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Report of the STACTIC Working Group on Satellite Tracking

28-30 October 1997

NAFO Headquarters, Dartmouth, N.S., Canada

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Report of the STACTIC Working Group on Satellite Tracking

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NAFO Headquarters, Dartmouth, N.S., Canada

1. Opening of the Meeting

The Executive Secretary opened the Meeting and welcomed the Delegations from Canada, Estonia, European Union, Iceland, Japan, Norway, Russia and United States of America (Annex 1). He informed that the Chairman of the Working Group, D. Bevan (Canada), could not attend the Meeting and proposed to elect a Chairman.

The delegate from Canada nominated O. A. Davidsen, delegate from Norway for the Chair, and this nomination was **adopted** by the Working Group.

2. Appointment of Rapporteur

Tony Blanchard (Canada) was appointed Rapporteur.

3. Adoption of Agenda

The agenda was discussed and **adopted** with the change of moving item 6 to position 4 and items 4 and 5 ahead respectively (Annex 2).

4. Consideration of a hail system that can operate using satellite technology and establish the need for formats and data exchange protocols

It was **agreed** that the Working Group would evaluate the present hail system and outline a hail system that would fulfil the mandate and provide a sound basis for operations.

The Executive Secretary stated that there had been no changes to the hail system with respect to automation since the April meeting, and that no system was in place to receive satellite data at the NAFO Secretariat. The Executive Secretary also stated that in the future there may be many inspection vessels in the NRA, and there should be agreement on an automatic communication system to be used to communicate hails to Contracting Parties with an inspection presence. The Secretary added that there should be a connection between the hail system and satellite tracking as outlined in Part VI of the Conservation and Enforcement Measures.

It was **agreed** that the Conservation and Enforcement Measures are important to the discussions of the Working Group, and that the mandate for the group is outlined in FC Working Paper 97/17 (Annex 3).

The delegate from the European Union emphasized the technical nature of the Working Group and that it should discuss the satellite system in terms of the Pilot Project as outlined in Part VI of the NAFO Conservation and Enforcement Measures. It was also stated that the hail system is presently working fine and that the vessel monitoring system is different from the hail system and that the Working Group cannot move outside its' mandate. The Working Group can discuss infrastructure at the Secretariat but cannot provide alternatives to the present hail system.

The delegate from Canada stated that positional information is an addition to hails and that the satellite is the method of transmission. The delegate from Canada gave a presentation on a proposed automatic hail system using satellites in which a contracted service provider would

receive hails from Contracting Parties in all forms, convert them to a standard protocol and then forward to the Secretariat. After considerable debate it was agreed that this is the model that the Working Group would recommend to the Fisheries Commission. The delegate from the EU entered a reservation on this point.

It was noted that there are two systems;

- Hail system that uses satellites or not;
- Vessel Monitoring System

Under Agenda item 5, the Working Group considered a hail system that can use satellite technology, with a view to integrate both.

There was a discussion concerning the formats for messages. It was **agreed** that things should be kept simple and standard formats should be used when forwarding messages to the Executive Secretary.

To address the issue of possible needs for data exchange protocols (item 4 of the Agenda) the Working Group agreed that the best approach would be for the Working Group to try to map the current reporting requirements as per Part III of the conservation and Enforcement Measures into a possible standardized format. For this purpose, the Working Group took the North Atlantic Fisheries Ministers Conference (NAFMC) recommendations of May 1997 as their point of reference (GF/97-470 circulated to Contracting Parties on 22 September 1997).

The records so produced are attached to the Working Group report. The Working Group took note that the above mentioned record formats are reproduced in the Working Group report only to demonstrate what is possible by applying a format which may be suitable also for automatic processing by the Secretariat (Annex 4).

5. Consideration of hardware and software which should be installed at the NAFO Secretariat

The Working Group **agreed** that there is a need for a minimum network facility at the Secretariat to handle available data. The delegate from Canada noted that the maintenance of a network is not trivial and that there are options that don't require a lot of in house expertise or maintenance contracts. It was **agreed** that this system should be kept simple and not a large strain on the resources of the Secretariat.

There was discussion about the message transfer agent between Contracting Parties, the Secretariat, and Contracting Parties with an inspection vessel presence. It was **agreed** that there are a variety of options for message transfer, each with a different degree of security. When choosing the methods of communication, Contracting Parties should keep in mind the level of security required. Currently, the Secretariat sends and receives hails from the EU via X-25 and kermit, and sends hails to Canada via E-mail. The Working Group is confident that the automatic message handling is possible and can be achieved at the Secretariat.

The Working Group identified the X-25 protocol as one possible medium to transfer data between Contracting Parties and the Secretariat.

The delegate from Canada asked whether any Contracting Party would volunteer to send daily position reports to the Secretariat to test the system.

6. Consideration of a standardized format for satellite tracking reports at the Secretariat

It was noted that the meeting of the fisheries ministers in the Faroe Islands called for a standard format for reporting from sea.

The delegate from Iceland gave a presentation on a vessel tracking system currently being used in Iceland demonstrating the North Atlantic Format STACTIC W.G. W.P. 97/10 (Annex 5).

It was also **agreed** that the Working Group would look at the format being used by the EU for their operation of satellite monitoring systems. It was agreed that the Working Group would look at the format presented by Iceland with a view to look at the data items that are relevant to satellite tracking and propose standard message formats. A subgroup was formed to develop standard report formats as reported in STACTIC W.G. W.P. 97/11 (Annex 6), and the delegate from the EU stated that this file format could be used as the standard for the remainder of the pilot project. Such a format offers flexibility for additional data elements to be represented also.

Using conventional Vessel Monitoring Systems (VMS), NAFO divisions can only easily be reported as the division into which the vessel has moved after the event. Bringing this to the attention of the Fisheries Commission, the Working Group took note that the Fisheries Commission may want to consider identifying the VMS position reports by other names than "MOVE", etc. for a possible permanent NAFO VMS.

The delegate from Russia made a presentation on a satellite tracking system being used by Russia in various places around the world. The system collects a variety of information for use by enforcement and science. There is a standard report format. The system is piloting the use of "black box" technology along with electronic logs (STACTIC W.G. W.P. 97/13).

It was **agreed** that there may be no opportunity for the Working Group to discuss black box technology under the terms of the meeting.

There was some discussion as to the need of return messages for hails sent to the Secretariat. It was **agreed** that there should be an option of error messages including; message unreadable, inconsistent data, and sequence error.

7. Review of appropriateness of the available data bases with respect to vessel positions and hails with a view to improving the data base and its appropriate distribution

The Executive Secretary stated that there is no guidance from the Conservation and Enforcement Measures for data management other than the requirement for the distribution of hails to Contracting Parties with an inspection vessel. All hail data are kept in a data base (ACCESS) at the Secretariat.

The Working Group was satisfied with the present approach of the relational data base by the Secretariat. However, the working group encourages the Secretariat to look into the matter of having a consultant establish interfaces with a Spread Sheet such as Excel, in the event of future information requirements from the Secretariat. It should also be noted that the Secretariat does not have authority from any specific regulation or provision to make analysis of any data.

The Working Group **recommended** that the issue of data bases and data distribution should be reviewed in light of the consultants recommendations.

8. Costs associated with the implementation of satellite tracking/hails by the NAFO Secretariat

The Working Group noted that funds totalling \$35,000 Cdn were allocated for the purposes of satellite tracking technology. The Working Group felt that the budget allocated to the task is adequate for the 1998 period, although there may be some limits. The working group also noted that although the allocated funds are sufficient for 1998, it should be recognized that a permanent budget allotment will be required if a permanent system is adopted.

In view of the limited funding, and the temporary nature of the pilot project, the working group recommended that where practical, the Secretariat lease rather than purchase equipment.

9. Recommendations to the Fisheries Commission and General Council (finance)

Standard satellite tracking reports **should be utilized** during the 1998 trial period and reports to be based on STACTIC W.P. 97/11 (Annex 6). It was the view of the majority of the working group that a contracted outside service provider would be the best option to handle the communication aspect (between Contracting Parties and Secretariat) of the satellite tracking pilot project. It was noted that the possibility exists that a contracted service provider to handle the communication aspect can be located wherever found appropriate. The data received at the Secretariat will be processed and distributed by the Secretariat.

It was **recommended** that Hail messages sent from Contracting Parties to the NAFO Secretariat conform with the attached annex (Annex 4) entitled "Example of Formats Which Would Allow for the Electronic Transmission of NAFO Hails from Contracting Parties to the NAFO Secretariat.

Canada has agreed to assist the Secretariat with any informatics problem and there was a general consensus that the Secretariat could call upon any Contracting Party with relevant experience for assistance.

It was noted by the Executive Secretary, that, given the NAFO procedures with regard to the approval and adoption of reports and pursuant to the provision of NAFO Convention, as per article XI and XII of the NAFO Convention, the Secretariat won't be in a position to officially implement any system before February 1998, however, all required research could be done during this time.

10. Other business

A presentation was made by a Canadian information technology firm "Satlantic" on vessel detection with synthetic aperture radar.

11. Adjournment

The meeting was adjourned at 1630 hrs on 30 October 1997.

Adoption of the Report

The Report has been adopted by the Fisheries Commission through a standard procedure of one (1) month of review, during 31 October-30 November 1997 (GF/97-541, 31 Oct 97).

Annex 1. List of Participants

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SECRETARIAT

L. I. Chepel, Executive Secretary

T. Amaratunga, Assistant Executive Secretary

G. Moulton, Statistical Officer

B. Cruikshank, Senior Secretary

Annex 2. Agenda

1. Opening of the Meeting by the Chairman, O. A. Davidsen (Norway)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Consideration of a hail system that can operate using satellite technology and establish the need for formats and data exchange protocols
5. Consideration of hardware and software which should be installed at the NAFO Secretariat
6. Consideration of standardized format for satellite tracking reports at the NAFO Secretariat
7. Review of the appropriateness of the available data bases with respect to vessel positions and hails with a view to improving the data base and its appropriate distribution
8. Costs associated with implementation of satellite tracking/hails by the NAFO Secretariat
9. Recommendations to the Fisheries Commission and General Council (finance)
10. Other business
11. Adjournment

Annex 3. Mandate of Working Group
(FC Working Paper 97/17-from 19th Annual Meeting)

STACTIC Working Group

Intersessional Meeting of Technical Experts

An intersessional meeting of technical experts will be held at a time and place to be established by the Executive Secretary to deal with the following:

- Improve the satellite tracking system introduced under the 1995 pilot project. This will include taking steps, as needed, to develop formats and data exchange protocols, and propose changes to the equipment at the NAFO Secretariat so that real time data on vessel positions can be received by the Secretariat and be forwarded to those Contracting Parties operating inspection vessels in the NAFO Regulatory Area.
- Develop a hail system that can operate using satellite technology and establish the needed formats and data exchange protocols. Propose changes to the equipment of the NAFO Secretariat needed to implement the system.
- Consider the appropriateness of the available databases with respect to vessel positions and hails with a view to improving the database and its appropriate distribution.

**Annex 4. Example of Formats Which Would Allow for the Electronic
Transmission of NAFO Hails from Contracting Parties
to the NAFO Secretariat**

NOTES

- a) The formats herein conform with the requirements for the NAFO Hails System as set out in FC Document 97/1 Part III Annex I Hail System Message Format.
- b) The formats consist of variable length delimited records, and are based on systems currently in use in the EU, Iceland and Norway.
- c) The variable length record is preferred over a fixed length record as some Contracting Parties collect more information from their vessels than is required by NAFO, and are forwarding the entire record to NAFO. The format is conducive to extraction of the required data fields by the receiving parties.
- d) The following convention is used in this paper: //FIELD NAME/field value//, where the field name is shown in uppercase, followed by the character "/", followed by the field value in lowercase. Fields are separated by "//".
- e) Each record begins with the string //SR// to indicate the Start of the Record.
- f) Each record ends with the string //ER// to indicate the End of the Record.
- g) Character fields (CHAR) shall conform with the ISO 8859.1 character set standard.
- h) Country codes used for addressee (AD) and sender (FR) shall conform with the ISO 3166 (1993) standard. E/F 7.3 states that user-assigned country codes shall start with the character "X", therefore it is proposed that the code XNS be used to designate the NAFO Secretariat, the addressee for hail messages.

NAFO HAILS SYSTEM - NAFO FC Document 97/1 Part III Annex I Hail System Message Format

1.1 ENTRY HAIL

//SR		Start Record
//FR/from	(ISO-3)	
//AD/addressee	XNS	
//SQ/sequence number	NUM(4)	
//NA/name of vessel	CHAR(40)	
//RC/call sign	CHAR(8)	
//XR/external identification letters and numbers	CHAR(14)	
//DA/date	CHAR(8)	YYYYMMDD
//TI/time	NUM(4)	HHMM UTC
//LA/latitude	CHAR(5)	NDDMM
//LO/longitude	CHAR(6)	WDDMM
//TM/indication of the message code	CHAR(3)	ENT
//DI/NAFO Division into which the vessel is about to enter.	CHAR(2)	
<p>//HO/total round weight of fish by species (3 alpha codes) on board in kilograms rounded to the nearest 100 kilograms. Allow several pairs of fields, consisting of species + weight, with each field separated by a space. e.g. //HO/species weight species weight species weight//</p>		
	SPECIES	CHAR(3)
	WEIGHT	NUM(7)
		FAO Codes
//MA/name of the Master	CHAR(30)	
//DS/directed species (target species)	CHAR(3)	FAO Codes
<p>Allow several species to be entered, with the values separated by spaces, e.g. //DS/species species species//</p>		
//ER//		End Record

NAFO HAILS SYSTEM - NAFO FC Document 97/1 Part III Annex I Hail System Message Format

1.2 MOVE HAIL

NOTE that FC Document 96/1 Part III states that vessels equipped with devices which enable the automatic transmission of their positions are exempt from the Hail requirements set out in Part III.

//SR	-	Start Record
//FR/from	(ISO-3)	
//AD/addressee	XNS	
//SQ/sequence number	NUM(4)	
//NA/name of vessel	CHAR(40)	
//RC/call sign	CHAR(8)	
//XR/external identification letters and numbers	CHAR(14)	
//DA/date	CHAR(8)	YYYYMMDD
//TI/time	NUM(4)	HHMM UTC
//LA/latitude	CHAR(5)	NDDMM
//LO/longitude	CHAR(6)	WDDMM
//TM/indication of the message code	CHAR(3)	MOV
//DI/NAFO Division into which the vessel is about to enter.	CHAR(2)	
//MA/name of the Master	CHAR(30)	
//DS/directed species (target species)	CHAR(3)	FAO Codes
Allow several fields to be entered, with the fields separated by spaces, e.g. //DS/species species species//		
//ER//	-	End Record

NAFO HAILS SYSTEM - NAFO FC Document 97/1 Part III Annex I Hail System Message Format

1.3 TRANSZONAL HAIL (between NAFO Divisions)

NOTE that FC Document 96/1 Part III states that vessels equipped with devices which enable the automatic transmission of their positions are exempt from the Hail requirements set out in Part III.

//SR	-	Start Record
//FR/from	(ISO-3)	
//AD/addressee	XNS	
//SQ/sequence number	NUM(4)	
//NA/name of vessel	CHAR(40)	
//RC/call sign	CHAR(8)	
//XR/external identification letters and numbers	CHAR(14)	
//DA/date	CHAR(8)	YYYYMMDD
//TI/time	NUM(4)	HHMM UTC
//LA/latitude	CHAR(5)	NDDMM
//LO/longitude	CHAR(6)	WDDMM
//TM/indication of the message code	CHAR(3)	ZON
//MA/name of the Master	CHAR(30)	
//DS/directed species (target species)	CHAR(3)	FAO Codes

Allow several fields to be entered, with the fields separated by spaces,
e.g. //DS/species species species//

//ER//	-	End Record
--------	---	------------

NAFO HAILS SYSTEM - NAFO FC Document 97/1 Part III Annex I Hail System Message
Format

1.4 EXIT HAIL

//SR	-	Start Record
//FR/from	(ISO-3)	
//AD/addressee	XNS	
//SQ/sequence number	NUM(4)	
//NA/name of vessel	CHAR(40)	
//RC/call sign	CHAR(8)	
//XR/external identification letters and numbers	CHAR(14)	
//DA/date	CHAR(8)	YYYYMMDD
//TI/time	NUM(4)	HHMM UTC
//LA/latitude	CHAR(5)	NDDMM
//LO/longitude	CHAR(6)	WDDMM
//TM/indication of the message code	CHAR(3)	EXI
//DI/NAFO Division from which the vessel is about to leave.	CHAR(2)	
//CA/catch in round weight taken in the Regulatory Area by species (3 alpha codes) in kilograms (rounded to the nearest 100 kilograms). Allow several pairs of fields, consisting of species + weight, with each field separated by a space. e.g. //CA/species weight species weight species weight//		
	SPECIES	CHAR(3)
	WEIGHT	NUM(7)
		FAO Codes
//MA/name of the Master	CHAR(30)	
//ER//	-	End Record

NAFO HAILS SYSTEM - NAFO FC Document 97/1 Part III Annex I Hail System Message Format

1.5 TRANSHIPMENT HAIL

//SR	-	Start Record
//FR/from	(ISO-3)	
//AD/addressee	XNS	
//SQ/sequence number	NUM(4)	
//NA/name of vessel	CHAR(40)	
//RC/call sign	CHAR(8)	
//XR/external identification letters and numbers	CHAR(14)	
//DA/date	CHAR(8)	YYYYMMDD
//TI/time	NUM(4)	HHMM UTC
//LA/latitude	CHAR(5)	NDDMM
//LO/longitude	CHAR(6)	WDDMM
//TM/indication of the message code	CHAR(3)	TRA
<p>//KG/total round weight by species (3 alpha codes) to be transshipped in kilograms (rounded to the nearest 100 kilograms) Allow several pairs of fields, consisting of species + weight, with each field separated by a space. e.g. //KG/species weight species weight species weight//</p>		
	SPECIES	CHAR(3) FAO Codes
	WEIGHT	NUM(7)
//MA/name of the Master	CHAR(30)	
//ER//	-	End Record

Annex 5. Presentation by Delegate of Iceland re North Atlantic Format

The North Atlantic Format

Field name	Field code	Type	Contents	Remarks	Mand/Opt
Start record	SR			Indicates start of the record	M
From	FR	Char*5	ISO-3/NAFO/NEAFC	Address of the transmitting state	M if below states
Address	AD	Char*5	ISO-3/NAFO/NEAFC	Address of the receiving state	M
Trip N°	TN	Num*3	001 - 999	Number of the fishing trip in current year	M
Sequence N°	SQ	Num*3	001 - 999	Serial number of the message in current year	M
Int. fleet N°	IR	Char*12	EU	Internal fleet registration number	O
Ext. fleet N°	XR	Char*12	Side number	External fleet registration number	O
Radio call sign	RC	Char*8	ITU code	The radio call sign of the vessel	M
Vessel Name	NA	Char*30	ISO 8859.1	Name of the vessel	O
Flag state	FS	Char*3	ISO-3	Code for the vessels flag state	O
Time	TI	Num*6	HHMMSS (UTC)	eg. //TI123500 = 12:35 UTC	M
Date	DA	Num*6	YYMMDD	eg. //DA970122 = 22 January 1997	M
Reporting area	RA	Char*6	ICES/NAFO codes	Code for the fishing area	M
Type of message	TM	Char*4	Codes	See note 1	M
Activity	AC	Char*3	Codes	See note 2	M
Lat	LA	Snum*8	±99.9999 (WGS-84)	eg. //LA62.3544 = 62°35'44N	M
Long	LO	Snum*9	±999.9999 (WGS-84)	eg. //LO-021.3455 = 021°34'55W	M
Speed	SP	Num*3	Knots * 10	eg. //SP105 = 10.5 knots	O
Course	CO	Num*3	360° scale	000 - 359 eg. //CO270 = 270°	O
Catch items	CA	Char*3/Num*7	FAO Codes, 10 pairs	eg. //CA/COD 5000 HAD 3000 = 5 tons Cod and 3 tons Haddock	O
Items in Hold	HO	Char*3/Num*7	FAO Codes, 10 pairs	Total items in hold	O
Other Items	KG	Char*3/Num*7	FAO Codes, 10 pairs	Can be used for information on items temporarily stored on board	O
Count Groups	CG	Char*3/Num*7	FAO Codes, 10 pairs	Used for detailed information regarding the catch	O
Agreement	AG	Char*4		Used for reference to special fishing or licensing agreements	O
Control Point	CP	Char*10	ISO 8859.1		O
Forward To	FT	Char*5	ISO-3/NAFO/NEAFC	Address of the secondary receiving party	O
Transfer To	TT	Char*8	ITU code	Radio call sign of the receiving vessel	O
Transfer From	TF	Char*8	ITU code	Radio call sign of the vessel loaded from	O
Port Name	PO	Char*20	ISO 8859.1	Name of the port	O
Master Name	MA	Char*30	ISO 8859.1	Name of the vessels master	O
National Zone	NZ	Char*3	ISO-3	Code for the National Zone	O
Platform Number	PL	Num*9			O
Position Quality	PQ	Char*1	ARGOS code	Code as received from ARGOS LES	O
Authenticity Code	AU	Hex*8	Hexadecimal	Comparison code for the message	O
Return Status	RS	Char*3	Codes	Used to indicate "ACK" / "NACK" (Acknowledge / Not Acknowledge)	O
Return Error Number	RE	Num*3	Lookup Table	Codes indicating errors as received at operation centre	O
Text String	MS	Char*32	ISO 8859.1	Text	O
Days Fished	DF	Num*5			O
Global Area Grid N°	GG	Num*2	FAO Glob Area Gnd		O
Gear	GE	Char*3	FAO Code		O
Vessel Owner	VO	Char*60	ISO 8859.1	Name of the vessel owner	O
Vessel Length	VL	Num*3	Overall length meters	Total length of the vessel in meters	O
Vessel Gross Tonnage	VT	Num*4	GT 1969 Convention		O
Zone Name	ZN	Char*6	ICES/NAFO codes	Name of Zone or Area if type of message is "MOVE"	O
Items Transferred	IT	Char*3/Num*7	FAO Codes, 10 pairs	Items transferred between ships	O
End record	ER			Indicates end of the record	M
Trailer start	TS	Max. 80		Space for extra information	O
Trailer end	TE			Indicates end of the trailer	M if TS used

Messages received from the Icelandic trawler "Vestmannaey" TFLE in the "North Atlantic Format", automatically generated from a software onboard the vessel, with a full automatic transmitting process via BoaTrack.

Initialiasion message, 4th September 1997.

//SR//AD//ICE//RC//TFLE//FS//ICE//XR/1273//NA//VESTMANNAEY//VL/60//VT/923
//VO/Bergur Huginn ehf. Vestmannaeyjar//TN/5//SQ/79//TI/234307//DA/970904
//RA/Va//TM//INIT//LA/63.1222//LO/-021.2794//SP/107//CO/090//AC//STM
//AU//ISLX//MA//Birgir Þór Sveinsson//ER//

Catch Report 5th September 1997.

//SR//AD//ICE//RC//TFLE//TN/5//SQ/80//TI/150559//DA/970905//RA/Va//TM//CATC
//LA/??/??/??/??/??/??//SP/032//CO/270//AC//FIS//CA//DSR 4000//ER//

Type of Message is: CATCH

Vessel: Vestmannaey
 Reg: 1273
 Owner: Bergur Huginnshel
 Master: Birgir Þor Svemrisson

Position: 65 22.72N 22 22.22W
 Date: 05/09/1997 150559

Call sign: TFJLC
 GRT: 923

Speed: 3.2
 Course: 270

Flag: ICE
 Length: 60

Adr: ICE
 Iceland
 Area: Va
 Iceland grounds

Activity: Fishing
 Nat. Zone:
 Agreement:
 Days Fished:

Optional text string:

*** REGISTRATION OF CATCH ***

Press "F2" to Send:

Item 1:	DSR	4.000	Deep-sea red
Item 3:			
Item 5:			
Item 7:			
Item 9:			

Item 2:	
Item 4:	
Item 6:	
Item 8:	
Item 10:	

Annex 6. Standardized File Format for Satellite Tracking Reports at the NAFO Secretariat

Definition of mandatory data elements

Data Element	Field Code	Maximum Width	Mandatory/Optional	Definition/Remarks
Start of Record	SR		M	
From	FR	3	M	Alpha-3 ISO country code
Addressec	AD	4	M	XNS
Sequence Number	SQ	4	M	
Name	NA	40	M	Vessel detail
International radio call sign	RC	8	M	Vessel detail
External identification	XR	14	M	Vessel detail
Flag State	FS	3	M	Alpha-3 ISO country code
Date	DA	8	M	YYYYMMDD
Time	TI	4	M	IHHMM
Latitude	LA	5	M	NDDMM
Longitude	LO	6	M	WDDMM
Type of Message	TM	3	M	ENT/EXI/MOV
NAFO Division*	DI	2	M	NAFO division in which the vessel has entered
End Record	ER		M	

*to be left blank if the report is an "exit"

Definition of optional data elements

Data Element	Field Code	Maximum Width	Mandatory/Optional	Definition/Remarks
Name of the Master	MA	30	O	
Target Species	DS	3	O	FAO codes; allowance for multiple main species

Note: Character set: ISO 8859.1. A data transmission is structured in the following manner: - a double slash ("/") and a field code indicate the start of a data element; - a slash ("/") separates the field code and the data. Optional data elements have to be inserted between "Start of record" and "End of record".

Example of messages based on the standardized file format

```

//SR//FR//NR//AD//XNS//SQ345//RC//FLN//XRV//5943//NA//VESSEL NAME//
FS//RUS//DA//YYMMDD//T//0400//TM//MOV//DI//3M//LA//N4721//LO//W04640//ER//
Optional elements: //MA//MASTERS NAME//DS//DIRECTED SPECIES//

```

NAFO Regulations: PART III.E. AND VI.B. OF THE CONSERVATION AND ENFORCEMENT MEASURES APPLIES