

EGU2020-11887

<https://doi.org/10.5194/egusphere-egu2020-11887>

EGU General Assembly 2020

© Author(s) 2020. This work is distributed under the Creative Commons Attribution 4.0 License.



Extending the Pegasus Portable Technology Platform to Apply to More Geophysical Monitoring Use

Bruce Townsend, Andrew Moores, and Sylvain Pigeon

Nanometrics Inc., Kanata, Canada (brucetownsend@nanometrics.ca)

The new Nanometrics Pegasus now available to the scientific community provides a compelling comprehensive solution for easily and quickly deploying portable seismic stations. Use cases include RAMP, local and regional hazard monitoring, passive seismic imaging and local or regional seismicity assessments. Because the technology platform on which Pegasus Portable is based is extensible and versatile, it has the potential to address additional use cases. The benefits of the Pegasus technology would apply to new use cases: optimal SWaP (Size, Weight and Power), Modularity (the versatility permits wide choice of sensors and power to serve various situations), Ease-of-Use (workflows designed for planning-to-publishing efficiency), Complete Ready-to-Use Datasets (including automatically generated station response), and Quick (such as ultra-fast boot, rapid data download). We explore the potential extensions to Pegasus that can enable additional use cases for autonomous geophysical monitoring.

An example is large-N mixed-mode nodal deployments in which hundreds of stations are quickly deployed that can include a mix of sensor types such as broadband seismometers, geophones, microbarometers, and weather stations. A key focus for large-N campaigns is to scale efficiently. One proposed element for consideration is a cloud-based campaign planning and post-deployment auditing service in which a master plan can be readily distributed to many field operators to facilitate automatic station configuration and later reconciliation of on-the-ground actions with the master plan.

Another compelling use case for Pegasus is ocean bottom seismometry, where technology enablers would include OBS-specific actions and workflows (managing the datalogger and its power sources without having to open marine pressure vessels, synchronizing timing to GNSS, applying time corrections to retrieved data and the like). These and other use cases and related technology extensions are discussed.