

May 16, 2022

Meidensha Corporation

Meiden sells flooding information system to Saga

Expected to help mitigate water disasters through real-time report of flooding with the use of smart leveling rods

Meidensha Corporation (Meiden) has sold a system to provide flooding information obtained from smart leveling rods (automated devices that gauge the level of flooding) to the city of Saga in Saga Prefecture. Using this system, the city started providing information on flooding to city residents and relevant parties on April 25, 2022, to prevent/mitigate damage from water-related disasters. It was the first time that Meiden has been involved in a service to provide information to the public using its smart leveling rods.

Background

The city administration compiled a basic plan for water drainage in March 2014 to address the increasing risk of inland inundation, which happens when the volume of water on land exceeds the capacity of natural or manmade drainage systems. There is an urgent need to deal with the situation, because climate change is causing torrential rains to occur more frequently and with greater intensity. Saga has built or upgraded pumping stations, waterways and regulating reservoirs, in addition to making and publicizing hazard maps. The aim is to ensure that the community is resilient to flooding.

As part of its efforts to raise awareness about flooding, Saga has installed leveling rods at 83 locations and actively uses the information obtained to support residents' self-help and mutual aid, as well as public assistance in preventing or mitigating flood damage.

Until now, floodwater levels indicated by rods were monitored visually and reported by residents and disaster-relief volunteers. But wider application in recent years of automated measurement of floodwater levels has allowed real-time provision of vital information to prevent or mitigate damage from water-related disasters. In collaboration with Saga, Meiden has conducted a demonstration experiment on a prototype real-time monitoring system using smart leveling rods. As of the end of fiscal 2021, the system

was in operation at 29 locations in the city.

Meiden was then commissioned to build a full-fledged system to provide flooding information obtained from smart leveling rods with the aim of making sure local residents know about flooding situations in and around their neighborhoods in real time. The system was installed in March 2022.

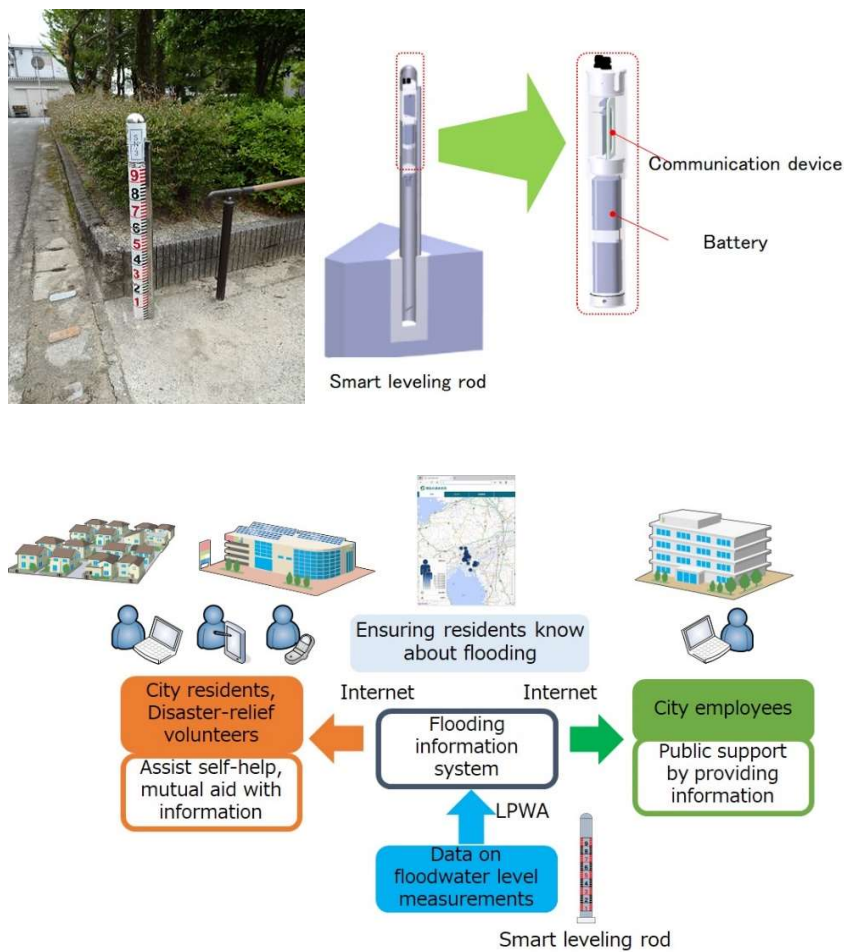
What is a smart leveling rod?

A smart leveling rod is a pole-shaped IoT device on which a communication device, antenna and battery are mounted. It collects real-time data on water levels that is made available online through a cloud system.

■ Features

- It makes wireless communication possible with an LPWA (Low Power Wide Area) communication device mounted on the rod
- The battery inside the rod makes it possible to provide power to the sensor and communication device
- Placing the rod on a road makes it possible to assess a flood situation in real time

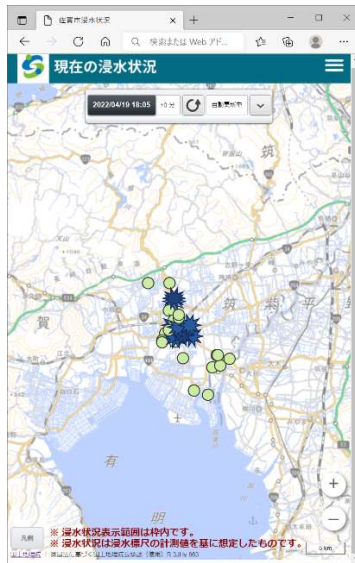
<How the smart leveling rod can be used>



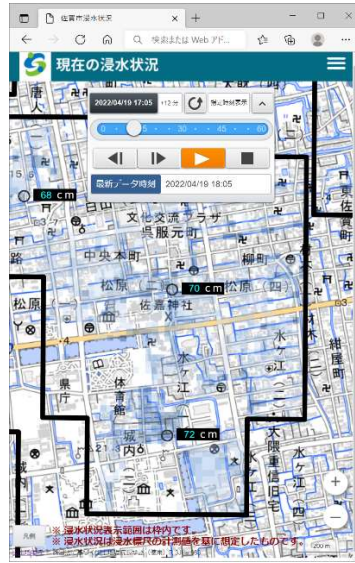
System to provide flooding information to city residents

The system Meiden sold and installed to provide flooding information to local residents collects information on floodwater levels through smart leveling rod. It stores the data in a cloud server to compile maps and graphs to give an accurate picture of the situation. In addition, Meiden built a web page to enable residents to view the maps and graphs. The web page can be easily accessed via the website of Saga's flooding information system so residents can easily be informed about flooding alerts, for example.

<What screenshots of Saga's flooding information system might look like>



Top screen



Display of past data



Display of a graph

Note: The maps and graph of the flooding situation shown above are for demonstration purposes.

Meiden has provided local governments across the nation with devices such as manhole antennas that can visualize water levels in underground pipes, along with an IoT service that monitors flooding with the use of LPWA networks to help people take adequate steps to prevent water-related damage.

Meiden is committed to solving social problems associated with increasing climate change and helping cities to be safe from and resilient to disasters by building sustainable infrastructure that ensures harmony between society and nature.

■ Saga's website providing flooding information

<https://sagacity-sinsui.aquasmartcloud.jp/>

■ Meidensha's IoT service to monitor flooding

https://www.meidensha.co.jp/products/water/prod_08/index.html