SonSetLink Technology: India Mark II

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 ministry organizations monitor their pumps. Below is our SonSetLink solution for the India Mark II (IM2) 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.
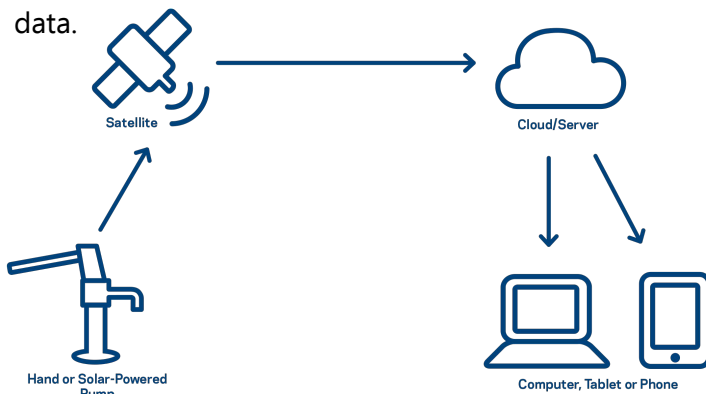

Figure 1: A diagram depicting SonSetLink, an IoT platform.

The Hardware

Body

SonSetLink technology gathers data using sensors that mount onto the IM2. A built-in satellite modem transmits this data daily. Our IM2 SonSetLink is built with aluminum and stainless steel; it holds up well in harsh environments. It is powered with replaceable AA lithium batteries.
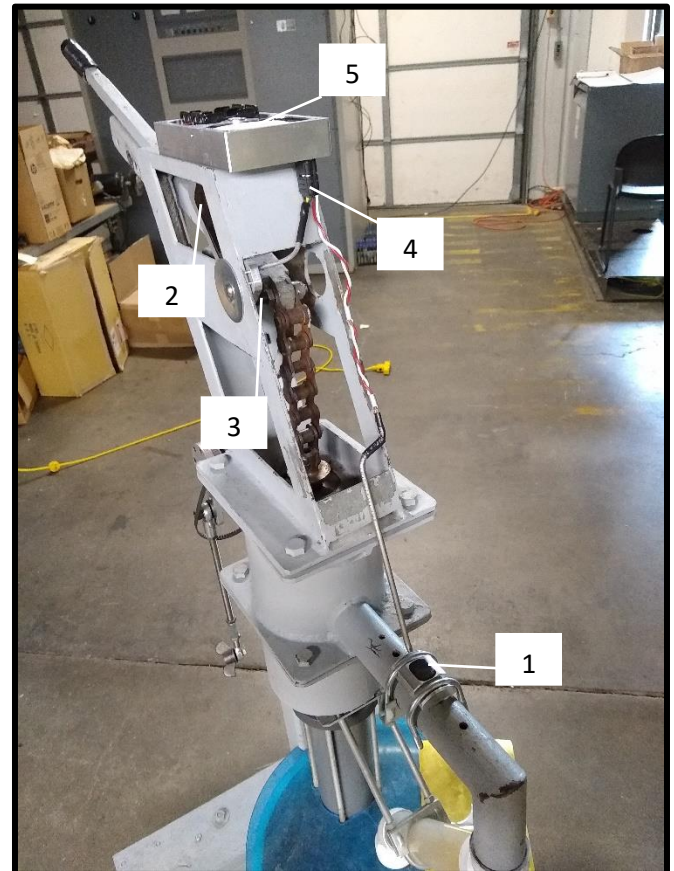
Sensor Possibilities

Water Detection

When water flows through 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. Sensor connection point.
5. Sealed housing for modem, batteries, and processor.

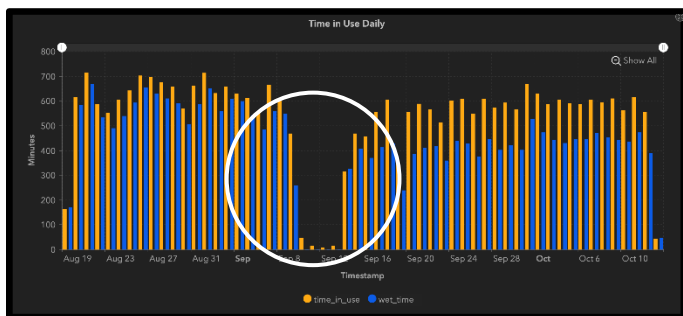After installation, the standard IM2 pump cover mounts back in its normal position on the front.

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Significant Stats

Together, the sensors measure the following:

Time-in-Use
The total amount of time the pump was being used
Wet time
The pump operation time with water flowing out
Dry time
The pump operation time with **no** water flowing out
Longest dry time
The longest period of dry time each day

Impact

SonSetLink allows nonprofit organizations to observe the performance of their pumps. Knowing pump performance in near real-time allows rapid maintenance response. One example of the effectiveness of SonSetLink can be seen on the graph below:

This data is not from an IM2, but the principle is the same. If an IM2 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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