



Case Study

RIVER LEVEL MONITORING IN NECKARBURKEN



INTRODUCTION

Local heavy rainfall events are repeatedly leading to local flooding. Even during the snow melt, residential and commercial areas in the districts of Neckarelz and Diedesheim in Mosbach are threatened by the rising floods of the River Elz.



Detectronik GmbH was commissioned to install a sensor on the bridge in Neckarburken to record the water level of the Elz.

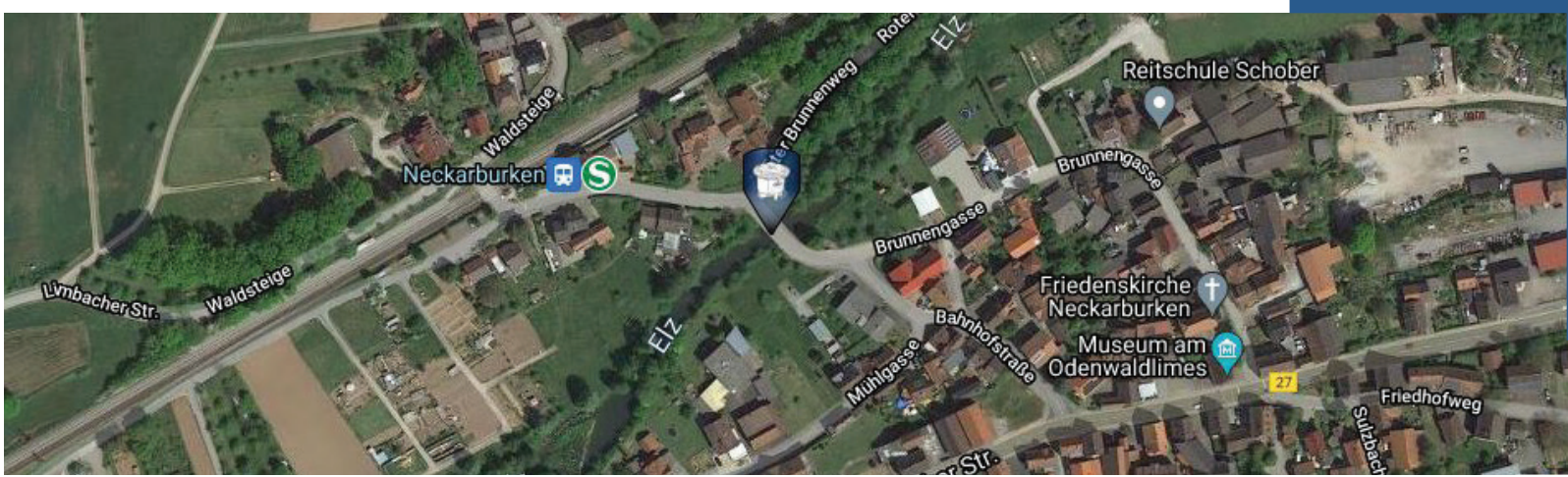
OBJECTIVES

Receive early flood warnings enabling timely pre-emptive flood defence action before flooding events occur.

PLANNING AND IMPLEMENTATION

The Detectronik MSFM Light with ultrasonic level sensor was selected as the preferred solution. Mainly used for CSO monitoring, the MSFM Lite is robust and equipped with a battery which lasts 5 years. This makes the MSFM Light also suitable for use in other applications where there is no mains supply, like river level monitoring.

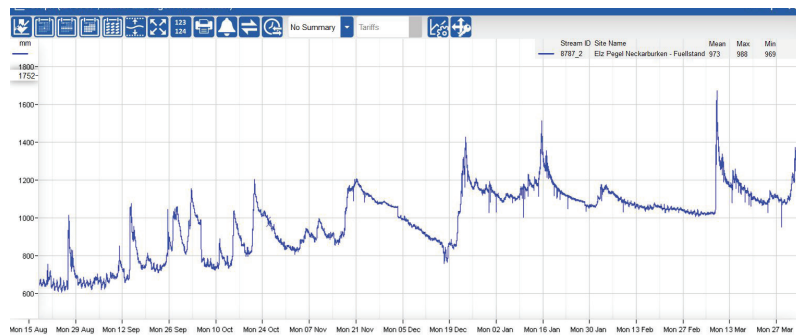
The MSFM Light has a modem of the latest generation and is compatible with 2G, 3G, LTE-M and NB-IoT GPRS mobile networks and can be used worldwide.



In cooperation with the communal building yard a mounting device with a stainless steel enclosure for the sensor including logger/modem was manufactured. The device was attached to the bridge and suspended over the River Elz.

RESULTS

The ultrasonic sensor measures the distance between the sensor and the water surface, which corresponds to the water level of the Elz. The collected data is sent every 12 hours to the Internet platform Detecdata. If the previously defined alarm threshold is exceeded in the event of an imminent flood, the data is sent immediately and an alarm is triggered by email/SMS. The relevant bodies can then take further measures in good time such as closing roads or evacuating affected areas.



The graph above shows lower levels during the summer months and rising levels during the winter months. The peaks on the graph indicate rain events throughout the year.



Approvals: MSFM
SIRA 12 ATEX 2110X Ex II 1G Ta -40°C to +60°C IEC Ex SIR 12.0044X Ex ia IIB T4 Ga Ta -40°C to +60°C

Approvals: Ultrasonic Sensor
SIRA 12 ATEX 2259X Ex II 1G Ta -20°C to +60°C IEC Ex SIR 12.0111X Ex ia IIC T4 Ga Ta -20°C to +60°C



Detectronic GmbH,
Seegasse 12,
91438 Bad Windsheim

+49 9841 4038242
kontakt@detectronic.org
www.detectronic-de.com