# INFRASOUND RECEPTION WITH A RASPBERRY BOOM

Adding a pipe array

As you probably know, I have setup a RDCU about 300 meters away from my home to come out of the man made noise. (Machines, Vibration, EMV)


MY RDCU (REMOTE DATA COLLECTION UNIT)

- The RDCU has 2 x 12 Volt 200 AH batteries, charged by a 280 Watt Solar pannel, following the sun and is delivering power for the following devices:

- SAM Earth Magnetic Field Sensor

- Web Cam Mobotix M24

- RFspace SDR Radio with two active antennas

- Infiltec Infra 20 Infrasound sensor

- Infiltec QM 4.5LV Geophone

- Güralp CMG-5TDE Strong Motion Accelerometer

- Güralp CMG-6TD Seismometer

- Raspberry Shake - 3 Axis Geophone

- Raspberry Boom, Infrasound Sensor

- TOA Lightning Detection and Primary NTP for RDCU devices

- LAN Switch, Moxa Serial to LAN Converter, Anel LAN Relay, 5 GHz Mikro Tik Radio Link, i7 PC, and so on
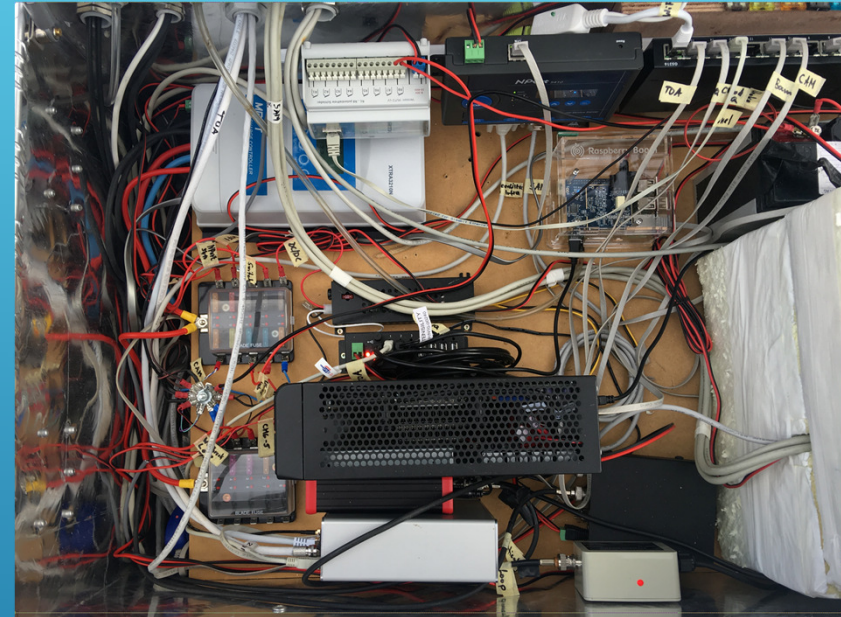
INSIDE THE RDCU

- Why have I selected a further Infrasound device, parallel to my already existing Infiltec Infra 20?

- I really don't like the oldfashioned serial devices, as the are slow, have limited cable lenghth and so on.

- After some investigation in the web I found a firm which produces geophones for vulcano monitoring in south America. To enhance my single geophone to a 3 channel geophone I ordered a Raspberry Shake. I asked them, if they also offer a kind of infrasound sensor. A few months later, the founder and CEO of Raspberry Shake contacted and told me, that they are developing an Infrasound sensor. A few month later, I bought my Raspberry Boom.

- The Shake and Boom use the same software, as they run on all kind of a Raspberry Pi. They have a LAN connection and also deliver a SEED Datalink for certain seismic software.
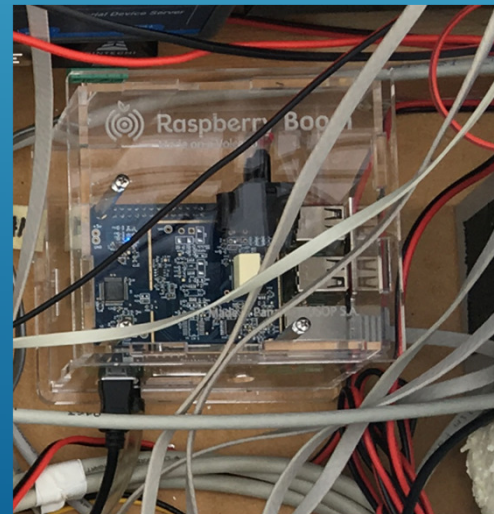
THE RASPBERRY BOOM

- Technical Information can be found on:

- http://manual.raspberryshake.org/boom.html

- The most interesting part for the Pro's is found under:

"Technical Specifications Documents – RBOOM and RS&BOOM Technical Specification Sheet.

TECHNICAL DATA

- I connected the Boom Device to my existing hose array and recognized, the the Boom device seems to be more sensitive compared to the Infiltec sensor. Due to the non UV resistent material selection the hose connectors and the foil against the grass, brake apart.

- **So I decided to buy and build a second, and last time!**

- New   After 6 month under UV radiation!

- I bought a 0.5mm thick pool foil, decided to construct an pipe array out of aluminium, as probably some wild animal will step on the array over the winter time. So plastic would not be a good idea.

- We are still finding parts of the UV resistant foil ! ☹

THE INFRASOUND HOSE ARRAY

Here are some pictures of the construction and installation of the aluminium pipe array. I had some Aluminium for the center ring lying around. The pipes are bought from Bauhaus. They offer 6m tubes, so I decided to cut them in 2m length for easier transport in my car.
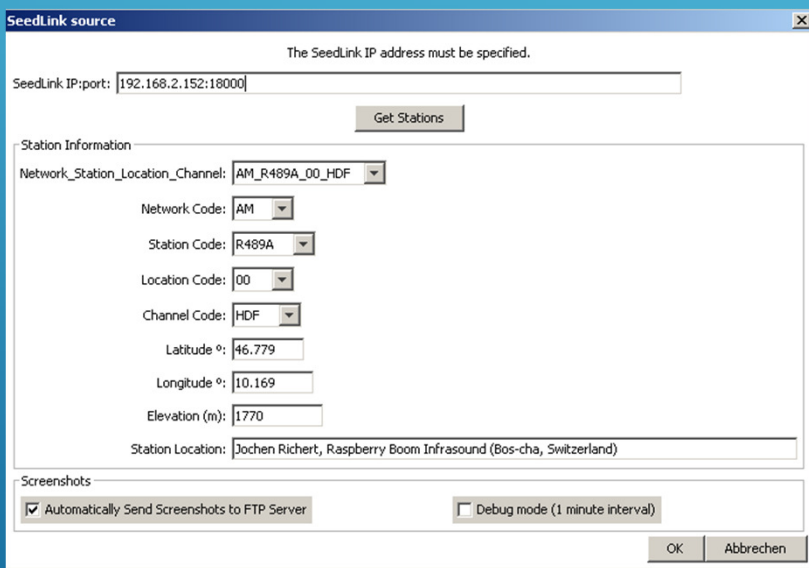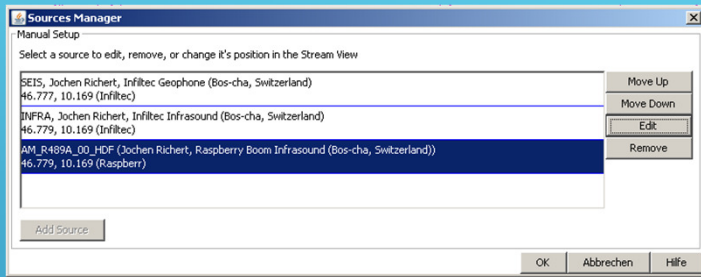

THE INFRASOUND PIPE ARRAY
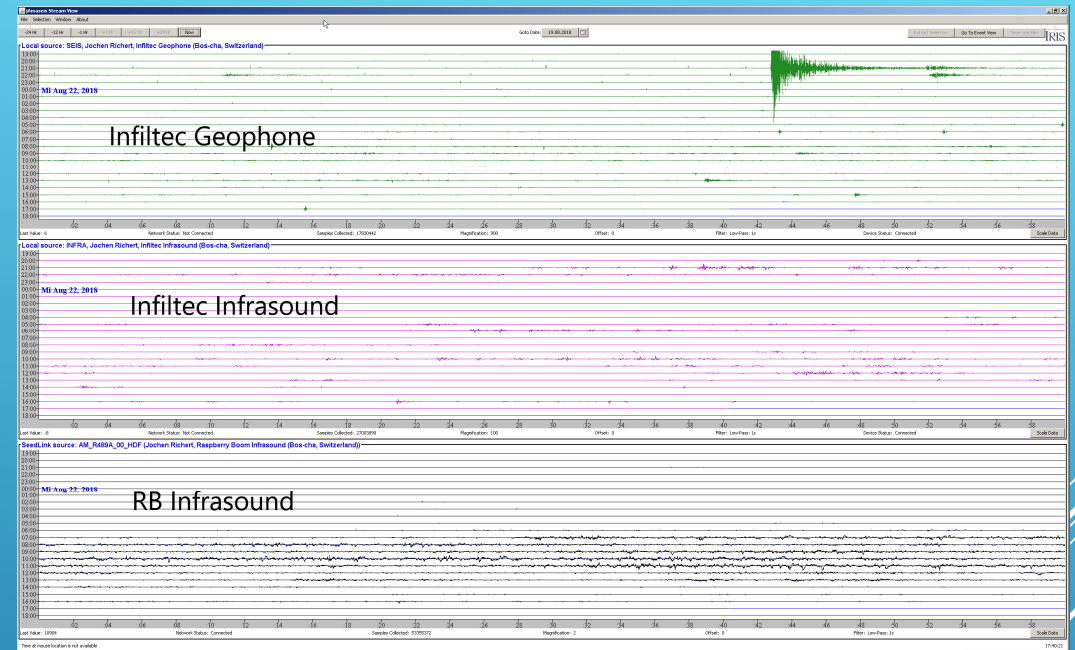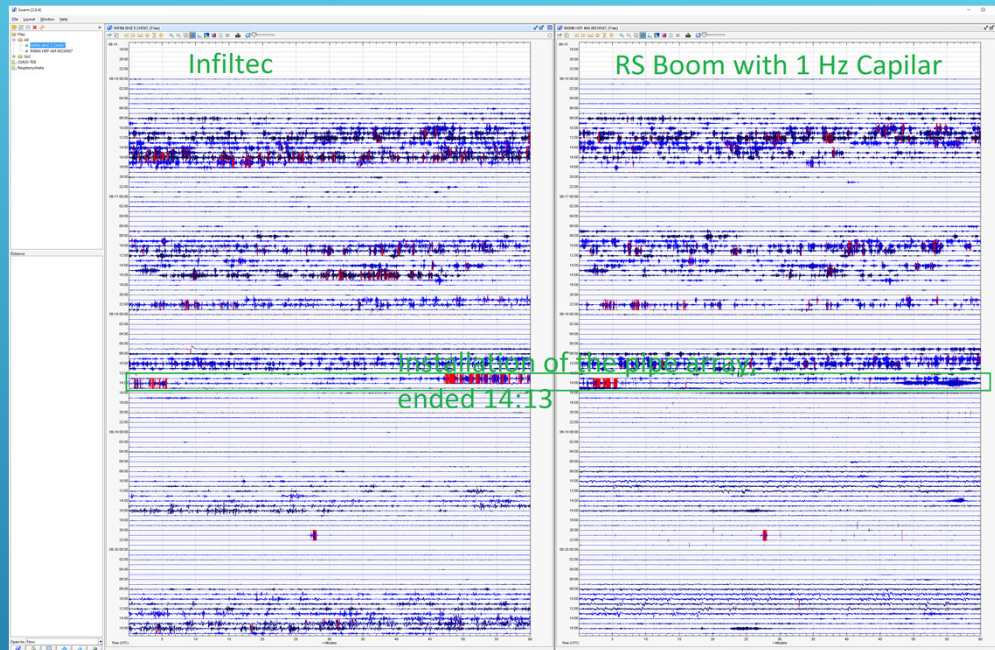
The Infiltec sensor is running with a mignification of 100 and the Boom with a magnification of 2. Both are filtered with a 1 sec. low Pass Filter.

THIS IS HOW I LOOKS LIKE WITH THE NEW PIPE ARRAY

HOW TO SETUP THE BOOM WITH JAMASEIS

- I started a small production of 5 center parts for the pipe array. The top and bottom cover will be professionally produced and cutted out by laser.

- This way, it should now be possible to compare the signals between stations using the same type of Infrasound sensor.

CENTER PART FOR PIPE ARRAY

- Thank you for your attention.

- If you have any question, please do not hesitate to contact me.

SUPPORT