# AVO Communications (2016)

**DIGITAL**: **13** volcano networks with **58** stations and **189** channels
**ANALOG**: **23** volcano networks with **157** analog and **220 channels**
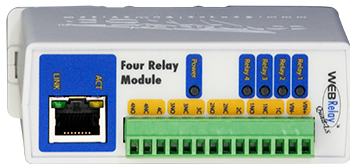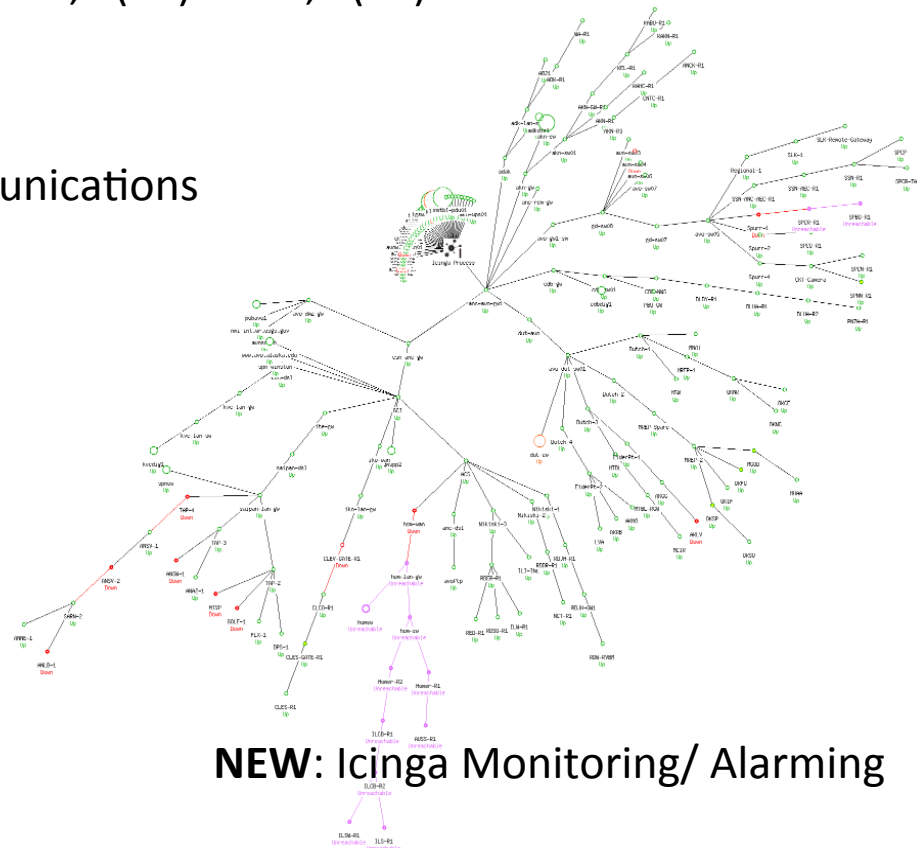*(Numbers don't include CNMI)*

AVO Digital Radio Counts *(Discluding CNMI)* :
(**94**) EB3+,   (**29**) FGR2,   (**10**) EB1

**FGR2 Gotcha**: 28 mile breakdown in communications
with Gateway radio FW 3.06.
All AVO FGR2's rolled back to FW 2.22

**NEW**: Use of customized WebRelay
firmware to ping and automatically
power-cycle unresponsive radios

**NEW**: Icinga Monitoring/ Alarming

# Environmental Site Hardening

Megafauna

Rime Ice & Deep Snow

Volcanic Eruptions

High winds & Flying debris
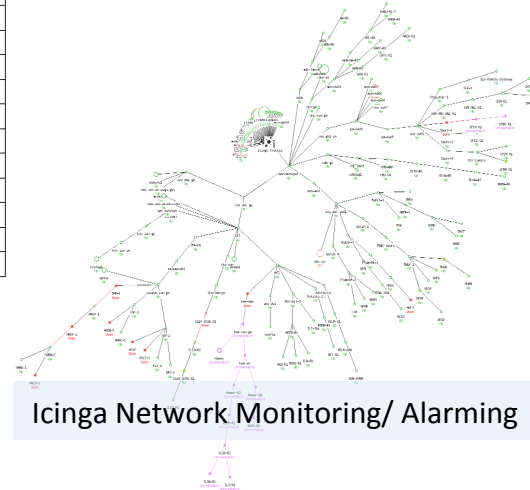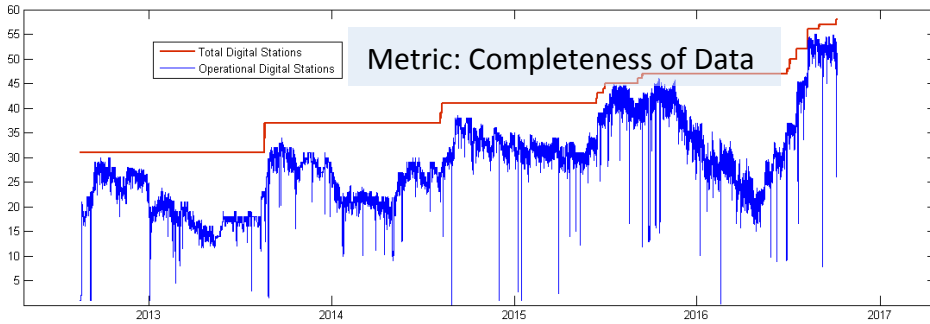
**Hardened Solar Panels Sandwich:**
[1] Lexan shield,  [2] Panel,
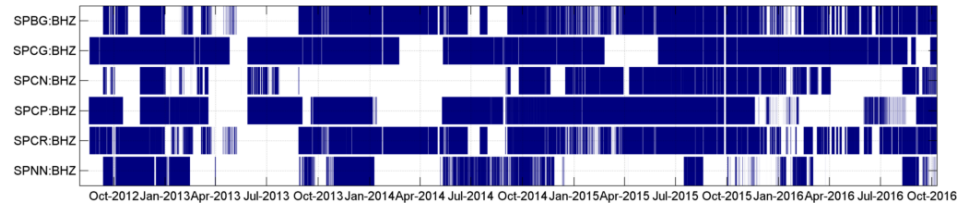[3] Blue board foam,  [4] Metal backing plate

Interior mounted Web Cameras

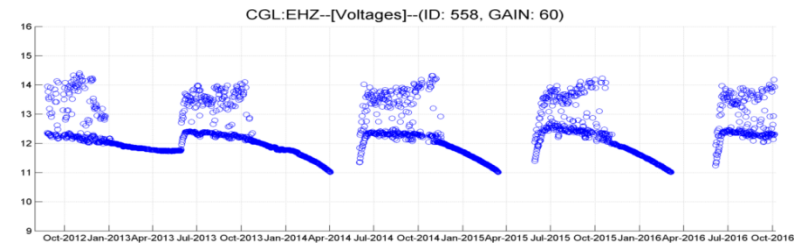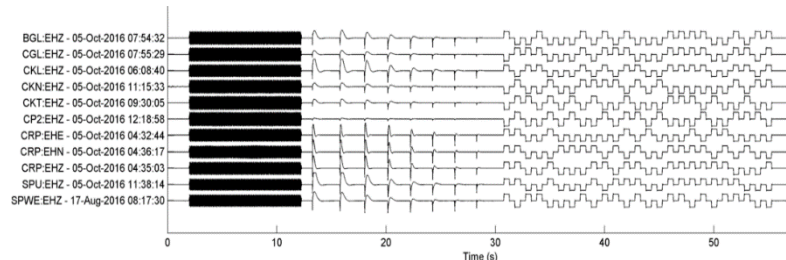# AVO SOH Monitoring



Metric: Completeness of Data

Multiple devices perform Voltage Monitoring:
MPPT controlers, Q330, NetRS

Icinga Network Monitoring/ Alarming

MPPT monitoring of Voltages, Currents, & Charge rates
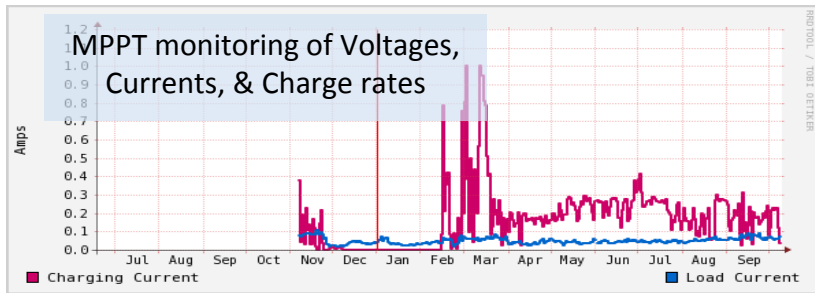
Data completion plots identify most challenging site to keep online

New insights into site-specific charging periods

**Analog Channels**: Use of McVCO 'calibration pulse' to automatically track outages, seismometer health, and voltage information.