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Updates on Early Adopter Program for Shrimp cVMS and FY23 Spending

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August 2024

Agenda Item IV: Review of the Expenditures of the FY23 Funds for the Early Adopter Program for Shrimp cVMS and Update on the Early Adopter Program for Shrimp cVMS

As requested by the Shrimp Committee at the April 2024 Council meeting, the Committee will receive information on NMFS' expenditures of the Fiscal Year 2023 funds for the Early Adopter Program for a cellular vessel monitoring system (cVMS) with the Gulf of Mexico federal shrimp fleet. The Committee will also receive information on the progress of the Early Adopter Program. The Committee should ask questions and provide feedback to NMFS.

Brief review

1. cELB units ceased transmitting information to the National Marine Fisheries Service (NMFS) on December 31, 2020. NMFS, Gulf Council, industry looking for alternatives to continue effort data collection
2. FY 2023 budget contained Congressional appropriation:

Within funds for Fisheries Data Collections, Surveys, and Assessments, the agreement provides \$850,000 for NMFS, in consultation with the Gulf of Mexico Fishery Management Council and shrimp industry stakeholders, to continue the development and implementation of the newly approved Electronic Logbook program (ELB) that archives vessel position and automatically transmits scientific shrimp fishing effort data via cellular service to NMFS.

3. Special AP meeting (May 2023) to discuss spend plan for these funds
4. 360K of these funds allocated to cVMS Early Adopter program

LGL expenditures for Early Adopter

1. FY23 Funds provided to Gulf States Marine Fisheries Commission
2. Request for proposals sent out (August 2023)
 - Recruitment and Outreach
 - Installation/travel
 - Provide devices and two years of cellular service to volunteers
 - Data acquisition and Troubleshooting
3. LGL Ecological Associates awarded contract (September 2023)
4. \$347,602 transferred to LGL for Early Adopter program (October 2023)

LGL status and results

- 204 volunteers to date
 - TX=120, LA=38, MS=13, AL=10, FL=23
 - 53 Boat Command, 7 Nemo, 118 Zen
- So far: 90 installations
 - TX=32, LA=29, MS=12, AL=8, FL=9
 - 33 Boat Command, 7 Nemo, 50 Zen
 - Average cost: \$2,428 per installation
- Remaining FY 23 funds: \$129,108
- Estimate this will cover 50 additional estimates
- 140 installations is more than LGL proposal estimate (50-120)

FY23 NMFS expenditures

Table 1. Shrimp FY23 Spend plan

Item	Amt. budgeted	Actual amount (est.)
1. Shrimp Effort Algorithm Vetting Meeting and related travel.	\$3,000	\$4,200
2. Contract for Rebuilding Shrimp Data Management System/Application	\$120,000	\$120,000
3. SEFSC Data Management and program administration	\$41,000	\$41,000
4. Hardware/Travel costs for testing of 3 cVMS on five vessels.	\$30,000	\$30,000
5. Application Development Staff	\$82,000	\$82,000
6. Outreach to shrimpers (20% of 1 SEFSC staff working with industry)	\$27,000	\$27,000
7. Contract for early adopter program to include installation, 2 years of cellular data and reimbursement for units. Minimum requirement would be to outfit 150 vessels	\$360,000	\$360,000
8. Management & Administrative (M&A) costs (22% reduction of 850K)	\$187,000	\$187,000
Total programmatic funds available	\$663,000	\$664,200
Total	\$850,000	\$851,200



FY24 NMFS expenditures

Table 2. Shrimp FY24 proposed budget

Item	Amount budgeted	Actual
1. Shrimp database processing/documentation meeting	\$5,000	\$3,000
2. Continuation of contract for Rebuilding Shrimp Data Management System/Application	\$60,000	\$60,000
3. SEFSC Part-time Shrimp Data Manager to oversee shrimp application processing and data production	\$60,000	TBD
4. Outreach to shrimpers (20% of 1 SEFSC staff working with industry)	\$27,000	TBD
5. Contract for early adopter program to include installation, 2 years of cellular data and reimbursement for units. Minimum requirement would be to outfit 150 vessels	\$511,000	\$450,000
6. Management & Administrative (M&A) costs (22% reduction of 850K)	\$187,000	\$187,000
7. Additional M&A/tax assessed (HQ level)		\$61,000
Total programmatic funds available	\$663,000	\$602,000
Total	\$850,000	\$850,000



LGL timeline

	Develop Outreach & Reimbursement Plans	Volunteer Solicitation	Device Installations	Reimbursement and Cellular Payments	Troubleshooting and Operations
Sep. 2023					
Oct. 2023					
Nov. 2023					
Dec. 2023					
Jan. 2024					
Feb. 2024					
Mar. 2024					
Apr. 2024					
May 2024					
Jun. 2024					
Jul. 2024					
Aug. 2024					
Sep. 2024 – Aug. 2026					

Progress to date

- Based on two rounds of testing, three vendors were invited to participate
 - Atlantic Radio and Telephone - Zen
 - Viatrax – Boat Command
 - Woods Hole Group – NEMO
 - (others could be included)
- All three vendors have transmitted data to the SEFSC through an API
- LGL has agreements for purchasing and shipping devices from the vendors



Early Adopter Program for the Gulf of Mexico Shrimp Fishery

Vessel Monitoring Systems (VMS)

	 Zen VMS	 Boat Command VMS	 NEMO VMS
Retail Cost* (Your Price):	\$1,095 (\$0)	\$199 (\$0)	\$574 (\$0)
<u>Reliability</u> Pilot Test Success Rate**: Vessels Monitored Successfully: Positions Correctly Reported*: NOAA Type Approved?	93 % (14/15) 98.2 % YES	80 % (4/5) 97.3 % YES	60 % (3/5) 85.6 % YES
Annual Cellular Fees* (Your Price):	\$99 (\$0)	\$179 (\$0)	\$349 (\$0)
<u>Specifications</u> Voltage: Hardwired: Dimensions: Waterproofing:	9-60 DC, 110 AC NO 7.5 x 5.5 x 1.5" IP67	9-32 DC, 110 AC Optional 4.5 x 3.5 x 3.6" IP66	3.7 V, 5.2 A (battery) NO 8.75 x 5 x 4" IP67
<u>Install Location</u> VMS Terminal: LTE/GPS Antenna:	Interior Interior/Exterior	Exterior Exterior	Exterior Exterior
<u>Warranty</u>	2 Years	2 Years	2 Years
<u>Features</u> Optional Web-based Tracking Interface: Annual Interface Fee* (Your Price):	 \$99 (\$0)	 \$0 (\$0)	 \$0 (\$0)

Get yours today! Contact Nathan Putman
nputman@lgl.com, Office: 979-846-7000, Cell: 205-218-5276

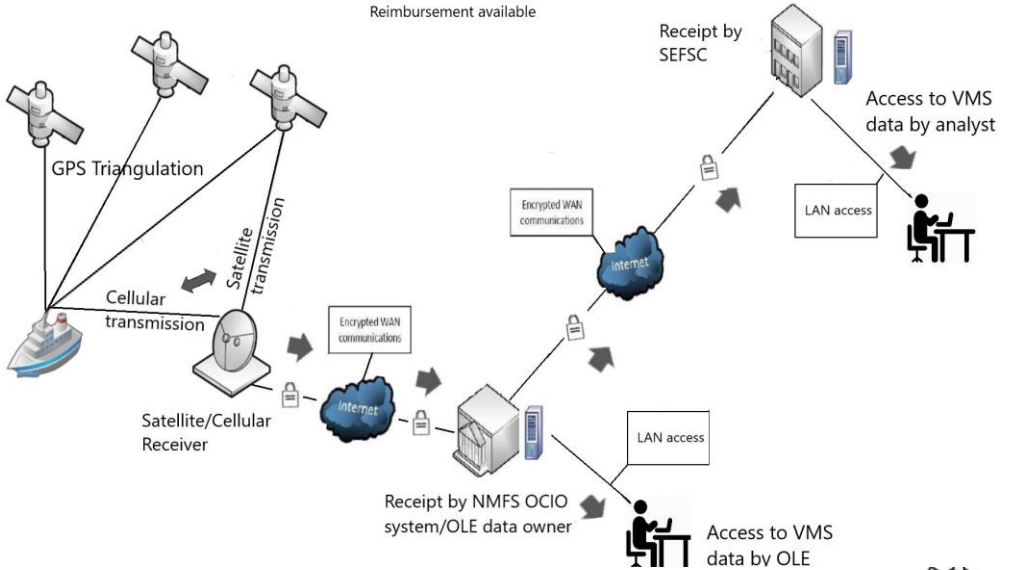
* Cost per tracking unit

** Percent of shrimp vessel pilot tests without large (>6hr) data gaps.

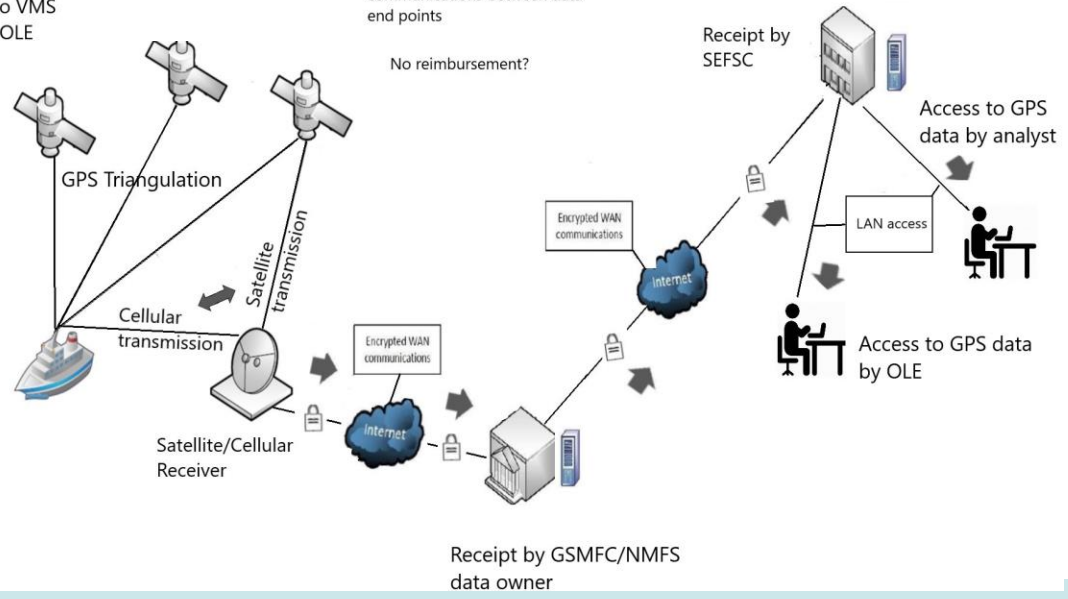
+ Percent of GPS positions correctly reported during pilot tests.

Data flow diagram – two models

Data transferred between OCIO and SEFSC utilizing encrypted communications between data end point
 Reimbursement available



Data transferred between GSMFC and SEFSC utilizing encrypted communications between data end points
 No reimbursement?



Data status and monitoring

- Two vendors are currently successfully transmitting data to the SEFSC through the API set up by the SEFSC
- Issue with remaining vendor and with verifying the receipt of data on our end
- No issues found running the data through the Dettloff effort estimation algorithm
- Some issues remain with data quality for one vendor (bad dates, bad GPS) – comparable to existing cELB
- NMFS need to increase regular data monitoring and quality control

Next steps

- Distribution of FY 24 Early Adopter funds
- Continued focus on:
 - **Outreach and recruitment**
 - Installation of devices
 - Monitoring data transmission and quality
 - Confirm data suitable for effort estimation
 - Integration of valid sampling design

Integration of survey design / Early Adopter

How do we include early adopter vessels in a future data collection program?

1. Need for valid statistical design
2. Need to meet Shrimp BiOp RPM 1 – 2021
NMFS must ensure that future fisheries effort monitoring is conducted at equivalent (or greater) levels as conducted over the past 10 years.
3. Exploring options from “equal to current level” of sampling to full Census
4. If sample approach, need for resampling (prevent “stale” sample)
5. Details being developed. Discussion deferred until November
6. Other considerations: manta and smalltooth sawfish BiOps
7. Upcoming IPT meeting to discuss

Questions and discussion

