

# A Case Study with a Mobile Seismo-Acoustic Array, RAPAR

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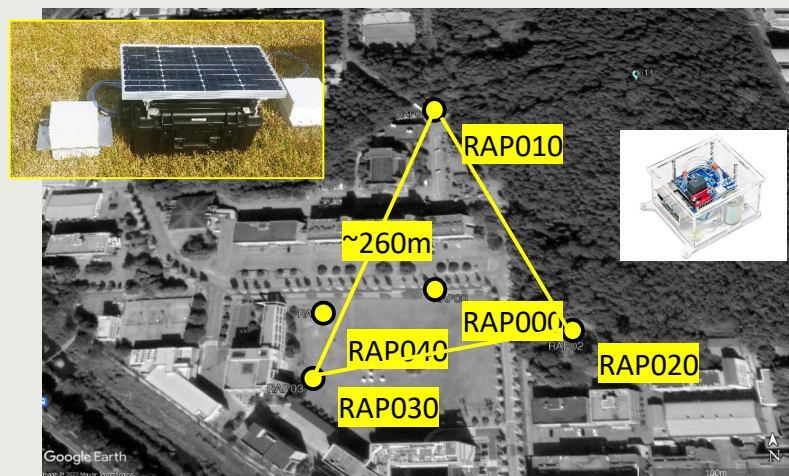


## ..... INTRODUCTION AND MAIN RESULTS

This presentation shows usefulness of a stand-alone mobile seismo-acoustic array, RAPAR for analysing seismo-acoustic signals from artificial sources in regional distance range.

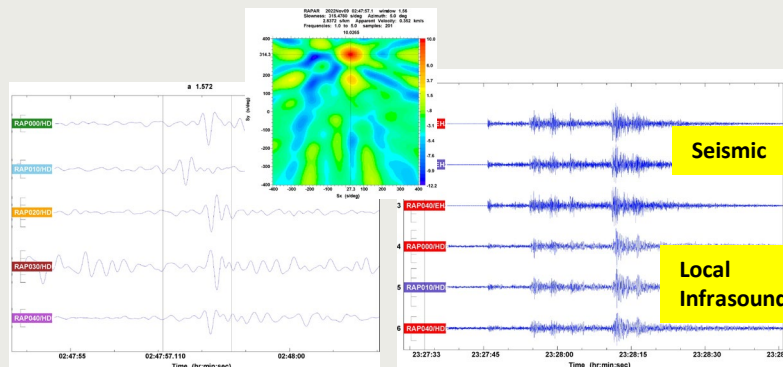
## Abstract

A mobile seismo-acoustic array, RAPAR(RASpberry ARray) was constructed with six Raspberry Shake-Booms, which are relatively small and cheap equipment. RAPAR is a stand-alone equipment with geophone, acoustic sensor, digitizer, solar power supply and LTE communication system but without a wind noise reduction system. RAPAR was deployed six months in a small peninsula, Homigot, located in the southeastern part of Korea and recorded clear seismo-acoustic signals from explosions at a mine at local distance range less than 10 km. A grid search with the first arrivals of seismic signals recorded at RAPAR was utilized for the localization of the events. The locations of the events were clustered within a small area of 255m x 225m. A waveform cross-correlation technique classified the events into five groups based on the seismic waveform coherence. The recorded waveforms at each group revealed the source characteristics of explosions at the mine.



## Field Test

- RAPAR was deployed as a 260-m small aperture array on KIGAM campus. RAPAR recorded various seismo-acoustic signals in regional distance range.



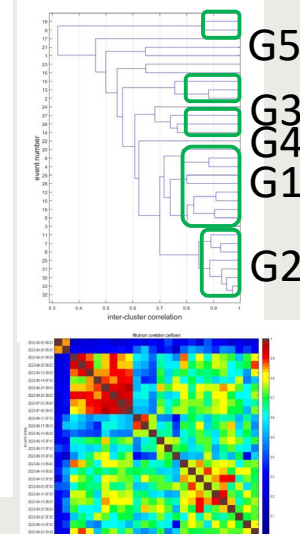
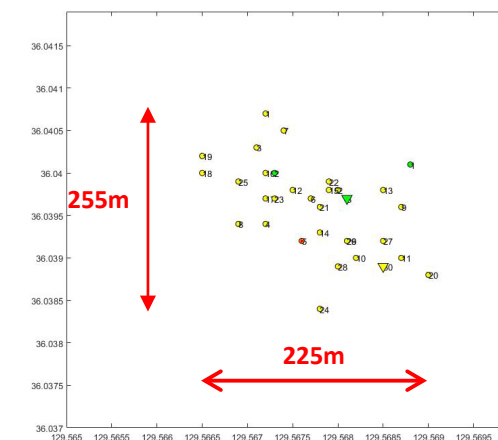
## Deploy at Homigot in the southeastern part of Korea

- RAPAR recorded clear seismo-acoustic signals from a mine at Homigot



## Results

A grid search located the events within a small area of 255m x 225m. Waveforms classified into five groups.



## Conclusions

The recorded waveforms from explosions at a small mine of Homigot revealed the source characteristics of explosions at the mine.

