



REFLECT™ Provides Real-Time Monitoring of River Levels in Flood Conditions

The Kifissos River is the largest catchment that composes Athens basin, located in the Attica region in Greece. Attica is surrounded by the mountains Parnitha, Penteli, Egaleo, and Ymittos. Athens basin has an area of 534 km², out of which around 379 km² (71%) belongs to Kifissos catchment. Athens basin is 68% urbanized and has an approximate population of 4 million residents. The main channel of Kifissos River has a total length of about 40 km, crossing Athens for 25 km, and discharging into the Saronic Gulf. The downstream part of the river network has been heavily modified over the years, with around 6.2 km of it being channelized and 8 km of it transformed into underground waterways. The main problems with the river are flood issues that are associated with surface run-off, which originates from the adjacent basins and therefore the monitoring of the water level in

different locations provides a better insight of the hydrologic behaviour of the river.

The Laboratory of Engineering Geology – Hydrogeology, National and Technical, University of Athens is involved with the application of geological, engineering, and hydrogeological knowledge in the design, development, and operation of various technical and mining works. It is also related with the study of natural hazard phenomena, their evaluation, prevention and application of mitigation measures. With one of their main research topics being the study and treatment of natural disasters including landslides, land subsidence, soil erosion and floods.

The group were looking to get accurate and reliable level measurement of the river, to give an early warning of high levels that are above the permitted river level. They therefore reached out to Pulsar Measurement's Partner, Metrica.



"We're thrilled with the great performance – results of the system and the success of our cooperation with the customer. As for the project, we believe that it was a very interesting project and the end result is exactly what we were looking for."

Accurate Level Measurement in Tough Conditions

After discussing the application, engineers at Metrica decided that the REFLECT™ 2-Wire Radar Level Sensor would be up to the task. Three REFLECT™ Level Sensors were installed in three different locations along the Kifissos River in Athens. Two of the sensors are powered by the datalogger with integrated solar panel, and one of them has integrated lithium batteries. Due to the REFLECT's low power consumption, the system can be powered by the solar panel, and REFLECT's immunity to weather conditions provides accurate and reliable measurements thanks to its radar technology.

All three REFLECT™ level sensors send the data received via GSM, in Metrica's exclusive web-server, and is visualized by their own web-platform METEOVIEW2. The scope of the project was to monitor the real-time level in case of flooding events. Thanks to the METEOVIEW2 web-platform, the client as well as Metrica can receive early warning alarms on their smart devices if the water level increases and exceeds predetermined thresholds.

REFLECT™ Reliable and Robust

The hermetically sealed Pulsar Measurement REFLECT™ level sensors require no routine servicing, and are able to withstand the harshest environments while maintaining accuracy in the presence of extreme dust, temperature, moisture, pressure, and chemicals. The narrow 6° degree beam angle and unique built-in DATEM software allow the sensor to focus on the true level, giving you the accurate data you need to make informed decisions about your operations.

The REFLECT™ **TILT** ensures optimal measurement by using the built-in LEDs to signal when the sensor is level and giving greatest signal strength. In Measurement mode these lights are used to give early indication of a change in measurement integrity, to give confidence in the accuracy of your data.

After 4 months of continuous operation, Metrica's customer is really satisfied with the performance of the equipment and installation, as they are able to monitor the water level in real time. With Metrica commenting "We're thrilled with the great performance – results of the system and the success of our cooperation with the customer. As for the project, we believe that it was a very interesting project and the end result is exactly what we were looking for."



More Information

REFLECT™: <https://pulsarmeasurement.com/en/reflect>

Partner Locator: <https://pulsarmeasurement.com/en/partnerlocator>



INFO@PULSARMEASUREMENT.COM

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Registered Address: 1 Chamberlain Square CS, Birmingham B3 3AX
Registered No.: 3345604 England & Wales*

www.pulsarmeasurement.com

United States
+1 888-473-9546

Asia
+60 102 591 332

Canada
+1 855-300-9151

Oceania
+60 102 591 332

United Kingdom
+44 (0) 1684 891371

pulsarmeasurement.com