization.

Noemi Rozlosnik, associate professor at DTU Nanotech, AquaVir coordinator

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Every project is different. The CEN-CENELEC Research Helpdesk can provide you with advice on how to include standardization in your project. Please feel free to contact us!

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