ID: Type: **Poster**

Temporary Installation of Seismo Wave MB3d with Raspberry Pi at Nanyang Technological University

To assess the feasibility of the installation of an infrasound array on the campus of Nanyang Technological University (NTU) a temporary deployment of the Seismo Wave MB3d microbarometers is being designed and carried out. This system uses Raspberry Pi 3 B (RPi) microcomputers for data collection, archiving, and data streaming via Wi-Fi and Ethernet. The use of RPi allows for a real-time stream from deployed sensors into the main infrasound data processing systems at NTU and allows for comparison between the NTU sites and the established infrasound site at MacRitchie Reservoir. In order to achieve real-time data transmission, the RPi is configured to access the MB3d USB connection using Ser2net and Earthworm software. This current configuration has provided a solution for temporary deployments, but there are limitations that impact its use for further deployments including high power consumption and reliability relative to other stations. For a practical and inexpensive solution for easily accessible sites, the RPi has worked well, but these few technical issues keep it from being an ideal solution for a permanent installation. Further work is being done to determine if a similar solution can be designed to work with the serial connection for the MB3ds.

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Track Classification: Theme 4. Performance Optimization