Amendment to the Alaska Region Electronic Technologies Implementation Plan

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1 Introduction

In May 2013, NMFS issued Policy Directive 30-133, *Policy on Electronic Technologies and Fishery-Dependent Data Collection*[1], which called for the development of Regional Electronic Technology Implementation Plans to address regionally specific fishery dependent data collection issues and electronic technologies to address these issues. In January 2015, NMFS finalized the Electronic Technology Implementation Plan[2] for the Alaska region to meet the milestone outlined in the Policy Directive. A biennial progress review of the implementation plan was completed in May 2017[3].

In 2018 NMFS completed a significant milestone in the Electronic Technology Implementation Plan by implementing regulations to allow EM as an alternative monitoring option to carrying an observer for small fixed gear vessels in partial coverage category of the North Pacific Observer Program. The data collected from this coverage is used to obtain catch and discard information from these vessels. After this achievement, in April 2018, the North Pacific Fisheries Management Council reconstituted the EM Workgroup to shift its focus to developing EM for use in the trawl catcher vessel fisheries. In June 2018, the Council adopted the following preliminary monitoring objectives as recommended by the trawl EM Workgroup (now EM Committee) to guide the development of an EM program for trawl catcher vessels:

- improve salmon accounting;
- reduce monitoring costs; and,
- improve the quality of monitoring data.

This amendment to the Electronic Technology Implementation Plan supplements the Council's revised prioritization of EM implementation on trawl vessels. This amendment does not replace the implementation work that the Council's EM Committee may undertake. As with the main document, this amendment borrows heavily from the products generated from the EM Workgroup and information in the EM/ER Strategic Plan[4] and, where appropriate, we have provided cross-references to the strategic Goals and Objectives.

2 Electronic Monitoring/Reporting Approaches for EM aboard trawl vessels

Compliance monitoring for a specific requirement (Section 2.1.1 of the Electronic Technology Implementation Plan) is likely the approach that will be used to implement EM aboard trawl vessels. The EM data obtained under the compliance monitoring approach do not feed into catch accounting or stock assessments. Instead, EM used in this approach supports data collection through other methods (e.g., observers or industry self-reported).

3 Updated list of Alaska fisheries suitable for implementation of EM and ER

The currently implemented existing monitoring tools summary for Alaskan fisheries in Table **3.1** is updated to reflect 1) implementation of EM aboard small fixed gear vessels and 2) the adjusted prioritization to implement EM aboard trawl vessels. The table provides a summary of

[1] Available at: https://www.fisheries.noaa.gov/webdam/download/64692871
[2] Available at: https://alaskafisheries.noaa.gov/sites/default/files/akremerimplementationplan.pdf
[3] Available at: https://www.fisheries.noaa.gov/resource/document/electronic-monitoring-and-reporting-implementation-plan-alaska-region-spring-0
[4] Available at: https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-276.pdf

fisheries where additional ER and EM could potentially be suitable and yellow cells indicate those fisheries that have been identified as the highest priority for implementation.

Table 3.1. Summary of the existing monitoring tools currently implemented in the North Pacific. Catch share programs require a more intensive suite of monitoring tools for management and are therefore listed separately from the non-catch share programs. Green cells indicate fisheries where electronic technologies have already been implemented and regulated programs are in place. Fisheries where additional Electronic Reporting (ER) and Electronic Monitoring (EM) could potentially be suitable are noted; yellow cells indicate fisheries that have been identified as high priority for implementation or have initiatives underway. (Note: AFA = American Fisheries Act; BSAI= Bering Sea/Aleutian Islands; CP = catcher/processor; CV = catcher vessel; GOA = Gulf of Alaska; IFQ = Individual Fishing Quota; IERS=Interagency Electronic Reporting System; LOA = length overall of vessel)

Program Type	Fishery	Current Requirements								Additional ER Potentially Suitable?	Potential EM Application?
		ER for Landings &/or Production (IERS)	Paper logbook[5]	ER for logbook (elogbook in IERS)	ER for Observer data (Atlas)	Flow Scale	VMS	Video	Observer Coverage		
Catch Share	BSAI pollock trawl CP & mothership (AFA)	Y	N	Y	Y	Y	Y	Y	200% (i.e. 2 observers on all trips)		
	BSAI non-pollock trawl CP (Amendment 80)	Y	N	Y	Y	Y	Y	Y	200%		Y - video to monitor deck sorted halibut PSC
	Central GOA Rockfish Trawl CP	Y	N	Y	Y	Y	Y	Y	200%		
	BSAI Pacific cod Longline CP	Y	N	Y	Y	Y	Y	Y	100% or 200%		Y – supplement observer coverage for catch estimation
	BSAI rationalized crab CP	Y	Y	Few-voluntary	N	Y	Y	N	100% - State observer program	Y- elogbook	
	BSAI pollock trawl CV (AFA)	Y	Y	Few-voluntary	Y[6]	n/a	Y	N	100%	Y- elogbook; Atlas	Y- compliance monitoring of no discard
	CGOA Rockfish Trawl CV	Y	Y	N	Y	n/a	Y	N	100%	Y- elogbook	Y-compliance monitoring of no discard
	IFQ Sablefish CP	Y	Y	Few-voluntary	Y	N	Y- AI only	N	100%	Y- elogbook	
	IFQ Halibut CP	Y	Y	Few-voluntary	Y	N	Y- AI only	N	100%	Y- elogbook	
	IFQ Sablefish CV	Y	Y	N	Y	n/a	Y- AI only	Y[7]	Partial	Y- elogbook	
	IFQ Halibut CV	Y	Y[8]	N	Y	n/a	Y- AI only	Y[6]	Partial	Y- elogbook	
	IFQ Halibut & Sablefish <40' LOA CV	Y	Y[7]	N	Y	n/a	Y- AI only	N	None		Y– video for catch estimation

[5] Paper logbooks are required by NMFS for vessels >60ft

[6] Vessels <125' may not provide daily transmission capabilities

[7] Fixed gear vessels in the partial coverage category have choice to opt into EM selection pool as an alternative to observer coverage.

[8] Paper logbooks are required by IPHC for vessels >26 ft fishing for halibut; vessels >60ft are also required to submit paper logbooks by NMFS and there is a shared IPHC-NMFS paper logbook

Program Type	Fishery	Current Requirements								Additional ER Potentially Suitable?	Potential EM Application?
		ER for Landings &/or Production (IERS)	Paper logbook[2]	ER for logbook (elogbook in IERS)	ER for Observer data (Atlas)	Flow Scale	VMS	Video	Observer Coverage		
Non-Catch Share	BSAI Turbot longline CP	Y	Y	Used voluntarily	Y	N	Y	N	100%		
	GOA Trawl CP	Y	Y	Used voluntarily	Y	N	Y	N	100%		
	GOA Longline CP	Y	Y	Used voluntarily	Y	N	Y	N	100%		
	BSAI Pacific cod Trawl CV	Y	Y	N	Y	n/a	Y	N	Partial; with option to opt-in to 100%	Y- elogbook	Y-compliance monitoring
	GOA pelagic Trawl CV	Y	Y	N	Y	n/a	Y	N	Partial	Y- elogbook	Y- compliance monitoring of no discard
	GOA non-pelagic Trawl CV	Y	Y	N	Y	n/a	Y	N	Partial	Y- elogbook	Y-compliance monitoring & estimation of halibut PSC
	Pot CP	Y	Y	Used voluntarily	Y	N	Y	N	100%	Y- elogbook	Y – video for catch estimation
	Longline & Pot >=40'LOA CV	Y	Y	N	Y	n/a	Y	Y	Partial	Y- elogbook	
	Longline & Pot <40'LOA CV	Y	N	N	N	n/a	Y- AI only	N	None		Y – video for catch estimation & PSC monitoring
	Jig	Y	Y	N	N	n/a	Y- AI only	N	None		

5 Update to EM/ER initiatives

This section identifies several initiatives to implement EM aboard trawl vessels in Alaska. These initiatives support new EM/ER implementation for the highest priority fisheries (yellow cells in Table 3.1).

5.1.3 Deck sorting of halibut prohibited species catch (PSC)

Goal
Provide compliance monitoring to ensure all halibut sorted on deck are provided to the observer and only halibut are sorted on deck on non-pollock trawl catcher/processors in the BSAI and the GOA. Additionally, evaluate and test technology to reduce observer duties one deck.

Description
Several Exempted Fishing Permits (EFP) have been conducted to test the efficacy of sorting halibut on deck to reduce halibut mortality. Observers are required to count, obtain a length and assess the halibut sorted on deck. In order to ensure all halibut sorted are provided to the observer for sampling and to ensure no other catch is sorted on deck, video cameras are used in the EFP. Additionally, other technologies are being tested (such as electronic length boards and chute cameras) to automate the collection of some observer data. Halibut deck sorting is expected to become a regulated program by 2020. The video monitoring system for compliance will be in the regulated program. The regulated program would allow any advanced technologies to be implemented in the future without further regulatory action. The EFP applications and permits as well as the RIR for the Halibut Deck Sorting Program can be found on the Alaska Region website at https://alaskafisheries.noaa.gov/.

Linkage to the EM/ER strategic plan
This project addresses the following components of the Strategic Plan for EM/ER in the North Pacific (Appendix A):

- Goal II, Objective 1: Conduct scientific research to advance the science of monitoring and data integration.
- Goal III, Objective 2: Implement EM/ER technology where appropriate and cost effective to enhance compliance monitoring.

Timeline

- Fishing under EFP with continued testing of advanced technologies and improvements to video monitoring systems will continue until December 2019.
- Regulations to enable halibut deck sorting are currently development. The proposed rule will be published in March 2019.
- Continued testing of advanced technologies under the regulated program in 2020 and after.

5.1.4 Evaluation of alternative sampling methods for salmon

Goal
Evaluate and test technology to automate salmon bycatch monitoring at shore-based processing plants.

Description

Salmon bycatch monitoring at shore-based processors is critical to management of Alaska's groundfish fisheries. Salmon bycatch caps require fishing operations to cease when they are exceeded. A collaborative project between the CGOA rockfish shore-based processors and NMFS to evaluate alternative sampling methods for salmon bycatch is currently underway. The project is testing the use of a chute camera to automate counting and identifying salmon species. Additionally, video systems are installed in the sorting areas to monitor sorting activities as well as determine if industry counts of salmon are accurate. Early results have indicated that automated methods to replace or augment human review of video for the presence of salmon could result in cost and time savings. Additional work to develop an image library of salmon sorting activities and testing of the automated system would be needed to promote this program.

Linkage to the EM/ER strategic plan

This project addresses the following component of the Strategic Plan for EM/ER in the North Pacific (Appendix A):

- Goal II, Objective 1: Conduct scientific research to advance the science of monitoring and data integration.
- Goal III, Objective 2: Implement EM/ER technology where appropriate and cost effective to enhance compliance monitoring.

Timeline

The project timeline is dependent of the success of the initial work as well as funding availability. Change and refinement of the timeline are expected to be an ongoing process with a sustained commitment to automated EM capacity building. Input from the EM committee and potential integration of this project with the EM Committee's cooperative research plan may also change this timeline.

- Initial testing of chute cameras and compliance video in processing plants-June 2018
- Presentation of initial results- September 2018
- Continued testing with expanded scope to other fisheries – 2019 and 2020
- Council analysis: 2021
- Development of regulations: 2022

5.1.4 Full retention on CVs using EM for compliance with full retention

Goal

The goal of this project is to explore changing observer duties aboard catcher vessels in from compliance monitoring of full retention of all species (including salmon, halibut, herring PSC), to collecting scientific and biological information from the fishery. The goal would be to remove the 100% observer coverage requirement for fisheries that have a full retention of salmon requirement and explore expanding to other fisheries that have similar attributes such as CGOA rockfish.

Description

Pollock catcher vessels in both the GOA and BSAI are required to retain all salmon until delivery and have very little at sea discard associated with the catches. The CGOA Rockfish program also has minimal discard for some of the species targeted. Testing the feasibility of using EM for compliance monitoring aboard catcher vessels with minimal discards currently would be a focus of this project.

This project will be conducted through a cooperative research plan with the NPFMC's EM

committee. The EM committee will use the EM fixed gear workgroup's plan as a model for their cooperative research plan development. While EM for monitoring compliance with discards has been conducted in other regions aboard so similar or the same vessels, several outstanding issues remain that need to be resolved prior to full implementation. These include:

- Addressing regulatory hurdles to full retention, including Maximum Retainable Amounts and species that could be designated as PSC during a season
- Testing EM systems aboard vessels with complex configurations, such as below deck conveyor belts or vessels that pump fish aboard.
- Determining the feasibility of verifying full retention when delivering to a tender vessel.
- Establishing the required observer coverage to collect biological information and marine mammal interaction.

Data and analysis produced on costs, data quality, risks, operational procedures, and vessel compatibility will inform decisions on implementation phases, future investments in technology, and identify the combination of tools that will best meet NMFS, Council, and stakeholder management objectives. These decision points will be analyzed in a regulatory amendment, and the Council's recommendation, and subsequent NMFS rulemaking that will result in integration of EM options into the Observer Program.

Linkage to the EM/ER strategic plan

This project addresses the following component of the Strategic Plan for EM/ER in the North Pacific (Appendix A):

- Goal III, Objective 2: Implement EM/ER technology where appropriate and cost effective to enhance compliance monitoring.
    - Strategy B: Expand use of EM in compliance applications.

Preliminary Timeline

The preliminary timeline is still under development. Using the EM fixed gear workgroup model as a guide a rough outline of the expected milestones is detailed below. It is expected that the EM committee will follow the same model of pilot studies, pre-implementation, and implementation. EFPs may be needed during the pilot and pre-implementation phases.

Table 5.2 Preliminary Timeline

Activity/Milestone	**Timeline**
EM Committee develops cooperative research plan	December 2018
Pilot testing	January –November 2019
Present Pre-implementation plan to Council	April 2020
Pre-implementation Year 1- likely to require EFPs and will focus on feasibility of operational changes required to comply with full retention	January – December 2020
Pre-implementation Year 2- again likely will require an EFP and will be refined from Year 1.	January – December 2021
Full implementation into a regulated program	January 2022