

## Operator Responsibilities & Vessel Monitoring Plans

As part of the pre-implementation plan, the EM Workgroup has been developing a proposed list of vessel operator responsibilities in section 5 of the document called Proposed 2016 EM program Elements. Eventually, NMFS will be developing regulations for an EM programs and there are several approaches for regulating EM,<sup>1</sup> including the concept of a Vessel Monitoring Plan that could be approved by NMFS. Although is not yet known how operator responsibilities and EM equipment requirements will be specified in regulation, we want to highlight, up front, some of the provisions that could be different under a regulated program and provide some initial thoughts on Vessel Monitoring Plans. In addition, NMFS already has some existing regulations that specify EM system requirements, and since these are likely to form the basis for equipment specifications for EM in this program we have provided the regulations and indicated provisions that might need to be modified for this fleet.

To facilitate discussion with the EM Workgroup, we have 3 sections to this document:

- A. Comments (*in red*) to Section 5 of the Proposed 2016 EM program Elements regarding eventual regulations.
- B. Ideas on elements for Vessel Monitoring Plan that could be incorporated into the 2016 pre-implementation plan
- C. Current regulations Video Monitoring System Requirements with provisions (*in red*) that might be need to be modified for this fleet.

---

### A. Operator Responsibilities on Vessels Carrying EM Systems

Because of the short time EM systems will be on a vessel, the operator responsibilities must be simple, easy to learn, and focused on providing the data quality and cost effectiveness crucial to program success. We propose the following operator responsibilities:

- **EM system installation:** Vessels selected from the EM Pool must have an installed, functioning EM system for the specified monitoring period. During the EM system installation, it will be the vessel owner's responsibility to assist with planning the best wiring routes and installing the hydraulic oil pressure and engine oil pressure sensors with the assistance of the EM technician.
- **EM system operation.**
  - **Onboard Power:** The EM systems that will be used in 2016 can accommodate DC power from 12-32 volts, or use AC power from an inverter or gen set. It will be the vessel owner's responsibility to work with the EM technician to identify a stable power supply and maintain power to the EM system at all times when underway. To avoid battery drain, the EM systems will be allowed to power down to sleep mode when the engine is off.
  - **Function Test:** Prior to leaving port, the vessel operator must turn the system on and conduct a system functionality test following the instructions in the VMP. If the functionality test identifies a malfunction, the vessel operator must contact the EM service provider immediately to resolve the issue. The EM service provider will determine if the malfunction is critical or

---

<sup>1</sup> See section 5 of the EM/ER Implementation Plan for a brief description of regulatory approaches:  
<http://alaskafisheries.noaa.gov/sustainablefisheries/em/akremerimplementationplan.pdf>

non-critical. A critical malfunction is one that prevents the data collection objectives from being achieved. *Note, the concept of “critical” or “non-critical” malfunction is reasonable for 2016, but a regulated program may have different provisions.*

- **Non-Critical EM System Malfunction:** If the malfunction cannot be fixed in a timely fashion, the vessel operator may depart on the scheduled trip, but must follow the service provider’s instructions to trigger video recording manually. The vessel operator must also submit the hard drive from that trip within 48- hours of landing or on the next business day if the fish is landed on a weekend. The vessel operator may not depart on a second trip without a functioning EM system unless approved by the EM service provider. *Note, this is reasonable for 2016, but a regulated program may have different provisions.*
- **Critical EM System Malfunction:** If the malfunction is a camera defined as “critical” in the vessel must remain in port for up to 48 hours to allow the EM service provider time to effect repairs. If the problem cannot be fixed within the 48 hour window, the vessel may receive a release and depart on the scheduled trip. The malfunction must be fixed prior to departing on subsequent trips. *As above, this is reasonable for 2016, but a regulated program may have different provisions.*
- **Equipment breakdown at sea:** If the system passes the function check prior to leaving port, and remains continuously powered during the trip, the operator would NOT be required to return to port in the event of a breakdown. However the malfunction must be fixed prior to departing on subsequent trips. If a vessel has repeat problems with EM system reliability or video quality, that vessel may be removed from the EM pool for a period of time and placed in the human observer pool.  
*As mentioned above- NMFS would likely not regulate the vessels in the EM selection pool in this manner. It is more likely that we will do something similar to the existing at-sea scales program and other compliance monitoring video programs. In these programs NMFS states the requirements and then have a prohibition against fishing without complying those requirements. In the at-sea scales program, vessels have historically contacted OLE for guidance when problems with scales have arisen. Using the information given to them OLE decides to address the problem. It is also important to note that these vessels carry enough spare parts to repair the problem at sea. In the 20 years of the program only 1 vessel has had to return to port because of a malfunctioning scale.*
- **Hard Drive Capacity:** The vessel operator must ensure that the system has adequate memory to record the entire trip before departing port. The vessel operator must carry one or more spare hard drives, sufficient to record the entire trip, as a back-up.
- **Video quality:** The vessel operator will be required to check the monitor before each set and to wipe water and slime off the camera lenses to maintain video quality. Video quality for each set will be recorded on the vessel score card. *NMFS may not prescribe when to check the monitor or to clean the camera as described above, but use a performance standard for this requirement because checking the monitor before each set is a great idea- the cameras may need to be cleaned more often depending on the location of the camera.*
- **First Trip Quality Control Review:** Operators of vessels selected for EM coverage will be strongly encouraged to make their first landing at an EM service port to allow for a quality control visit. *“Strong encouragement” may be appropriate for pre-implementation, but is not likely something that could be regulated (it is either required or it is not).*

- **Catch handling:**
  - **Discard control points.** The vessel operator will be responsible for ensuring all catch is handled within view of the cameras as described in the VMP. A deck camera will be used to ensure that all discards are done in view of the rail cameras.
  - **Rockfish:** 2014 and 2015 field work is being evaluated to determine if EM reviewer species ID of rockfish can meet management needs. Industry representatives have proposed full retention of all rockfish with forfeiture of amounts in excess of the allowable bycatch limits as a means to ensure species ID and minimize waste. For 2016, there are two options for rockfish
    - **Option 1** – allow discards at sea
    - **Option 2** – Require full retention. This option would require an EFP. Members of the EM Workgroup could assist in writing the EFP, and PSMFC could be the applicant. To be in place for March 2016, the experimental design would need to be completed for AFSC review by September 1, 2015, and the completed application would need to be at the NMFS regional office for review and NEPA process by October 1, 2015. The EFP would be reviewed by the Council at the December meeting, and the regional office would complete the permit process in early 2016.
  - **Seabirds:** An additional camera will be installed to determine if a seabird streamer line was used during setting. Vessel operators will be required to hold incidentally caught seabirds up to the camera for 2-3 seconds (*This does not seem like enough time with video recording at 5 fps to capture all the needed characters. If we are going to identify seabirds, we may need more than 10 frames to look at*) and ensure that certain key parts of the animal, such as the beak, are captured by the cameras.
  
- **Effort logbooks:** Field work has demonstrated that it is impractical for EM video reviewers try to determine hook size, spacing, and count hooks during the video review. Vessel operators will be required to keep a simple logbook and write down their hook size, *hook count*, *hook* spacing, skate length, and the number of skates on each set. They will not be required to record catch information, other than what is already required in IPHC or other logbooks. The effort log being used in the 2015 testing plan is shown below for reference.

## B. Vessel Monitoring Plans

Several options exist for the architecture of Vessel Monitoring Plans (VMP). They can allow the vessel owner to detail exactly how their vessel will meet a set of performance standards listed in regulations; or, they can be very limited with only the vessel specific details identified in the VMPs while all other requirements would be specified in regulations with no requirement for the vessel to submit the details of how their vessel will comply with the regulation. The latter likely makes the most sense for this fleet as requiring vessel owners to describe procedures that are identical across the fleet would be time consuming and provide little additional information. The detailed information in an expansive VMP that would need to be reviewed and approved by the agency would be costly and time consuming as well. A list of the potential elements to a minimal VMP are described below. Additional elements may be needed as part of the VMP or some of the listed elements may not be valuable in a VMP. However, a good yard stick for whether an element is in a VMP instead of prescriptive regulatory text would be if the requirement is specific to the vessel (VMP) or uniform across all vessels (regulatory text).

### VMP Elements

- **Contact Information:** Name, phone number and email address of vessel personnel available to answer any questions about the VMP.
- **Diagram of Vessel:** The diagram should identify where fish are brought aboard, all locations where fish will be discarded within the view of the rail camera. Also include the location where catch is sorted and stored. The diagram must point to the location of the cameras and their coverage area.
- **Screen Shots:** After the cameras are in place screen shots of each camera's view must be taken and provided in the VMP.
- **Specifications Sheet:** *This could be a fillable form*
  - **Camera type for each camera to be used-** *(see next section for current regulations regarding minimum requirements for cameras should be used as a guide for the minimum camera requirements at §679.28(e))- If there are no camera differences for the entire fleet this may not be needed and another means can be used to identify these specifications. However, camera technology changes rapidly so it may be more flexible to have this requirement in a VMP that can be changed yearly than in prescriptive regulations that takes much longer to update.*
    - Number of cameras
    - Brand
    - Model
    - Analog or IP (internet protocol- or networked)
    - Pixel capability/ density
    - Lens type (brand, model, fixed or adjustable aperture, and resolution capability)
  - **Operating System and Data Storage-** *This information will be useful in determining if the system has enough storage capacity and processor speed to record the data from all cameras at 5 unique frames per second for the duration of an entire trip. If there are no operating system and data storage differences for the entire fleet this may not be needed and another means can be used to identify these specifications. However, computer*

*technology changes rapidly so it may be more flexible to have this requirement in a VMP that can be changed yearly than in prescriptive regulations that takes much longer to update.*

- Storage device type and size
  - File type in which the data is recorded
  - Compression type
  - Processor speed
  - Operating System
  - Monitor brand and specifications
- **Sensor Package-** *If there are no sensor differences for the entire fleet this may not be needed and another means can be used to identify these specifications. However, there may be multiple sensors than can meet the same performance standard so it may be more flexible to have this described in the VMP rather than a prescriptive regulation.*
- List all sensor types and their use.
- **Spare Parts Package** –*This information will be useful to determine if a repair needs to be made, if that repair can be done while at sea or the vessel will need to return to port and have a video service provider repair the system.*
- List all spare parts for the EM system that will be aboard the vessel while at sea

## C. Video Monitoring System Requirements

Several requirements for cameras are already outlined in §679.28(e) and it is likely that these requirements will be used under any EM program. Additional regulations in a new section of §679.28 will need to be developed specific to the EM vessel selection pool as well. Areas where these regulations may need to be modified to meet the needs of this program are highlighted in *red*.

### §679.28 (e)

(1) What requirements must a vessel owner and operator comply with for a video monitoring system?

(i) The system must have sufficient data storage capacity to store all video data from an entire trip. Each frame of stored video data must record a time/date stamp in Alaska local time (A.l.t.).

(ii) The system must include at least one external USB port or other removable storage device approved by NMFS.

(iii) The system must output video files to an open source format or the vessel owner must provide software capable of converting the output video file to an open source format or commercial software must be available for converting the output video file to an open source format.

(iv) Color cameras must have at a minimum 470 TV lines of resolution, auto-iris capabilities, and output color video to the recording device with the ability to revert to black and white video output when light levels become too low for color recognition.

(v) The video data must be maintained by the vessel operator and made available on request by NMFS employees, or any individual authorized by NMFS. The data must be retained on board the vessel for no less than 120 days after the date the video is recorded, unless NMFS has notified the vessel operator that the video data may be retained for less than this 120-day period. *This requirement may not apply to the vessels in the EM selection pool.*

(vi) The system must record at a speed of no less than 5 unique frames per second at all times when the use of a video monitoring system is required.

(vii) NMFS employees, or any individual authorized by NMFS, must be able to view any video footage from any point in the trip using a 16-bit or better color monitor *aboard the vessel?* that can display all cameras simultaneously and must be assisted by crew knowledgeable in the operation of the system.

(viii) Unless exempted under paragraph (D) *and (E)* below, a 16-bit or better color monitor must be provided within the observer sampling station or at the location where the observer sorts and weighs samples. The monitor:

(A) Must have the capacity to display all cameras simultaneously;

(B) Must be operating when the use of a video monitoring system is required;

(C) Must be securely mounted at or near eye level;

(D) Is not applicable to longline C/Ps subject to § 679.100(b)(2)

*(E) Vessels in the EM selection pool*