

The Need for SonSetLink

One of the largest challenges of installing a well in a third-world community is to maintain pump uptime. SonSet Solutions has designed a platform called **SonSetLink™** (SSL) to help missions organizations monitor their pumps. Below is our monitoring technology for the Afridev hand pump.

How SonSetLink Works

SonSetLink is an **Internet of Things (IoT)** platform. An **IoT** platform is a series of physical objects that are connected digitally. SonSetLink is an end-to-end platform that allows remote access to pump data.

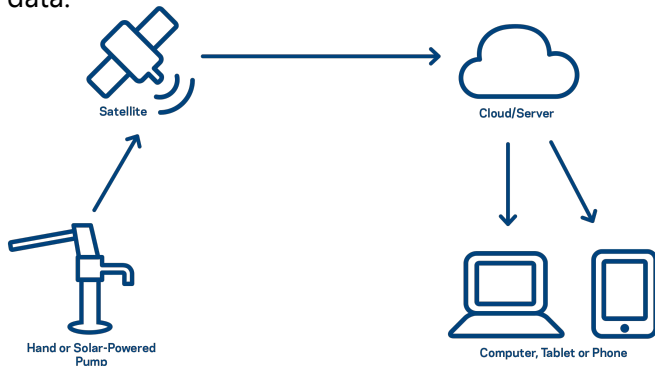


Figure 1: A diagram depicting SonSetLink, an IoT platform.

The Hardware

Body

SonSetLink technology gathers data using sensors that mount onto the Afridev. A built-in satellite modem transmits this data daily. Our Afridev SonSetLink is built with aluminum and HDPE; it holds up well in harsh environments. It is powered with replaceable AA lithium batteries.

Sensor Possibilities

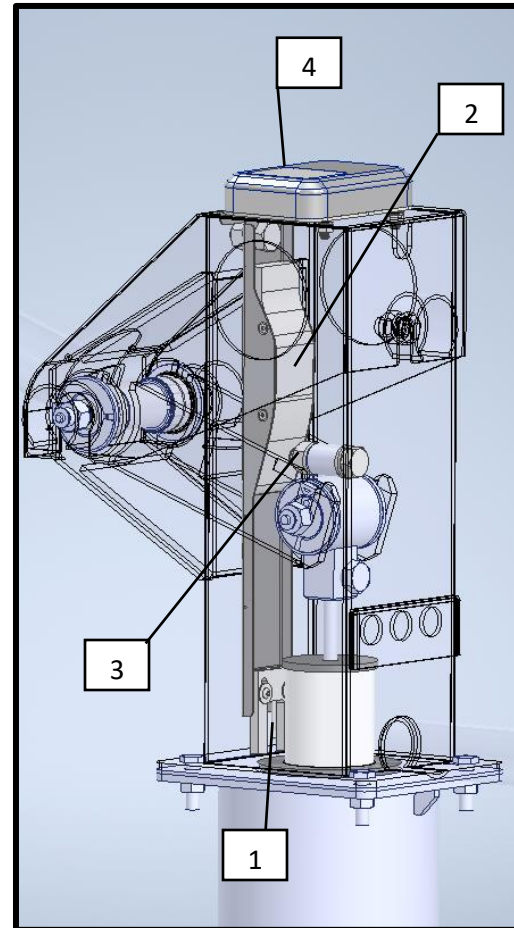
Water Detection

When the water flows out of the pump spout, the SSL senses the water with two stainless steel probes.

Pump Motion Detection

When the pump handle is moved, our sensors detect the motion using magnets. We tally and send each minute of usage daily.

Monitor Setup



1. Water sensor in the spout.
2. Handle motion sensor.
3. Custom magnet bolt; enables handle motion detection.
4. Sealed housing for modem, batteries, and processor.

The sensor sends the information to the processor through a wireless infrared signal.

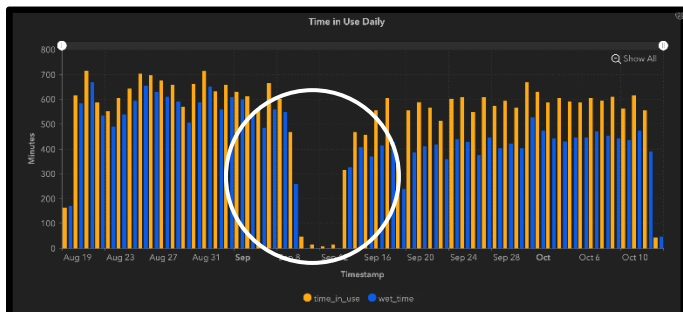
Significant Stats

Together, the sensors measure the following:

Time-in-Use
The total amount of time the pump was used
Wet time
The pump operation time with water flowing out
Dry time
The pump operation time with no water flowing out
Ambient Temperature
The temperature outside around the pump

Impact

The purpose of SonSetLink is to ensure that nonprofit organizations can observe the conditions of their pumps. One example of the effectiveness of SonSetLink can be seen on the graph below:



At this site in Malawi, East Africa, there was a lapse in the performance of an Afridev pump. Once this downtime was detected, the organization mobilized a repair team to resolve the issue. After the repair, the pump returned to its regular performance. SonSetLink data allowed this ministry to drastically shorten the downtime of their pump.



Support the Work

By partnering with nonprofit organizations who can use our technology, we are not just making a physical impact, but a spiritual one as well. By supporting this mission prayerfully and financially, you can make a spiritual impact as well.



Village leaders pray over an India Mark II hand pump, equipped with a SonSetLink, in Tanzania.

If you feel called to support this initiative, see below for the contact info.

Donations:
SonSet Solutions
P.O. Box 2709
Elkhart, IN 46515-2709

SonSetLink website: <https://SonSetLink.org/>
SonSetLink email: SonSetLink@SonSetSolutions.org
SonSetLink newsletter:
<https://SonSetSolutions.org/subscribe/>

Tours, visits, and shipping:
2830 17th Street
Elkhart, IN 46517
Office Phone: (574) 970-4252