

**POS41. SWQMS INNOVATIVE SYSTEM FOR CONTROLLING
SURFACE WATER QUALITY**

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Abstract

This paper presents the concept of a "watermark" model SWQMS for monitoring surface water quality with possibility of real-time warning in case of accidental pollution or ecological risk. The idea of switching from a theoretical concept of intelligent monitoring station for the quality of surface waters, obtained through the CAE computational technology, to a superior level of technological readiness which will take effect as an experimental demonstrator – the SWQMS live-online-dynamic monitoring model it is illustrated in present images.

The special structure of the monitoring integrates IQ sensors and multiparameter probes for the measurement of the physicochemical and biological factors of the water body which is subject to pollution pressures. Anchored in the offshore of the flowing water the special mechanical structure of the station allows it to float in a fixed point for the monitoring of quality indicators at water surface. At the command of the onboard controller which equips the monitoring station this one can be immersed both for the monitoring of the quality indicators at different water levels (profile monitoring) as well as for frost protection during cold season. Therefore it is ensured the adaptability of the monitoring station to the environmental conditions for the temperate continental climate. The

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SWQMS station has two hydro-generators and photovoltaic panels to provide energy independence for long time.

The station also integrates besides intelligent sensors an *IT* hardware-software system for data acquisition processing and transmission to the local terrestrial system centre. Thus equipped, the special monitoring station becomes an operational watermark in the infrastructure of the networks for surface water quality monitoring. The physical model thus designed allows the continuous evaluation in situ of the monitored surface water “health status” with the purpose of warning in case of pollution.