

Project Title: Seal-mounted Video and telemetry Package for Hawaiian Monk Seal Foraging Studies

Background/Overview:

The NOAA Hawaiian Monk Seal Research Program is mandated to understand monk seal biology and ecology to help inform the development of management and conservation activities intended to help facilitate the recovery of the species. This work includes understanding the foraging ecology and behavior of monk seals at sea. This research requires technology that can be safely mounted and recovered from the seal and can withstand a harsh marine environment (salt water, pressure at depth, percussive damage, etc.) Video data helps with understanding diet and foraging behavior. Other data including location, 3-dimensional movement, and depth helps understand habitat use, energetic cost and other components vital to understanding the ecology of the species.

Objectives:

The objective of this procurement is to obtain video telemetry systems that can be deployed on and recovered from Hawaiian monk seals and able to withstand wear and tear from the marine environment. This will also include developing specific modifications to the systems to aid NOAA in successfully recovering the cameras after deployment.

Scope of Work:

The NOAA Hawaiian Monk Seal Research Program is in need of video-telemetry tags that can be deployed on and recovered from free-ranging monk seals. The system should be contained in a single body and be able to do the following:

1. Recorder Video
 - a. High quality (HD if possible) preferably in color.
 - b. Record at least 6 hrs of video footage
 - c. Duty cycle capable so that researchers can subsample different times during foraging trips (for example record for 30 min, top for 90 min, record for 30 etc.)
2. Depth: pressure transducer record depths up to 500m \pm 1 m
3. Gyroscope (3-axis) (deg/sec) with adjustable sampling frequency
4. Accelerometer (3-axis) with adjustable sampling frequency
5. Magnetometer (3-axis) with adjustable sampling frequency
6. Temperature sensor \pm .01 deg Celsius
7. GPS location (optional) quote with and without and describe capabilities.
8. Light Sensor to determine need for LEDS
9. Forward facing LED or other light system to illuminate at night or at depth.
10. Communications: wireless data transfer and programming
11. Battery Duration: Able to record minimum of 6 hrs video and sensor sample continuously for at least 1 week.
12. Memory: able to store at least 6 hrs of HD video and at least a week's worth of continuously sampled data from sensors.

Orders pending availability of funds:

Base Year: Design consultation and purchase of 3-4 Video systems

Period of Performance: Sep 25, 2017 - Feb 28, 2018. System development and delivery of initial order on timeline identified below.

Option Quantity Year 1: Purchase of 1-4 Video Systems

Period of Performance: Mar 1, 2018 - Feb 28, 2019

Option Quantity Year 2: Purchase of 1-4 Video Systems

Period of Performance: Mar 1, 2019 - Feb 28, 2020

Tasks:

Consultation/Design: The Offeror will work with HMSRP staff to consider modifications to camera housing in order to facilitate ease in recovering cameras from seals and reducing possibility of the cameras being an entanglement hazard. This will be done by consultation on phone and web chats.

Camera Engineering: Provide vide-telemetry system(s) for understanding monk seal foraging ecology based on the specifications and needs identified in the Scope of Work section above.

Place of Performance:

Work (building and engineering of camera system) will be conducted at the Offeror's facilities. Discussion of tag mounting design will occur via email and conference call.

Government-Furnished Property (GFP):

None.

Security Requirements:

None.

Deliverables Schedule for Base Year:

Due Date	Deliverable Activities
10/10/2017	Design Specifications for Mounting and Recovering from Hawaiian monk seals
11/15/2017	Delivery of (3-4) video-telemetry system

Deliverables Schedule: Option Quantity Year 01 and Year 02

Due Date	Deliverable Activities
On or before 2/28/2019	Delivery of (4) video-telemetry system (Option Year 01)
On or before 2/28/2020	Delivery of (4) video-telemetry system (Option Year 02)

Acceptance Criteria:

1. Delivered on time
2. Delivered to specifications based on attachment design and instrument specifications
3. Tags are functional based on desk top testing