

ELECTRONIC TECHNOLOGY IMPLEMENTATION PLAN ATLANTIC HIGHLY MIGRATORY SPECIES

Highly Migratory Species Management Division Office of Sustainable Fisheries

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I. Purpose/Background

The National Marine Fisheries Service (NMFS) is committed to the use of electronic technologies in fishery dependent data collection to collect timely, cost-efficient data needed to manage U.S. federal fisheries. NMFS is examining its available electronic technologies – including both electronic reporting (ER) and electronic monitoring (EM) capabilities - at the national level as a means to improve management, reporting, and cost efficiencies. Modern fishery-dependent data collection technologies can ensure collections are timely, accurate, adaptable to emerging needs, and capable of providing data at a scale that will support management and scientific needs of the agency and our partners.

In May 2013, NMFS issued Policy Directive 30-133, *Policy on Electronic Technologies and Fishery-Dependent Data Collection*¹, stating that implementation will rely on Regional Offices, and the Office of Sustainable Fisheries with respect to Atlantic Highly Migratory Species (HMS), initiating consultations on the consideration and design of fishery-dependent data collection programs that use electronic technologies for each Federal fishery. As a result, Regional Electronic Technology Implementation Plans and an implementation plan for Atlantic HMS have been developed to address regionally-specific fishery dependent data collection issues and electronic technologies to address these issues. This document provides the Electronic Technologies Implementation Plan for Atlantic HMS to meet the objectives outlined in the Policy Directive. The Atlantic HMS Plan was reviewed by the Electronic Technologies Working Group (ETWG) to ensure it was complete and consistent with the regional implementation plans, and all comments, edits, and feedback were considered in this document. This version also reflects input from the HMS Advisory Panel during the March 2015 meeting.

II. Objectives of Monitoring Regime

Promoting and supporting initiatives aimed at improving the agency's electronic reporting and monitoring capabilities in Atlantic HMS fisheries is a key component of the HMS Management Division's effort to provide dependable access to comprehensive, accurate, and timely data. The managers of Atlantic HMS fisheries data are tasked with organizing data and information in support of policy and regulatory actions, increasing efficiency, and coordinating operational activities. The goal of this plan is to provide an operational strategy for implementing and

¹ Available at: <http://www.nmfs.noaa.gov/op/pds/documents/30/30-133.pdf>

expanding the use of electronic technologies for federally managed Atlantic HMS fisheries. When appropriate, the use of electronic technologies should complement and correspond with similar technologies used by other partners including States, Fishery Management Councils, and Regional Fisheries Management Organizations. Members of the HMS Advisory Panel stressed that the HMS Management Division should coordinate with Atlantic and Gulf coast fishery management partners to integrate data collection across organizations, reduce redundancy in reporting burdens for the public, and facilitate data sharing.

The primary objective for expanding the use of electronic technologies is to improve the quality and timeliness of fisheries data for use by scientists and managers. The expanded use of ER would provide immediate benefits where reporting accuracy and precision can be improved and more timely data can be validated to address data collection issues. While EM is important to both science and management, development and implementation of additional EM requirements beyond those already underway is considered a longer-term goal than ER for Atlantic HMS fisheries.

ER technologies and automated image processing techniques are rapidly evolving. While this rapid evolution can be beneficial, regulations based on the development and implementation of such systems require careful thought to ensure technological investments are appropriate in the short and long term. Consideration of cost must extend beyond the acquisition of the technology and provide for infrastructure necessary to support the technology into the future and to adapt and evolve as technology advances. Additionally, the HMS Advisory Panel emphasized that technologies should be tested and their functionality proven before mandatory requirements are implemented.

Much of the data related to Atlantic HMS fisheries are managed and stored in multiple data systems, each with independent information files, programming platforms, architectures, and databases. Given the broad spectrum of data sources/formats and business processes associated with these systems, integration of these systems will be an important consideration for existing and future systems. The HMS Advisory Panel suggested that a data warehouse with interfaces for different fisheries management systems may facilitate data integration and sharing.

More broadly, the HMS Management Division's primary objective for enhancing its implementation of electronic technologies is to improve quota and/or annual catch limit monitoring and tracking, and to ensure compliance with regulations and other regulatory measures. In addition, other objectives for EM/ER include, but are not limited to: 1) improving perceptions and stakeholder buy-in regarding the data collection process through implementation of robust, validated, and tested data collection programs; 2) increasing data accessibility for managers, scientists, fishermen, and others through data integration and sharing, as appropriate; and 3) developing standardized reporting practices and systems that reduce reporting burden and enhance quality control/quality assurance of submitted data.

III. State of Technological Capabilities Prior to 2015

a. Electronic Monitoring

Vessel Monitoring Systems: Vessel Monitoring Systems (VMS) have been and continue to be used to facilitate enforcement of time/area and fishery closures. Owners or operators of commercial vessels (e.g. pelagic and bottom longline and shark gillnet fisheries) that are permitted, or required to be permitted, to fish for Atlantic HMS are required to install a NMFS-approved enhanced mobile transmitting unit (E-MTU) VMS on board the vessel and operate the VMS unit under the circumstances below:

- Whenever the vessel has pelagic longline gear on board,
- Whenever a vessel issued a directed shark limited access permit (LAP), has bottom longline gear on board, is located between 33°00' N. latitude and 36°30' N. latitude, and the Mid-Atlantic shark closed area is closed as specified in § 635.21(d)(1), or,
- Whenever a vessel issued a directed shark LAP has gillnet gear on board from November 15-April 15.

The [Atlantic Highly Migratory Species \(HMS\) Vessel Monitoring System \(VMS\) Program Compliance Guide](#) provides information regarding certain aspects of the VMS requirements for Atlantic HMS fisheries, specifically: hail in/out requirements; approved E-MTU VMS units; and reimbursement for E-MTU VMS. See Section IV for VMS expansion details.

b. Electronic Reporting

Web-Based Catch and Landing Reporting: Atlantic HMS Angling category permit holders are required to report bluefin tuna, swordfish, blue and white marlin, roundscale spearfish, and sailfish catch and landings via <https://hmspermits.noaa.gov>. See 50 CFR part 635.5(c). These reports are necessary to ensure compliance with international catch and landings limits and reporting obligations. See Section IV for additional details on near-term plans for expanding electronic technologies.

Release Mako App: With the Release Mako app, fishermen can report live releases of shortfin mako sharks from their Apple or Android mobile devices while still on the water. The app uses a device's built-in GPS, when available, to fill in location coordinates on the shortfin mako live release data form. The catch and release reports submitted via email allow fishermen to put their mako on the Shortfin Mako Shark Live Release Interactive web map. The submission form is easy to fill out and operates like the online submission form. Touching the latitude and longitude boxes (Android) or button (iPhone) provides an exact location when GPS is available. The app also includes information about shortfin mako stock status, fishing regulations, FAQs, and safe handling and release guidelines. After submitting this live release information through the app, and putting their mako on the map, fishermen receive a certificate of their release and will be able to see how they are making a difference in the conservation of shortfin mako sharks and encourage others to do the same.

eDealer: Since January 1, 2013, all Atlantic HMS dealers have been required to report commercially-harvested Atlantic sharks, swordfish, and bigeye, albacore, yellowfin, skipjack (BAYS) tunas electronically (August 8, 2012; 77 FR 47303). Dealers must submit reports on a weekly basis (Sunday to Saturday), no later than midnight, local time, of the first Tuesday following the end of the reporting week. Reports are required whether dealers bought HMS during that weekly reporting period (i.e., a “positive” report) or did not buy HMS during that weekly reporting period (i.e., a “negative” report). Dealers must continue reporting bluefin tuna through the existing landing card fax system. Electronic reporting is necessary to ensure timely and accurate reporting, which is critical for quota monitoring and management of Atlantic HMS, particularly sharks, which have relatively small quotas.

The eDealer system is integrated with electronic reporting programs established in other regions for other species, including the Standard Atlantic Fisheries Information System (known as SAFIS) and different versions of various State Trip Tickets systems. The eDealer system was developed through extensive coordination with the Northeast and Southeast Fisheries Science Centers, the Atlantic Coastal Cooperative Statistical Program, the Gulf States Marine Fisheries Commission and individual states. Dealers have the option of submitting their shark, swordfish, and BAYS tuna purchases through these other electronic systems or directly into the eDealer system to help reduce reporting burden. All the HMS data are then centralized into the eDealer database where they are available for use by Agency managers, scientists, and enforcement officers.

IV. Near-Term (2015-2017) Plan for Expanding Electronic Technologies for Atlantic HMS

a. Amendment 7 Pelagic Longline Electronic Video Monitoring **i. Implementation**

On December 2, 2014, NMFS published the final rule to implement Amendment 7 to the 2006 Consolidated HMS FMP (79 FR 71509), which includes a suite of new regulations for the directed and incidental Atlantic bluefin tuna (bluefin) fisheries, including the pelagic longline fishery. In order to ensure a robust reporting and monitoring system, new regulations include a requirement that vessels install and operationalize video EM as a means to verify the accuracy of counts and identification of bluefin reported by the vessel operator via mandatory logbooks and VMS reports (audit approach). The principal objective of video EM in the pelagic longline fishery is to use the data to verify the accuracy of counts and identification of bluefin reported by the vessel operator. A long term goal is to improve the fishing effort and bluefin catch estimation methods by incorporating data gathered through video EM. While some portions of Amendment 7 were effective January 1, 2015, the electronic video portion will become effective June 1, 2015. This period of time will allow for installation of video cameras on the boats participating in the fishery.

To implement video EM in the pelagic longline fishery, NMFS solicited services for the installation, and maintenance of video EM systems on approximately 135 vessels, which range from 30 to > 100ft, (81 percent are greater than 40 ft. in length). NMFS also solicited services to train vessel operators on the proper implementation, use, maintenance, and troubleshooting of the video EM systems, including the use of individual vessel plans.

A contract was awarded in August 2014. The following deliverables were included:

- Contact with all designated vessel owners/operators.
- Schedule of EM system installation for all designated vessels complete based upon mutual agreement with vessel owners/operators.
- 100% of vessels' EM systems operational for all designated vessels.

NMFS also awarded a contract for services for the analysis and storage of the data received from the video EM with the following deliverables:

- Development of database storage system
- Data analysis

ii. Costs/Funding

The EM installation portion of this effort is anticipated to cost approximately \$2.0 million over two years. Data storage and analysis of the videos is anticipated to cost approximately \$700,000 in the first year, and \$200,000 in subsequent years for continued analysis and database maintenance. Funding from the NMFS National Catch Share Program has been identified and obligated for the initial tasks under new and existing contracts.

iii. Communication Strategies

The Amendment 7 final rule provided information to the pelagic longline fleet regarding the need for installation of cameras and equipment for EM. NMFS conducted two webinars in December 2014 for industry members and the public to learn more about Amendment 7 requirements. The contractor conducting the installations will provide continuous feedback on installations, and how the systems function once they are installed. The EM team will also directly engage fishermen who are permitted in HMS fisheries and have reported using pelagic longline gear regarding the new requirements of Amendment 7, including general information on how EM works and its intended use, and the schedule for EM installation by the contractor. Many constituents have called the IBQ Customer Service line with questions about EM; the IBQ Customer Service team will therefore continue to communicate information on new EM requirements upon request by callers.

iv. Evaluation

Although there is not a formal evaluation mechanism for this project, it is anticipated that the continuous feedback provided by the installation contractor, vessel owners/operators, and data analysts will serve in that capacity. Amendment 7 includes provisions for a formal review of the Individual Bluefin Quota program and associated measures, and an evaluation of EM may be

included in that review, if appropriate. For additional details on the Amendment 7 formal review, see the Final Environmental Impact Analysis discussion “IBQ Program Evaluation After Three Years” (<http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am7/index.html>)

v. Future Needs/Challenges

Funding has been obligated for the initial EM installations for vessels identified as eligible for initial Individual Bluefin Quota (IBQ) shares in Amendment 7 (135 vessels). Approximate annual funding to support the program is \$500,000-\$575,000 (\$250,000 for data analysis, \$250,000 for data storage, and \$75,000 for additional EM installations (if needed)).

One of the anticipated challenges is the receptiveness/willingness of the fishery participants to have the system installed. One of the concerns raised by fishery participants has been regarding the cost of the system. At this time, the federal government will provide funding for the initial equipment and installation of the systems for vessels identified as eligible for initial IBQ shares in Amendment 7 (135 vessels). Vessel owners will, however, need to pay to have a hydraulic sensor installed, as well as shipping costs of the data hard drives to the agency for analysis. Estimates for extra hard drives are approximately \$100 and estimates for shipping costs are approximately \$25 (to both send and return the hard drive). Estimates to install a hydraulic sensor will vary due to individual vessel configurations. Estimates of long-term costs for system maintenance, replacement, etc., are not yet known. As this is the first electronic monitoring regulatory requirement in the Atlantic HMS fisheries, NMFS is not able to anticipate all of the future needs; however, the ability to be responsive and flexible will be important to the success of this program. At the March 2015 HMS Advisory Panel meeting, Panel members expressed concern about the cost of installation of EM for vessels that are not eligible for initial IBQ shares as well as concerns about the timeline for EM installation given the June 1, 2015, effective date. Members also suggested that electronic systems provide a confirmation code once any report is submitted (e.g., when reporting bluefin tuna through the VMS unit).

b. Amendment 7 Individual Bluefin Quota Data Management System

i. Implementation

Beginning January 1, 2015, NMFS implemented an IBQ program for the HMS pelagic longline fishery, which specified shares and allocations of quota for eligible pelagic longline vessels based on criteria articulated in Amendment 7, including analysis of vessel-specific landings on designated species and interactions with bluefin tuna. The IBQ program is designed to increase individual accountability to control and reduce dead discards of bluefin tuna in the pelagic longline fishery. These allocations may be transferred (leased) on an annual basis initially, with permanent sale of shares and/or allocation envisioned following a formal review of the program after three years. Allocations may be transferred between permitted pelagic longline vessel owners and permitted bluefin tuna purse seine fishery participants. Southeast Regional Office (SERO) Individual Transferable Quota (ITQ) program staff are working with HMS Management

Division program staff to adapt the Southeast ITQ program website and database to include pelagic longline and bluefin tuna purse seine vessels, permit owners, HMS dealers with tuna permits, and fishery participants into an IBQ Data Management System.

ii. Costs/Funding

At this time, the costs of adapting the Southeast ITQ program website and database consist of the SERO ITQ and HMS Management Division program staff time for review of requirements, programming changes, and implementation. Future funding may be necessary if major modifications to the IBQ Data Management System are needed, and the HMS Management Division has developed a plan to monitor and track costs to inform future discussions regarding funding needs as well as to inform mandatory cost recovery requirements under the Magnuson-Stevens Act.

iii. Communication Strategies

The Amendment 7 final rule provides information to the pelagic longline fleet regarding the new IBQ Data Management System requirements (e.g., login and password, account functionality, leasing procedures, etc). HMS Management Division staff provide customer support and record feedback in customer service logs on how the system functions. The HMS IBQ team conducted two webinars in December 2014 and continues to conduct directed outreach to the pelagic longline fishery on the new requirements of Amendment 7, general information on how the IBQ Data Management System works and its intended use, and respond to any questions. Outreach products include permit holder letters that explain how to log into the IBQ system, web-based tutorials, a step-by-step troubleshooting guide to IBQ system functionality, an IBQ program Frequently Asked Questions document, and presentations at Advisory panel meetings (or via other avenues, as appropriate).

iv. Evaluation

Although there is not a formal evaluation mechanism for this project, it is anticipated that the feedback received during outreach and support of the IBQ Data Management System rollout and implementation will serve in that capacity. Amendment 7 includes provisions for a formal review of the IBQ program overall and an evaluation of the IBQ Data Management System may be included in that review, if appropriate.

v. Future Needs/Challenges

While initial development and implementation of the IBQ Data Management System was funded through the NMFS Fisheries Research and Management Program funding line, future funding may be necessary if major modifications to the IBQ Data Management System are needed. As this is the first IBQ program in the pelagic longline fishery, NMFS is not able to anticipate all of the future needs; however, the ability to be responsive and flexible will be important to the success of this program. If needed, such funding may be available from the NMFS National Catch Share Program funding line or the Fisheries Research and Management Program funding line, as appropriate.

c. Amendment 7 Vessel Monitoring System Daily Catch Reporting for Pelagic Longline and Purse Seine

i. Implementation

As of January 1, 2015, all permitted pelagic longline and bluefin purse seine vessel operators are required to report the number and approximate size of all bluefin retained or discarded dead on a daily basis via vessel monitoring system (VMS) units. These data are submitted while at sea. Vessel owners/operators need to verify the data in the IBQ Data Management System prior to offloading at a permitted dealer. These data are used in conjunction with the IBQ Data Management System to track individual IBQ allocations in real-time.

ii. Costs/Funding

The VMS Daily Catch Reporting portion of this effort cost approximately \$50,000 in the first year to modify and deploy form changes to existing VMS units already required in the pelagic longline and bluefin purse seine fisheries (the requirement for the bluefin purse seine fishery is new; however, these vessels already have VMS units due to regulations applicable to other fisheries in which they participate). Funding was identified and obligated for the VMS Daily Catch Reporting form modification from the National Catch Share Program funding. Future funding may be necessary if major modifications to the VMS Daily Catch Reporting forms or functionality are needed.

iii. Communication Strategies

The Amendment 7 final rule and corresponding outreach materials provide information to the pelagic longline and purse seine fleets regarding the new VMS Daily Catch Reporting requirements (e.g., how to fill out and submit reports on new form, how the VMS data will be coordinated with the IBQ program for quota accounting, etc). HMS Management Division staff have conducted and will continue to conduct outreach directly to permitted fishermen in the HMS pelagic longline and purse seine fisheries on the new requirements of Amendment 7, general information on how the VMS forms work in conjunction with the IBQ Data Management System, and respond to any questions.

iv. Evaluation

Although there is not a formal evaluation mechanism for the VMS Daily Catch Reporting project, NMFS anticipates that the feedback received during outreach and support of the VMS Daily Catch Reporting changes implementation will serve in that capacity. Amendment 7 includes provisions for a formal review of the IBQ program overall and associated measures, and an evaluation of the VMS Daily Catch Reports may be included in that review, if appropriate.

v. Future Needs/Challenges

Funding from NMFS National Catch Share Program funding line was obligated for the development of VMS Daily Catch Report functionality. Future funding for additional VMS form changes may be necessary if major modifications to the VMS forms are needed or if there are issues with VMS vendor performance. If needed, such funding may be available from the

NMFS National Catch Share Program funding line or the NMFS Fisheries Research and Management Program funding line, as appropriate. The ability to be responsive to issues with VMS data submissions will be important to the overall Amendment 7 success.

d. Amendment 7 Bluefin Catch Reporting for General, Harpoon, and Charter/Headboat Categories

i. Implementation (including timeline)

Beginning January 1, 2015, all Atlantic Tunas General, Harpoon, and HMS Charter/Headboat permit holders are required to report their bluefin catches (landings and dead discards) via a web-based reporting form (currently all commercial bluefin tuna landings are reported by the permitted dealers purchasing those fish within 24 hours via landings cards submitted to NMFS). The collection of catch information, in addition to landings information from dealers, provides additional information on total mortality of bluefin from these categories, and complement data collection in the pelagic longline and purse seine fisheries.

ii. Costs/Funding

The Bluefin Catch Reporting portion for Atlantic Tunas General, Harpoon, and HMS Charter/Headboat categories was incorporated using existing operations and maintenance contract funds from the NMFS Fisheries Research and Management Program funding line into the web-based reporting form to the HMS permits website where Angling category vessel owners must already report their bluefin catches (landings and discards). Future funding may be necessary if additional modifications to the web-based reporting forms or functionality are needed.

iii. Communication Strategies

The Amendment 7 final rule provides information to Atlantic Tunas General, Harpoon, and HMS Charter/Headboat permit holders regarding the new Bluefin Catch Reporting requirements (e.g., what must reported online, how to access the website, etc.). HMS Management Division staff has and will continue to conduct outreach to Atlantic Tunas General, Harpoon, and HMS Charter/Headboat permit holders on the new requirements of Amendment 7, general information on how the website reporting will work, and respond to any questions.

iv. Evaluation

Although there is not a formal evaluation mechanism for the Bluefin Catch Reporting project, NMFS anticipates that the feedback received during outreach and implementation of the reporting changes will serve in that capacity.

v. Future Needs/Challenges

Funding was obligated for the development of Bluefin Catch Report functionality. Future funding for additional website form changes may be necessary if modifications are needed. If needed, such funding may be available from the NMFS Fisheries Research and Management Program funding line.

e. Bluefin Tuna Dealer Reporting (Consideration of using eDealer)

i. Implementation

The HMS Management Division is considering electronic bluefin tuna dealer reporting. The objective is two-fold: (1) creation of electronic reporting for dealer purchases of bluefin tuna as well as (2) simplification/streamlining the reporting of bluefin tuna dealer purchases with other HMS dealer purchases. The Division is currently analyzing the different reporting mechanisms that are available and is analyzing the advantages and disadvantages and developing a cost estimate for the various options. Options include developing a separate electronic reporting system specifically for bluefin, incorporating bluefin reporting into the existing eDealer program where all other commercial HMS landings may be reported, and incorporating the ability to report bluefin into other state and/or federal dealer reporting programs that exist (e.g., SAFIS, trip tickets, etc.). Benefits of electronic reporting include streamlining reporting requirements for dealers as well as consolidating all HMS commercial landings data. Challenges to incorporating bluefin into existing dealer reporting mechanisms include ensuring that all international and domestic requirements are met in all systems, some of which are outside NMFS' control.

ii. Costs/Funding

The mechanism chosen will influence the costs of development. Cost estimates for the various options will be developed. Funding may be available from the NMFS Fisheries Research and Management Program funding line.

iii. Communication Strategies

Once a methodology is chosen, the HMS Management Division will communicate any changes or new requirements through directed outreach to bluefin dealers and HMS Advisory Panel members.

iv. Evaluation

Factors that NMFS would evaluate in development and implementation of electronic dealer reporting for bluefin include ease of reporting for dealers, timeliness of data submission, complexity of data pathways, ability to make changes as needed, and ability to meet all international and domestic requirements.

v. Future Needs/Challenges

Once cost estimates have been developed and the preferred method of bluefin dealer reporting is identified, obtaining and appropriating funds may be necessary. One possible challenge of changes to reporting would be getting dealers to use a new reporting system.

f. Electronic Logbook Pilot (Coordination with SEFSC)

i. Implementation

The HMS Management Division is working with the Southeast Fisheries Science Center (SEFSC) to implement a pilot program to test and develop electronic vessel logbook reporting on a select group of vessels. Currently, selected fishermen must submit landings, effort, and economic information on paper forms within a certain amount of time after landing. Depending on the fish being caught, fishermen can use a variety of forms (e.g., HMS logbook, Coastal fisheries logbook, vessel trip report) and each form collects slightly different information (e.g., set-based information versus trip-based information). If the fisherman did not fish during a month, they must submit a “no fishing report” for that month. Entering the data and ensuring the quality of the data can take NMFS staff and/or contractors several months or more.

The objective of electronic logbooks is to simplify and streamline data reporting for fishermen and NMFS and to improve timeliness and quality of data. The objectives of the pilot program are to test different systems to see which system works best, obtain industry buy in, and to determine how to integrate the data from the electronic vessel logbooks with the electronic data being reported by dealers. The SEFSC has outlined the technical requirements, communicated the needs to vendors, recruited a few volunteer vessels, and is continuing to recruit additional volunteer vessels. The SEFSC expects to begin installing the needed hardware on the volunteer vessels in spring 2015 and will complete testing of the e-logbook system during 2015. During the pilot program, the SEFSC will work with fishermen to achieve industry buy in and will ask fishermen and developers for suggestions to improve the software and program. Also, the SEFSC will work with each vessel to explore hardware solutions and ways to integrate the hardware with existing vessel electronics. The SEFSC expects to incorporate multiple software versions as suggestions from fishermen. During the pilot program, the SEFSC will also focus on data receipt and storage infrastructure along with determining the methods to transition from the current system to a fully electronic system. The HMS Management Division staff will assist with recruiting volunteer vessels from the pelagic and bottom longline fisheries, reviewing overall system design as needed and addressing fishermen’s concerns.

ii. Costs/Funding

The length of testing, the different mechanisms tested, changes in the technical requirements, and the number of vessels chosen will influence the costs of the pilot program. Funding for the project is approximately \$81,000 and is from the NOAA Fisheries Information System Program. At this time, vendors are also volunteers and will not be paid.

iii. Communication Strategies

Volunteers will be asked directly and will be chosen based on interest. Once chosen, the SEFSC will work directly with the fishermen to receive suggestions for improvements.

iv. Evaluation

Factors used to evaluate the pilot program for electronic logbooks include meeting the technical requirements, ease of reporting for fishermen, quality of data submitted, timeliness of data submission, complexity of data pathways, ability to make changes as needed, and ability to meet all international and domestic requirements.

v. Future Needs/Challenges

Once testing is complete, the HMS Management Division in coordination with the SEFSC will need to determine regulatory and other requirements needed to implement electronic logbooks in HMS fisheries, as appropriate.

g. Electronic Logbooks for Charter/Headboat (Coordination with South Atlantic/Gulf Councils)

i. Implementation

The HMS Management Division was invited to participate on a technical subcommittee that was formed to develop a charter vessel electronic reporting amendment in the Gulf Council and South Atlantic Council's management areas. The subcommittee reviewed the findings of a pilot study conducted in the Gulf of Mexico in 2010 to determine the feasibility of conducting a census of charter boats using electronic reporting methods. The technical subcommittee conveyed a meeting on May 28-29, 2014, to develop recommendations for implementing electronic reporting in the for-hire sector. The subcommittee reconvened via webinar on September 29, 2014, to develop a draft report. The final report of recommendations was submitted to the Councils on December 1, 2014, and it is available online at <http://safmc.net/sites/default/files/meetings/pdf/Council/12-2014/Data/ElecReportingRec11262014.pdf>. The timeline for implementation will be largely dependent on the next steps taken by the Councils, the HMS Management Division, and the States.

ii. Costs/Funding

The vision of the subcommittee is that the proposed census program may be funded through the Marine Recreational Information Program (MRIP) and incorporate MRIP certified validation and estimation procedures; operation would be decentralized from MRIP to regional and state entities through their fisheries information systems or FINs. The subcommittee discussed that an exact cost estimate would be difficult to determine given the array of unknown variables at this time that would affect program cost. The costs to the HMS Management Division will primarily involve costs associated with coordination, outreach, education, and eventually data integration and analysis.

iii. Communication Strategies

The subcommittee discussed that the success of the program requires a smooth and well-coordinated program throughout the region. Close coordination will need to continue between Council, Federal, State, and other partners to develop an effective charter/headboat electronic

monitoring programs. This close coordination is critical to meet timeliness needs, improve accuracy (and precision), and minimize duplication of effort. To this end, the subcommittee recommends that GulfFIN and ACCSP committees work jointly with end users (i.e., MRIP, Southeast Regional Office, SEFSC, HMS, and States) to coordinate this new reporting program.

iv. Evaluation

The objectives to be evaluated for the charter/headboat electronic reporting program include the following:

- Increasing the timeliness of catch estimates for in-season monitoring of particular species;
- Increasing the temporal (and/or spatial) precision of catch estimates for monitoring particular species;
- Providing vessel-specific catch histories for management;
- Increasing stakeholder trust and buy-in associated with data collection; and
- Reducing biases associated with collection of catch statistics.

iv. Future Needs/Challenges

The future needs include receiving feedback from the Councils and NMFS, developing a timeline for potential implementation with applicable state and federal agencies, and review and modification of state and/or federal regulations to accommodate the recommended electronic logbook program. Current challenges include developing an appropriate method to calibrate electronic reporting with existing survey methods, minimizing reporting burden on vessel operators, compliance, and collaboration with States with implementation, data collection, and validation.

h. Recreational Catch Reporting App Development

i. Implementation

Reporting of Atlantic HMS caught recreationally outside of tournaments (non-tournament reporting) is currently required for billfishes, swordfish, and bluefin tuna. The existing non-tournament reporting program utilizes phone and web-based reporting capabilities. Expansion to include reporting via smart phone application has been recommended to improve ease of reporting and compliance with reporting requirements. Smart phone reporting application analysis includes considering different technologies that are available and developing a pros/cons list for the various options. Application analysis will be completed by fall 2015 for potential implementation in 2016.

ii. Costs/Funding

The technology chosen will influence the costs of development. Cost estimates for the various options will be developed. Funding may be available from the NMFS Fisheries Research and Management Program funding line.

iii. Communication Strategies

Once a methodology is chosen, the HMS Management Division would communicate any changes or new requirements to anglers and HMS Advisory Panel members through HMS News, the HMS Compliance Guide, the HMS website, and outreach to media outlets such as fishing magazines and newspapers.

iv. Evaluation

Factors to be evaluated include ease of reporting for anglers, timeliness of data submission, complexity of data pathways, ability to make changes as needed, and ability to meet all international and domestic requirements.

v. Future Needs/Challenges

Once a cost estimate is developed and a preferred method of non-tournament recreational reporting is identified, obtaining and appropriating funds may be necessary. One potential challenge could be getting anglers to use the reporting application; however, if the application is designed and constructed well, improved ease and speed of reporting should be appealing to anglers and help to overcome this challenge.

i. Online HMS Tournament Registration and Reporting

i. Implementation

Atlantic HMS tournaments must register with NMFS, and tournaments that are selected for reporting must report tournament fishing activity and landings to NMFS within 7 days of tournament completion. Database improvements, including online registration and reporting, are planned and have begun in coordination with the SEFSC. The improvements will ultimately support selection and reporting of all HMS tournaments, thus providing valuable information for scientists and managers. Online registration beta testing is underway with the SEFSC and may be ready for public use by spring 2015. Continued progress toward online tournament reporting is planned through 2015 including work by the SEFSC to ensure data security as well as data quality control/quality assurance processes. Improvements to tournament registration and reporting program are anticipated to be completed in 2016.

ii. Costs/Funding

The technology chosen for online registration and reporting as well as firewall protection and data quality management will influence the costs of development.

iii. Communication Strategies

Communication of any registration or reporting changes would be made through direct mailing or e-mail to tournament directors/operators, HMS Advisory Panel members, HMS News, the HMS Compliance Guide, and the HMS website.

iv. Evaluation

Factors to be evaluated include ease of reporting for tournament directors/operators, timeliness of data submission, complexity of data pathways, ability to make changes as needed, quality and

security of data, and ability to meet all international and domestic requirements. Customer satisfaction surveys with tournament operators have been utilized in the past and would likely be used again.

v. Future Needs/Challenges

Obtaining and appropriating additional funds may be necessary as communicated recently by the SEFSC. One potential challenge could be getting tournament operators/directors to use the registration and reporting features online; however, if the websites are designed and constructed well, improved ease and speed of use should be appealing and help to overcome this challenge.

V. Feedback from Atlantic Highly Migratory Species Advisory Panel

On September 10-11, 2014, the Atlantic HMS Advisory Panel meeting was held in Bethesda, MD. During the meeting, NMFS sought feedback on what should be included in the HMS Electronic Technologies Implementation Plan. Ideas and feedback included:

- Recommendation of development of a recreational reporting “app” or electronic reporting system.
- Support for all (commercial and recreational) HMS vessels having a VMS, and requirement to declare trip information.
- Support for reducing the redundancy of reporting.
- Support for anything that increases reporting and the timeliness of reporting.
- Support to keep some overlap of reporting (e.g., human observer coverage and paper logbooks) for some period of time so that data streams can be compared for completeness, accuracy, etc.
- Support for collecting effort data in electronic reports.
- Recommendation that designing and development of software and applications should be handled by the private sector versus the federal government.
- Recommendation that the federal government should develop a set of standards and formats for reporting data so that it could be used by anybody who needs it.
- Concern about who will be paying for electronic technologies.

An interim-final Electronic Technologies Implementation Plan was shared with the HMS Advisory Panel via email for their feedback and input. The interim-final Implementation Plan was discussed at the March 2015 Advisory Panel meeting and several suggested modifications to the objectives have been made to this version based on Advisory Panel member input. Specifically, suggestions to integrate data collection programs and share data as much as possible with fishery management partners as well as emphasis on testing new technology prior to implementation were added to the objectives.

VI. Framework for Future (3-10 Years) Electronic Technology Implementation

A clearly defined process for successful implementation of Electronic Technologies is critical. The process should outline steps for assessing Electronic Technology needs, development, implementation, and evaluation, with particular emphasis on whether Electronic Technologies could augment or replace existing systems. As proposed in NOAA's draft guidance and best practices for EM/ER, the Atlantic HMS Management Division intends to use a six phase process for long-term future EM/ER consideration and development, including HMS Advisory Panel and stakeholder input at relevant stages. The phases include: 1) program assessment, 2) identification of goals/objectives, 3) program design, 4) pre-implementation, 5) implementation, and 6) review and adaptation.

VII. Staffing/HMS Electronic Technologies Team

- a. Amendment 7: Brad McHale, Thomas Warren, Dianne Stephan, Sarah McLaughlin, Craig Cockrell, Jennifer Cudney, George Silva, Joseph Desfosse, Jenni Wallace, Carrie Soltanoff, Margo Schulze-Haugen
- b. eDealer: Jackie Wilson, Delisse Ortiz, Joseph Desfosse, Jacqueline Johnson-Cragg, Dianne Stephan, Kathy Goldsmith, Karyl Brewster-Geisz, Margo Schulze-Haugen
- c. Online HMS Tournament Registration/Reporting: Randy Blankinship, Katie Davis
- d. Electronic Logbooks: George Silva, Jackie Wilson