SonSetLink Technology: LifePumpLink

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**^{TM} (SSL) to help missions organizations monitor their pumps. Below is our monitoring technology setup for the LifePump.

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.
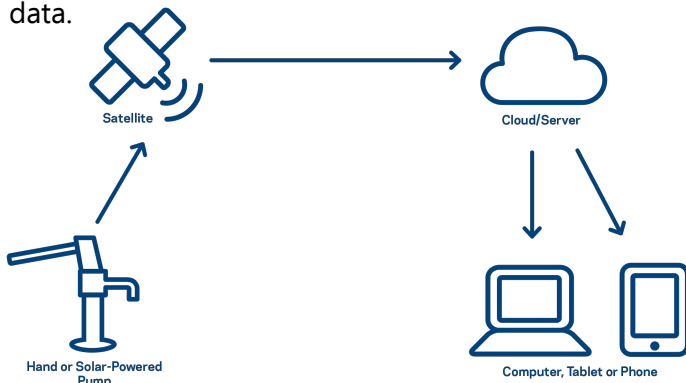

Figure 1: A diagram depicting SonSetLink, an IoT platform.
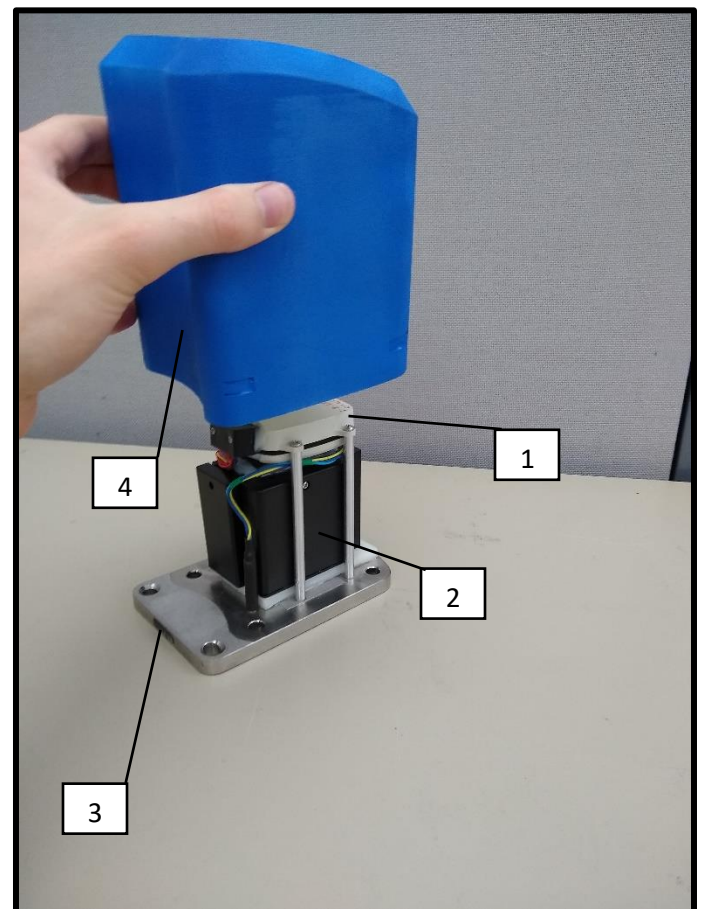
The Hardware

Body

SonSetLink technology gathers data using sensors that mount onto the LifePump. A built-in satellite modem transmits this data daily. The LifePumpLink is sealed against water and dust ingress, and mounted on high grade stainless steel, holding up well in harsh environments. It is powered with replaceable AA lithium batteries.

Sensor Possibilities

Pump Motion Detection

When the handle of the LifePump is turned, the LifePumpLink detects the motion using magnets and a reed switch. We calculate the gallons of water pumped based on the number of handle rotations each day. We tally and send each minute of usage daily.

Monitor Setup

1. Satellite modem.
2. Battery pack.
3. Reed switch bank.
4. Protective cover.

The sensor is mounted to the front of the LifePump where it detects handle rotations.

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Significant Stats

Together, the sensors measure the following:

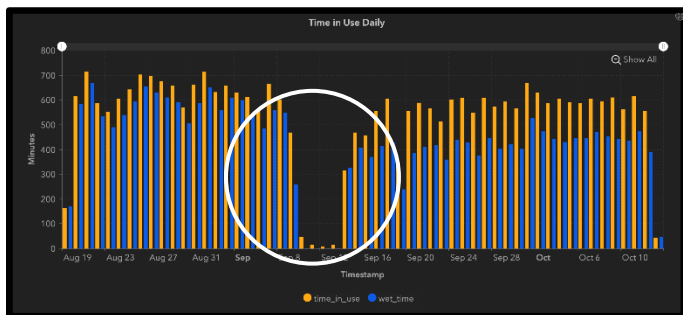| Time-in-Use |
| --- |
| The total amount of time the pump was used |
| **Handle Rotations** |
| The number of times the handle has been turned |
| **Ambient Temperature** |
| The temperature outside around the pump |

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:

The graph above is not of LifePump data, but the principle is the same. If a LifePump fails, the downtime is detected. A maintenance technician can be deployed to repair the pump, and the uptime resumes. This is just one example of how monitoring pumps can be so important.

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:
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