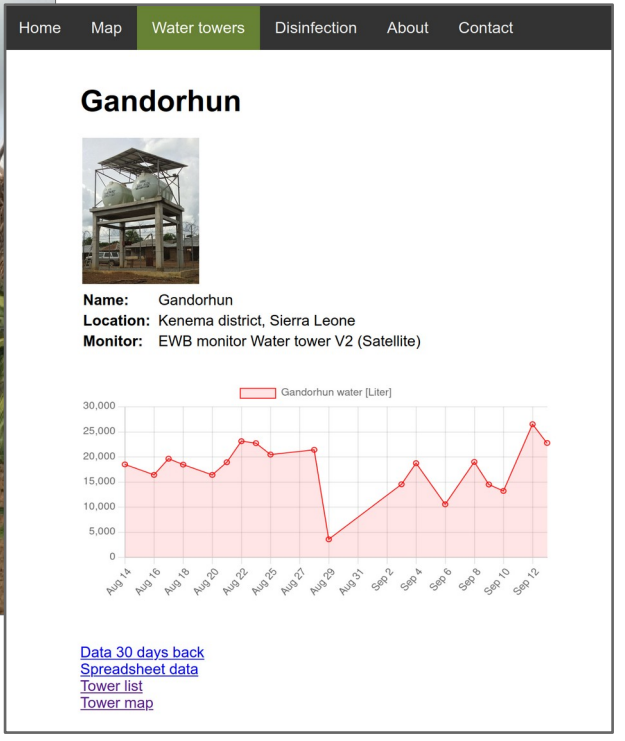
EWB Monitor information



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What is EWB Monitor?

EWB Monitor supports the UN Sustainable Development Goal 6: *“Ensure availability and sustainable management of water and sanitation for all”*

EWB Monitor has been designed to monitor water tower operation and water consumption

Since 2023 the EWB Monitor also enables monitoring of environmental and climate parameters using small sensors that sends data to the EWB Monitor

The data is available via the EWB Monitor website and also via data integration solutions

EWB Monitor is currently installed at different water towers in Sierra Leone

EWB Monitor is open-source

EWB Monitor functional requirements

The functional requirements below define EWB Monitor functionality and capabilities:

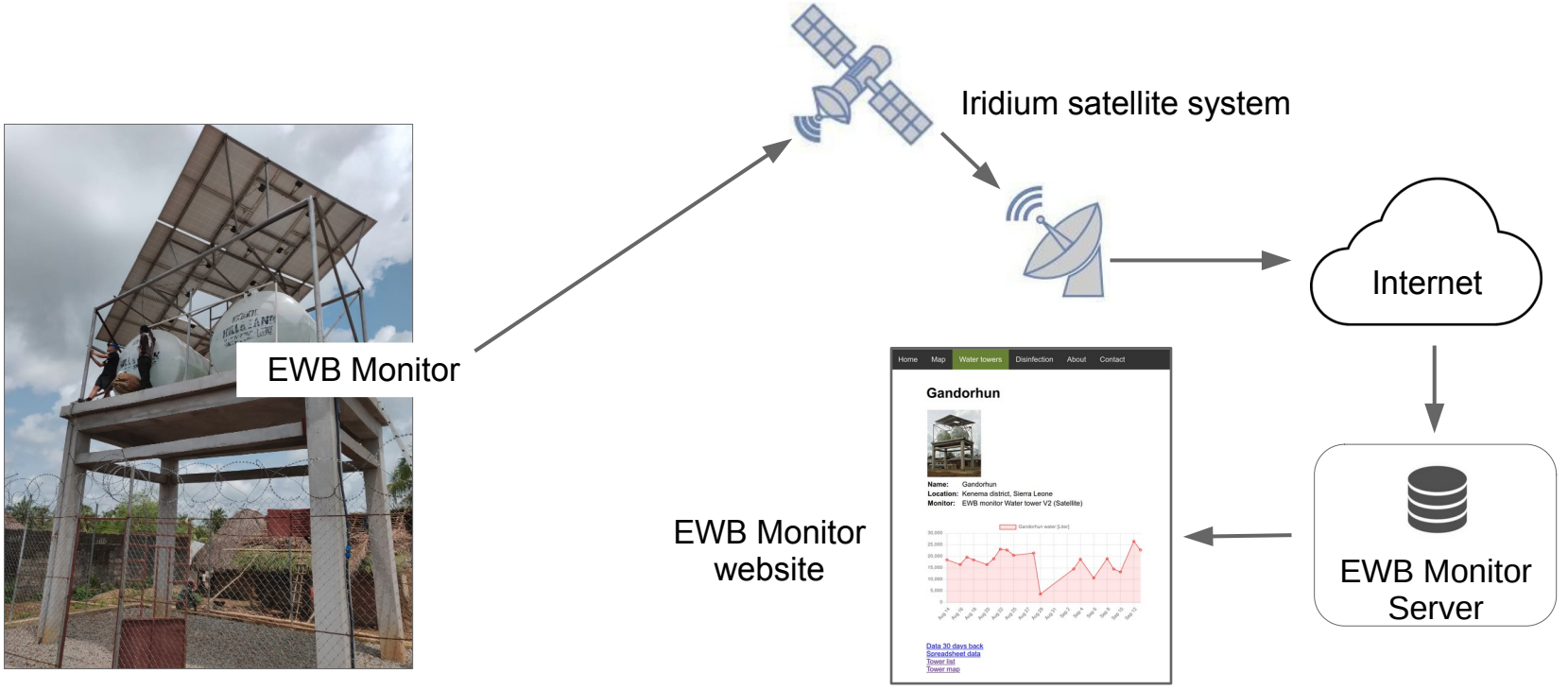
- EWB Monitor is designed for installation on a community water tower to monitor the water tower operation and water consumption. The monitoring is based on measurements from a flow meter which is inserted between the pump and the water tower tank.
- The EWB Monitor including any potential faults thereof must not in any way impact the water tower operation. To ensure this, it must operate completely independent of the water tower and not be electrically connected to the water tower electrical system such as the pump, pump control or solar cell panel power.
- EWB Monitor must report water tower data at least each 24h (satellite link) or preferably more often (mobile data link).
- (New 2023) EWB Monitor must optionally support reception of data from nearby sensors (e.g. environmental and climate data) through a local wireless network.

EWB Monitor design goals

The design goals below define other important EWB Monitor properties:

- EWB Monitor should be designed for use in remote areas with little or no infrastructure
- The cost of EWB Monitor hardware, installation and operation must be kept low to increase accessiblity and scalability.
- EWB Monitor should be designed to enable installation and service e.g. by local companies and at a later stage also enable local production.
- EWB Monitor should promote further development, also at e.g. local universities by using open standards, open architectures and open source software and hardware.

EWB Monitor architecture



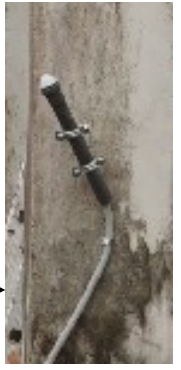
The EWB Monitor hardware at the water tower sends data via either satellite (illustration above) or via mobile internet to the EWB Monitor server. From there it is accessible via the EWB Monitor website https://ewb-monitor.org

EWB Monitor installation

Solar cell panel

Water flow meter

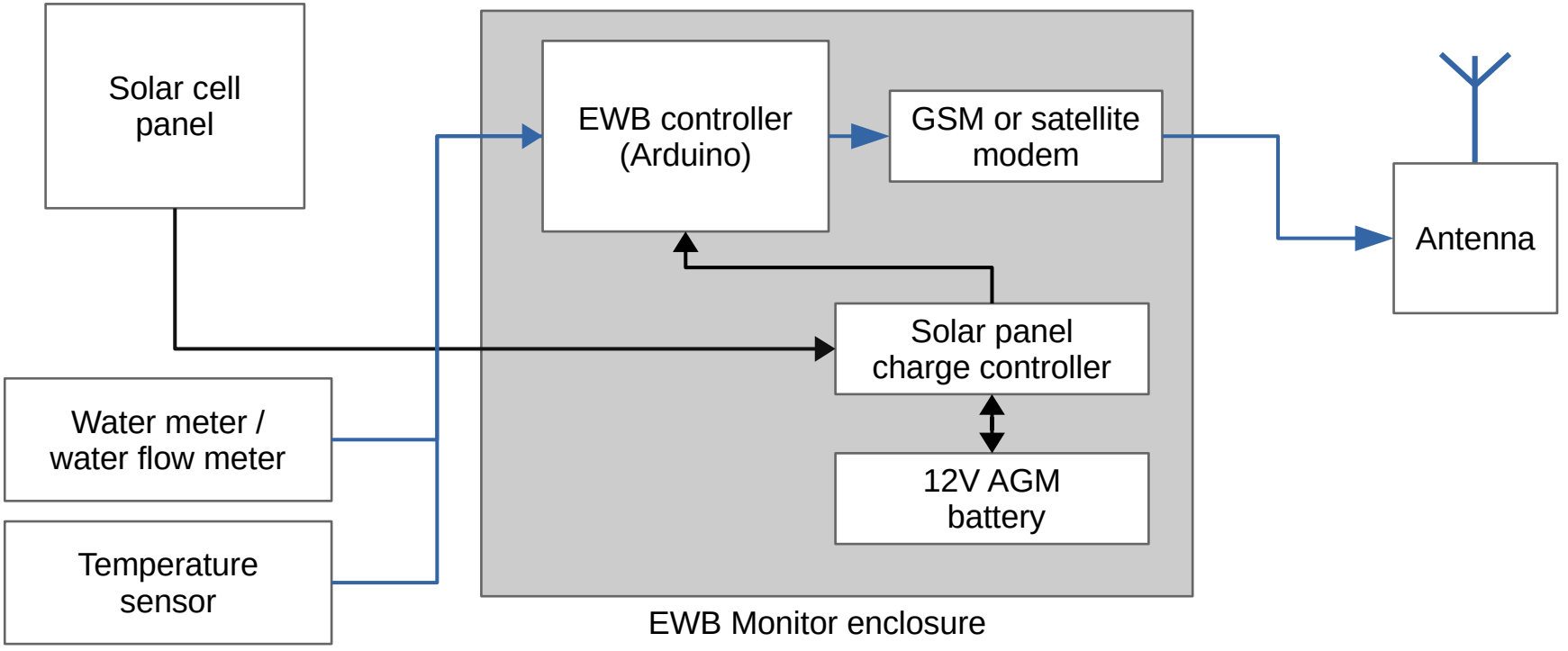
EWB Monitor



External antenna

The installation consists of the EWB Monitor enclosure which contains the electronics and battery. From the enclosure there is a cable to a solar cell panel and to a water flow meter. Some installations also has a cable to an external mobile internet or satellite antenna and to a temperature sensor.

EWB Monitor hardware



This illustration shows a more detailed view. The grey box represents the EWB Monitor enclosure with the battery and electronics. From the enclosure there is a cable to a solar cell panel and to a water flow meter. Some installations also has a cable to an external mobile internet or satellite antenna and to a temperature sensor.

Who is behind EWB Monitor?

EWB Monitor has been developed by Engineers Without Borders – Denmark and the University of Southern Denmark in collaboration with local and global funding partners, NGO's, universities and private companies. Some of them are listed here.

ENGINEERS WITHOUT BORDERS DENMARK

SDU

WORLD HOPE INTERNATIONAL

SEND SIERRA LEONE

ETU - SL EDUCATION ENTREPRENEURSHIP TECHNOLOGY

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Who owns EWB Monitor?

The installed EWB Monitors and the monitor data are owned by the local stakeholders. Depending on a stakeholder agreement data from stakeholders may be available for research, non-commercial purposes, commercial purposes.

The EWB Monitor technology is copyrighted by the respective creators, which are mainly Engineers Without Borders – Denmark and the University of Southern Denmark. This ensures that the technology is open for everyone to exploit for non-commercial as well as commercial purposes.

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Contact information

General inquiries concerning EWB Monitor such as collaboration, operation, funding, media etc. should be directed to:

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