Instrumentation Services Overview

IRIS Instrumentation Services
Technical Interchange Meeting

Palm Spring, CA
April 12-13, 2016
A Wide Range of Instrumentation Activities

Temporary to Permanent

Vaults

Temporary

Harsh Environments

Ocean Bottom
Status of IS Programs - TA

• Starting 3rd season
  – Over 30 stations complete
  – Targeting ~70 this season
• Key technologies
  – Power systems
    • Lithium rechargeable
  – Communications
    • Inmarsat and Iridium
  – Sensor emplacement
    • Posthole

• Teams in Anchorage, New Mexico, and San Diego
L48 and CEUSN

- Rolled up the final TA footprint in the northeast
- Converted 158 stations to long term operation as part of the Central and Eastern US Network
Global Seismographic Network

- 153 globally distributed stations
- A new generation borehole Streckeisen sensor
  - Initial units under test
- Push on use of metrics and MUSTANG
- Key efforts at USGS Albuquerque Seismological laboratory and Project IDA at UCSD
PASSCAL

- Deployments on every continent for three decades
- Support for wide range of experiments, from broadband to active source
- Specialized support for Polar deployments
- High volume: Testing, calibration, packaging
- Team at PASSCAL Instrument Center at New Mexico Tech
Magnetotellurics

- Support for both Transportable Array and Flexible Array MT activities

- MT-TA is continuing on mid-Atlantic footprint

- Challenges with older instruments
  - Workarounds of every sort

- Team at Oregon State University
Ocean Bottom Seismograph Instrument Pool

- Support experiments worldwide
- Broadband and short period
- Completed a major 4 year experiment
  - Stress on people and HW
- Key technologies
  - Packaging for pressure
  - Packaging for shipping and handling
  - Power systems
  - Timing
Other IS Activities

- **Greenland Ice Sheet Monitoring network (GLISN)**
  - Ongoing O&M of six stations
  - Highly leveraged – data from 32 stations
  - Evaluating Iridium Pilot high bandwidth system

- **GEOICE**
  - Developing Wavefields technology
  - Testing in the lab and field (Antarctica)
  - Testing sensor-datalogger combo
Emerging Activities

• Wavefields
  – Deploying instruments in larger numbers (large N) to observe wavefields with minimal aliasing
  – Demonstration experiment this spring

• Subduction Zone Observatory
  – Workshop in September 2016

• Sustainability
  – Analyzing what we have, how many, how old, when it needs to be replaced and how much money we need!

More activities highlighted in the presentations
Our Funding and Support

- SAGE, OBSIP, GLISN, GEOICE all at different stages of multi-year awards
- Funding generally strong, but generally flat (trend in federal funding)
- Although flat funding is stressful, we (IRIS) are still funded at over $30 million / year of public funding
- Solid expectation of stable funding through 2018
Technical Interchange Meeting

• IRIS’ second face-to-face Technical Interchange Meeting

• Goal: Share knowledge and experience
  • Gain efficiency
  • Enhance quality

• Contribute open and freely

• Meet your colleagues

• Enjoy
Summary

• Collectively executing a wide-range of instrumentation activities

• A mix of stable, well established activities and new activities

• Your efforts and your expertise are key to the success of the activities highlighted here – Thank You!