Modification of the Vessel Position Data Collection Program for the Gulf of Mexico Shrimp Fishery

Draft Framework Action
under the Fishery Management Plan for the
Shrimp Fishery in the Gulf of Mexico, U.S. Waters

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ABBREVIATIONS USED IN THIS DOCUMENT

BRD	bycatch reduction device
cELB	cellular electronic logbook
CHG	charter/headboat permit for Gulf coastal migratory pelagic species
Council	Gulf of Mexico Fishery Management Council
EEZ	Exclusive Economic Zone
ELB	electronic logbook
EIS	environmental impact statement
EMTU	enhanced mobile transceiver unit
EMTU-C	enhanced mobile transceiver unit – cellular
FMP	Fishery Management Plan
GMFMC	Gulf of Mexico Fishery Management Council
Gulf	Gulf of Mexico
HMS	highly migratory species
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
RCG	charter/headboat permit for Gulf reef fish
RR	Gulf of Mexico reef fish commercial permit
RSLA	South Atlantic rock shrimp limited access permit
Shrimp FMP	Shrimp Fishery of the Gulf of Mexico, U.S. Waters
SPGM	Gulf shrimp moratorium permit
SRD	Science and Research Director
TED	turtle excluder device
VMS	vessel monitoring system

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CHAPTER 1. INTRODUCTION

1.1 Background

The Gulf of Mexico Fishery Management Council (Council) is developing a draft framework action under the Fishery Management Plan (FMP) for the Shrimp Fishery of the Gulf of Mexico, U.S. Waters (Shrimp FMP) to address the expiration of the 3G cellular network in December 2020, which was used for transmission of data from cellular electronic logbook units (cELB).[1] Even though the data can no longer be transmitted via 3G cellular networks, the hardware devices on board vessels continue to collect and store effort data, as long as they are still functioning. Additionally, the National Marine Fisheries Service (NMFS) server that securely stored the shrimp industry's position data is no longer operational as of December 7, 2020. Amendment 13 to the Shrimp FMP (2005) established the use of "electronic logbooks" (ELB), which are vessel tracking devices that collect vessel positional data in 10-minute intervals. Originally, the ELB boxes stored the positional data onto SD cards, which were eventually collected in the field by NMFS Port Agents. In 2013, NMFS upgraded the original ELB design to gain efficiency, designing a device that could transmit the positional data to NMFS over a 3G cellular signal. These upgraded vessel tracking devices were named "cellular electronic logbooks" (cELB). The vessel position information transmitted from cELBs are combined with data from submitted dealer reports to estimate effort. The Shrimp ELB Framework Action (2013) later established a cost-sharing system for the cELB program, under which NMFS provided the hardware, software, data storage, effort estimation analysis, and archival activities while the selected permit holders covered the costs of installing and maintaining the units, as well as the cellular service required for data transmission. The current regulations require participation in the cELB program if selected by the Science and Research Director (SRD) and were implemented with Shrimp Amendment 13:

§ 622.51 Recordkeeping and reporting.
(a) Commercial vessel owners and operators--(1) General reporting requirement. The owner or operator of a vessel that fishes for shrimp in the Gulf EEZ or in adjoining state waters, or that lands shrimp in an adjoining state, must provide information for any fishing trip, as requested by the SRD, including, but not limited to, vessel identification, gear, effort, amount of shrimp caught by species, shrimp condition (heads on/heads off), fishing areas and depths, and person to whom sold.
(2) Electronic logbook reporting. The owner or operator of a vessel for which a Federal commercial vessel permit for Gulf shrimp has been issued and who is selected by the SRD must participate in the NMFS-sponsored electronic logbook reporting program as directed by the SRD. In addition, such owner or operator must provide information regarding the size and number of shrimp trawls deployed and the type of bycatch reduction device (BRD) and turtle excluder device used, as directed by the SRD. Compliance with the reporting requirements of this paragraph (a)(2) is required for permit renewal.
(3) Vessel and Gear Characterization Form. All owners or operators of vessels applying for or renewing a commercial vessel moratorium permit for Gulf shrimp must complete an annual Gulf Shrimp Vessel and Gear Characterization Form. The form will be provided by NMFS at the time

[1] Appendix A provides a diagram of how cELBs work and the role of cellular data transmission.

of permit application and renewal. Compliance with this reporting requirement is required for permit issuance and renewal.

Vessels selected to participate must carry time-stamped global positioning system (GPS) units that record and store data regarding a vessel's location at 10-minute time intervals (LGL Ecological Research Associates, Inc. 2009).[2] From these time-stamped locations, vessel speed between points can be estimated and then evaluated with mathematical algorithms to determine if a vessel is stopped, fishing, or transiting. Fishing effort has historically been measured in terms of "fishing days," where a fishing day equals 24 hours of towing time.

Trip tickets provide NMFS with shrimp catch data for each trip, which is then matched to the GPS track log data and used to estimate catch-per-unit-effort for the trip. Effort is estimated by statistical area and depth zone using the Pooling Method (Nance 2004). Shrimp fishery statistical zones in the Gulf of Mexico (Gulf) are shown in Figure 1.1.1. Historically, GPS track logs stored on the cELBs were transmitted via a cellular signal to NMFS as soon as the vessel is within cellular range, whereas the trip ticket landings data for the year are not available to NMFS until the following year.

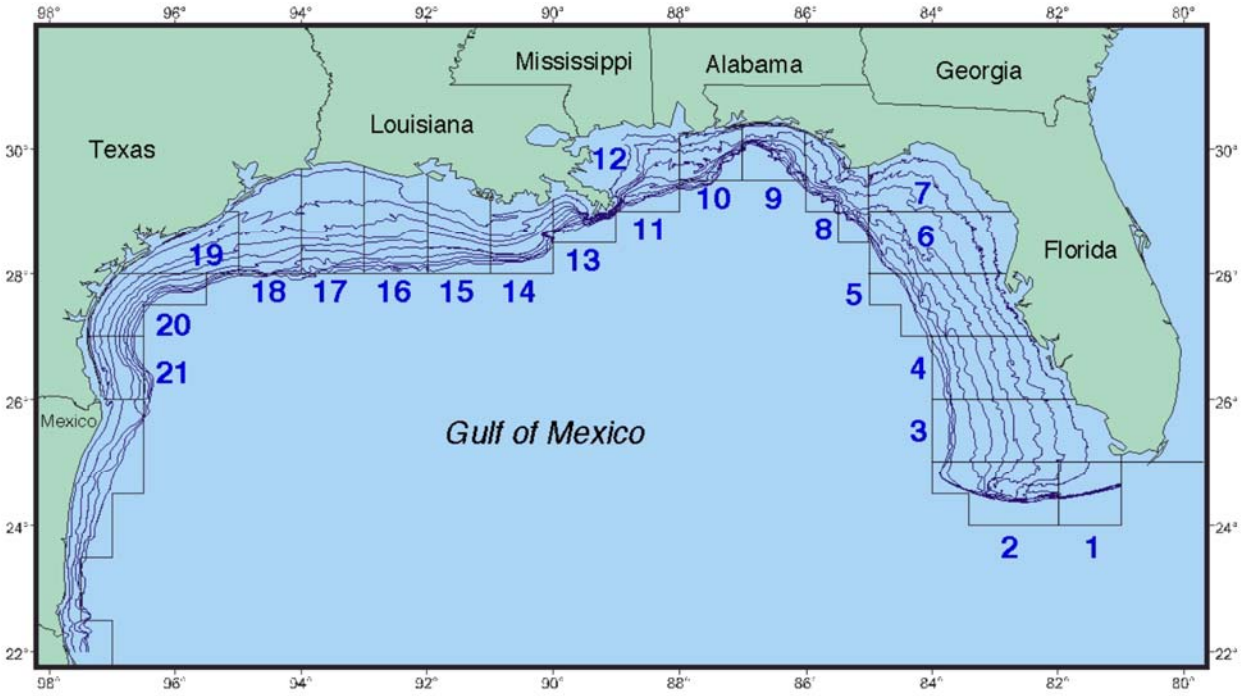

Figure 1.1.1. Statistical sub-areas and depth zones (five fathom increments) for the U.S. Gulf of Mexico.

[2] To specify if units record data all the time, such as when a vessel is in port, it is noted within LGL's 2009 *Procedures manual for electronic logbook (ELB)* that "A second programming change extended the observation period further by not recording position data where it has not changed during a 24 hour period. It is anticipated that this change, which will stop recording while a vessel is in port…" and that "Unplugging the unit causes no problems other than lost data. If you unplug a unit for a significant amount of time during a trip, the data from that trip may not be useful to the program because information about tows may be lost. Unplugging the unit when in port is never a problem."

In order to meet the requirements of Section 7 of the Endangered Species Act (ESA), specifically the "Reasonable and Prudent Measures" resulting from the recent "Reinitiation of ESA Section 7 Consultation on the Implementation of the Sea Turtle Conservation Regulations under the ESA and the Authorization of the Southeast U.S. Shrimp Fisheries in Federal Waters under the Magnuson-Stevens Fishery Management and Conservation Act" (Biological Opinion [BiOp]), NMFS must ensure that fisheries effort monitoring is conducted at equivalent, or greater, levels as was conducted over the past 10 years. Currently, effort monitoring in the Gulf shrimp fishery is not being conducted at equivalent levels, and there is no clear plan for greater levels. Through this framework action, the Council is exploring alternatives to the cELB program in order to continue the estimation of effort in the shrimp fishery, which will assist in conducting annual shrimp stock assessments, estimating bycatch of other species for use in other species' assessments, and monitoring sea turtle bycatch and the juvenile red snapper effort threshold.

1.2 Purpose and Need

The purpose of this framework action is to transition from the expired 3G cellular electronic logbook program to a system that would maintain the Council's and NMFS' scientific ability to estimate and monitor fishing effort in the Gulf shrimp fishery while minimizing the economic burden on the industry to the maximum extent practicable.

The need is to base conservation and management measures on the best scientific information available and to minimize bycatch to the extent practicable, as required by the Magnuson-Stevens Fishery Conservation and Management Act, and minimize interactions with protected species as required by the ESA.

1.3 History of Management

The following history of management illustrates the critical role that effort data has played in management of the shrimp fishery. The Shrimp FMP, supported by an environmental impact statement (EIS), was implemented on May 15, 1981. The FMP defined the shrimp fishery management unit to include brown shrimp, white shrimp, pink shrimp, royal red shrimp, seabobs (*Xiphopenaeus kroyeri*), and brown rock shrimp (*Sicyonia brevirostris*). Seabobs and rock shrimp have since been removed from the FMP. The actions implemented through the FMP and its amendments have addressed the following objectives:

1. Optimize the yield from shrimp recruited to the fishery.
2. Encourage habitat protection measures to prevent undue loss of shrimp habitat.
3. Coordinate the development of shrimp management measures by the Council with the shrimp management programs of the Gulf States, when feasible.
4. Promote consistency with the Endangered Species Act and the Marine Mammal Protection Act.
5. Minimize the incidental capture of finfish by shrimpers, when appropriate.
6. Minimize conflict between shrimp and stone crab fishermen.
7. Minimize adverse effects of obstructions to shrimp trawling.
8. Provide for a statistical reporting system.

The purpose of the plan was to enhance yield in volume and value by deferring harvest of small shrimp to provide for growth. The main actions included: 1) establishing a cooperative Tortugas Shrimp Sanctuary with Florida to close a shrimp trawling area where small pink shrimp comprise the majority of the population most of the time; 2) a cooperative 45-day seasonal closure with Texas to protect small brown shrimp emigrating from bay nursery areas; and 3) a seasonal closure of an area east of the Dry Tortugas to avoid gear conflicts with stone crab fishermen.

Amendment 1/Environmental Assessment (EA)(1981) provided the Regional Administrator (RA) with the authority (after conferring with the Council) to adjust by regulatory amendment the size of the Tortugas Sanctuary or the extent of the Texas closure, or to eliminate either closure for one year.

Amendment 2/EA (1981) implemented mandatory reporting of statistical data by shrimp vessel owners and operators, dealers, and processors.

Amendment 3/EA (1982) resolved a shrimp-stone crab gear conflict on the west-central coast of Florida.

A **NMFS Rule** (1987) required all shrimp trawlers 25 ft and longer in offshore waters to use qualified turtle excluder devices (TED) and all shrimp trawlers smaller than 25 ft to restrict tow times to 90 minutes or less. In inshore waters, at specified times, all shrimp trawlers were required to restrict tow times to 90 minutes or less. In both inshore and offshore waters, shrimp trawlers using TEDs are exempt from the tow time restrictions. The rule specified criteria and procedures for qualifying additional TEDs; specified vessel sizes, areas and seasons for which qualified TEDs or 90-minute tow times must be used; established reporting requirements; continued measures for resuscitation and release of captured sea turtles; and continued designated critical habitat. Initially, only four TED designs were approved: the NMFS' TED, the Cameron TED, the Matagorda TED, and the Georgia TED. The Morrison soft-TED was authorized later in the year.

Amendment 4/EA (1988) identified problems that developed in the fishery and revised the objectives of the FMP accordingly. The annual review process for the Tortugas Sanctuary was simplified, and the Council and RA review for the Texas closure was extended to February 1. A provision that white shrimp taken in the EEZ be landed in accordance with a state's size/possession regulations to provide consistency and facilitate enforcement with Louisiana was to have been implemented at such time when Louisiana provided for an incidental catch of undersized white shrimp in the fishery for seabobs. This provision was disapproved by NMFS with the recommendation that it be resubmitted after Louisiana provided for that bycatch. This resubmission was made in February of 1990 and applied to white shrimp taken in the EEZ and landed in Louisiana. It was approved and implemented in May of 1990.

Amendment 5/EA (1991) defined overfishing for Gulf brown, pink, and royal red shrimp and provided measures to restore overfished stocks if overfishing should occur. Action on the definition of overfishing for white shrimp was deferred, and seabobs and rock shrimp were removed from the management unit. The duration of the seasonal closure to shrimping off Texas

was changed from June 1 through July 15 to May 15 through July 15 to conform to changes in state regulations.

Amendment 6/EA (1992) eliminated the annual reports and reviews of the Tortugas Shrimp Sanctuary in favor of monitoring and an annual stock assessment. Three seasonally opened areas within the sanctuary continue to open seasonally, without need for annual action. A proposed definition of overfishing of white shrimp was rejected by NMFS because it was not based on the best available data.

Amendment 7/EA (1994) defined overfishing for white shrimp and provided for future updating of overfishing indices for brown, white, and pink shrimp as new data became available. A total allowable level of foreign fishing for royal red shrimp was eliminated; however, a redefinition of overfishing for royal red shrimp was disapproved.

Amendment 8/EA (1995), implemented in early 1996, addressed management of royal red shrimp. It established a procedure that would allow total allowable catch for royal red shrimp to be set up to 30% above maximum sustainable yield (MSY) for no more than two consecutive years so that a better estimate of MSY could be determined. This action was subsequently negated by the 1996 Sustainable Fisheries Act amendment to the Magnuson-Stevens Act that defined overfishing as a fishing level that jeopardizes the capacity of a stock to maintain MSY and does not allow optimum yield to exceed MSY.

Amendment 9/supplemental EIS (1997) required the use of a NMFS certified bycatch reduction device (BRD) in shrimp trawls used in the EEZ from Cape San Blas, Florida to the Texas/Mexico border, and provided for the certification of BRDs and specifications for the placement and construction. The purpose of this action was to reduce the bycatch mortality of juvenile red snapper by 44% from the average mortality for the years 1984 through 1989. This amendment exempted shrimp trawls fishing for royal red shrimp seaward of the 100-fathom contour, as well as groundfish and butterfish trawls, from the BRD requirement. It also excluded small try nets and no more than two ridged frame roller trawls of limited size. Amendment 9 also provided mechanisms to change the bycatch reduction criterion and to certify additional BRDs.

Amendment 10/EA (2002) required BRDs in shrimp trawls used in the Gulf east of Cape San Blas, Florida. Certified BRDs for this area were required to demonstrate a 30% reduction by weight of finfish.

Amendment 11/EA (2001) required owners and operators of all vessels harvesting shrimp from the EEZ of the Gulf to obtain a federal commercial vessel permit. This amendment also prohibited the use of traps to harvest royal red shrimp from the Gulf and prohibited the transfer of royal red shrimp at sea.

Amendment 12/EA (2001) was included as part of the Generic Essential Fish Habitat (EFH) Amendment that established EFH for shrimp in the Gulf.

A **NMFS rule** (2003) required the use of larger TED escape openings in otter trawl nets used to harvest shrimp to improve the exclusion leatherback turtles and adult loggerheads and green turtles. Also, the double-cover escape opening was introduced, which consists of two mesh flaps covering the escape hole and provides enhanced turtle exclusion as well as improved shrimp retention.

Amendment 13/EA (2005) established an endorsement to the federal shrimp vessel permit for vessels harvesting royal red shrimp; defined the overfishing and overfished thresholds for royal red shrimp; defined MSY and OY for the penaeid shrimp stocks in the Gulf; established bycatch reporting methodologies and improved collection of shrimping effort data in the EEZ; required completion of a Gulf Shrimp Vessel and Gear Characterization Form by vessels with federal shrimp permits; established a moratorium on the issuance of federal commercial shrimp vessel permits; and required reporting and certification of annual landings during the moratorium.

August 2006 Regulatory Amendment (2006) changed the BRD certification criterion for penaeid shrimp trawling in the EEZ from being based on the expected reduction in the mortality of red snapper to the expected reduction in finfish catch. The change in the BRD certification criterion addressed shrimp trawl bycatch more comprehensively and increased flexibility, promoted innovation, and allowed for a wider variety of BRDs which allowed fishermen to choose the most effective BRD for fishing conditions and therefore reduce overall finfish bycatch. This amendment also certified the Modified Jones-Davis BRD for use in the Gulf and South Atlantic shrimp fisheries, provisionally certified the extended funnel BRD for use in the Gulf shrimp fishery, and provisionally certified the composite panel BRD to be used in the Gulf and South Atlantic shrimp fisheries. The amendment also consolidated and made modifications to the BRD Testing Manuals for the Gulf of Mexico and the South Atlantic regions.

Amendment 14/EIS (2007) was a joint amendment with Reef Fish Amendment 27. It established a target red snapper bycatch mortality goal for the shrimp fishery in the western Gulf of 74% relative to the benchmark years of 2001-2003, reducing that target goal to 67% beginning in 2011 and eventually reducing the target to 60% by 2032. The amendment also defined seasonal closure restrictions that can be used to manage shrimp fishing effort in relation to the target red snapper bycatch mortality reduction goal. If necessary, a seasonal closure of the shrimp fishery in areas (add areas) will occur at the same time as the annual closure of federal waters, which occurs in conjunction with the Texas closure. The need for a closure will be determined by the RA based on an annual assessment by the Southeast Fisheries Science Center (SEFSC). The assessment will use shrimp effort data for the most recent 12-month period available and will include a recommendation regarding the geographical scope and duration of the closure. The SEFSC's assessment will be provided to the RA on or about March 1 of each year. It also established a framework procedure to streamline the management of shrimp fishing effort in the western Gulf.

A **Framework Action** (2008) made revisions to BRD specifications and testing protocols, including lowering the needed bycatch reduction for BRDs in the western Gulf from 44% to 30% to be consistent with the eastern Gulf and the South Atlantic.

A **Framework Action** (2009) decertified the expanded mesh and Gulf Fisheye BRDs. This action also modified the allowable configuration for the Fisheye BRD, such that it could not be placed farther forward than 9 ft from the tie-off rings.

The Generic Annual Catch Limit (ACL)/Accountability Measures (AM) Amendment/EIS (2011) set an ACL and AM for royal red shrimp. Penaeid shrimp were exempt from the ACL/AM requirements because of their annual life cycle.

A **Framework Action** (2012) certified the two BRDs that were provisionally certified in 2010. It also lowered the effort reduction threshold established in Amendment 14 from 72% to 67%.

The Shrimp ELB Framework Action (2013) established a cost-sharing system for the ELB program and described new equipment and procedures for the program.

Amendment 15/EA (2015) redefined stock status criteria for the three penaeid species of shrimp including MSY and overfished/overfishing thresholds. The general framework procedure was also be updated.

Amendment 16/SEIS (2015) eliminated duplicative AMs and the quota for royal red shrimp. The ACL was set equal to the acceptable biological catch and a post-season AM was established.

Amendment 17A/EA (2017) extended the Gulf commercial shrimp permit moratorium for 10 more years through October 26, 2026.

Amendment 17B/EA (2017) defined the aggregate MSY of 112,531,374 pounds of tails for all shrimp species and an aggregate OY of 85,761,596 pounds of tails for all shrimp species. This amendment allows for the creation of a reserve permit pool when certain conditions are met, and mandates that the Council convene a review panel to review the details of a permit pool if the number of permits reaches 1,175. This amendment also allows vessels possessing shrimp to transit through federal waters without a federal permit if their trawl doors and nets are out of the water and bag straps are removed.

Amendment 18/Categorical Exclusion (CE) (2019) reduced the target reduction goal for juvenile red snapper mortality in the Federal Gulf penaeid shrimp trawl fishery from 67%to 60% and modified the FMP framework procedures to allow changes to the target reduction goal for juvenile red snapper mortality through the abbreviated framework documentation process.

A **NMFS Rule (EIS)** (2019, effective 2021) required skimmer trawl vessels 40 feet and greater in length that are rigged for harvesting shrimp to install and use TEDs designed to exclude small turtles in their nets. The space between the deflector bars of the new TEDs must not exceed 3 inches and escape openings must be oriented at the top of the net. There are webbing restrictions on the escape opening flap depending on the type of TED grid and escape opening configuration.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1 - Modify the Method Used to Collect Vessel Position Data for the Gulf of Mexico Shrimp Fishery

Note: The types of data and amount/timing of data collection would not vary between alternatives. Consistent with current requirements, the permitted vessels selected to participate must also provide the National Marine Fisheries Service (NMFS): the size and number of shrimp trawls deployed for each set, and the type of bycatch reduction device and turtle excluder device used in the nets. As set forth in Amendment 13 (GMFMC 2005) and 50 C.F.R. § 622.51, compliance with these requirements and the requirement to submit vessel position data is required for permit renewal.

Alternative 1: No Action - Maintain the current method to collect vessel position data through the cellular electronic logbook (cELB) units supplied by NMFS. Prior to December 7, 2020, the owners or operators of selected vessels were responsible for the cost of cellular service necessary to transmit the data. Currently, because 3G cellular transmission is no longer possible, NMFS will collect the memory cards from the units via mail.

Alternative 2: Implement a cellular vessel monitoring system (cVMS) requirement for the Gulf of Mexico (Gulf) shrimp fishery that provides archived position data compatible with the SEFSC's shrimp effort algorithm. If selected by the Science and Research Director (SRD), the owner or operator of a shrimp vessel with a valid or renewable Gulf shrimp moratorium permit (SPGM) would be required to install a type-approved VMS unit (50 CFR 600.1501) that archives vessel position when on a shrimp fishing trip in the Gulf and automatically transmits that data via cellular service to NMFS.

Alternative 3: Implement a cellular ELB (cELB) requirement for the Gulf shrimp fishery that provides archived position data compatible with the SEFSC's shrimp effort algorithm. If selected by the SRD, the owner or operator of a shrimp vessel with a valid or renewable SPGM would be required to install a NMFS-approved ELB that archives vessel position when on a shrimp fishing trip in the Gulf and automatically transmits those data via cellular service to a non-OLE NMFS server. NMFS-approved ELBs would not be type-approved based on regulations at 50 CFR 600.1501.

Discussion:

Alternative 1 (No Action) would maintain the current method for collecting vessel position data. cELB units ceased transmitting information to NMFS on December 31, 2020, and the National Environmental Satellite Data and Information Service shut down the server receiving the data from cELB units on December 7, 2020. Because 3G cellular transmission is no longer possible, NMFS has been collecting the memory cards from the cELB units of participating vessels via mail until a new process is developed. However, NMFS will be unable to determine if a cELB unit has stopped collecting data until the memory cards have been sent and the data have been downloaded and analyzed. Analyses, as of December 2021, of the terminated cELB

transmission method and the current mail-in process have shown problems with adequacy of the data collected. With the cellular system, data were automatically transmitted and so nonfunctional cELB units could be identified and replaced in real time. The mail-in process requires manual transmission, where SD cards are only mailed to NMFS twice per year. As a result, data recovery with the mail-in process has ranged from approximately 58% to 86% for the five mailings from June 2021 to June 2023[3]. Furthermore, as cELB units break down, overall coverage will continue to lag as new vessels are not being recruited into the effort pool. Cost-sharing of the ELB program was previously established (GMFMC 2013) with vessel owners paying installation, maintenance, and transmission costs; discussion of cost-sharing for a VMS is discussed under **Alternative 2**.

Alternative 2 would transition the data collection by requiring the owner or operator of a shrimp vessel with a valid or renewable SPGM, if selected by the SRD, to install an approved cellular VMS, which archives vessel position when on a shrimp fishing trip[4] in the Gulf and automatically transmits that data via cellular service to NMFS.[5] As shown in Appendix B, the VMS type-approval regulations include the requirements for units that use satellite transmission as well as cellular transmission. However, in this framework action, the Gulf of Mexico Fishery Management Council (Council) is considering only VMS units with cellular transmission due to concerns over satellite transmission costs. Currently, VMS reimbursement is available nationally for the purchase cost of the units,[6] while installation, maintenance, and communication costs are covered by vessel owners, and reimbursement is capped at $950 for programs that only allow for the use of a cellular VMS (maximum reimbursement is under review for programs that only allow satellite VMS). Following the current national VMS regulations, NOAA Office of Law Enforcement (OLE) would maintain final storage of the collected data, to which the Southeast Fisheries Science Center would have access.

Owners or operators of vessels with more than one permit that requires VMS would need to comply with all the requirements for each permit, as could be the case with Gulf shrimp vessels that possess permits in other fisheries with VMS requirements. As of July 21, 2021, there were 1,360 vessels with valid or renewable SPGM permits. Of these 1,360 vessels, 465 had permits in other fisheries. Of these 465 vessels, an estimated 113 vessels are required to comply with VMS requirements in other fisheries. Most of these 113 vessels have South Atlantic rock shrimp limited access (RSLA) permits (96), while others have commercial Gulf reef fish (RR) permits (13), or various Atlantic highly migratory species (HMS) permits. Atlantic HMS permits require VMS when various types of gear are on board (e.g., pelagic longline, bottom longline, gillnet), at

[3] The listed percentages represent the percent range of returned SD cards during the five mailings that have occurred prior to January 2024: 64% from Mailing 1 in June 2021; 58% from Mailing 2 in January 2022; 68% from Mailing 3 in June 2022; 76% from Mailing 4 in January 2023; 86% from Mailing 5 in June 2023. However, data quality from returned SD cards is not represented in these percentages.

[4] In 50 C.F.R. § 622.2, a trip is defined as "a fishing trip, regardless of number of days duration, that begins with departure from a dock, berth, beach, seawall, or ramp and that terminates with return to a dock, berth, beach, seawall, or ramp."

[5] Information on Vessel Monitoring System Type-Approval can be found at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=40795e9b7e80ab071d63d0f076d60d11&mc=true&r=SUBPART&n=sp50.12.600.q and in Appendix B.

[6] Information on reimbursement of VMS units can be found at https://www.psmfc.org/program/vessel-monitoring-system-reimbursement-program-vms. Information on the VMS Funding Prioritization Process can be found at https://media.fisheries.noaa.gov/2022-03/06-102-Revision_Cap%20Update%20-%20Signed%20JC.pdf.

certain times of year, or in certain areas. The Atlantic HMS VMS requirements would not apply when the vessel has shrimp trawl gear on board and HMS defined gear has been removed from the vessel, and thus the vessels with Atlantic HMS permits would not have to simultaneously comply with those requirements and any requirements in the Gulf shrimp fishery as long as they do not possess other permits with VMS requirements. Additionally, the VMS requirements for RSLA permits only apply while vessels are in the South Atlantic, and satellite is the only option. The commercial Gulf reef fish permit also requires satellite VMS and requires the unit to be reporting at all times, regardless of location. For both the RSLA and Gulf reef fish permits, the vessels would be required to carry two VMS units.

Alternative 3 would transition the data collection by requiring the owner or operator of a shrimp vessel with a valid or renewable SPGM, if selected by the SRD, to install an approved ELB, which archives vessel position when on a fishing trip in the Gulf of Mexico and automatically transmits that data via cellular service to NMFS. An approved ELB would operate in the same manner as an approved VMS, but the collected data would be transmitted to a NMFS server that is not housed by OLE. Unlike **Alternative 2**, OLE would not store this data.

At its January 2022 meeting, NMFS presented to the Council an evaluation of the draft approval specifications (Appendix D) for reinstituting the historical cELB program. Under the current VMS type-approval process (**Alternative 2**), NOAA Fisheries contracts with an industry expert who performs VMS testing and provides recommendations, and SEFSC would maintain additional requirements for vendors on the SEFSC program website along with a website with those approved vendors for the shrimp fishery. If the national VMS type-approval process is not followed (**Alternative 3**), the SEFSC would need to develop a separate contract for shrimp-specific testing and certification as well as maintain requirements for vendors on the SEFSC shrimp program website. In addition, NMFS may need to add the Gulf shrimp approval specifications to the regulations at 50 C.F.R. Part 622, Subpart C.

In comparing **Alternatives 2** and **3**, the types of data (i.e. HH:MM:SS; degrees, minutes, seconds), amount/timing of data collection, and minimum number of position fixes would not vary. Vessel position would be recorded every 10 minutes (LGL Ecological Research Associates, Inc. 2009). The minimum number of position fixes that a unit can process would be 14,400.

Under **Alternative 2**, as part of its review, NMFS OLE may perform field tests and at-sea trials that involve demonstrating every aspect of EMTU/EMTU-C and communications operation. These field tests and at-sea trials would not be mandatory under **Alternative 2**, but would be under **Alternative 3**. As part of the review for approval of devices under **Alternative 3**, NMFS would perform at-sea trials aboard an offshore commercial shrimp vessel (i.e., in federal waters of the Gulf of Mexico) that involve demonstrating functionality of every aspect of the hardware/software device, cellular mobile communications service, or bundle operation. At-sea testing aboard an offshore shrimp vessel includes, but is not limited to: ensuring the installed hardware/software device's GPS signal and connection is sufficient to attain and record at least 95% of the required 10-minute interval position fix data in a 24-hour period for each 24-hour day of at-sea testing, with a minimum of 7 days spent at-sea for these trials; comparing vessel speed and activity (trawling, transit, etc.), as recorded by a human observer, aboard the offshore shrimp

vessel against speed and activity generated by NMFS shrimp effort algorithm programs using data from the hardware/software device, cellular mobile communications service or bundle seeking type-approval; and mounting of the hardware/software device in a location where similar/traditional marine electronics are mounted aboard working trawlers to troubleshoot any issues associated with potential mounting locations and/or wiring and battery capabilities.

Early Adopter Program

The Fiscal Year 2023 budget contained Congressional appropriation that "*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.*"[7] The Shrimp Advisory Panel met with NMFS representatives for a meeting in May 2023 to discuss the proposed spend plan for these funds. NMFS designated $360,000 of the funds for an Early Adopter Program of cVMS units on federally permitted shrimp vessels in the Gulf. The Early Adopter Program would provide cVMS units and two years of cellular service to volunteers. As of January 2024, the vendors approved for the Early Adopter Program have successfully transmitted data to the SEFSC, thereby meeting the requirement to automatically transmit data to NMFS via cellular service (**Alternative 2**) and to automatically transmits data via cellular service to a non-OLE NMFS server (**Alternative 3**). Volunteer solicitation began in October 2023, and, as of January 17, 2024, 11 vessels had signed up to participate. At the January 2024 Council meeting, NMFS stated that 50 to 75 units may be provided to industry volunteers, as a range of costs for devices and cellular service exists. For those selected under **Alternative 2**, so long as the devices are considered a type-approved VMS unit (50 CFR 600.1501), volunteers in the Early Adopter Program would not incur the purchase cost of a cVMS unit.

[7] https://www.govinfo.gov/content/pkg/CREC-2022-12-20/html/CREC-2022-12-20-pt1-PgS7819-2.htm

CHAPTER 3. LIST OF PREPARERS

PREPARERS

Name	Expertise	Responsibility	Agency
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Max Birdsong	Social Scientist	Social effects	GMFMC
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REVIEWERS (Preparers also serve as reviewers)

Name	Expertise	Responsibility	Agency
Manny Antonaras	Deputy Special Agent in Charge	Review	NOAA OLE
Mike Barnette	Fishery Biologist	Review	SERO/PR
Joelle Godwin	Technical Writer and Editor	Regulatory writer	SERO/SF
Alisha Gray	Data Analyst	Review	SERO/SF
Frank Helies	Gulf Branch Chief	Review	SERO/SF
Mara Levy	General Counsel	Legal review	NOAA GC
Christopher Liese	Economist	Review	SEFSC
Alan Lowther	Survey Statistician	Review	SEFSC
Rich Malinowski	Fishery Biologist	Review	SERO/SF
Michelle Masi	Fishery Biologist	Review	SEFSC
Jenny Ostroff	Fishery Biologist	Review	SERO/SF
Jessica Stephen	Fishery Biologist/Data Analyst	Review	SERO/SF
Mike Travis	Social Science Branch Chief	Review	SERO/SF
Matthew Walia	Compliance Liaison Analyst	Review	NOAA OLE

GMFMC = Gulf of Mexico Fishery Management Council; NOAA=National Oceanic and Atmospheric Administration, SERO = Southeast Regional Office, SF = Sustainable Fisheries Division, PR = Protected Resources Division, HC = Habitat Conservation Division, SEFSC=Southeast Fisheries Science Center, GC = General Counsel

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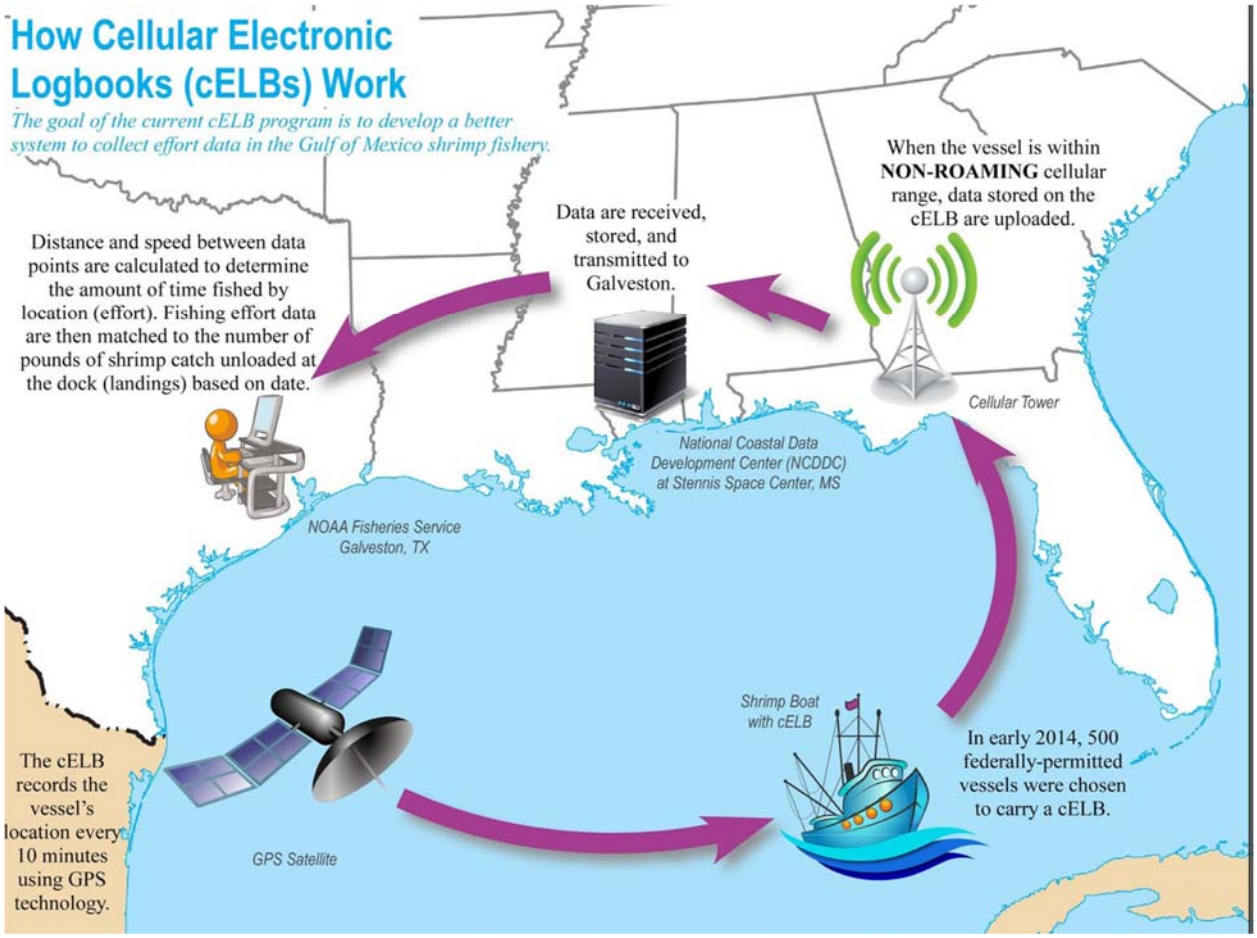
APPENDIX A. DIAGRAM OF HOW A CELLULAR ELB WORKS

The following diagram shows five steps, beginning with the GPS satellite, noting that the cELB records the vessel's location every 10 minutes using GPS technology, and ending with the National Marine Fisheries Service in Galveston, Texas, where distance and speed between data points are calculated to determine the amount of time fished by location (effort) and then matching the fishing effort data to the number of pounds of shrimp catch unloaded at the dock (landings) based on date.



APPENDIX B. VESSEL MONITORING SYSTEM TYPE-APPROVAL

e-CFR data is current as of July 19, 2021

Title 50 → Chapter VI → Part 600 → Subpart Q

Title 50: Wildlife and Fisheries
PART 600—MAGNUSON-STEVENS ACT PROVISIONS

Subpart Q—Vessel Monitoring System Type-Approval

Contents

Source: 85 FR 40921, July 8, 2020, unless otherwise noted.

§600.1500 Definitions and acronyms.

In addition to the definitions in the Magnuson-Stevens Act and in §600.10, and the acronyms in §600.15, the terms and acronyms in this subpart have the following meanings:

Authorized entity means a person, defined at 16 U.S.C. 1802(36), authorized to receive data transmitted by a VMS unit.

Bench configuration means the configuration of a VMS unit after it has been customized to meet the Federal VMS requirements.

Bundle means a mobile communications service and VMS unit sold as a package and considered one product. If a bundle is type-approved, the requestor will be the type-approval holder for the bundled MCS and VMS unit.

Cellular communication means the wireless transmission of VMS data via a cellular network.

Communication class means the satellite or cellular communications operator from which communications services originate.
Electronic form means a pre-formatted message transmitted by a VMS unit that is required for the collection of data for a specific fishery program (*e.g.,* declaration system, catch effort reporting).
Enhanced Mobile Transceiver Unit (EMTU) means a type of MTU that is capable of supporting two-way communication, messaging, and electronic forms transmission via satellite. An EMTU is a transceiver or communications device, including an antenna, and dedicated message terminal and display which can support a dedicated input device such as a tablet or keyboard, installed on fishing vessels participating in fisheries with a VMS requirement.
Enhanced Mobile Transceiver Unit, Cellular Based (EMTU-C) means an EMTU that transmits and receives data via cellular communications, except that it may not need a dedicated message terminal and display component at the time of approval as explained at §600.1502(a)(6). An EMTU-C only needs to be capable of transmission and reception when in the range of a cellular network.
Latency means the state of untimely delivery of Global Positioning System position reports and electronic forms to NMFS (*i.e.,* information is not delivered to NMFS consistent with timing requirements of this subpart).
Mobile Communications Service (MCS) means the satellite and/or cellular communications services used with particular VMS units.
Mobile Communications Service Provider (MCSP) means an entity that sells VMS satellite and/or cellular communications services to end users.
Mobile Transmitter Unit (MTU) means a VMS unit capable of transmitting Global Positioning System position reports via satellite. (MTUs are no longer approved for new installations on VMS vessels).
Notification Letter means a letter issued by NMFS to a type-approval holder identifying an alleged failure of a VMS unit, MCS, or the type-approval holder to comply with the requirements of this subpart.
Position report means the unique global positioning system (GPS) report generated by a vessel's VMS unit, which identifies the vessel's latitude/longitude position at a point in time. Position reports are sent from the VMS unit via the MCS, to authorized entities.
Requestor means a vendor seeking type-approval.
Service life means the length of time during which a VMS unit remains fully operational with reasonable repairs.
Sniffing means the unauthorized and illegitimate monitoring and capture, through use of a computer program or device, of data being transmitted over a network.
Spoofing means the reporting of a false Global Positioning System position and/or vessel identity.
Time stamp means the time, in hours, minutes, and seconds in a position report. Each position report is time stamped.
Type-approval holder means an applicant whose type-approval request has been approved pursuant to this subpart.
Vendor means a commercial provider of VMS hardware, software, and/or mobile communications services.

Vessel Monitoring System (VMS) means, for purposes of this subpart, a satellite and/or cellular based system designed to monitor the location and movement of vessels using onboard VMS units that send Global Positioning System position reports to an authorized entity.
Vessel Monitoring System (VMS) data means the data transmitted to authorized entities from a VMS unit.
Vessel Monitoring System Program means the Federal program that manages the vessel monitoring system, data, and associated program-components, nationally and in each NMFS region; it is housed in the Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service's Office of Law Enforcement.
Vessel Monitoring System (VMS) Unit means MTU, EMTU or EMTU-C, as well as the units that can operate as both an EMTU and an EMTU-C.
Vessel Monitoring System (VMS) Vessels means vessels that operate in federally managed fisheries with a requirement to carry and operate a VMS unit.

§600.1501 Vessel Monitoring System type-approval process.

(a) *Applicability.* Unless otherwise specified, this section applies to EMTUs, EMTU-Cs, units that operate as both an EMTU and EMTU-C, and MCSs. Units that can operate as both an EMTU and EMTU-C must meet the requirements for both an EMTU and an EMTU-C in order to gain type-approval as both. MTUs are no longer eligible for type-approval.
(b) *Application submission.* A requestor must submit a written type-approval request and electronic copies of supporting materials that include the information required under this section to the NMFS Office of Law Enforcement (OLE) at: U.S. Department of Commerce; National Oceanic and Atmospheric Administration; National Marine Fisheries Service; Office of Law Enforcement; Attention: Vessel Monitoring System Office; 1315 East-West Highway, SSMC3, Suite 3301, Silver Spring, Maryland 20910.
(c) *Application requirements.* (1) EMTU, EMTU-C, and MCS Identifying Information: In a type-approval request, the requestor should indicate whether the requestor is seeking approval for an EMTU, EMTU-C, MCS, or bundle and must specify identifying characteristics, as applicable: Communication class; manufacturer; brand name; model name; model number; software version and date; firmware version number and date; hardware version number and date; antenna type; antenna model number and date; tablet, monitor or terminal model number and date; MCS to be used in conjunction with the EMTU/EMTU-C; entity providing MCS to the end user; and current global and regional coverage of the MCS.
(2) Requestor-approved third-party business entities: The requestor must provide the business name, address, phone number, contact name(s), email address, specific services provided, and geographic region covered for the following third-party business entities:
(i) Entities providing bench configuration for the EMTU/EMTU-C at the warehouse or point of supply.
(ii) Entities distributing/selling the EMTU/EMTU-C to end users.
(iii) Entities currently approved by the requestor to install the EMTU/EMTU-C onboard vessels.
(iv) Entities currently approved by the requestor to offer a limited warranty.
(v) Entities approved by the requestor to offer a maintenance service agreement.
(vi) Entities approved by the requestor to repair or install new software on the EMTU/EMTU-C.
(vii) Entities approved by the requestor to train end users.
(viii) Entities approved by the requestor to advertise the EMTU/EMTU-C.
(ix) Entities approved by the requestor to provide other customer services.
(3) Regulatory Requirements and Documentation: In a type-approval request, a requestor must:

(i) Identify the NMFS region(s) and/or Federal fisheries for which the requestor seeks type-approval.
(ii) Include copies of, or citation to, applicable VMS regulations and requirements in effect for the region(s) and Federal fisheries identified under paragraph (c)(3)(i) of this section that require use of VMS.
(iii) Provide a table with the type-approval request that lists in one column each requirement set out in §§600.1502 through 600.1509 and regulations described under paragraph (c)(3)(ii) of this section. NMFS OLE will provide a template for the table upon request. The requestor must indicate in subsequent columns in the table:
(A) Whether the requirement applies to the type-approval; and
(B) Whether the EMTU, EMTU-C, MCS, or bundle meets the requirement.
(iv) Certify that the features, components, configuration and services of the requestor's EMTU/EMTU-C, MCS, or bundle comply with each requirement set out in §§600.1502 through 600.1509 and the regulations described under paragraph (c)(3)(ii) of this section.
(v) Certify that, if the request is approved, the requestor agrees to be responsible for ensuring compliance with each requirement set out in §§600.1502 through 600.1509 and the regulations described under paragraph (c)(3)(ii) of this section over the course of the type-approval period.
(vi) Provide NMFS OLE with two EMTU/EMTU-Cs loaded with forms and software, if applicable, for each NMFS region or Federal fishery, with activated MCS, for which a type-approval request is submitted for a minimum of 90 calendar days for testing and evaluation. For EMTU-Cs, the forms and software may be loaded onto a dedicated message terminal and display component to which the EMTU-C can connect. Copies of forms currently used by NMFS are available upon request. As part of its review, NMFS OLE may perform field tests and at-sea trials that involve demonstrating every aspect of EMTU/EMTU-C and communications operation. The requestor is responsible for all associated costs including paying for: Shipping of the EMTU/EMTU-C to the required NMFS regional offices and/or headquarters for testing; the MCS during the testing period; and shipping of the EMTU/EMTU-C back to the vendor.
(vii) Provide thorough documentation for the EMTU/EMTU-C and MCS, including: EMTU/EMTU-C fact sheets; installation guides; user manuals; any necessary interfacing software; MCS global and regional coverage; performance specifications; and technical support information.
(d) *Certification.* A requestor seeking type-approval of an EMTU/EMTU-C to operate with a class or type of communications, as opposed to type-approval for use with a specific MCS, shall certify that the EMTU/EMTU-C meets requirements under this subpart when using at least one MCSP within that class or type of communications.
(e) *Notification.* Unless additional time is required for EMTU/EMTU-C testing, NMFS OLE will notify the requestor within 90 days after receipt of a complete type-approval request as follows:
(1) If a request is approved or partially approved, NMFS OLE will provide notice as described under §600.1510 and the type-approval letter will serve as official documentation and notice of type-approval. OLE will publish and maintain the list of type-approved units on their Vessel Monitoring System web page.
(2) If a request is disapproved or partially disapproved:
(i) OLE will send a letter to the requestor that explains the reason for the disapproval/partial disapproval.
(ii) The requestor may respond to NMFS OLE in writing with additional information to address the reasons for disapproval identified in the NMFS OLE letter. The requestor must submit this

response within 21 calendar days of the date of the OLE letter sent under paragraph (e)(2)(i) of this section.
(iii) If any additional information is submitted under paragraph (e)(2)(ii) of this section, NMFS OLE, after reviewing such information, may either take action under paragraph (e)(1) of this section or determine that the request should continue to be disapproved or partially disapproved. In the latter case, the NMFS OLE Director will send a letter to the requestor that explains the reasons for the continued disapproval/partial disapproval. The NMFS OLE Director's decision is final upon issuance of this letter and is not appealable.

§600.1502 Communications functionality.

(a) Unless otherwise specified, this subsection applies to all VMS units. Units that can operate as both an EMTU and EMTU-C must meet the requirements for both an EMTU and an EMTU-C in order to gain type-approval as both. The VMS unit must:
(1) Be able to transmit all automatically-generated position reports.
(2) Provide visible or audible alarms onboard the vessel to indicate malfunctioning of the VMS unit.
(3) Be able to disable non-essential alarms in non-Global Maritime Distress and Safety System (GMDSS) installations.
(4) EMTU/EMTU-Cs must be able to send communications that function uniformly throughout the geographic area(s) covered by the type-approval, except an EMTU-C only needs to be capable of transmission and reception when in the range of a cellular network.
(5) EMTU/EMTU-Cs must have two-way communications between the unit and authorized entities, via MCS, or be able to connect to a device that has two-way communications.
(6) EMTU/EMTU-Cs must be able to run or to connect to a dedicated message terminal and display component that can run software and/or applications that send and receive electronic forms and internet email messages for the purpose of complying with VMS reporting requirements in Federal fisheries. Depending on the reporting requirements for the fishery(s) in which the requester is seeking type-approval, an EMTU-C type-approval may not require the inclusion of a dedicated message terminal and display component at the time of approval, but the capability to support such a component must be shown.
(7) Have messaging and communications mechanisms that are completely compatible with NMFS vessel monitoring and surveillance software.
(b) In addition, messages and communications from a VMS unit must be able to be parsed out to enable clear billing of costs to the government and to the owner of a vessel or EMTU/EMTU-C, when necessary. Also, the costs associated with position reporting and the costs associated with other communications (for example, personal email or communications/reports to non-NMFS Office of Law Enforcement entities) must be parsed out and billed to separate parties, as appropriate.

§600.1503 Position report data formats and transmission.

Unless otherwise specified, this subsection applies to all VMS units, MCSs and bundles. Units that can operate as both an EMTU and EMTU-C must meet the requirements for both an EMTU and an EMTU-C in order to gain type-approval as both. To be type-approved in any given fishery, a VMS unit must also meet any additional positioning information as required by the applicable VMS regulations and requirements in effect for each fishery or region for which the type-approval applies. The VMS unit must meet the following requirements:
(a) Transmit all automatically-generated position reports, for vessels managed individually or grouped by fleet, that meet the latency requirement under §600.1504.

(b) When powered up, must automatically re-establish its position reporting function without manual intervention.
(c) Position reports must contain all of the following:
(1) Unique identification of an EMTU/EMTU-C and clear indication if the unit is an EMTU-C.
(2) Date (year/month/day with century in the year) and time stamp (GMT) of the position fix.
(3) Date (year/month/day with century in the year) and time stamp (GMT) that the EMTU-C position report was sent from the EMTU-C.
(4) Position fixed latitude and longitude, including the hemisphere of each, which comply with the following requirements:
(i) The position fix precision must be to the decimal minute hundredths.
(ii) Accuracy of the reported position must be within 100 meters (328.1 ft).
(d) An EMTU/EMTU-C must have the ability to: (1) Store 1,000 position fixes in local, non-volatile memory.
(2) Allow for defining variable reporting intervals between 5 minutes and 24 hours.
(3) Allow for changes in reporting intervals remotely and only by authorized users.
(e) An EMTU/EMTU-C must generate specially identified position reports upon:
(1) Antenna disconnection.
(2) Loss of positioning reference signals.
(3) Security events, power-up, power down, and other status data.
(4) A request for EMTU/EMTU-C status information such as configuration of programming and reporting intervals.
(5) The EMTUs loss of the mobile communications signals.
(6) An EMTU must generate a specially identified position report upon the vessel crossing of a pre-defined geographic boundary.

§600.1504 Latency requirement.

(a) Ninety percent of all pre-programmed or requested Global Positioning System position reports during each 24-hour period must reach NMFS within 15 minutes or less of being sent from the VMS unit, for 10 out of 11 consecutive days (24-hour time periods).
(b) NMFS will continually examine latency by region and by type-approval holder.
(c) Exact dates for calculation of latency will be chosen by NMFS. Days in which isolated and documented system outages occur will not be used by NMFS to calculate a type-approval holder's latency.

§600.1505 Messaging.

(a) Unless otherwise specified, this section applies to all VMS units, MCSs, and bundles. Units that can operate as both an EMTU and EMTU-C must meet the requirements for both an EMTU and an EMTU-C in order to gain type-approval as both. Depending on the reporting requirements for the fishery(s) in which the requester is seeking type-approval, an EMTU-C type-approval may not require the inclusion of a dedicated message terminal and display component at the time of approval, but the capability to support such a component must be shown. To be type-approved in any given fishery, a VMS unit must meet messaging information requirements under the applicable VMS regulations and requirements in effect for each fishery or region for which the type-approval applies. The VMS unit must also meet the following requirements:
(b) An EMTU must be able to run software and/or applications that send email messages for the purpose of complying with VMS reporting requirements in Federal fisheries that require email communication capability. An EMTU-C must be able to run or connect to a device that can run

such software and/or applications. In such cases, the EMTU/EMTU-C messaging must provide for the following capabilities:
(1) Messaging from vessel to shore, and from shore to vessel by authorized entities, must have a minimum supported message length of 1 KB. For EMTU-Cs, this messaging capability need only be functional when in range of shore-based cellular communications.
(2) There must be a confirmation of delivery function that allows a user to ascertain whether a specific message was successfully transmitted to the MCS email server(s).
(3) Notification of failed delivery to the EMTU/EMTU-C must be sent to the sender of the message. The failed delivery notification must include sufficient information to identify the specific message that failed and the cause of failure (*e.g.,* invalid address, EMTU/EMTU-C switched off, *etc.*).
(4) The EMTU/EMTU-C must have an automatic retry feature in the event that a message fails to be delivered.
(5) The EMTU/EMTU-C user interface must:
(i) Support an "address book" capability and a function permitting a "reply" to a received message without re-entering the sender's address.
(ii) Provide the ability to review by date order, or by recipient, messages that were previously sent. The EMTU/EMTU-C terminal must support a minimum message history of 50 sent messages—commonly referred to as an "Outbox" or "Sent" message display.
(iii) Provide the ability to review by date order, or by sender, all messages received. The EMTU/EMTU-C terminal must support a minimum message history of at least 50 messages in an inbox.

§600.1506 Electronic forms.

Unless otherwise specified, this subsection applies to all EMTUs, EMTU-Cs, MCSs, and bundles.
(a) *Forms.* An EMTU/EMTU-C must be able to run, or to connect to and transmit data from a device that can run electronic forms software. Depending on the reporting requirements for the fishery(s) in which the requester is seeking type-approval, an EMTU-C type-approval may not require the inclusion of a dedicated message terminal and display component at the time of approval, but the capability to support such a component must be shown. The EMTU/EMTU-C must be able to support forms software that can hold a minimum of 20 electronic forms, and it must also meet any additional forms requirements in effect for each fishery or region for which the type-approval applies. The EMTU/EMTU-C must meet the following requirements:
(1) *Form Validation:* Each field on a form must be capable of being defined as Optional, Mandatory, or Logic Driven. Mandatory fields are those fields that must be entered by the user before the form is complete. Optional fields are those fields that do not require data entry. Logic-driven fields have their attributes determined by earlier form selections. Specifically, a logic-driven field must allow for selection of options in that field to change the values available as menu selections on a subsequent field within the same form.
(2) A user must be able to select forms from a menu on the EMTU/EMTU-C.
(3) A user must be able to populate a form based on the last values used and "modify" or "update" a prior submission without unnecessary re-entry of data. A user must be able to review a minimum of 20 past form submissions and ascertain for each form when the form was transmitted and whether delivery was successfully sent to the type-approval holder's VMS data processing center. In the case of a transmission failure, a user must be provided with details of the cause and have the opportunity to retry the form submission.

(4) VMS Position Report: Each form must include VMS position data, including latitude, longitude, date and time. Data to populate these fields must be automatically generated by the EMTU/EMTU-C and unable to be manually entered or altered.
(5) Delivery and Format of Forms Data: Delivery of form data to NMFS must employ the same transport security and reliability as set out in §600.1507 of this subpart. The forms data and delivery must be completely compatible with NMFS vessel monitoring software.
(b) *Updates to Forms.* (1) The EMTU/EMTU-C and MCS must be capable of providing updates to forms or adding new form requirements via wireless transmission and without manual installation.
(2) From time to time, NMFS may provide type-approved applicants with requirements for new forms or modifications to existing forms. NMFS may also provide notice of forms and form changes through the NMFS Work Order System. Type-approved applicants will be given at least 60 calendar days to complete their implementation of new or changed forms. Applicants will be capable of, and responsible for translating the requirements into their EMTU/EMTU-C-specific forms definitions and wirelessly transmitting the same to all EMTU/EMTU-C terminals supplied to fishing vessels.

§600.1507 Communications security.

Communications between an EMTU/EMTU-C and MCS must be secure from tampering or interception, including the reading of passwords and data. The EMTU/EMTU-C and MCS must have mechanisms to prevent to the extent possible:
(a) Sniffing and/or interception during transmission from the EMTU/EMTU-C to MCS.
(b) Spoofing.
(c) False position reports sent from an EMTU/EMTU-C.
(d) Modification of EMTU/EMTU-C identification.
(e) Interference with Global Maritime Distress and Safety System (GMDSS) or other safety/distress functions.
(f) Introduction of malware, spyware, keyloggers, or other software that may corrupt, disturb, or disrupt messages, transmission, and the VMS system.
(g) The EMTU/EMTU-C terminal from communicating with, influencing, or interfering with the Global Positioning System antenna or its functionality, position reports, or sending of position reports. The position reports must not be altered, corrupted, degraded, or at all affected by the operation of the terminal or any of its peripherals or installed-software.
(h) VMS data must be encrypted and sent securely through all associated cellular, satellite, and internet communication pathways and channels.

§600.1508 Field and technical services.

As a requirement of its type-approval, a type-approval holder must communicate with NMFS to resolve technical issues with a VMS Unit, MCS or bundle and ensure that field and technical services includes:
(a) Diagnostic and troubleshooting support to NMFS and fishers, which is available 24 hours a day, seven days per week, and year-round.
(b) Response times for customer service inquiries that shall not exceed 24 hours.
(c) Warranty and maintenance agreements.
(d) Escalation procedures for resolution of problems.
(e) Established facilities and procedures to assist fishers in maintaining and repairing their EMTU, EMTU-C, or MTU.
(f) Assistance to fishers in the diagnosis of the cause of communications anomalies.

(g) Assistance in resolving communications anomalies that are traced to the EMTU, EMTU-C, or MTU.
(h) Assistance to NMFS Office of Law Enforcement and its contractors, upon request, in VMS system operation, resolving technical issues, and data analyses related to the VMS Program or system.

§600.1509 General.

(a) An EMTU/EMTU-C must have the durability and reliability necessary to meet all requirements of §§600.1502 through 600.1507 regardless of weather conditions, including when placed in a marine environment where the unit may be subjected to saltwater (spray) in smaller vessels, and in larger vessels where the unit may be maintained in a wheelhouse. The unit, cabling and antenna must be resistant to salt, moisture, and shock associated with sea-going vessels in the marine environment.
(b) PII and Other Protected Information. Personally identifying information (PII) and other protected information includes Magnuson-Stevens Act confidential information as provided at 16 U.S.C. 1881a and Business Identifiable Information (BII), as defined in the Department of Commerce Information Technology Privacy Policy. A type-approval holder is responsible for ensuring that:
(1) All PII and other protected information is handled in accordance with applicable state and Federal law.
(2) All PII and other protected information provided to the type-approval holder by vessel owners or other authorized personnel for the purchase or activation of an EMTU/EMTU-C or arising from participation in any Federal fishery are protected from disclosure not authorized by NMFS or the vessel owner or other authorized personnel.
(3) Any release of PII or other protected information beyond authorized entities must be requested and approved in writing, as appropriate, by the submitter of the data in accordance with 16 U.S.C. 1881a, or by NMFS.
(4) Any PII or other protected information sent electronically by the type-approval holder to the NMFS Office of Law Enforcement must be transmitted by a secure means that prevents interception, spoofing, or viewing by unauthorized individuals.

§600.1510 Notification of type-approval.

(a) If a request made pursuant to §600.1501 (type-approval) is approved or partially approved, NMFS will issue a type-approval letter to indicate the specific EMTU/EMTU-C model, MCSP, or bundle that is approved for use, the MCS or class of MCSs permitted for use with the type-approved EMTU, and the regions or fisheries in which the EMTU/EMTU-C, MCSP, or bundle is approved for use.
(b) The NMFS Office of Law Enforcement will maintain a list of type-approved EMTUs/EMTU-C, MCSPs, and bundles on a publicly available website and provide copies of the list upon request.

§600.1511 Changes or modifications to type-approvals.

Type-approval holders must notify NMFS Office of Law Enforcement (OLE) in writing no later than 2 days following modification to or replacement of any functional component or piece of their type-approved EMTU, EMTU-C, or MTU configuration, MCS, or bundle. If the changes are substantial, NMFS OLE will notify the type-approval holder in writing within 60 calendar days that an amended type-approval is required or that NMFS will initiate the type-approval revocation process.

§600.1512 Type-approval revocation process.

(a) If at any time, a type-approved EMTU/EMTU-C, MCS, or bundle fails to meet requirements at §§600.1502 through 600.1509 or applicable VMS regulations and requirements in effect for the region(s) and Federal fisheries for which the EMTU/EMTU-C or MCS is type-approved, or if an MTU fails to meet the requirements under which it was type-approved, OLE may issue a Notification Letter to the type-approval holder that:
(1) Identifies the MTU, EMTU, EMTU-C, MCS, or bundle that allegedly fails to comply with type-approval regulations and requirements;
(2) Identifies the alleged failure to comply with type-approval regulations and requirements, and the urgency and impact of the alleged failure;
(3) Cites relevant regulations and requirements under this subpart;
(4) Describes the indications and evidence of the alleged failure;
(5) Provides documentation and data demonstrating the alleged failure;
(6) Sets a response date by which the type-approval holder must submit to NMFS OLE a written response to the Notification Letter, including, if applicable, a proposed solution; and
(7) Explains the type-approval holder's options if the type-approval holder believes the Notification Letter is in error.
(b) NMFS will establish a response date between 30 and 120 calendar days from the date of the Notification Letter. The type-approval holder's response must be received in writing by NMFS on or before the response date. If the type-approval holder fails to respond by the response date, the type-approval will be revoked. At its discretion and for good cause, NMFS may extend the response date to a maximum of 150 calendar days from the date of the Notification Letter.
(c) A type-approval holder who has submitted a timely response may meet with NMFS within 21 calendar days of the date of that response to discuss a detailed and agreed-upon procedure for resolving the alleged failure. The meeting may be in person, conference call, or webcast.
(d) If the type-approval holder disagrees with the Notification Letter and believes that there is no failure to comply with the type-approval regulations and requirements, NMFS has incorrectly defined or described the failure or its urgency and impact, or NMFS is otherwise in error, the type-approval holder may submit a written objection letter to NMFS on or before the response date. Within 21 calendar days of the date of the objection letter, the type-approval holder may meet with NMFS to discuss a resolution or redefinition of the issue. The meeting may be in person, conference call, or webcast. If modifications to any part of the Notification Letter are required, then NMFS will issue a revised Notification Letter to the type-approval holder. However, the response date or any other timeline in this process would not restart or be modified unless NMFS decides to do so, at its discretion.
(e) The total process from the date of the Notification Letter to the date of final resolution should not exceed 180 calendar days, and may require a shorter timeframe, to be determined by NMFS, depending on the urgency and impact of the alleged failure. In rare circumstances, NMFS, at its discretion, may extend the time for resolution of the alleged failure. In such a case, NMFS will provide a written notice to the type-approval holder informing him or her of the extension and the basis for the extension.
(f) If the failure to comply with type-approval regulations and requirements cannot be resolved through this process, the NMFS OLE Director will issue a Revocation Letter to the type-approval holder that:
(1) Identifies the MTU, EMTU, EMTU-C, MCS, or bundle for which type-approval is being revoked;

(2) Summarizes the failure to comply with type-approval regulations and requirements, including describing its urgency and impact;
(3) Summarizes any proposed plan, or attempts to produce such a plan, to resolve the failure;
(4) States that revocation of the MTU, EMTU, EMTU-C, MCS, or bundle's type-approval has occurred;
(5) States that no new installations of the revoked unit will be permitted in any NMFS-managed fishery requiring the use of VMS;
(6) Cites relevant regulations and requirements under this subpart;
(7) Explains why resolution was not achieved;
(8) Advises the type-approval holder that:
(i) The type-approval holder may reapply for a type-approval under the process set forth in §600.1501, and
(ii) A revocation may be appealed pursuant to the process under §600.1513.

§600.1513 Type-approval revocation appeals process.

(a) If a type-approval holder receives a Revocation Letter pursuant to §600.1512, the type-approval holder may file an appeal of the revocation to the NMFS Assistant Administrator.
(b) An appeal must be filed within 14 calendar days of the date of the Revocation Letter. A type-approval holder may not request an extension of time to file an appeal.
(c) An appeal must include a complete copy of the Revocation Letter and its attachments and a written statement detailing any facts or circumstances explaining and refuting the failures summarized in the Revocation Letter.
(d) The NMFS Assistant Administrator may, at his or her discretion, affirm, vacate, or modify the Revocation Letter and send a letter to the type-approval holder explaining his or her determination, within 21 calendar days of receipt of the appeal. The NMFS Assistant Administrator's determination constitutes the final agency decision.

§600.1514 Revocation effective date and notification to vessel owners.

(a) Following issuance of a Revocation Letter pursuant to §600.1512 and any appeal pursuant to §600.1513, NMFS will provide notice to all vessel owners impacted by the type-approval revocation via letter and Federal Register notice. NMFS will provide information to impacted vessel owners on:
(1) The next steps vessel owners should take to remain in compliance with regional and/or national VMS requirements;
(2) The date, 60-90 calendar days from the notice date, on which the type-approval revocation will become effective;
(3) Reimbursement of the cost of a new type-approved EMTU/EMTU-C, should funding for reimbursement be available pursuant to §600.1516.

§600.1515 Litigation support.

(a) All technical aspects of a type-approved EMTU, EMTU-C, MTU, MCS, or bundle are subject to being admitted as evidence in a court of law, if needed. The reliability of all technologies utilized in the EMTU, EMTU-C, MTU, MCS, or bundle may be analyzed in court for, inter alia, testing procedures, error rates, peer review, technical processes and general industry acceptance.
(b) The type-approval holder must, as a requirement of the holder's type-approval, provide technical and expert support for litigation to substantiate the EMTU/EMTU-C, MCS, or bundle capabilities to establish NMFS Office of Law Enforcement cases against violators, as needed. If the technologies have previously been subject to such scrutiny in a court of law, the type-

approval holder must provide NMFS with a brief summary of the litigation and any court findings on the reliability of the technology.
(c) The type-approval holder will be required to sign a non-disclosure agreement limiting the release of certain information that might compromise the effectiveness of the VMS operations.

§600.1516 Reimbursement opportunities for revoked Vessel Monitoring System type-approval products.

(a) Subject to the availability of funds, vessel owners may be eligible for reimbursement payments for a replacement EMTU/EMTU-C if:
(1) All eligibility and process requirements specified by NMFS are met as described in NMFS Policy Directive 06-102; and
(2) The replacement type-approved EMTU/EMTU-C is installed on the vessel, and reporting to NMFS Office of Law Enforcement; and
(3) The type-approval for the previously installed EMTU/EMTU-C has been revoked by NMFS; or
(4) NMFS requires the vessel owner to purchase a new EMTU/EMTU-C prior to the end of an existing unit's service life.
(b) The cap for individual reimbursement payments is subject to change. If this occurs, NMFS Office of Law Enforcement will publish a notice in the Federal Register announcing the change.

APPENDIX C. APPROVED VMS UNITS FOR THE GULF OF MEXICO FOR-HIRE FISHERIES

The following list is compiled from information found at https://www.fisheries.noaa.gov/southeast/rules-and-regulations/approved-vessel-monitoring-system-vms-units-reporting-southeast-hire-integrated and is current as of November 6, 2023.

VMS Vendor	Unit Name	Data Transmission	With Forms?*	Also Approved for Use in Commercial Gulf Reef Fish Fishery?
AddValue	IFleetONE	Satellite	Yes	Yes
Atlantic Radio Telephone	ZenVMS-SAT	Satellite	No	No
Atlantic Radio Telephone	ZenVMS-LTE	Cellular	No	No
MetOcean	OmniCom VMS	Satellite	Yes	Yes
MetOcean	OmniCom Global	Satellite	Yes	Yes
Nautic Alert	Insight X3 VMS	Satellite	Yes	Yes
Nautic Alert	Insight X3	Cellular	No	No
Skymate	Alon a8000	Satellite	No	No
Skymate	I1500	Satellite	Yes	Yes
Woods Hole Group/CLS	Triton	Satellite	Yes	Yes
Woods Hole Group/CLS	Leo**	Satellite	Yes	Yes
Woods Hole Group/CLS	Thorium TST***	Satellite	Yes	Yes
Woods Hole Group/CLS	WatchDog 750	Satellite	Yes	Yes
Woods Hole Group/CLS	CLS NEMO EMTU-C	Cellular	No	No

*With forms means that these approved VMS units satisfy the positioning requirement of the SEFHIER program, and have the capability to submit the required declaration and logbook forms. Without forms means that these units satisfy the positioning requirement of the SEFHIER program, but do not have the capability to submit the required reports.
**No longer available for purchase.
***No longer approved for new installations.

APPENDIX D. DRAFT TECHNICAL SPECIFICATIONS FOR HISTORICAL CELB PROGRAM

To monitor shrimping effort in the Gulf of Mexico (Gulf) hardware/software is needed to record date, time, latitude and longitude from a GPS installed upon the vessel at 10-minute intervals, throughout the duration of each shrimping trip in the Gulf. The data should be locally stored until it can be remotely uploaded when in range of a non-roaming cellular mobile communications service to a National Marine Fisheries Service (NMFS) server. The data recorded and transmitted should be compatible with existing inputs to NMFS effort analysis algorithms for the cELB program. Any system that meets the technical specifications must first be field tested aboard an offshore shrimp vessel to ensure reliability prior to its type-approval and implementation in the shrimping fleet.

To accomplish this the following specifications are needed:

Definitions and Acronyms

This section will be completed after finalization of technical specifications.

Vessel Monitoring System Type Approval Process

Applicability. This section applies to hardware/software devices, cellular mobile communications services, and bundles installed upon vessels with a federal Gulf shrimp permit which collect time stamped vessel position fix data at 10-minute intervals when shrimping in the Gulf, and then automatically transmits recorded data to NMFS when in range of a non-roaming cellular mobile communications service for the purpose of NMFS Southeast Fishery Science Center (SEFSC) shrimp effort analysis (reference CFR number here). At no time, shall this data be transmitted automatically to the National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement (OLE). This includes direct automatic transmission to NOAA OLE as well as secondary automatic transmission to NOAA OLE (i.e., transmission to an intermediary which is then subsequently automatically transmitted to NOAA OLE).

Application submission: A requestor must submit a written type-approval request and electronic copies of supporting materials that include the information required under this section to NMFS Southeast Regional Office at: (insert appropriate mailing address and attention line here).

Application requirements:

- Hardware/software identifying information: In a type-approval request, the requestor should indicate whether the requestor is seeking approval for a hardware/software device, cellular mobile communications service, or bundle and must specify identifying characteristics as applicable: communication class; manufacturer; brand name; model name; model number; software version and date; firmware version number and date;

hardware version number and date; antenna type; antenna model number and date; tablet, monitor or terminal number and date; cellular mobile communications service to be used in conjunction with hardware/software; entity providing cellular mobile communications service to the end user; and current global and regional coverage of the cellular mobile communications service.

- Requestor-approved third-party business entities: The requestor must provide the business name, address, phone number, contact name(s), email address, specific services provided, and geographic region covered for the following third-party business entities:
    - Entities providing bench configuration for the hardware/software at the warehouse or point of supply.
    - Entities distributing/selling the hardware/software to end users.
    - Entities currently approved by the requestor to install the hardware/software onboard vessels.
    - Entities currently approved by the requestor to offer a limited warranty.
    - Entities approved by the requestor to offer a maintenance service agreement.
    - Entities approved by the requestor to repair or install new software.
    - Entities approved by the requestor to train end users.
    - Entities approved by the requestor to advertise the hardware/software.
    - Entities approved by the requestor to provide other customer services.
- Regulatory Requirements and Documentation: In a type-approval request, a requestor must:
    - Identify the NMFS region(s) and/or federal fisheries for which the requestor seeks type approval.
    - Provide a table with the type-approval request that lists in one column each requirement set out in the regulations. NFMS will provide a template for the table upon request. The requestor must indicate in subsequent columns in the table whether the hardware/software device, cellular mobile communications service, or bundle meets the requirement.
- Certify that the features, components, configurations and services of the requestor's hardware/software device, cellular mobile communications service, or bundle comply with each requirement set out in ____ through ___ and the regulations described under paragraph ____ of this section.
- Certify that, if the request is approved, the requestor agrees to be responsible for ensuring compliance with each requirement set out in ___ through ____ and the regulations described under paragraph ___ of this section over the course of the type-approval period.
- Provide NMFS with two devices loaded with appropriate software/hardware, with activated cellular mobile communications service, for which a type-approval request is submitted for a minimum of 90 calendar days for testing and evaluation. As part of its review, NMFS will perform at-sea trials aboard an offshore commercial shrimp vessel (i.e., in federal waters of the Gulf of Mexico) that involve demonstrating functionality of every aspect of the hardware/software device, cellular mobile communications service, or bundle operation. At-sea testing aboard an offshore shrimp vessel includes, but is not limited to: ensuring the installed hardware/software device's GPS signal and connection is sufficient to attain and record at least 95% of the required 10 minute interval position fix data in a 24-hour period for each 24-hour day of at-sea testing, with a minimum of 7

days spent at-sea for these trials; comparing vessel speed and activity (trawling, transit, etc.) as recorded by human observer aboard the offshore shrimp vessel against speed and activity generated by NMFS shrimp effort algorithm programs using data from the hardware/software device, cellular mobile communications service or bundle seeking type-approval; and mounting of the hardware/software device in a location where similar/traditional marine electronics are mounted aboard working trawlers to troubleshoot any issues associated with potential mounting locations and/or wiring and battery capabilities. The requestor is responsible for all associated costs including paying for: shipping of the hardware/software device to the required NMFS office for testing; the cellular mobile communications service during the testing period; and shipping of the hardware/software device back to the vendor.

- Provide thorough documentation for the hardware/software device, cellular mobile communications service or bundle, including: hardware/software fact sheets; installation guides; user manuals; any necessary interfacing software; cellular mobile communications service global and regional coverage; performance specifications; and technical support information.

Certification. A requestor seeking type-approval of a hardware/software device to operate with a class or type of cellular communications, as opposed to type-approval for use with a specific cellular mobile communications service, shall certify that the hardware/software meets requirements under this subpart when using at least one cellular mobile communications service provider within that class or type of communications.

Notification. Unless additional time is required for hardware/software testing, NMFS will notify the requestor within 90 days after receipt of a complete type-approval request as follows:

- If a request is approved or partially approved, NMFS will provide notice as described under ____ (section number) and the type-approval letter will serve as official documentation and notice of type-approval. NMFS will publish and maintain the list of type-approved units on their web page.
- If a request is disapproved or partially disapproved:
    - NMFS will send a letter to the requestor that explains the reason for the disapproval/partial disapproval.
    - The requestor may respond to NMFS in writing with additional information to address the reasons for disapproval identified in the NMFS letter. The requestor must submit this response within 21 calendar days of the date of the NMFS letter sent under paragraph ___ of this section.
    - If any additional information is submitted under paragraph ___ of this section, NMFS, after reviewing such information, may either take action under paragraph ___ of this section or determine that the request should continue to be disapproved or partially disapproved. In the latter case, NMFS will send a letter to the requestor that explains the reasons for the continued disapproval/partial disapproval. NMFS's decision is final upon issuance of this letter and is not appealable.

Communications functionality

- The hardware/software device, cellular mobile communications service, or bundle must:
    - Be able to transmit automatically generated, 10-minute interval, time-stamped vessel position fix data from hardware/software when within range of a non-roaming cellular mobile communications service network/signal.
    - Have one-way communications, with transmission from the vessel to NMFS, that function uniformly throughout the geographic area covered by the type-approval when in range of a non-roaming cellular mobile communications network signal.
    - Have data and communications mechanisms that are compatible with NMFS SEFSC shrimp cELB effort analysis programs.

Position fix data formats and transmission

The hardware/software device must meet the following requirements:

- Store and then transmit all automatically-generated time-stamped vessel position fixes such that it meets the latency requirements under ____ (insert number here).
- When powered up, must automatically re-establish recording time-stamped position fixes at 10-minute intervals without manual intervention.
- Time-stamped position fix data is automatically transmitted to NMFS when within range of a non-roaming cellular mobile communications service network. At no time, are these data to be transmitted automatically to NOAA Office of Law Enforcement. This includes direct automatic transmission to NOAA OLE as well as secondary automatic transmission to NOAA OLE (i.e., transmission to an intermediary which is then subsequently automatically transmitted to NOAA OLE).
- If time-stamped position fix data fails to transmit, an automatic retry feature is enabled.
- Time-stamped position fixes are recorded every 10 minutes (600 seconds), 144 times a day, and must contain all of the following:
    - Unique identification of the hardware/software device.
    - Date (year/month/day) and time stamp (GMT) of the position fix.
    - Position fixed latitude and longitude, which comply with the following requirements:
        - The position fix precision must be to the decimal minute hundredths.
        - Accuracy of the reported position must be within 100 meters (328.1 ft).
        - Hardware/software device must have the ability to:
            - Store at least 14,400 position fixes in local, non-volatile memory.
            - Allow for interval of 10 minutes between position fixes. Have the ability to be pre-programmed for 10-minute intervals by the type-approval holder prior to sale to fishers.
    - Time-stamped position fix data and transmission must be in a format compatible with NMFS SEFSC shrimp cELB effort analysis programs.

Latency requirement

- Ninety percent of all pre-programmed time-stamped position fixes during each 24-hour period must reach NMFS within 15 minutes or less of being sent from the hardware/software device.
- NMFS will continually examine latency by type-approval holder.
- Exact dates for calculation of latency will be chosen by NMFS. Days in which isolated and documented system outages occur will not be used by NMFS to calculate a type-approval holder's latency.

Communications Security

To the extent possible, communications between a hardware/software device and the cellular mobile communications service should have mechanisms to prevent:

- Sniffing and/or interception during transmission from the hardware/software device to the cellular mobile communications service.
- Spoofing.
- False time-stamped position fix data sent from the hardware/software device.
- Modification of the hardware/software identification.
- Interference with Global Maritime Distress and Safety System (GMDSS) or other safety/distress functions.
- Introduction of malware, spyware, keyloggers, or other software that may corrupt, disturb, or disrupt transmission, and the hardware/software device.
- Position fix data should be encrypted and sent securely through associated cellular mobile communications service pathway or channel.

Field and technical services

As a requirement of type-approval, a type-approval holder must communicate with NMFS to resolve technical issues with a hardware/software device or cellular mobile communication service and ensure that field and technical services include:

- Diagnostic and troubleshooting support to NMFS and fishers.
- Established facilities and procedures to assist fishers in maintaining and repairing the hardware/software device.
- Assist fishers in the diagnosis of the cause of communications anomalies.
- Assistance in resolving communications anomalies that are traced to the hardware/software device.
- Assistance to NMFS and its contractors, upon request, in device operation, resolving technical issues, and data analysis related to the device.
- Warranty and maintenance agreements as applicable.

General

- Hardware/software device must have the durability and reliability necessary to meet all requirements regardless of weather conditions. The cabling, antenna and any portion of

the device intended to be installed outdoors must be resistant to salt, moisture and shock associated with sea-going vessels in the marine environment and have reliable functionality aboard vessels which can remain offshore for up to 60 days at a time and vessels constructed of steel, wood, fiberglass or other material, especially if a portion of the device is intended to be installed inside of a steel cabin/wheelhouse.

- PII and Other Protected Information. Personally identifying information (PII) and other protected information includes Magnuson-Stevens Act confidential information as provided at 6 U.S.C. 1881a and Business Identifiable Information (BII), as defined in the Department of Commerce Information Technology Privacy Policy. A type-approval holder is responsible for ensuring that:
    - All PII and other protected information is handled in accordance with applicable state and Federal law.
    - All PII and other protected information provided to the type-approval holder by vessel owners or other authorized personnel for the purchase or activation of a hardware/software device or arising from participation in any Federal fishery are protected from disclosure not authorized by NMFS or the vessel owner or other authorized personnel.
    - Any release of PII or other protected information beyond authorized entities must be requested and approved in writing, as appropriate, by the submitter of the data in accordance with 16 U.S.C. 1881a, or by NMFS.
    - Any PII or other protected information sent electronically by the type-approval holder to NMFS must be transmitted by secure means that prevents interception, spoofing, or viewing by unauthorized individuals to the extent possible.

Notification of type-approval

- If a request made pursuant to ____ (insert number) is approved or partially approved, NMFS will issue a type-approval letter to indicate the specific hardware/software device(s), cellular mobile communications service provider, or bundle that is approved for use, the cellular mobile communications or class of cellular mobile communications permitted for use with the type-approved device(s), and the regions or fisheries in which the hardware/software device(s), cellular mobile communications provider, or bundle is approved for use.
- NMFS will maintain a list of the type-approved devices, cellular mobile communications service providers, and bundles on a publicly available website and provide copies of the list upon request.

Changes or modifications to type-approvals

Type-approval holders must notify NMFS in writing no later than 7 days following modification to or replacement of any functional component or piece of their type-approved hardware/software device, cellular mobile communications service, or bundle. If the changes are substantial, NMFS will notify the type-approval holder in writing within 60 calendar days that an amended type-approval is required or that NMFS will initiate the type-approval revocation process.

Type-approval revocation process

- If at any time, a type-approved hardware/software device, cellular mobile communications service, or bundle fails to meet requirements at ____ (insert number) through ____ (insert number) and requirements in effect for the region(s) and Federal fisheries for which the device or cellular mobile communications service is type-approved, or if a device fails to meet the requirements under which it was type-approved, NMFS may issue a Notification Letter to the type-approval holder that:
    - Identifies the hardware/software device, cellular mobile communications service, or bundle that allegedly fails to comply with type-approval regulations and requirements;
    - Identifies the alleged failure to comply with type-approval regulations and requirements, and the urgency and impact of the alleged failure;
    - Cites relevant regulations and requirements under this subpart;
    - Describes the indications and evidence of the alleged failure;
    - Provides documentation and data demonstrating the alleged failure;
    - Sets a response date by which the type-approval holder must submit to NMFS a written response to the Notification Letter, including, if applicable, a proposed solution; and
    - Explains the type-approval holder's options if the type-approval holder believes the Notification Letter is in error.
- NMFS will establish a response date between 30 and 120 calendar days from the date of the Notification Letter. The type-approval holder's response must be received in writing by NMFS on or before the response date. If the type-approval holder fails to respond by the response date, the type-approval will be revoked. At its discretion and for good cause, NMFS may extend the response date to a maximum of 150 calendar days from the date of the Notification Letter.
- A type-approval holder who has submitted a timely response may meet with NMFS within 21 calendar days of the date of that response to discuss a detailed and agreed-upon procedure for resolving the alleged failure. The meeting may be in person, conference call, or webcast.
- If the type-approval holder disagrees with the Notification Letter and believes that there is no failure to comply with the type-approval regulations and requirements, NMFS has incorrectly defined or described the failure or its urgency and impact, or NMFS is otherwise in error, the type-approval holder may submit a written objection letter to NMFS on or before the response date. Within 21 calendar days of the date of the objection letter, the type-approval holder may meet with NMFS to discuss a resolution or redefinition of the issue. The meeting may be in person, conference call, or webcast. If modifications to any part of the Notification Letter are required, then NMFS will issue a revised Notification Letter to the type-approval holder. However, the response date or any other timeline in this process would not restart or be modified unless NMFS decides to do so, at its discretion.
- The total process from the date of the Notification Letter to the date of final resolution should not exceed 180 calendar days, and may require a shorter timeframe, to be determined by NMFS, depending on the urgency and impact of the alleged failure. In

rare circumstances, NMFS, at its discretion, may extend the time for resolution of the alleged failure. In such a case, NMFS will provide a written notice to the type-approval holder informing him or her of the extension and the basis for the extension.

- If the failure to comply with type-approval regulations and requirements cannot be resolved through this process, NMFS will issue a Revocation Letter to the type-approval holder that:
    - Identifies the hardware/software device, cellular mobile communications service, or bundle for which type-approval is being revoked;
    - Summarizes the failure to comply with type-approval regulations and requirements, including describing its urgency and impact;
    - Summarizes any proposed plan, or attempts to produce such a plan, to resolve the failure;
    - States that revocation of the hardware/software device, cellular mobile communications service, or bundle's type-approval has occurred;
    - States that no new installations of the revoked unit will be permitted in any NMFS managed fishery requiring the use of this type of device;
    - Cites relevant regulations and requirements under this subpart;
    - Explains why resolution was not achieved;
    - Advises the type-approval holder that:
        - The type-approval holder may reapply for a type-approval under the process set forth in ____ (insert number here), and
        - A revocation may be appealed pursuant to the process under ____ (insert number here)

Type-Approval revocation appeals process

- If a type-approval holder received a Revocation Letter pursuant to ___ (insert number), the type-approval holder may file an appeal of the revocation to the NMFS.
- An appeal must be filed within 14 calendar days of the date of the Revocation Letter. A type-approval holder may not request an extension of time to file an appeal.
- An appeal must include a complete copy of the Revocation Letter and its attachments and a written statement detailing any facts or circumstances explaining and refuting the failures summarized in the Revocation Letter.
- The NMFS may, at its discretion, affirm, vacate, or modify the Revocation Letter and send a letter to the type-approval holder explaining his or her determination, within 21 calendar days of receipt of the appeal. The NMFS's determination constitutes the final agency decision.

Revocation effective date and notification to vessel owners

- Following issuance of a Revocation Letter pursuant to ____ (insert number) and any appeal pursuant to ____ (insert number), NMFS will provide notice to all vessel owners impacted by the type-approval revocation via letter and Federal Register Notice. NMFS will provide information to impacted vessel owners on:

- The next steps vessel owners should take to remain in compliance with regional and/or national requirements;
- The date, 60-90 calendar days from the notice date, on which the type-approval revocation will become effective.

APPENDIX E. COMPARISON TABLE OF CELB AND OLE VMS TECHNICAL SPECIFICATIONS

Element within Type-Approval Specifications	Draft Type-Approval Specifications for Reinstituting Historical cELB Program for Shrimp Fishery	Type-Approval Specifications for Instituting NOAA OLE VMS Requirement for Shrimp Fishery
Vessel Monitoring System Type-Approval Process	This section of cELB draft specifications and the NOAA OLE VMS specifications are largely the same, with the following exceptions: • Any reference to EMTU, EMTU-C, VMS, or MTU in the VMS specifications is replaced with "hardware/software device" in the cELB specifications. • Any reference to NMFS Office of Law Enforcement in the VMS specifications is replaced with "NMFS" in the cELB specifications; NOAA OLE is specifically excluded for transmission purposes in the cELB specifications. • Applicability subsection of cELB specifications is amended to reflect devices on federally permitted shrimp vessels utilized to collect position data when shrimping for use in NMFS shrimp effort algorithms. • In the cELB specifications, at-sea testing was made a requirement rather it being optional, as it is in the VMS specifications, and several specific testing protocols were detailed to ensure they are addressed.	
Communications Functionality	Must be able to: Transmit automatically generated 10-minute interval time-stamped position fix data from a hardware/software device installed upon the vessel when in range of non-roaming cellular communications service. Have one-way communication from the vessel to NMFS. Have communication and data mechanisms that are compatible with NMFS SEFSC cELB effort analysis programs.	Must be able to: Transmit automatically generated position reports, have visible/audible alarms, have two-way communications between unit and authorized entities, run/connect to dedicated message terminal and display component capable of running software that sends and receives electronic forms and internet email messages, messaging and communications that are completely compatible with NOAA vessel monitoring surveillance software, enable billing to be parsed out to show costs for government and owner of vessel.
Position Report/Fix Data Formats & Transmission	Upon installation of the hardware/software device, position fix must be automatically recorded at 10-minute intervals to	Must transmit all automatically generated position reports & automatically re-establish position reporting function when powered.

Element within Type-Approval Specifications	Draft Type-Approval Specifications for Reinstituting Historical cELB Program for Shrimp Fishery	Type-Approval Specifications for Instituting NOAA OLE VMS Requirement for Shrimp Fishery
	a file on the device's local hard drive anytime the device is powered on. Accuracy of the reported position must be within 100 meters (328.1 ft). Must store minimum of 14,400 position fixes on local hard drive. When hardware/software device is powered up, it must automatically re-establish recording required data. Transmitted position fix data must include date, time, latitude, longitude and a unique identifying number for the device. Data transmitted automatically to NMFS (excludes NOAA OLE) when within range of a non-roaming cellular mobile communications network. If program fails to transmit data, an automatic retry feature is enabled. Time-stamped position fix data must be in a format compatible with NMFS cELB effort analysis programs.	Position reports must contain unique identification of the device, position fixed latitude and longitude with date and time stamp, position accurate to within 100 meters (328.1 ft). Must store 1,000 position fixes in local non-volatile memory. Must allow for authorized user to remotely change reporting/ping interval from the standard pre-programmed interval for the fishery. In addition to the automatically generated position reports, additional position reports must be generated when: antenna is disconnected, loss of position reference signal, power-up, power-down, loss of mobile communications signals, vessel crossing a pre-defined geographic boundary
Latency Requirement	"Position reports" (in the VMS specifications) are referred to as "time stamped position fixes" in the cELB specifications. Otherwise, these two sections are the same in both specifications.	
Messaging	Not applicable. Not required to reinstate the historical cELB program.	Must be able to run or connect to software/applications that can send email messages, must support message length of 1 KB, must have confirmation of delivery function for email messages, must be failed delivery notification for email messages, must support an "address book" and a "reply" function, must be able to review messages previously sent/received, must have minimum email message

Element within Type-Approval Specifications	Draft Type-Approval Specifications for Reinstituting Historical cELB Program for Shrimp Fishery	Type-Approval Specifications for Instituting NOAA OLE VMS Requirement for Shrimp Fishery
		history of at least 50 messages to an inbox
Electronic Forms	Not applicable. Not required to reinstate the historical cELB program.	Must be able to run and transmit electronic forms, support forms software that holds a minimum of 20 electronic forms, fields must be capable of being defined as Optional/Mandatory/Logic Driven, be able to select forms from menu, be able to populate forms based on prior submission, be able to review minimum of 20 past form submissions, reporting of forms transmission failure/success, forms data compatible with NFMS vessel monitoring software, position reports unable to be manually entered or altered, capable of providing updates to forms or adding new forms
Communications Security	Must have mechanisms to prevent to the extent possible: sniffing or interception during transmission, spoofing, false position reports, modification of hardware/software identification, or introduction of malware/spyware/etc., data shall be encrypted and sent securely. Acceptable for hardware/software device to interface with GPS antenna.	Must have mechanisms to prevent to extent possible: sniffing or interception during transmission, spoofing, false position reports, modification of identification, interference with safety functions, introduction of malware/spyware/etc., terminal from interfering with GPS antenna. Data must be encrypted and sent securely through all associated cellular, satellite and internet communication pathways and channels.
Field & Technical Services	Hardware/software developers must have established facilities and procedures to assist fishers in maintaining and repairing the device/program, provide assistance to fishers in the diagnosis of the cause of communications anomalies, and provide assistance to NMFS to	Must ensure field and technical services include: diagnostic and troubleshooting support to NMFS and fishers 24/7 and 365 days a year, response time for customer service inquiry no more than 24 hours, warranty and maintenance agreements, escalation procedures for problem resolution, established

Element within Type-Approval Specifications	Draft Type-Approval Specifications for Reinstituting Historical cELB Program for Shrimp Fishery	Type-Approval Specifications for Instituting NOAA OLE VMS Requirement for Shrimp Fishery
	resolve technical issues with the transmission or format of data, warranty and maintenance agreements.	facilities & procedures to assist fishers in maintaining and repairing equipment, assistance for diagnosis/resolution of communications anomalies, assistance to OLE
General	Device must have the durability and reliability necessary to meet all requirements regardless of weather conditions. The cabling, antenna and any portion of the device intended to be installed outdoors must be resistant to salt, moisture and shock associated with sea-going vessels in the marine environment and have functionality aboard vessels remaining offshore for up to 60 days and constructed of steel, wood, fiberglass, or other material. Remainder of this section of cELB draft specifications is largely the same as section 600.1509 of the NOAA OLE VMS specifications, with the following exceptions: • any reference to EMTU, EMTU-C, VMS, or MTU in the VMS specifications is replaced with "hardware/software" in the cELB specifications • any reference to NMFS Office of Law Enforcement in the VMS specifications is replaced with NMFS in the cELB specifications	EMTU/EMTU-C must have the durability and reliability necessary to meet all requirements regardless of weather conditions, including in a marine environment where the unit may be subject to saltwater (spray) in smaller vessels, and in larger vessels where the unit may be maintained in a wheelhouse. The unit, cabling and antenna must be resistant to salt, moisture, and shock associated with sea-going vessels in the marine environment. Remainder of this section of the NOAA OLE VMS specifications is largely the same as the cELB draft specifications, with the following exceptions: • any reference to EMTU, EMTU-C, VMS, or MTU in the VMS specifications is replaced with "hardware/software" in the cELB specifications • any reference to NMFS Office of Law Enforcement in the VMS specifications is replaced with NMFS in the cELB specifications

Element within Type-Approval Specifications	Draft Type-Approval Specifications for Reinstituting Historical cELB Program for Shrimp Fishery	Type-Approval Specifications for Instituting NOAA OLE VMS Requirement for Shrimp Fishery
5 Sections: • **Notification of Type-Approval** • **Changes or Modifications to Type-Approvals** • **Type-Approval Revocation Process** • **Type-Approval Revocation Appeals Process** • **Revocation Effective Date and Notification to Vessel Owners**	These sections of cELB draft specifications and the NOAA OLE VMS specifications are largely the same, with the following exceptions: • Any reference to EMTU, EMTU-C, VMS, or MTU in the VMS specifications is replaced with "hardware/software" in the cELB specifications. • Any reference to NMFS Office of Law Enforcement in the VMS specifications is replaced with "NMFS" in the cELB specifications.	
Litigation Support	Not applicable. Not Included in cELB specifications as cELB is a scientific data collection program and not a program designed for law enforcement purposes intended to be routinely utilized in a court of law.	All technical aspects of device subject to being admitted as evidence in court. Type approval holder must provide technical and expert support for litigation to establish NMFS OLE cases against violators. Type approval holder required to sign non-disclosure agreement limiting release of information that might compromise effectiveness of VMS operations.
Reimbursement Opportunities for Revoked Vessel Monitoring System Type-Approval Products	Not applicable. cELB's do not have a designated reimbursement fund, therefore this section does not apply.	When an EMTU/EMTU-C approval has been revoked by NMFS, vessel owners may be eligible for reimbursement.
Definitions	Not currently included in cELB draft specifications, but would be added upon finalization.	Definitions of terms included in NOAA OLE VMS specifications.