

Suggested standards for electronic logbooks (ELB) solutions developed for fisheries of the Northeast Region under Amendment 16 to the Northeast Multispecies FMP

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I. Proposed Definition of a trip

There are currently several definitions of a trip depending on which system is collecting information. These are specific to a system and may not relate to one another. These systems include VMS, vessel trip reports, observers and dealer reports. In order to associate all information for a trip, a single comprehensive definition is necessary.

Appendix F presents the trip definitions currently in use and proposes a solution that attempts to encompass the widest number of scenarios. The solution needs to work for all systems not only electronic vessel reporting.

II. Proposed Trip identifier

The current trip identifier as specified in several regulations is the vessel trip report serial number. While this is a common element to all vessels holding a northeast federal permit, several issues are causing it not to work universally in practice. Not having a single identifier that links together all pieces of information describing a trip makes compiling this information into one data set problematic. Appendix G. proposes several other options to using the VTR serial number to accomplish this.

III. Business rules

Suggested data collection business rules

1. Reporting by one of the accepted reporting methods:
 - a. At-sea file transmission via approved VMS vendor and NMFS-NE type-approved electronic logbook software.
 - b. Data entry into NMFS e-reporting web-portal.
 - c. Export file upload via NMFS web-portal and NMFS-NE type-approved electronic logbook software.
2. Catch and effort data are to be collected at the subtrip-level or haul-by-haul level.
3. Haul-by-haul data collections: Statistical area fished and corresponding point location must be based on the location of the start of the haul. There are four events associated with a fishing effort: start of the set, end of the set, start of the haul, and end of the haul. Not all effort events must be collected for each gear type, but at a minimum, each effort record must contain the start haul information.
4. Subtrip-level reporting: Statistical area allocation of catch should be based on the captain's good faith haul of the catch within the area. Catch cannot be allocated to statistical areas based on automated means. For example, applications should not use the time spent in a given statistical area to automatically allocate the catch to statistical area.

5. Apportionment records (landed fish) must be reported separately from catch. Landing amounts, grade codes, market codes and units of measure can vary independently from the retained catch amounts; however, all species recorded as retained catch must have at least one landing record.

Rules for at-sea file transmissions

1. Partial trip transmissions (e.g., daily catch reports) are allowed and can be partial replacements or additions. Data load routines will perform a load of any new data received.
 - a. Electronic logbook (ELB) records are locked once data are transmitted. This means that once catch records have been transmitted they can not be deleted or updated through the ELB software. Changes to transmitted data must be made through the web portal. The only exception to this will be the following data elements in the trip record: trip notes, end_date and end_time.
 - b. The end_date and end_time fields in the export file should be equal to the sail_date and sail_time until the trip has been ended. This is how the FVTR database triggers will know that a trip is still open and has not been completed.
 - c. The header and trip record must be transmitted with each partial trip transmission. Record count columns are used to track the numbers of records sent and to ensure all records are received and loaded. See Appendix A for an example of an export file. See the ELB_export_field_descriptions.xls spreadsheet for details.
2. Supplemental data elements (dynamic data) will receive a two digit record_type with the first digit corresponding to the parent record_type (e.g., supplemental effort data elements will have record type numbering of the format 2#, etc.). The second digit corresponds to the number of supplemental data “groups” collected. *Note at this point there are no plans to expand the collection beyond a single group so all accessory data elements should have a “1” in the second digit of the record_type.*
3. For partial trip transmissions the data filename will be modified from the trip_id (e.g., 12345609051210.txt) to trip_id_seq_num (e.g., 12345609051210_1.txt). Whole trips (initial and retransmits) will retain the original trip_id format. Retransmission of partial trip fragments should retain the original sequence number.
4. Any splitting of the file that is required to meet file size demands of transmission methods (e.g., SkyMate) should be split on whole efforts and/or landing records such that the parent record is transmitted with all of its children (i.e., all catch or apportion records for the effort or landing must be included).
5. Data files should be transmitted in a password protected .zip file in accordance with the technological capabilities of the VMS vendor. The password protected zip file is intended to provide a layer of security. The VMS units will send the data files in email form to the email address (evtr@noaa.gov). The serial number of the VMS unit will be in the subject line in the form of <VMS serial number>filename.

6. Users will be able to bypass satellite transmission of trip files by loading them directly through the VERS web portal. The web portal will only allow whole trips to be uploaded; the upload of partial trips will not be submitted.

Data access business rules

1. Whole trips that are retransmitted will not be reloaded if they have been loaded previously. Because trip files can not be edited through the logbook once they have been transmitted, any resubmissions of whole trips will be identical to trip files previously loaded.
2. Users shall not be able to gain access to edit trips through the web portal until a trip has been finished (they may view and delete). This will prohibit the closure of trips that may still be active (i.e., captain is on trip and has sent in two days worth of data, owner accesses the portal system and closes a trip).
3. Trips shall be available for edit through the web portal for **16** days.
4. Seconds are removed from the sail time, end sail time and landing time during the data load.
5. Only authorized users will have access to data.

IV. Type Approval of third-party eVTR systems

Approval of third party eVTR applications will be granted. To gain approval for use in the NE Region, vendors must submit the software application to NMFS for review. The review will be based on five criteria:

1. Meets NMFS-NE data collection requirements including coding and submission standards; and,
2. Correctly applies data collection business rules; and,
3. Can produce a data file in the specified standard format (Appendix A) that can be successfully loaded into NMFS-NE databases using existing load routines; and,
4. If designed to transmit data at sea, it correctly applies transmission business rules and can be transmitted via one of the approved Vessel Monitoring System units (Boatrac, SkyMate, Thrane & Thrane); and,
5. Provides a mechanism by which critical support table updates can be performed without requiring revisions to the software code.

Appendix A. Export file field descriptions and business rules

The files format is quoted CSV (comma separated variable). Comments fields (both in trip notes and dynamic data) must not contain carriage returns.

header_record_type, program_code, source_version, original_transmission_date, transmission_date, effort_record_count_for_trip_fragment, landings_record_count_for_trip_fragment, total_effort_record_count_for_trip, total_landings_record_count_for_trip
trip_record_type, trip_id, vessel_name, vessel_hull_id, vessel_permit_num, sail_port, sail_date, sail_time, end_port, end_date, end_time, trip_category, crew_size, num_anglers, operator_last_name, operator_first_name, operator_permit_num, trip_entry_date, trip_entry_time, trip_notes
trip_dynamic_record_type, dynamic_element_code, dynamic_data_value [optional]
effort_record_type, effort_num, accsp_gear_code, vtr_gear_code, mesh_size, gear_quantity, gear_size, mesh_type, start_set_date, start_set_time, end_set_date, end_set_time, start_haul_date, start_haul_time, end_haul_date, end_haul_time, start_set_lat, start_set_lon, end_set_lat, end_set_lon, start_haul_lat, start_haul_lon, end_haul_lat, end_haul_lon, loran_bearing1, loran_bearing2, area_code, depth, depth_uom, num_hauls, soak_hours, soak_mins, temp, effort_entry_date, effort_entry_time
effort_dynamic_record_type, dynamic_element_code, dynamic_data_value [optional]
catch_record_type, catch_num, species_code, hail_amount, disposition_code, catch_entry_date, catch_entry_time
catch_dynamic_record_type, dynamic_attribute_code, dynamic_data_value [optional]
landing_record_type, landing_num, land_port, land_date, land_time, land_entry_date, land_entry_time
landing_dynamic_record_type, dynamic_attribute_code, dynamic_data_value [optional]
apportion_record_type, appor_num, species_code, appor_amount, disposition_code, dealer_permit_num, issuing_agency, sold_date, appor_entry_date, appor_entry_time
apportion_dynamic_record_type, dynamic_attribute_code, dynamic_data_value [optional]

Export file example

0,1,FLDRS 2.0, 1/9/2008,20:23:24,1/10/2008,10:48:16,1,1,1,1
1,12345608010902,"Tennessee Jed",123456,123456,2545000005,1/9/2008,02:17:22,2545000005,1/9/2008,20:23:24,1,5,0,
"Smith", "John",10001234,1/9/2008,08:25:00,"ripped the belly out of flatnet on haul#2."
11,3,5000
11,4,2,45
2,1,092,OTF,6.5,1,100,,1/9/2008,06:16:32,1/9/2008,06:19:46,1/9/2008,07:54:02,1/9/2008,08:02:15,4131.5619 N,07040.4427
W,4131.5617 N,07040.4426 W,4131.5610 N,07040.4429 W,4131.5606 N,07040.4436 W,,,538,25,FA,1,1,34,,1/9/2008,08:19:07
21,10,280
21,23,2
21,24,9
21,113,2
3,1,172877UN01LB,250,011,1/9/2008,08:19:30
31,51,2
31,52,6
31,53,9
31,54,7
31,55,1
3,2,172735UN01LB,200,011,1/9/2008,08:19:58
3,3,172905UN01LB,50,110,1/9/2008,08:20:07
3,4,172873UN01LB,40,110,1/9/2008,08:20:15
4,1,2545000005,1/9/2008,14:23:24,1/9/2008,19:23:42
5,1,172877UN01LB,250,001,1393,NMFS-NER,1/9/2008,19:23:43
5,2,172735UN01LB,200,001,1393,NMFS-NER,1/9/2008,19:23:43

Appendix B. Support Tables

ACCSP_SAFIS_Grade_Categories	List of species grade codes used in the ACCSP commercial fisheries landings data collection system.
ACCSP_SAFIS_Market_Categories	List of species grade codes used in the ACCSP commercial fisheries landings data collection system.
FVTR_Dealers	Federally permitted dealers in the northeast.
FVTR_Dispositions	Codes to indicate the disposition of the catch for each species.
FVTR_Fishing_Areas	United States statistical areas to indicate where fish are caught.
FVTR_Gear_Codes	List of gears by code and description.
FVTR_Location_To_Area	Table used to assign a ten minute square to statistical area.
FVTR_Mesh_Type	List of mesh types for nets.
FVTR_Ports	A list of ports by code and name.
FVTR_Report_Sources	Codes to indicate the type or level of reporting through the tool selected
FVTR_Species_Codes	Table of acceptable species, market, grade and unit of measure combinations used to collect fisheries data.
FVTR_Trip_Categories	Table with codes to indicate the trip categories, i.e. commercial, party, or charter
FVTR_Units_of_Measure	Units of measure abbreviations used in the collection of the data.
FVTR_Vessels	Table of federally permitted fishing vessels in the northeast.
Raw_Record_Types	List of the number codes to indicate the record types in the data export file.
VERS_Elements	A list of the vessel electronic reporting dynamic data elements.
VERS_Elements_Table	A list of the vessel electronic reporting dynamic data record type so it will be loaded to the correct dynamic data table.
VERS_Gear_Program_Rules	Tells the application which parameters to collect for each gear in order to calculate soak duration

Appendix B. Support Tables, cont'd

VERS_Operator

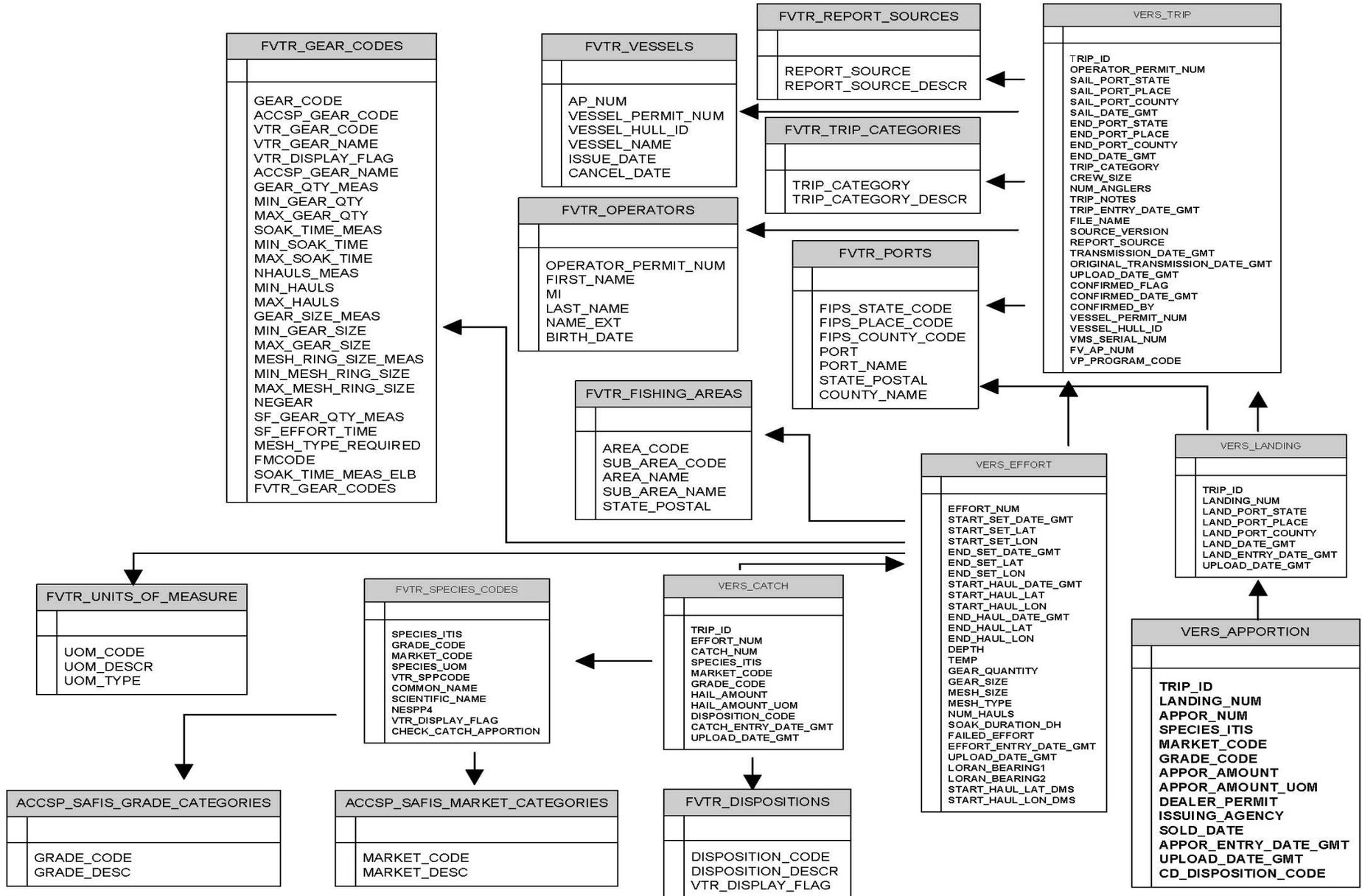
Federally permitted vessel operators

VERS_Programs

The code to indicate the program under which the vessel is collecting data.

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Appendix C. EVTR Data Model



Appendix D. Assignment of point locations to ten minute squares

Statistical areas are derived based on the latitude, longitude and ten minute square associated with a point location. The region must be broken down into a grid of ten minute squares (Fig. 1) based on the ten minute square assignment shown in Table 1. Each ten minute square is assigned an identifier (LOC value) based on the latitude degree, longitude degree and the latitude and longitude minutes (Table 1). The identifier is a six character value; for example the ten minute square corresponding to a point at 41°33.5400' N and 69°24.3200' W would have LOC value of 416943. Applications can then use the FVTR_Location_To_Area to find the statistical area value that corresponds to the calculated LOC value.

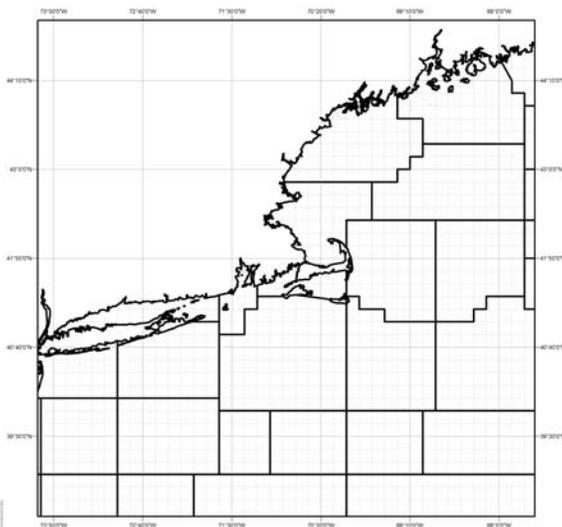


Table 1. The logic used to assign a corresponding ten minute square to a point location.

		Minutes Longitude					
		60-50	50-40	40-30	30-20	20-10	10-0
Minutes Latitude	50-60	11	21	31	41	51	61
	40-50	12	22	32	42	52	62
	30-40	13	23	33	43	53	63
	20-30	14	24	34	44	54	64
	10-20	15	25	35	45	55	65
	0-10	16	26	36	46	56	66

Appendix E. Glossary

Apportionment: The assignment of the landed catch to seafood dealers.

Effort Start Set: The time when the gear is first placed in the water and the setting activity commences.

Effort End Set: The time when the gear is fully deployed and begins to fish.

Effort Start Haul: The time when retrieval of the gear begins and at least part of the gear ceases to fish with full effectiveness.

Effort End Haul: The time when the gear is fully retrieved and is aboard the vessel.

Fishing Trip: The period of time from when a fishing vessel leaves port with an empty hold to attempt the harvest of fish until the offload or transfer of *all* fish/fish product from those harvesting attempts; or the period of time from when a fishing vessel leaves port with an empty hold and returns to port after not successfully having caught any fish.

Subtrip: A subdivision of a fishing trip for each unique statistical area, gear type, and gear configuration (mesh size) fished on a given trip.

Ten Minute Square: Refers to a single cell or 'square' within a gridded partition of geographic locations. The dimension of each cell is ten minutes of latitude by ten minutes of longitude.

Universal Time Coordinated (UTC): The international time standard (sometimes used synonymously with Greenwich Mean Time (GMT))

Varchar: Variable length format (data type) for character data values.

Appendix F: Trip Identifier Definitions

Definitions Currently In Use

Northeast reporting regulations (50 C.F.R. 648.2): Fishing trip or trip means a period of time during which fishing is conducted, beginning when the vessel leaves port and ending when the vessel returns to port.

Atlantic Coast Cooperative Statistics Program: Fishing Trip - A period of time over which fishing occurs. The time spent fishing includes configuring, deploying, and retrieving gear, clearing animals from the gear, and storing, releasing or discarding catch. When watercraft are used, a fishing trip also includes the time spent traveling to and from fishing areas or locales and ends when the vessel offloads product at sea or returns to the shore. When fishing from shore or man-made structures, a fishing trip may include travel between different fishing sites within a 24-hour period.

Proposed Electronic Log Book (FLDRS)

For the purposes of catch monitoring, a fishing trip is the period of time from when a fishing vessel leaves port with an empty hold to attempt the harvest of fish until the offload or transfer of *all* fish/fish product from those harvesting attempts; or the period of time from when a fishing vessel leaves port with an empty hold and returns to port after not successfully having caught any fish.

Table 2. Events that may trip start or end by Reporting Program

Current reporting System					VTR	VTR	NEFOP	VMS
EVENTS					RESULT	TRIP DEFINITION	TRIP DEFINITION	TRIP DEFINITION
depart port	set gear	return to port			No VTR	no gear was hauled - not a fishing trip	dock to dock - trip ends when vessel returns to port	demarc to demarc
depart port	attempt to fish, but trip is cut short because of mechanical problems with no catch actually being landed (one sub-trip)	return to port	n/a		single VTR	trip ends at first port	dock to dock - trip ends when vessel returns to port	demarc to demarc
depart port	fish a single mesh, stat area, and gear type (one sub-trip)	return to port	offload catch at a single dealer/port	n/a	single VTR	trip ends at point of offload	dock to dock - trip ends when vessel returns to port	demarc to demarc
depart port	fish a single mesh, stat area, and gear type (one sub-trip)	return to port	offload catch at multiple dealers/ports	n/a	single VTR	trip ends when all catch is offloaded	dock to dock - trip ends when vessel docks at first port	demarc to demarc - trip ends when vessel first crosses demarc
depart port	fish multiple mesh, stat areas, or gear types (multiple sub-trips)	return to port	offload catch at a single dealer/port	n/a	multiple VTRs	trip ends at point of offload	dock to dock - trip ends when vessel returns to port	demarc to demarc
depart port	fish multiple mesh, stat areas, or gear types (multiple sub-trips)	return to port	offload catch at multiple dealers/ports	n/a	multiple VTRs	trip ends when all catch is offloaded	dock to dock - trip ends when vessel docks at first port	demarc to demarc - trip ends when vessel first crosses demarc

Current reporting System					VTR	VTR	NEFOP	VMS
EVENTS					RESULT	TRIP DEFINITION	TRIP DEFINITION	TRIP DEFINITION
depart port	engage in broken scallop trip on a single sub trip	return to port	offload none or partial catch	return to sea, complete fishing activity, return to port, offload all remaining catch	single VTR	trip ends when all catch is offloaded	trip ends when any portion of the catch is offloaded	demarc to demarc - trip ends when vessel first crosses demarc
depart port	engage in broken scallop trip on a multiple sub trip	return to port	do not offload catch	return to sea, complete fishing activity, return to port, offload all remaining catch	multiple VTRs	trip ends when all catch is offloaded	trip ends when any portion of the catch is offloaded	demarc to demarc - trip ends when vessel first crosses demarc
depart port	engage in herring fishery w/ at sea transfer	remain at sea	offload to herring at-sea carrier vessel	remain at sea, resume fishing activity, starting new sub-trip	single VTR	trip ends when all catch from each sub-trip is offloaded	dock to dock - trip ends when catcher vessel returns to port	demarc to demarc
depart at-sea carrier	engage in herring fishery w/ at sea transfer	remain at sea	offload to herring at-sea carrier vessel	remain at sea, resume fishing activity, starting new sub-trip	single VTR	trip ends when all catch from each sub-trip is offloaded	dock to dock - trip ends when vessel returns to port	n/a
depart at-sea carrier	engage in herring fishery	return to port	offload catch at a single dealer/port	n/a	single VTR	trip ends when all catch from each sub-trip is offloaded	dock to dock - trip ends when vessel returns to port	n/a
depart port	fish in state waters	return to port	offload partial catch	return to sea, complete fishing activity, return to port, offload all remaining catch	single VTR	trip ends when all catch is offloaded	dock to dock - trip ends when vessel docks at first port	demarc to demarc

Appendix G: Trip Identifier Definitions

Definitions in current use

Northeast reporting regulations (50 C.F.R. 648.2): Trip Identifier means the complete serial number of the vessel logbook page completed for that trip.

Atlantic Coast Cooperative Statistics Program: Fishing Trip: Unique Identifier for Commercial Fisheries - The unique identifier for commercial fisheries trip data is the trip start, the vessel identifier, and trip number when a vessel is involved; the trip start, the individual identifier, and the trip number when a vessel is not involved. Reporting of the unique identifier is required of both commercial fishermen and dealer on all submitted reports.

Proposed New Unified Definition of a trip

A concatenation of the federal vessel permit number (6 digits) and the year (2 digits), month (2 digits), day (2 digits) and hour (2 digits based upon military time) when the trip identifier was created (e.g., 12345609051210).

The year, month, day and hour portion of the trip identifier can represent any point during the trip between the time of sailing and time of landing. If a partial trip transmission occurs (e.g., daily catch reports), the trip identifier must be generated before any partial trips are transmitted.

Once a trip identifier is generated by the ELB program it can not be changed. It becomes the critical link to identify the trip throughout all of the fisheries dependent data collection systems.