SAND2018-2843PE

The Trans-Atlantic Infrasound Payload (TAIP) on PMC-Turbo

Daniel C. Bowman

OBJECTIVE: Measure low frequency sound, or “infrasound”, over the Arctic.

- Survey acoustic waves in a region that has never been measured before
- Overfly ocean microbarom source regions in the north Atlantic
- Cross-calibrate three different sensors

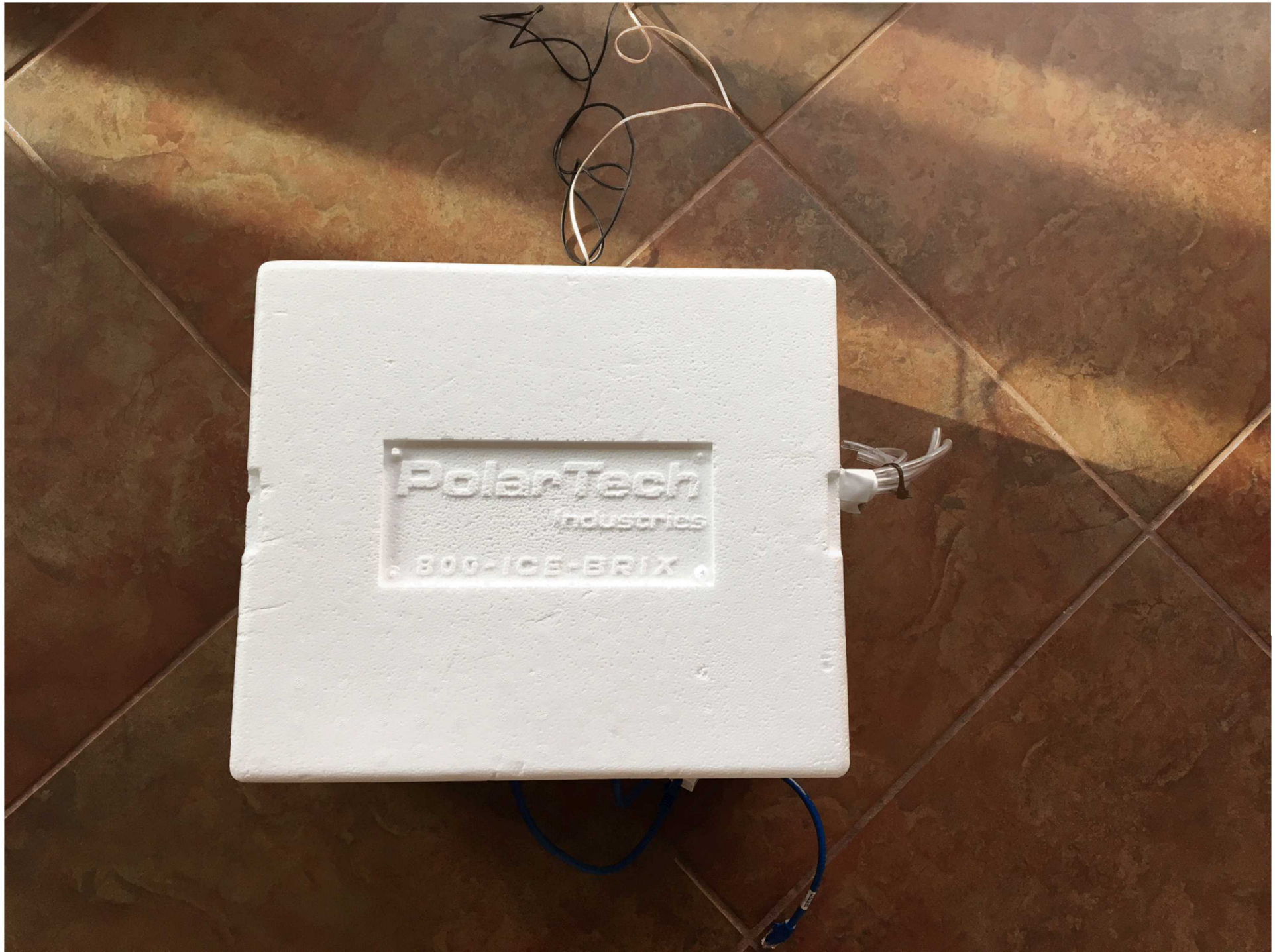
TEAM

Principal Investigator: Daniel C. Bowman (Sandia National Laboratories); dbowma@sandia.gov

- TAIP Point of Contact
- Mission Planning, Payload Integration, Experiment Coordination
- Data reduction and analysis

Co-Investigator: Jonathan M. Lees (UNC Chapel Hill); jonathan.lees@unc.edu

- Data analysis and interpretation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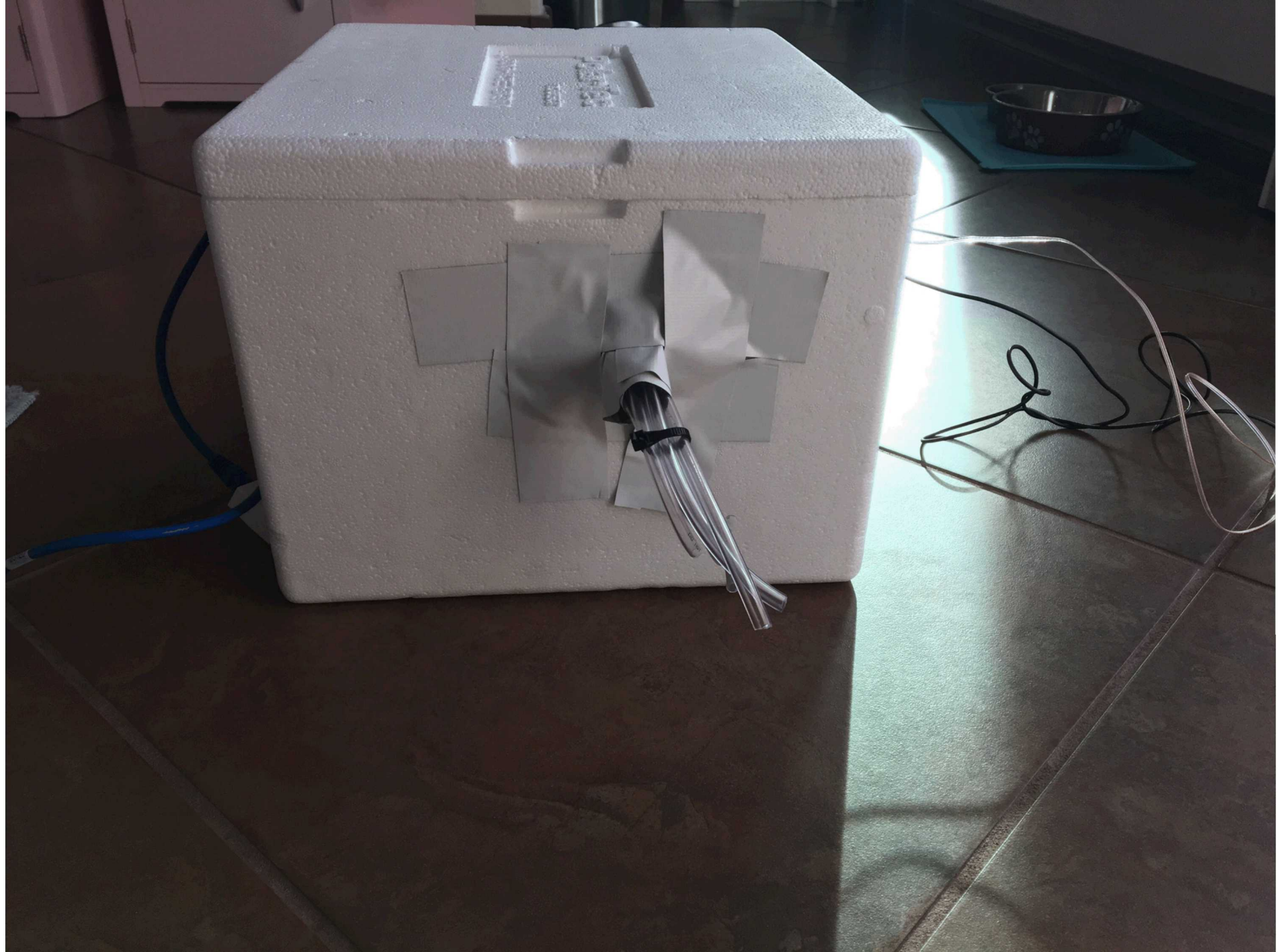


MIC
POWER

Specifications and Requirements

Mass and Dimensions: 2.5 kg (5.6 lbs.); 38 x 33 x 25 cm (15 x 13 x 10 in) medical-grade foam shipping carton
Power: One CSBF-supplied 30 V battery. The remainder of the payload operates on internal power (Energizer Ultimate Lithium AA battery packs).
Special Needs:

- Tubing protruding from box must have access to the atmosphere
- Two GPS antennae protruding from box must have a view of the sky
- Blue Ethernet cables protruding from box must be connected together pre-launch (see Operations Plan for details)
- **Payload must be recovered for mission success**

Specifications and Requirements

Flight Parameters: No specific altitude or day/night exposure needs. Longer flight durations are better.
Thermal, pointing, telemetry needs: None
Thermal Analysis: None required (payload design similar to ULDB 2016 infrasound package)
Integration Requirements: No team members will be present in Sweden. Photos of payload after integration are requested.

TAIP Status

December 2017: Payload constructed and tested
January 23, 2018: Payload integration at CSBF

TAIP is flight ready; no further modifications or milestones are anticipated

Documentation

Trans-Atlantic Infrasound Payload (TAIP) Operation Plan (delivered to CSBF in January 2018)

- Payload description
- Power needs
- Operation of Payload
- Recovery
- Checklists