

# GUTA

## DRINKING AID SYSTEM

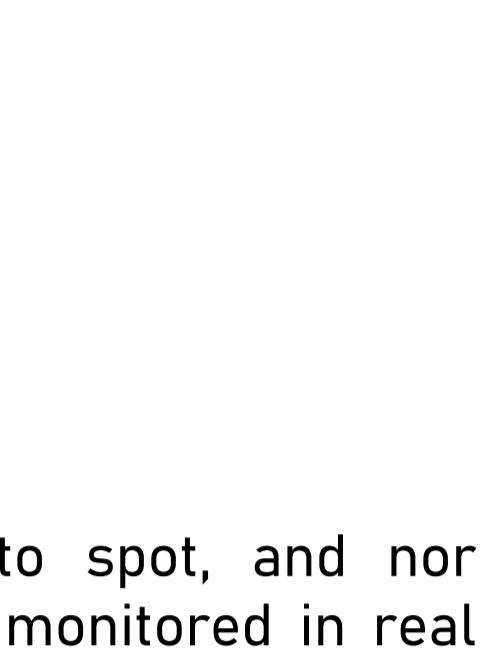
project type: Academic project  
end date: jun 2024  
duration: 5 weeks  
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Guta is a hacked product-service system designed with the aim of expanding overall accessibility and keeping track of the water quality in regards of the iconic Milan public fountains, the Vedovelle. Guta is composed of three add-ons and an integrated digital service that gets translated in a touch point via an app. The main challenge with Guta was designing a hacking procedure that would not interfere too much with the iconicity of Milanese fountains.



### TARGETING BOTH USERS AND MAINTAINERS

The research was conducted via a large scale **data gathering** and by directly **collaborating** with the foundries where Vedovelle are produced and with the maintenance company itself, MM.



**IN MILAN THERE ARE 688 PUBLIC WATER FOUNTAINS, PUMPING UP TO 864.000 LITERS OF WATER A DAY**

Milan's Vedovelle rich history and their **iconic, easily recognizable** shape make them a staple of the city's identity that has to be left unaltered.

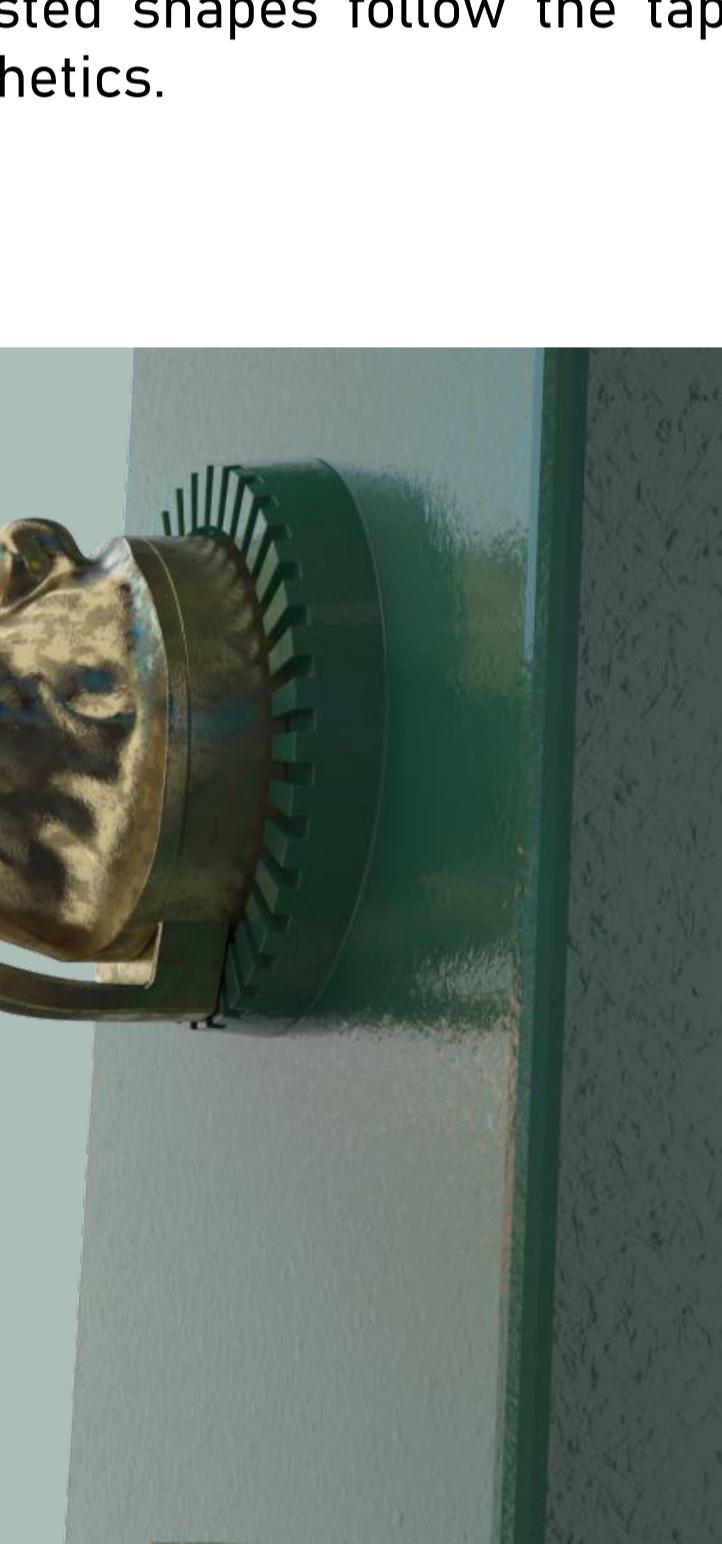
### THE HACKING UPGRADE IS MADE OF THREE PHYSICAL ADD-ONS AND A DIGITAL SERVICE

Vedovelle are to be fitted with **add-ons** that bring small improvements to the current uses, limit the need for maintenance and make monitoring easier.



### GUTA LUZ

Milan's fountains are often hard to spot, and nor water quality nor interactions are monitored in real time. Guta Luz deepens user experience giving back in advance a **complete report** of each Vedovella.



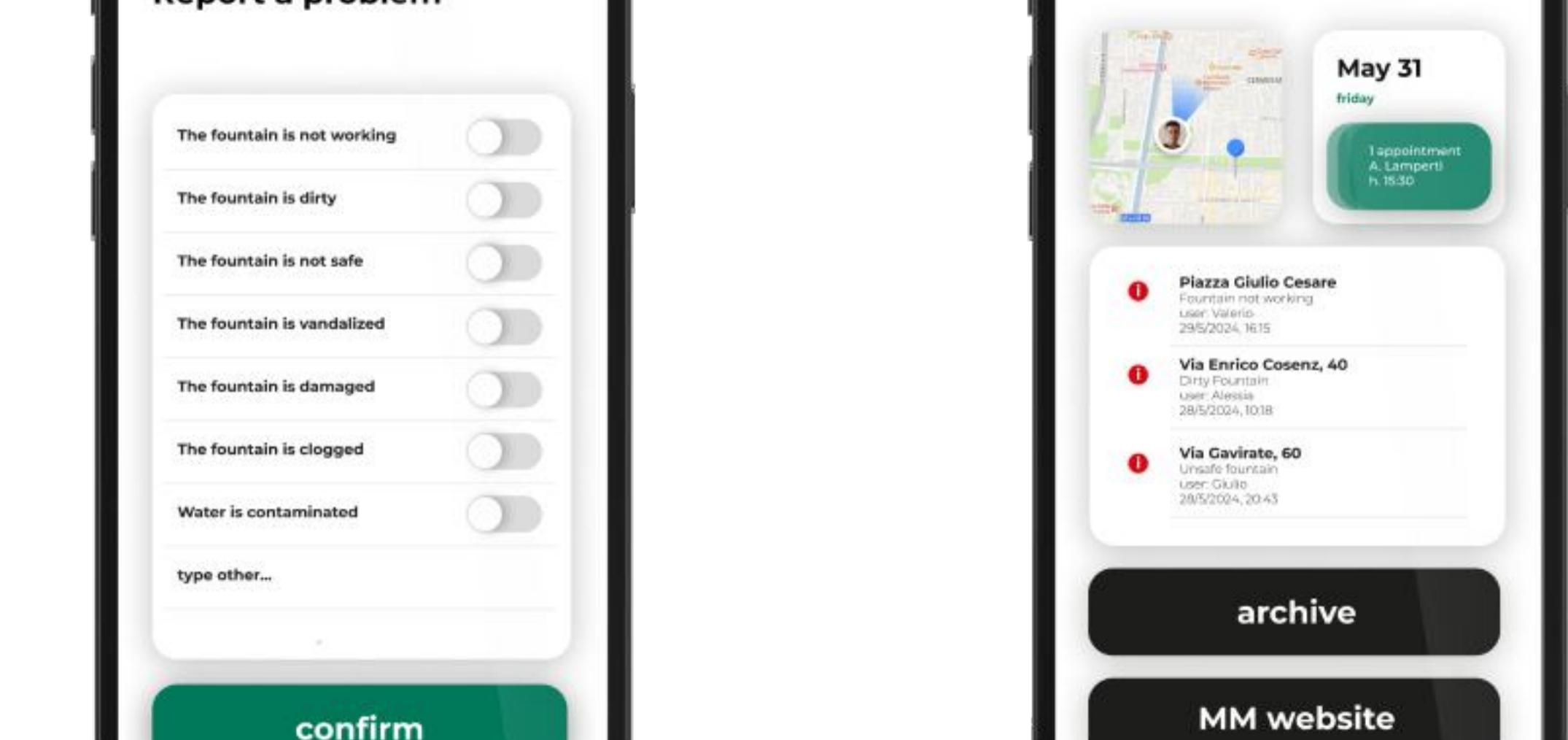
### GUTA CICININ

An easy to install **parasitic** product that regulates water flow through a simple twist in order to make the interaction with the fountain easier and spillage-free for all kinds of users. Lost wax casted shapes follow the tap curves without overshadowing too much past aesthetics.



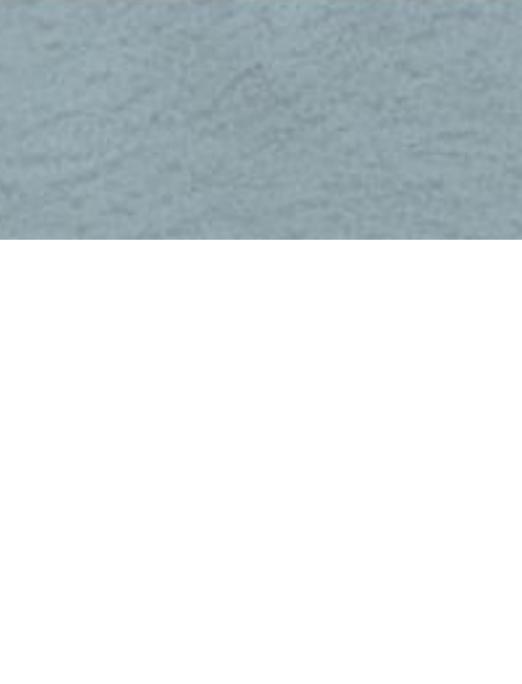
### GUTA BASIN

A parasitic casted brass grill, **designed to cover perfectly the fountain tank** in order to ensure functioning drainage, preventing debris or ill-mannered behaviours from clogging it. The **city map's inspired pattern** enhances the relationship between Milan and its fountains.



### PCB NESTING

underneath the top cover there is a 5V battery, the PCB, the esp32 board and the **GPS**.

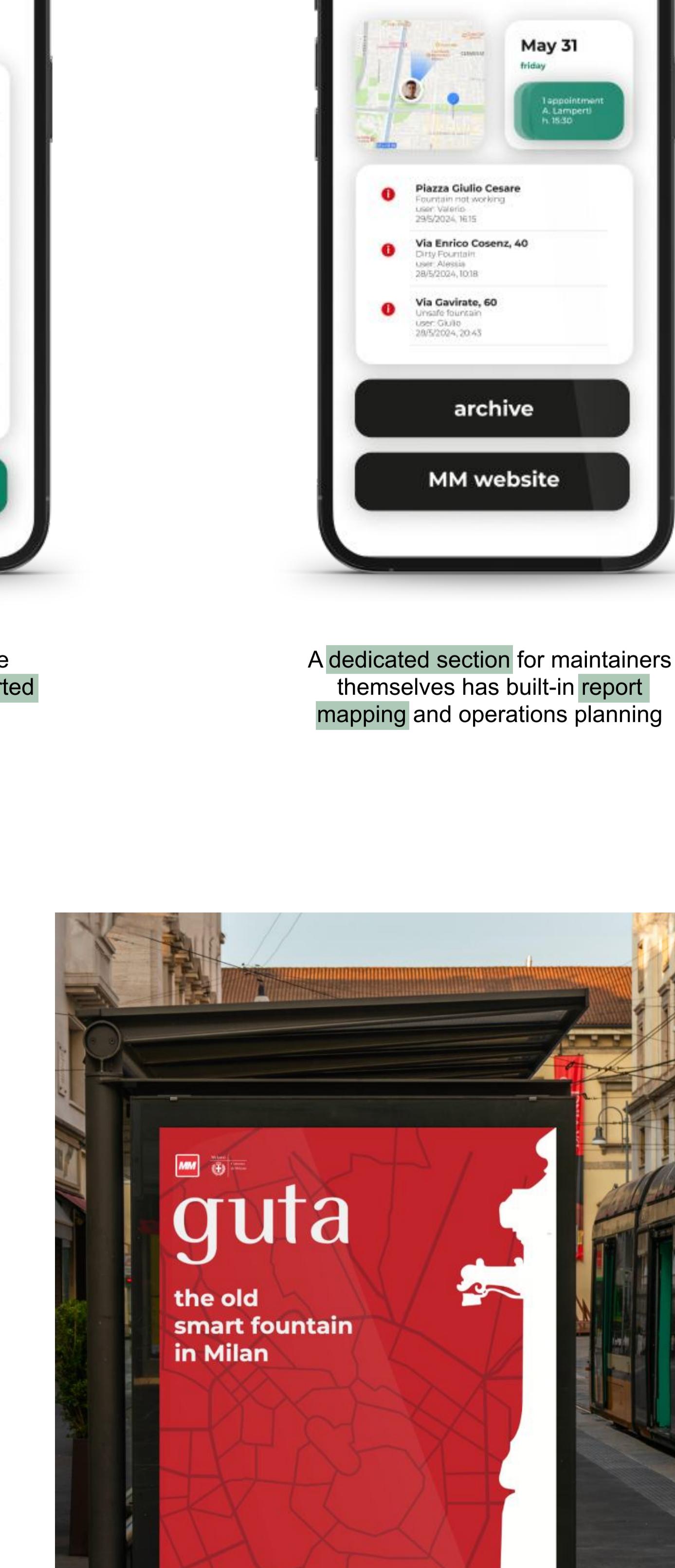
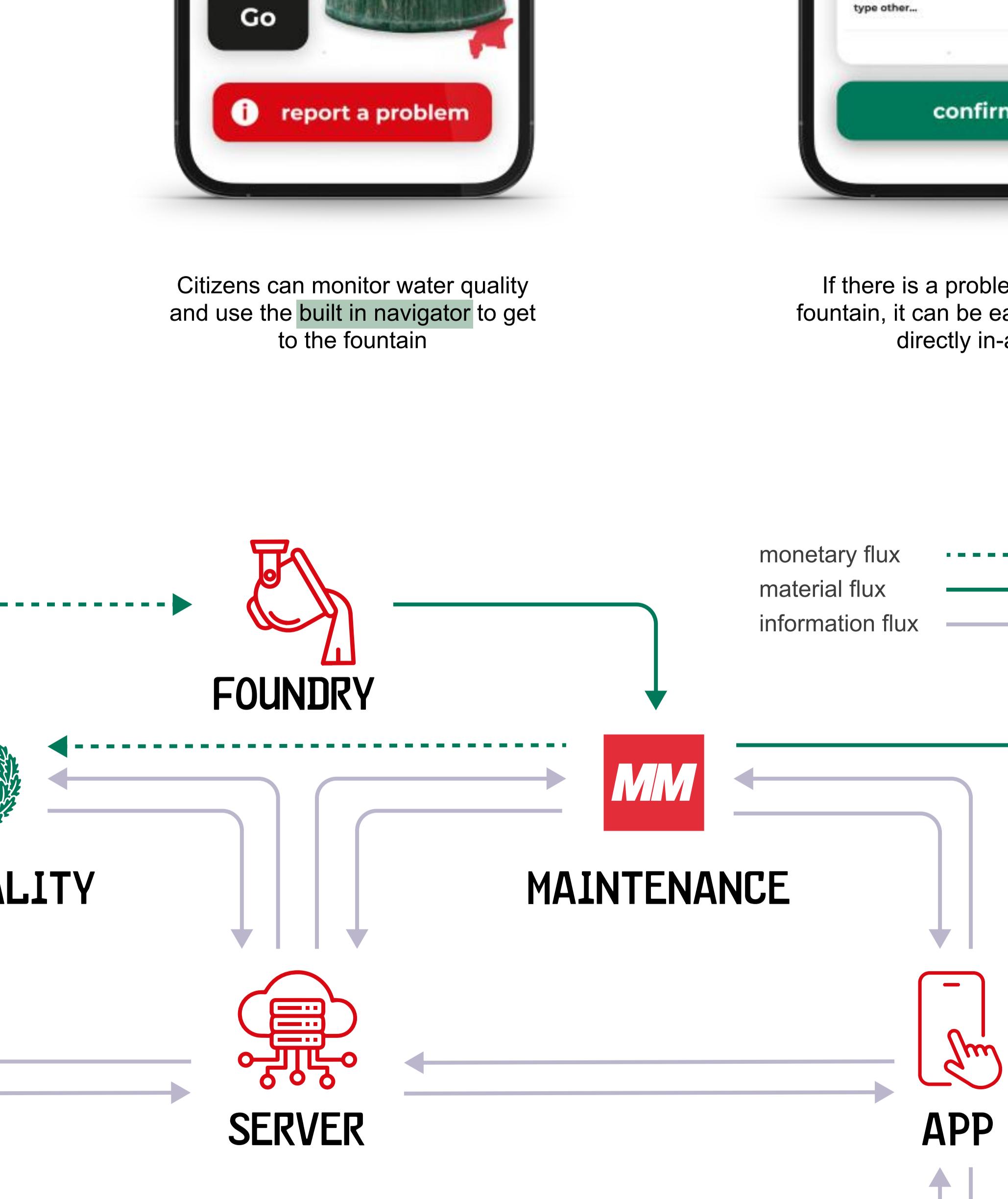


### TDS SENSOR

checking for **water purity** and constantly sends quality updates to the pcb



### RAISING THE FOUNTAINS TO THE NETWORK



The app acts as a **mapper** for all the municipalities fountains and their status

Citizens can monitor water quality and use the **built-in navigator** to get to the fountain

If there is a problem with the fountain, it can be easily **reported** directly in-app

A dedicated section for maintainers themselves has built-in **report** mapping and operations planning

### LED, PROX SENSORS

lighting up the fountain during the night and **collecting data** about use and vandalism times



### HYDRO-GENERATOR

mounted on the water pipes the turbine generates **clean energy** that powers the whole system



monetary flux  
material flux  
information flux



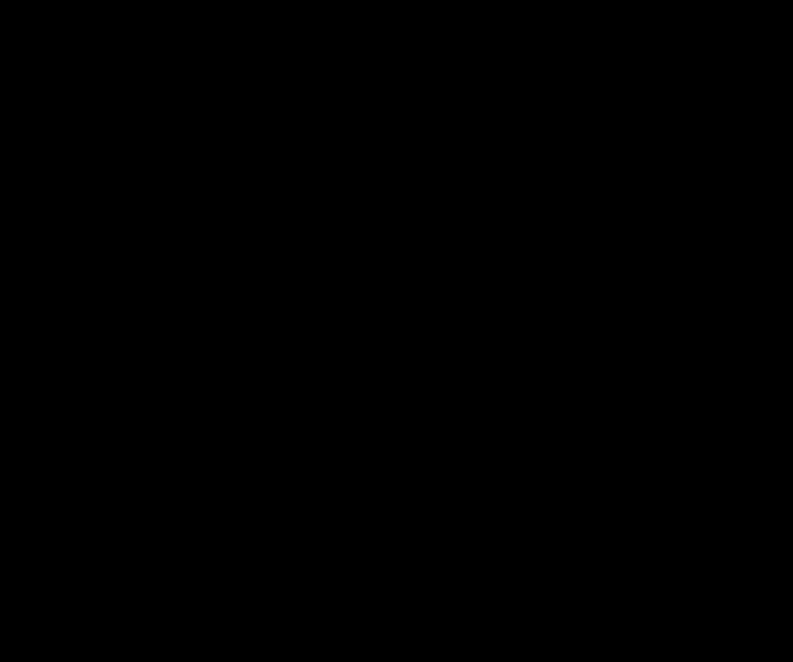
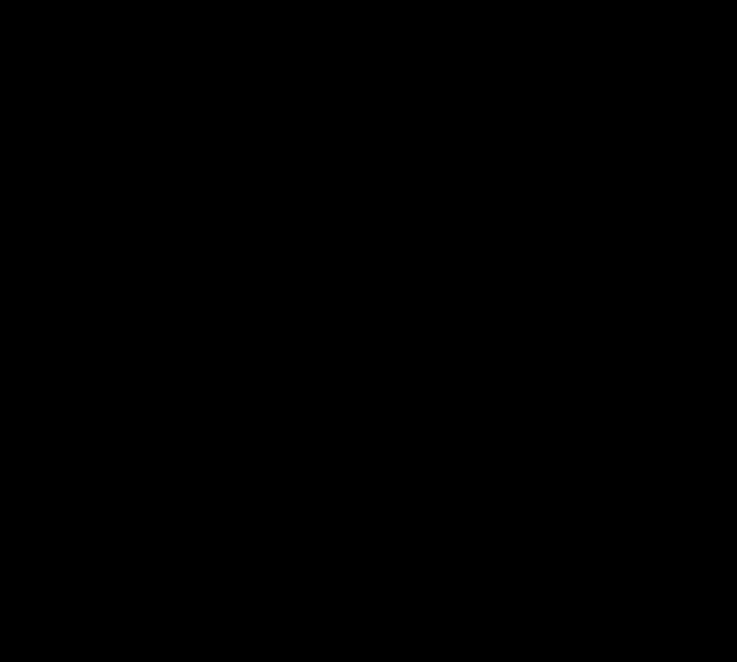
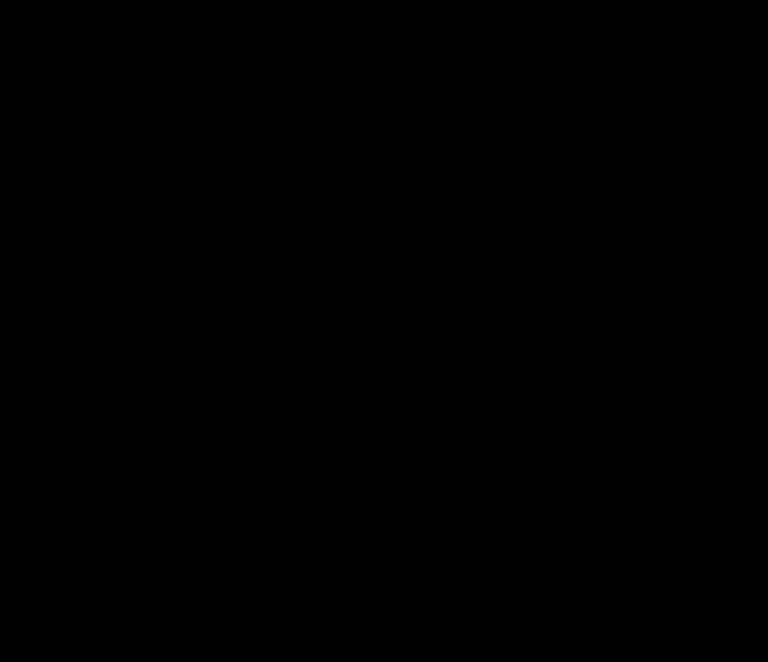
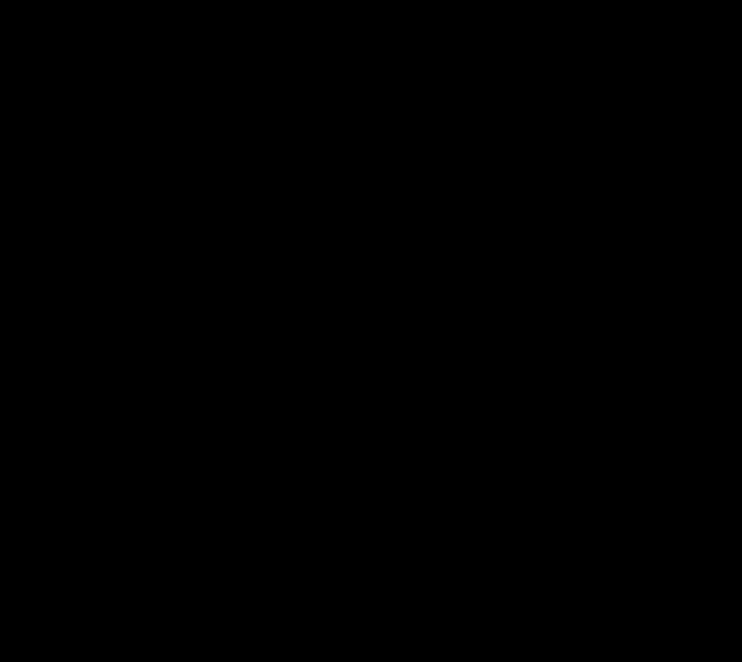
reporting irregular values linked to clogging in order to warn for immediate maintenance

### WATER LEVEL SENSOR

reporting irregular values linked to clogging in order to warn for immediate maintenance



### APP SERVICE



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