

# AVO's A2D Effort - 2019



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Alaska Volcano Observatory

# AVO's A2D Effort ...

## Historical Context:

- AVO started life with simple, low cost, low power analog equipment transmitting across FM radio channels
- Our radio channel allocations for a ~200-station network were voided in 2005
- Ordered to comply (an unfunded mandate)
- Decided upon a strategy to vacate the NTIA spectrum and move to digital systems transmitting in the “unlicensed” ISM bands
- We worked at an exceedingly slow pace with limited funding until a couple years ago
- Received a congressional appropriation of about \$10M in late FY18 to address the problem full on – 2019 was officially “Year 1” of a focused 4-year effort

## Staffing:

- AVO's core group of field operatives has grown to 10 – distributed across AVO, UAFGI, and ADGGS
- AVO deployed over 50 individuals to the field (~40 directly associated with A2D efforts)
- An average of 12 field-deployed staff per day for the period June 1 through August 31

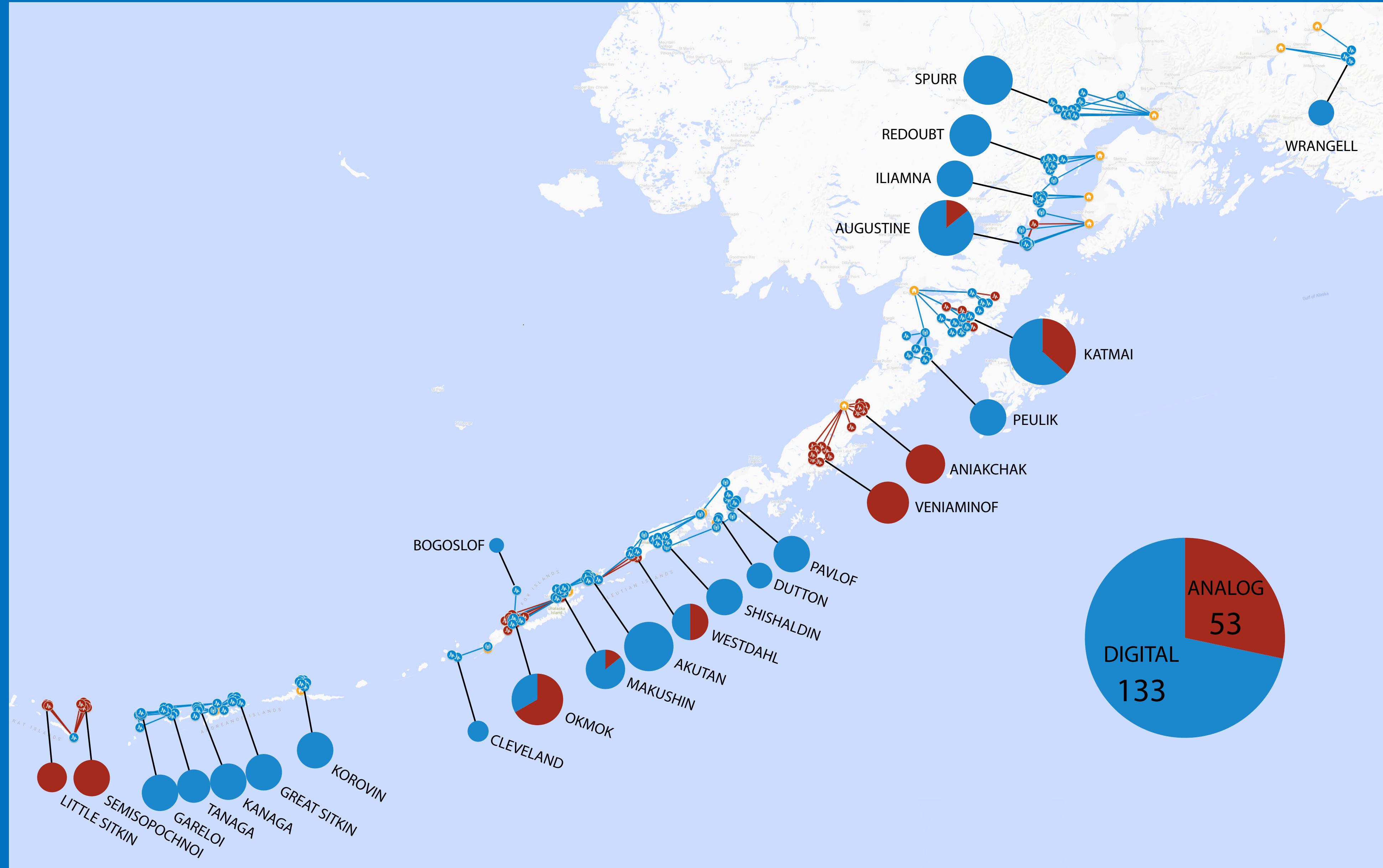
## Logistics:

- Over 80 days of ship charter; about 190 days of helicopter; nearly 30 tons of equipment shipped

## Principal accomplishments:

- A2D – 36 stations (plus 8 D2D modernizations)
- Infrasound – 10 new channels
- Cameras – 4 new cameras
- Five volcano networks fully flipped from Analog to Digital

# Status to date...





Gareloi

# Tanaga & Gareloi Geophysics

June 29 – July 24

Boyce  
Graham  
Kamibayashi  
Kushner  
Lally  
Lopez  
Mayo  
Wech  
M/V Steadfast  
Maritime Heli

Part of a bigger effort: Adak & Atka A2D Upgrades

5 volcanoes: Great Sitkin, Kanaga,  
Tanaga, Garelo, Korovin

36 sites, 33 broadband seismic, 10 infrasound,  
4 webcams, 8 radio subnets



Tanaga CAM (TAPA) Mon Oct 28 13:31:50 2019 (HDT)  
Exposure: 92



Tanaga/Garelo/Korovin/Steadfast/Maritime @ Adak

Tanaga. A2D Upgrade = new power system, batteries\*, sensors, digitizers, telemetry

TAFL



TAFP



TANO



TASE



TASO



TACS  
2003



TACS -> TASO

TACS  
2019



5? backhaul attempts



walk-off

the  
move



TASO

# TAPA repeater huts



Tanaga CAM (TAPA) Mon Oct 28 13:31:50 2019 (HDT)  
Exposure: 92

- Equal dataflow per hut

# A2D Upgrades: Gareloi

GAEA



GAKI



GALA



GANE

GANO

GASW