Biannual Progress Review of Implementation of NOAA Fisheries Electronic Technologies Policy

Metrics to Report:

- The number of FMPs with defined fishery-dependent data collection monitoring goals.
- The number of FMPs reviewed to identify fisheries where the adoption of additional electronic technologies would be appropriate for achieving data needs.
- For fisheries where additional electronic technologies are identified as appropriate, the number of FMPs with electronic technologies incorporated into fishery-dependent data collection programs.

Office of Sustainable Fisheries Highly Migratory Species Management Division – May 6, 2016

The 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP) includes management measures for those Atlantic tunas, swordfish, billfish, and sharks that are managed by the Secretary of Commerce per the Magnuson-Stevens Fishery Conservation and Management Act. The 2006 Consolidated HMS FMP contains management measures for Atlantic bluefin, bigeye, albacore, yellowfin, and skipjack tunas; Atlantic swordfish; Atlantic blue and white marlin, sailfish, and roundscale and longbill spearfish; and oceanic sharks.

- The number of FMPs with defined fishery-dependent data collection monitoring goals:
    - One (100%); the 2006 Consolidated HMS FMP contains defined fishery-dependent data collection goals, including self-reporting, on-board observer, electronic reporting, and video monitoring programs.

- The number of FMPs reviewed to identify fisheries where the adoption of additional electronic technologies would be appropriate for achieving data needs:
    - One (100%); the 2006 Consolidated HMS FMP was reviewed and the pelagic longline fishery was identified for electronic monitoring and the bluefin tuna purse seine and commercial handgear fisheries were identified for electronic reporting in 2015, in addition to existing electronic monitoring in the pelagic longline and shark bottom longline fisheries and electronic reporting in the HMS recreational fishery and commercial dealer reporting. Electronic reporting, pending additional resources, was identified as appropriate for the pelagic longline fishery (electronic logbooks), HMS charter/headboat fisheries (electronic logbooks); HMS recreational fishery (catch reporting app); and online HMS tournament registration and reporting.

- For fisheries where additional electronic technologies are identified as appropriate, the number of FMPs with electronic technologies incorporated into fishery-dependent data collection programs
    - One (100%); the 2006 Consolidated HMS FMP contains fishery-dependent data collection and management measures for the pelagic longline, bluefin tuna purse seine, HMS recreational, and HMS charter/headboat fisheries for which additional electronic technologies were identified as appropriate, pending additional resources. Dealers purchasing all HMS must report electronically.

- Progress at the fishery level, i.e. the appropriate unit within a FMP that better reflects the application of electronic technologies:
    - Prior to 2015:
        - The Atlantic pelagic longline and bottom longline fisheries were monitored electronically via vessel monitoring systems (VMS).
        - The HMS Angling and Charter/Headboat vessels were required to report electronically via a web-based system all non-tournament landings of bluefin tuna, swordfish, blue and white marlin, and roundscale spearfish.
        - All HMS dealers were required to report electronically all purchases of HMS (except for bluefin tuna) via the electronic dealer reporting system (eDealer).

        - HMS Angling and Charter/Headboat vessels were able to report live releases of shortfin mako sharks via an app.
    - Objectives for 2015-2017:
        - Effective January 1, 2015, Amendment 7 to the 2006 Consolidated HMS FMP implemented a variety of new electronic technologies, including electronic reporting of daily catches of bluefin tuna in the pelagic longline and purse seine fisheries via VMS units, electronic reporting of bluefin tuna catches in the pelagic longline and purse seine fisheries via the web-based Individual Bluefin Quota system, electronic reporting for bluefin tuna catches for the General, Harpoon, and Charter/Headboat fisheries via a web-based reporting system, and effective June 1, 2015, electronic monitoring in the pelagic longline fishery.
        - HMS Management Division staff are working cooperatively with the Northeast Fisheries Science Center to develop an electronic reporting portal for bluefin tuna dealers, with a target date of implementation of June 2016.
        - The HMS Management Division continues to work with the Southeast Fisheries Science Center in the development of electronic logbooks for fishermen using various commercial gear types including handline, bandit reel, and longline. Field testing of several types of electronic logbooks in a pilot program ended in February 2016. Two HMS vessels (one buoy gear and one pelagic longline vessel) participated. The Southeast Fisheries Science Center is currently reviewing the results and will present findings to HMS Management Division staff along with the South Atlantic and Gulf of Mexico Fishery Management Councils this summer. Preliminary results have been positive and development of a permanent electronic logbook is expected..
        - HMS Management Division staff are participating in the plan development team for electronic logbooks for Charter/Headboat vessels with South Atlantic and Gulf of Mexico Fishery Management Councils. Currently, reporting forms are in development.
        - The HMS Management Division has contracted development of a recreational catch reporting app to complement the existing web-based catch reporting of all non-tournament landings of bluefin tuna, swordfish, blue and white marlin, and roundscale spearfish, with target implementation in early summer 2016.
        - HMS Management Division staff are working cooperatively with the Southeast Fisheries Science Center to beta test an online HMS tournament registration portal with the next steps of developing an online HMS tournament reporting system.
        - The HMS Management Division staff are working with National Seafood Inspection Laboratory and Office of International Affairs/Seafood Inspection staff on implementing electronic reporting of bluefin tuna through the International Commission on the Conservation of Atlantic Tunas (ICCAT) electronic Bluefin Tuna Catch document program, which was effective May 1, 2016.

- Information on why other FMPs or fisheries are not being considered for the incorporation of electronic technologies:
    - By gear type, the following species/fisheries are not currently being considered for electronic technologies with a brief explanation:
        - Bluefin tuna –Trap category – this is a limited fishery with incidental catches of bluefin tuna on an infrequent basis. As this fishery is not primarily managed by the HMS Management Division, no reporting changes are being considered for bluefin tuna caught in traps.
        - Recreational handgear – currently, recreational catches of sharks and BAYS tunas are estimated via surveys (e.g., MRIP, Large Pelagics Survey, Texas Headboat). As recreational catch apps for other HMS are developed in the near-term, requiring recreational reporting of sharks and BAYS tunas may be revisited.

Table 1. Atlantic HMS Pelagic Longline EM Program Cost Estimates (Calendar year 2015)[1]

Camera-based Electronic Monitoring	Total Cost	% Government cost share?	% Industry cost share?	NMFS budget line (e.g., FRM, catch shares, NOP, etc)
Planning (technical system design, vessel monitoring plans, support system design)				
Specifications setting				
Technical software system design QA/QC, metadata, integration	$189,391 (one time cost); $ 620,000	100		
Commercial off- the shelf/3rd party developer option				
Regulation development and implementation	$65,000	100		
Hardware	$1,324,000	100		
Camera(s)				
Sensors				
Media/storage				
Government IT infrastructure	$ 12,008 (AWS) $ 71,940 (Data Center) (One time cost)	100		
Software, database dev., software licenses	$66,000	100		
Field Support				
Installation				
---Labor	$143,000	100		
---Wiring, connections, etc				
Training (labor, materials, travel)	$127,000	100		
Maintenance/Repair/Replacement	$81,000	100		
Help Desk				
Data Communications & Reporting	$63,000	100		
At sea				
Shoreside				
Government IT infrastructure				
Data Retrieval	$ 27,755 (6/15-12/15)	100		
Data Validation	$ 27,755 (6/15-12/15)	100		
Data Analysis				
Software				
---development	$94,968 (one time cost)	100		
---license				
Labor	$ 64,523 (6/15-12/15)	100		
System maintenance	$ 204,091 (FY16)	100		
Data Storage/Archiving				
On board				
On shore	$ 28,110 (6/15-12/15)	100		
Government IT infrastructure				
Other (specify)				

[1] Provide reference for the program, including brief description and a citation to the implementing rule

The numbers shown in the table are preliminary/ball park numbers. The Atlantic HMS EM requirements went into effect in June 2015, however the production process started well before 2015 and the system is still under development/refinement, so it is difficult to provide an accurate numbers for a given time period at this point due to the overlap of costs. Feedback from the vendors also found the categories problematic as it was difficult for them to breakout the costs as outlined in the template. Suggest revisiting to standardize the time-frames intended to be covered in the responses and modify the various categories.

1. **Technical software system design QA/QC, metadata, integration:** Includes one-time development cost for Data Pre-processing System design/development and IAI QC/AR module ongoing development.
2. **Government IT infrastructure:** Includes data center hardware one time cost and AWS (05/2015-12/2015) cost (not included AWS storage)
3. **Data Retrieval and Data Validation:** Includes one operator labor cost (6/2015-12/2015) divided into two sections
4. **Software development:** Includes EM video and analysis website
5. **Labor:** Data Analyst labor cost (6/2015-12/2015)
6. **System maintenance**: include the FY 2016 cost of network support, security, software maintenance, and project management. Project was under development in 2015. There is no full year cost for 2015.
7. **On shore**: Video Data storage cost (6/2015 - 12/2015)
8. **Data Communications & Reporting:** Includes project management labor.
9. **Planning:** Includes QA/QC, metadata, and integration work associated with project start-up.
10. **Hardware:** Includes the full amount paid to contractor for 123 systems. This reflects the way the costs are shown in the contract.
11. **Software, database dev, software licenses**: Includes the amount paid to develop (and modify) the onboard software to meet program requirements (e.g., encryption, only recording hauls and not sets, etc).
12. **Training (Labor, materials, travel)**: Includes travel expenses associated with installations and briefing vessel operators on the use of the systems.
13. **Maintenance/Repair/Replacement**: Includes a rough estimate of labor as it doesn't include supplies, (to date, those costs have been quite low) base on life cycle of the system.
14. **Regulation development and implementation:** Includes approximate staff time associated with implementation related calls/meetings, drafting related notices, customer service calls, etc.

$1, 824,000 is the amount paid to Saltwater Inc. for work completed between Jan 1-Dec 31, 2015. It includes the purchase of 123 EM systems and 123 installs.