Low cost transmission and State of Health for NDC's

Transmitting live data from a seismic station has a cost. The Observatorio San Calixto (OSC) based in La Paz, Bolivia, developed a low cost (<50US$) solution for 3G live data transmission system, based on a Raspberry Pi, and a 3G dongle. A homemade State of Health (SoH) daughter board connected on top of the Raspberry Pi was designed to connect intrusion, battery voltage and temperature sensors. Miniseed data format is being used, based on IRIS tools. This system can thus be connected with most of off-the-shelf digitizers. Data is stored locally allowing for backfilling in case of network shortage, and transmission is done through VPN to secure the access. For the NDC, a web-based graphical interface was developed to monitor of the live-SoH of each station, with charts and records of the station history. Mail alerts are sent when a station is missing or a parameter is out of range. Though it canât be used for alert system, as it depends on the mobile network, it is of good help as a complement of the existing CTBTO network for research topics, and it is easily movable. This system has been successfully deployed today on five stations on the Bolivian network.

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