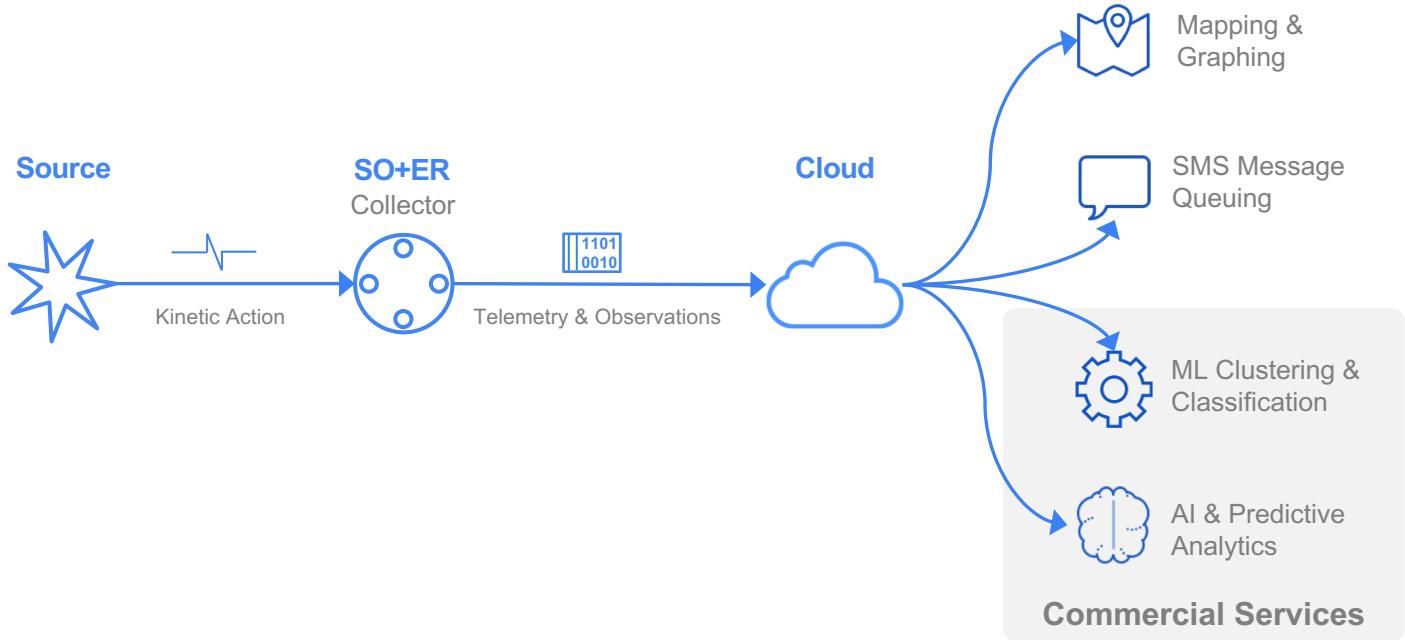


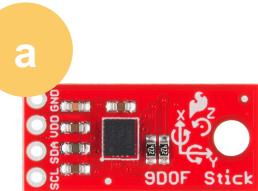
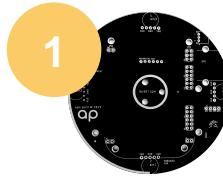
# So, what does it do?

The SO+ER Community sensor contains an array of microphones and an internet enabled single-board computer. The sensor listens for and records sharp sounds with high levels of energy. Recordings are analyzed with machine learning to verify kinetic characteristics and, when appropriate, immediately spawn an alert.



# Stuff you'll need to build it

1. SO+ER PCB (x1)
2. SO+ER Enclosure (x1)
3. [Headers](#) (x2)
4. [BeagleBone Wireless](#) (x1)
5. Sensors
  - a. [9DOF](#) (x1)
  - b. [MEMS Mics](#) (x4)
  - c. [Temperature](#) (x1)
  - d. [GPS](#) (x1)
6. uxcell M3x3mm
  - i. [Phillips Round Head Nylon Machine Screw Bolt Fastener](#) (x3)
  - ii. [Female Thread Brass Knurled Threaded Insert Embedment Nuts](#) (x3)



❖ See the Bill of Materials (BOM) for a detailed list of COTS components, sensors, and other parts.

# Who builds this stuff? It's DIY

## PCB Manufacturers

- Seeed Studio Fusion PCB (OCONUS)
- OSH Park

## Flashing the 4GB microSD Image

*MacOS*

```
dd if=soter.img of=/dev/rdev# bs=10m
```

*Linux*

```
dd if=soter.img of=/dev/dev# bs=10M
```

Pop the microSD in the BeagleBone and power on.  
The BeagleBone powers off when flashing  
completes.

## Enclosure Manufacturers

- Shapeways
- 3D Hubs

Cost Est. Min  
\$200USD

## SO+ER Architecture: Overview

The call-outs below identify the various architecture elements found in a diagram.

- 1 Thin Client Devices
- 2 HTTP Path
- 3 SO+ER Device | Platform
- 4 HTTP Server
- 5 Proxy Microservices
- 6 Sensor Test Applications
- 7 Internet Path
- 8 Persisted Configuration Files

