



Developed by:
Photrack Ltd, Hydrosolutions Ltd
photrack.ch, hydrosolutions.ch

DischargeApp

Smartphone-based optical flow measurements for rivers, irrigation and wastewater channels

- High-tech, low-cost and user-friendly technology for scalable discharge measurements
- Measure water level, surface velocity and discharge with a smartphone in less than a minute
- Setup a measurement station in less than 1 hour
- Calculations are done in the smartphone with the DischargeApp, no internet coverage required
- Error-free data transmission to the cloud
- Intuitive visualization, analysis and management using the DischargeDataHub
- More than just a sensor: use augmented reality to add value to the data

Product description and functionality



Perform a smartphone measurement in less than a minute.



The initial site setup takes less than 1 hour.

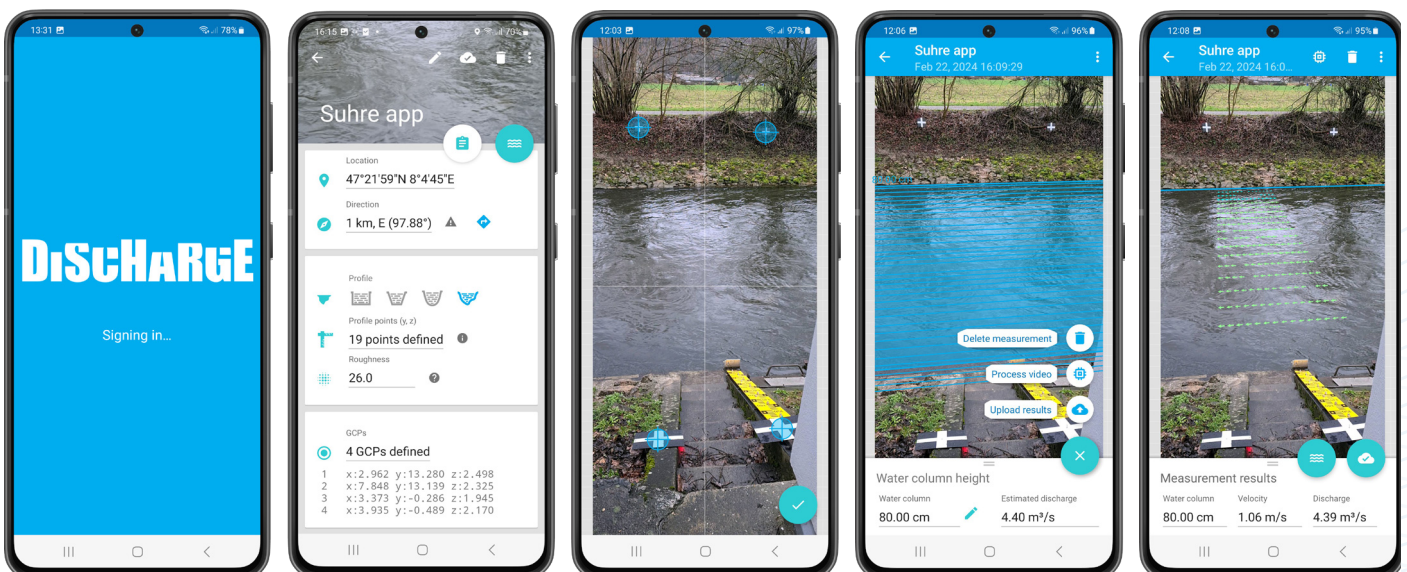
In many places of the world data on water remains scarce, one key reason being that traditional systems do not scale due to their high investment costs, difficult operation and maintenance. Even more, in many places monitoring stations are subject to vandalism.

Additionally, even in places where there is sufficient data, it is often difficult to access and interpret it by local stakeholders.

The DischargeApp is a low-cost, user-friendly smartphone application which provides fast and accurate discharge measurements in rivers and open channels. It is only needed to have four ground control points on the field, no expensive equipment is left at the place. Additionally, the cross-section of the water body needs to be measured. Depending on the

size and complexity of the channel, the initial site setup may take between 15 minutes and 1 hour, but this has to be done only once.

Measuring the discharge on a dedicated DischargeApp site takes less than a minute. The computation occurs locally on the smartphone, hence the DischargeApp can be used to measure in regions without network coverage. Once the measurement is done, data transmission to the cloud is possible immediately or later, as soon as internet is available. This allows error-free data transmission and storage. The measurements can be accessed via the integrated DischargeDataHub platform. On this platform measurement data, sites, users and user permissions can be managed. Access to the data is secure and login protected.



Sign in, set up a measurement site, record a movie and select the position of the ground control points, measure the water level on the screen, compute the discharge and upload the results to the cloud.

Special features and benefits

Innovative technology: Low-cost and high-tech smartphone application providing fast and accurate measurements of water level, surface velocity and volumetric flow rate or discharge.

Versatile: The DischargeApp allows to measure flows in any kind of open channels and streams, like natural rivers, irrigation furrows or sewer networks, under different flow conditions.

Fast: A site can be set up in less than 1 hour. Performing a measurement takes less than a minute.

Robust measurements: Every measurement provides the user with the water level, the velocity at the surface of the water and the discharge. The discharge obtained is computed by considering the whole velocity field at the surface of the water body, which strongly contributes to the accuracy measurement.

Scalable: Once that a station is setup, other users can perform measurements, which allows to collect more data.

Non-intrusive: The DischargeApp extracts velocity information from the structures at the water surface. It does not rely on any chemical or particle tracers. This also makes this measurement technology safe for usage during flood events, during which gauging by entering the water would be too dangerous.

Proof image: Every measurement comes with a proof image.

Rating curve: Use the measured water level and discharge data to build site specific rating curves.

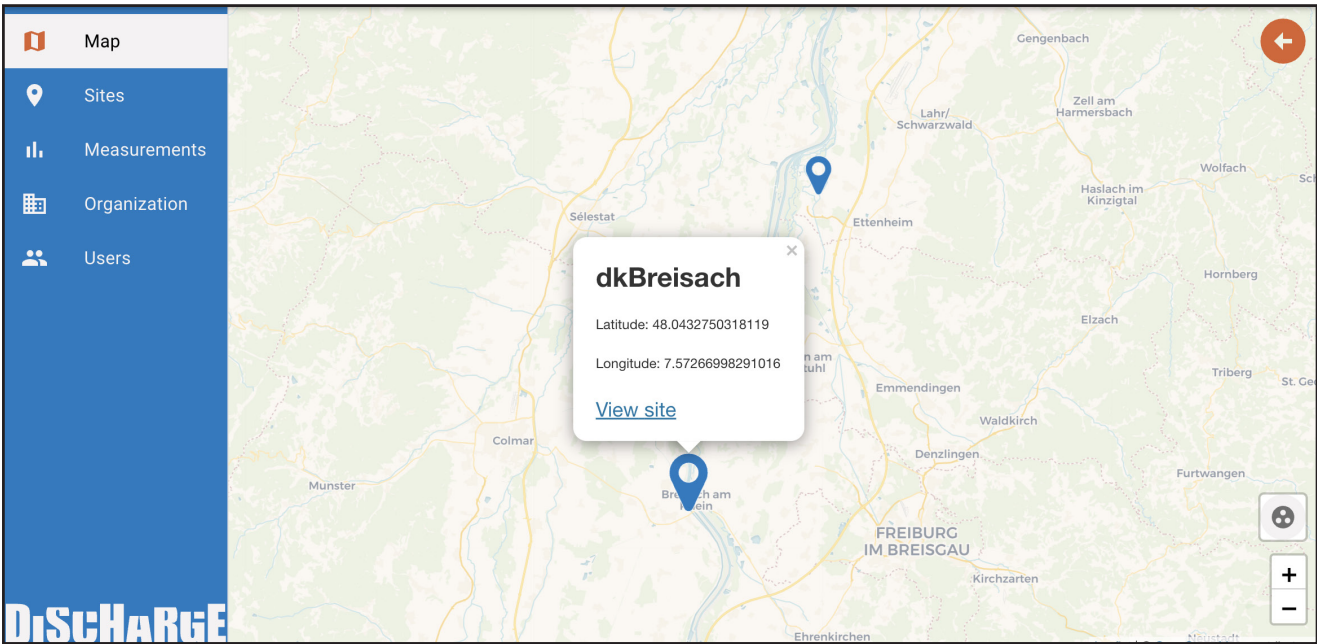
Error-free transmission: Data transmission is done automatically, avoiding errors while collecting data.

More than just a sensor: use augmented reality to visualize the measured water level and velocity field on a so-called „proof-image“ and assess the accuracy of these results. Upload the results automatically and visualize them on the DischargeDataHub before sharing them with other users or exporting them for further uses.

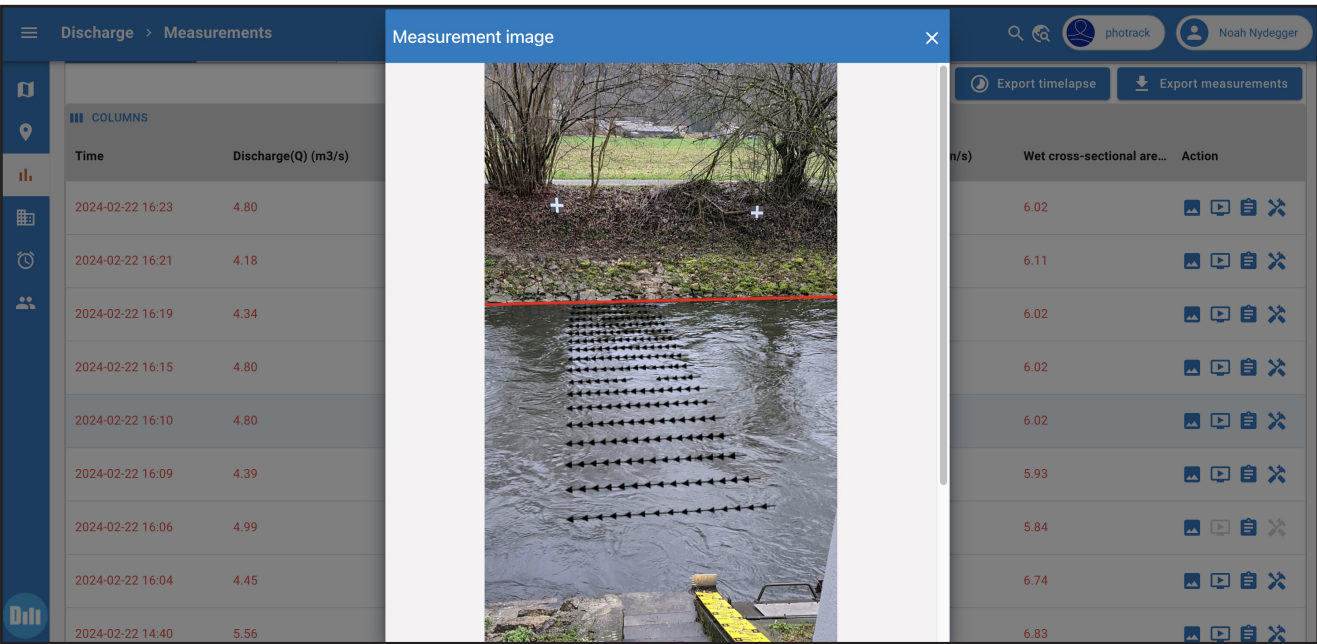


Visualize time series of the measured water level, surface velocity and discharge data on the DischargeDataHub.

Special features and benefits



The DischargeDataHub (discharge.ch) provides an overview over geolocalized measurement sites.



Visualize, analyze and manage the measured data with the DischargeWeb.

Download App-Store



The right is reserved to change or amend the foregoing technical specification without prior notice