

# INTER-AMERICAN TROPICAL TUNA COMMISSION

## 93<sup>RD</sup> MEETING

San Diego, USA  
August 24<sup>th</sup>, 2018

### DOCUMENT IATTC-93-05

#### SOME CONSIDERATIONS RELATED TO USE OF VMS IN THE EPO AND THE POSSIBLE DEVELOPMENT OF A STAND-ALONE IATTC VMS SCHEME

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#### 1. Introduction

The negotiators of the Convention of Antigua did not introduce in its text a reference to the use of VMS. However, several provisions of the Convention call for the adoption by the Commission of measures not specifically contemplated in the Convention, but which are necessary to achieve its objective.

For instance, Article VII on *Functions of the Commission* that states in its paragraph 1 v) that it has the responsibility to adopt “***adopt any other measure or recommendation, based on relevant information, including the best scientific information available, as may be necessary to achieve the objective of this Convention, including non-discriminatory and transparent measures consistent with international law, to prevent, deter and eliminate activities that undermine the effectiveness of the conservation and management measures adopted by the Commission.***”

Likewise, paragraph 9 of article XVIII of the Convention, which refers to the *Implementation, compliance and enforcement by Parties*, states that “***The Parties whose coasts border the Convention Area or whose vessels fish for fish stocks covered by this Convention or in whose territory the catch is landed and processed shall cooperate with a view to ensuring compliance with this Convention and with a view to ensuring the application of the conservation and management measures adopted by the Commission, including through the adoption of cooperative measures and schemes, as appropriate.***”

On the other hand, Annex 3 of the Antigua Convention refers to the functions of the Committee for the Review of Implementation of Measures Adopted by the Commission; in its subsection c), it empowers the Committee to “*provide recommendations relating to the implementation of, and compliance with, conservation and management measures*”.

In a manner consistent with these provisions, in June 2004, the Commission approved Resolution [C-04-06](#) on the establishment of a vessel monitoring system (VMS). Said resolution states that “*Each Party with tuna-fishing vessels 24 meters or more in length operating in the Eastern Pacific Ocean and harvesting species for which the Commission has established conservation and management measures shall, by January 1, 2005, or as soon as possible thereafter, establish a satellite-based vessel monitoring system (VMS); except that a Party that already has such a program in effect shall be deemed to have satisfied this requirement.*”

The resolution was amended in June 2014, leading to Resolution [C-14-02](#) mainly for making mandatory by January 1<sup>st</sup>, 2016 the use of VMS in all commercial fishing vessels 24 meters or more in length operating in the Eastern Pacific Ocean (EPO) and harvesting tuna or tuna-like species.

Moreover, this resolution states that “Each CPC shall provide to the Director, by 31 May, 2017, a progress report on its VMS consistent with this resolution. The Commission will discuss how best to proceed with future consideration of VMS to support its conservation and management program at its annual meeting in 2017, including the possible development of a stand-alone IATTC VMS scheme”.

For this purpose, the Secretariat sent memorandum 215-410, dated 16 May 2017, to all CPCs requesting that the report be sent and suggesting, since no specific format had been established, that the following topics be referred to:

- 1) If all commercial fishing vessels 24 meters or more in length operating in the EPO and harvesting tuna or tuna-like species have been equipped with a VMS.
- 2) When the VMS equipment has been installed and when it became to be operational.
- 3) If the VMS has been used to transmit the data required in the relevant IATTC resolutions, including Resolutions C-03-04 and C-03-05.
- 4) Suggestions to optimize the utility of using VMS.

## 2. Contents of the reports received from the CPCs

In response to the memorandum, reports were received from 17 CPCs. They were posted on the IATTC website (see <https://www.iattc.org/CatchReportsDataENG.htm>) and are summarized in the following comparative table (which does not include the 6 CPCs that do not have purse-seine or longline fishing vessels operating in the EPO – Bolivia, Canada, Honduras, Kiribati, Indonesia, and Liberia):

	BLZ	CHN	COL	KOR	CRI	ECU	SLV	USA	FRA	GTM	JPN	MEX	NIC	PAN	PER	TWN	EU	VTU	VEN	CHL
Sent their report on VMS use																				
Fishing vessels 24 m or more in length in the EPO harvesting tuna that have VMS													-					-	-	
VMS use pursuant to Res. C-04-06 since January 1 <sup>st</sup> , 2005				?									-					-	-	
Year when the use of VMS began	2003	2006	2008	?	2014	2008	2006	2016	2012	2010	2005	2004	-	2005	2015	2007	2010	-	-	?
VMS are used to transmit data pursuant to Res. C-03-04 and C-03-05	N A	-				-	?	?	?	?	?	?	-	?		?	?	-	-	
Issued suggestions for the improvement of VMS use	-	-	-		-	-	-	-		-	-	-	-	-	-	-	-	-	-	
VMS cost. The owner (O) or the government (G) pays	?	-	?	?	?	-	?	?	?	?	?	G	-	?	?	?	?	-	-	O
Requirement of VMS use to vessels with other flags that fish in their EEZ	?	-	?	?	?	-	?	?	?	?	?	?	-	?	?	?	?	-	-	-
Green, Fulfilled. Red, Not fulfilled. Yellow, Not applicable. ? Not included in the report. - No information available.																				

## 2.1 How to optimize the use of VMS

Three members of the IATTC made comments regarding the optimization of the use of VMS:

Member	Comments
CRI	Review the national regulations regarding the use of VMS and strengthen it, if applicable.
	Consider alternative systems that complement the VMS system, such as AIS or others.
	Improve the use of VMS information for research subjects.
COL	They are currently working at a national level to make progress in the update of VMS by having equipment with a better satellite coverage, greater confidentiality in data transmission and more safety at sea.
FRN	Align the standards of VMS use with the IATTC recommendations.

Besides these suggestions, it is worth remembering the main purposes and functions of a VMS scheme, in order to keep in mind the parameters that must be taken into account for its optimization. Inspired by the definition contained in the legislation of a member of the IATTC, it can be said that they are:

- a) To know the exact location of the route taken by the vessel along its trip as well as the fishing zone;
- b) To improve the information for technical and scientific fishing research;
- c) To improve the management of fisheries resources,
- d) To verify the compliance of closures, as well as of the forbidden or restricted catch areas, and the level of occurrence and recurrence of vessels.
- e) To provide the authorities in charge of safeguarding and human life at sea with vessel-location data.

Thanks to the reports submitted, it can be concluded that these purposes and functions are already fulfilled at the national level in the CPCs involved. In considering the possible development of an independent IATTC VMS scheme, it is necessary to reflect on which of them would be expected to be complied with in the framework of that scheme, particularly if it involves the establishment of a centralized information system in the Secretariat.

To this end, it may be helpful to consider the experience of the other tuna RFMOs.

### 3. Use of VMS in the 5 tuna RFMOs

In the review of the measures adopted by the five tuna RFMOs<sup>1</sup> on the use of VMS, the following similarities and differences can be identified:

- In all the use of VMS is mandatory at least for vessels of 24 m in length and over.
- In WCPFC, there is a centralized VMS program, that is, developed and managed by the Secretariat, which directly receives the data from the vessels.
- In ICCAT, there is also a centralized program for the bluefin tuna fisheries, but which is managed by the CPCs individually and send electronically to the Secretariat the messages received on the position of their respective vessels. In the other fisheries, the data is received and processed in the control center of each flag CPC.

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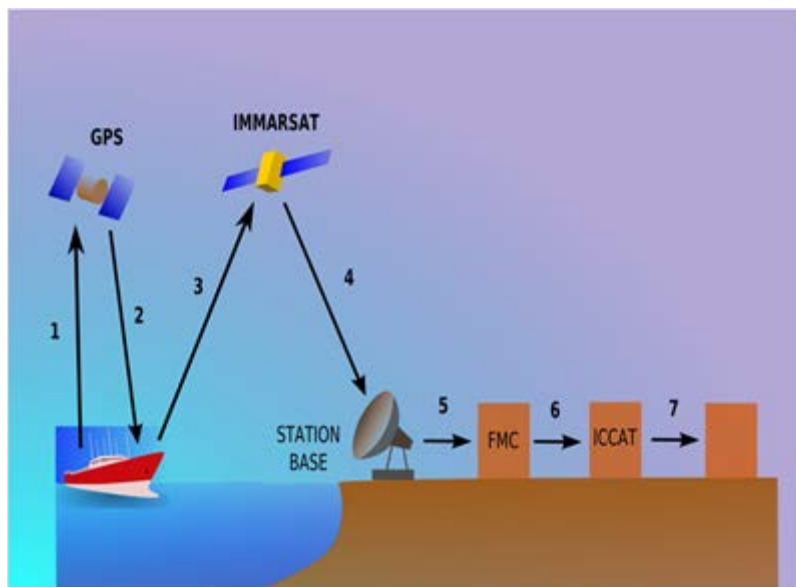
<sup>1</sup> in addition to the IATTC, these are the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Indian Ocean Tuna Commission (IOTC), the Western and Central Pacific Fisheries Commission (WCPFC), and the Commission for the Conservation of Southern Bluefin Tuna (CCSBT).

- In CCSBT, the VMS system for the vessels fishing for southern bluefin tuna must comply with the requirements of the IOTC, the WCPFC, the CCAMLR and the ICCAT in the different areas of overlap with those other commissions. Outside those areas, the requirements of the IOTC apply. Each flag State is responsible for the monitoring and management or the use of the VMS system by its vessels.
- In the IOTC as well as in the IATTC, it is also the flag States that are responsible for the monitoring and management of the use of the VMS system by their respective vessels as well as for providing the Secretariat with a report on its implementation.

In Annex 1, a comparative table is presented which highlights the components of the VMS program in each of the tuna RFMOs. In addition, the current instruments on VMS adopted by each of them are included as Annex 2.

From the experience of the different tuna RFMOs, that of ICCAT regarding the bluefin tuna fisheries seems to be particularly relevant as a starting point for reflecting on the possible adoption of an equivalent system in the IATTC.

In the ICCAT system, each CPC is responsible for hiring the signal service. As illustrated in the following figure, the data and information are sent from the vessels to a station base, and then to the respective CPC, which in turn sends them to the Secretariat of the Commission.



Source: ICCAT

ICCAT employs a person for the administration and management of the system, and as a liaison with the various CPCs to resolve any incident. This administrator also has the technical support of the Secretariat for the management of networks and connectivity of the VMS system.

#### 4. Cost of having a centralized VMS system in the IATTC

In the case of the IATTC, and without prejudice to the discussion and agreement on the type of system that the Commission would like to adopt or its functions, if the ICCAT model is taken as a starting point, it would only be necessary to focus on steps 6 and 7, illustrated in the figure above, since, in compliance with Resolution C-14-02, steps 1 to 5 are already implemented.

The establishment of the necessary arrangements so that each CPC could send the signal of its respective VNS office or station to the IATTC offices in La Jolla, would still be pending.

With the ICCAT model in mind, an approximate estimate was made of the costs of implementing a similar system in the IATTC.

<b>Item</b>	<b>Approximate cost</b>
Installation of the computer system to receive and store the data and information transmitted by the CPCs	<b>US\$ 300, 000</b>
Annual maintenance contract	<b>US\$ 12,000</b>
Appointment of an officer to administer and manage the VMS program (annual salary)	<b>US\$ 80,000</b>

## Annex 1

	Measure	Scope Vessels	Scope Marine Areas	Centralized VMS? & Data reporting	Information use
WCPFC	CMM on vessel monitoring system . Activated in December 2013	All size vessels.	High Seas. EEZ can be included at request and expense of coastal state. Currently included: NZ, Cook I., Niue, USA, Aus, FSM, France, Palau, Tuvalu, Samoa, Tonga and Nauru.	Centralized. Vessels report to the Commission directly.	Control and monitoring of the implementation of conservation measures.
ICAAT	Rec. 14-09 concerning minimum standards for the establishment of a VMS in the ICCAT convention area	All commercial vessels >24m LOA or 20m between perpendiculars; Eastern BFT vessels >15m	EEZ and High Seas	Not centralized. Flag States must communicate to a land based FMC.	Automatic and in real time transmission of data to coastal state when fishing in its waters
	Rec 12-06 (para. 13); For East. BFT see Rec. 13-07 (para 89) and Rec. 07-08			For Eastern BFT it's centralized. CPC shall communicate messages to the ICCAT Secretariat	<b>East. BFT:</b> Secretariat shall make available without delay VMS info to CPCs "with an active inspection presence in the Plan Area". It shall also make it available to SCRS at its request.
IOTC	Res. 15/03 on the VMS programme NO DATE OF REVIEW y Res. 06/03.	Vessels >24m LOA in domestic EEZ, and ALL vessels outside domestic EEZ by April 2019 (50% of which by April 2017); Carrier vessels authorized to transship-at-sea (also in EEZ). All vessels mandated by 06/03 must implement by April 2016	High seas and EEZ	Not centralized. VMS info sent to Flag State FMC (just annual reports to the Secretariat)	Date and position.
IATTC	Res. C-14-02 amends and replaces C-04-06 on January 1, 2016	24m or more.	EEZ and High Seas	Not centralized. Information collected by the FMC and not forwarded to Secretariat	VMS equipment should be usable to transmit to the Director the IATTC data required in the relevant IATTC Resolutions including C-03-04 [at-sea reporting] and C-03-05 [provision of data]"
CCSBT	CCSBT VESSELS FOLLOW RULES OF EACH RFMO WHERE THEY FISH Resolution on establishing a CCSBT VMS System (2008)	Vessels fishing for SBT. (Different VMS schemes apply depending on the RFMO area).	Must follow directives of the RFMOs managing the region where the CCSBT-vessel is fishing.	CCSBT must provide summary reports in advance of Compliance Committee meetings. Must follow directives of the RFMOs managing the region where the CCSBT-vessel is fishing.	CCSBT must provide summary reports in advance of Compliance Committee meetings.

## ICCAT resolutions

14-09

GEN

**RECOMMENDATION BY ICCAT AMENDING RECOMMENDATION  
03-14 BY ICCAT CONCERNING MINIMUM STANDARDS FOR THE ESTABLISHMENT  
OF A VESSEL MONITORING SYSTEM IN THE ICCAT CONVENTION AREA**

*IN ACCORDANCE WITH* the Needs and Principles set forth in the General Outline of Integrated Monitoring Measures Adopted by ICCAT, adopted by the Commission in 2002 to ensure effective monitoring measures;

*CONSIDERING* the deliberations of the ICCAT Working Group to Develop Integrated Monitoring Measures, held in Madeira from 26 to 28 May 2003;

*RECOGNIZING* the developments in satellite-based vessel monitoring systems (VMS), and their utility within ICCAT;

*RECOGNIZING* the legitimate right of coastal States to monitor the vessels fishing in waters under their jurisdiction;

*CONSIDERING* that real-time transmission to the Fishing Monitoring Center (FMC) of the coastal State of VMS data of all the vessels (including catching, carrier and support vessels) flying the flag of a CPC authorised to fish ICCAT species enables this coastal State, particularly in the case of a developing State, to ensure the effective implementation of ICCAT conservation and monitoring measures;

THE INTERNATIONAL COMMISSION FOR THE CONSERVATION OF  
OF ATLANTIC TUNAS (ICCAT) RECOMMENDS THAT:

1. Each flag Contracting Party, Cooperating non-Contracting Party, Entity or Fishing Entity (hereinafter referred to as CPC) shall implement a Vessel Monitoring System (hereinafter referred to as VMS) for its commercial fishing vessels exceeding 20 meters between perpendiculars or 24 meters length overall and:
  - a) require its fishing vessels to be equipped with an autonomous system able to automatically transmit a message to the Fisheries Monitoring Center (hereinafter referred to as FMC) of the flag CPC allowing continuous tracking of the position of a fishing vessel by the CPC of that vessel.
  - b) ensure that the satellite tracking device fitted on board the fishing vessels shall enable the vessel to continuously collect and transmit, at any time, to the FMC of the flag CPC the following data:
    - i) the vessel's identification;
    - ii) the most recent geographical position of the vessel (longitude, latitude) with a margin of error lower than 500 metres, with a confidence interval of 99%;
    - iii) the date and time of the fixing of the said position of the vessel.
  - c) Ensure, in cooperation with the coastal State, that the position messages transmitted by its vessels while fishing in waters under the jurisdiction of that coastal State are transmitted automatically and in real time to the FMC of the coastal State that has authorized the fishing activity, provided that due consideration has been given to minimizing the operational costs, technical difficulties, and administrative burden associated with transmission of these messages.
  - d) In order to facilitate the transmission and receipt of position messages, as described in subparagraph 1(c), the FMC of the flag State and the FMC of the coastal State shall exchange their contact information and notify each other without delay of any changes to this information. The FMC of the coastal State shall notify the flag State FMC of any interruption in the reception of consecutive position messages. The transmission of position messages between the FMC of the flag State and that of the coastal State shall be carried out electronically using a secure communication system.
2. Each CPC shall take appropriate measures to ensure that the VMS messages are transmitted and received, as specified in paragraph 1.

3. Each CPC shall ensure that the masters of fishing vessels flying its flag shall ensure that the satellite tracking devices are permanently operational and that the information identified in paragraph 1.b) is collected and transmitted at least every four (4) hours. In the event of a technical failure or non-operation of the satellite tracking device fitted on board a fishing vessel, the device shall be repaired or replaced within one month, unless the vessel has been removed from the list of authorized LSFVs. After this period, the master of a fishing vessel is not authorized to commence a fishing trip with a defective satellite tracking device. Furthermore, when a device stops functioning or has a technical failure during a fishing trip, the repair or the replacement has to take place as soon as the vessel enters a port; the fishing vessel shall not be authorized to commence a fishing trip without the satellite tracking device having been repaired or replaced.
4. Each CPC shall ensure that a fishing vessel with a defective satellite tracking device shall communicate to the FMC, at least daily, reports containing the information in paragraph 1(b) by other means of communication (radio, telefax or telex).
5. CPCs are encouraged to extend the application of this Recommendation to their fishing vessels of less than 20 meters between perpendiculars or 24 meters length overall if they consider this to be appropriate to ensure the effectiveness of ICCAT conservation and management measures.
6. The Commission shall review this Recommendation no later than 2017 and consider revisions to improve its effectiveness, including by changing the transmission frequency, taking into account SCRS advice, the different nature of various fisheries, cost implications, and other relevant considerations, including generally accepted MCS best practices.
7. To inform this review, the SCRS is requested to provide advice on the VMS data that would most assist the SCRS in carrying out its work, including frequency of transmission for the different ICCAT fisheries.
8. This measure shall repeal and replace Recommendation 03-14.



**RECOMMENDATION BY ICCAT CONCERNING DATA EXCHANGE FORMAT  
AND PROTOCOL IN RELATION TO THE VESSEL MONITORING SYSTEM (VMS)  
FOR THE BLUEFIN TUNA FISHERY IN THE ICCAT CONVENTION AREA**

*IN ACCORDANCE WITH* paragraph 49 of the *Recommendation by ICCAT to Establish a Multi-annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean* [Rec. 06-05];

THE INTERNATIONAL COMMISSION FOR THE CONSERVATION  
OF ATLANTIC TUNAS (ICCAT) RECOMMENDS THAT:

1. Each flag Contracting Party, Cooperating non-Contracting Party, Entity or Fishing Entity (hereinafter referred to as "CPCs") shall implement a vessel monitoring system (VMS) for its bluefin tuna fishing vessels referred to in paragraph 49 of the *Recommendation by ICCAT to Establish a Multi-annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean* [Rec. 06-05], in accordance with the *Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area* [Rec. 03-14].
2. The autonomous system referred to in paragraph 1(a) of the *Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area* [Rec. 03-14] shall be in conformity with the specifications and schedule set out in **Annex 1**.
3. Each CPC shall communicate electronically the messages pursuant to paragraph 1 here above to the ICCAT Secretariat. In the event of technical malfunction, the messages shall however be transmitted electronically to the ICCAT Secretariat within 24 hours of receipt.
4. Not later than 31 January 2008, the CPCs shall transmit the messages to the ICCAT Secretariat every six hours at least when operating in the ICCAT Convention area. The messages should be sequentially numbered (with a unique identifier) in order to avoid duplication.
5. Each CPC shall ensure that the messages transmitted by their corresponding Fishing Monitoring Centre (hereinafter referred to as "FMCs") to the ICCAT Secretariat shall be in accordance with the data exchange format set out in **Annex 2**.
6. CPCs engaged in inspection at sea operations in the Convention area in accordance with the ICCAT Scheme of Joint International Inspection referred to in paragraphs 56 and 57 of the *Recommendation by ICCAT to Establish a Multi-annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean* [Rec. 06-05] shall request the ICCAT Secretariat to make available the messages received under paragraph 3 for all fishing vessels within 100 n miles of the inspection vessel(s) at sea.
7. CPCs shall take the necessary measures to assure that all messages shall be treated in a confidential manner, and be limited for the inspection at sea operations referred to in paragraph 6. The ICCAT Secretariat shall ensure the confidential treatment of the messages received. Data three years old or more shall be available to the SCRS for scientific purposes, given due consideration of data confidentiality.

## Annex 1

1. Each CPC shall establish and operate fishing monitoring centres, hereinafter referred to as “FMC”, which shall monitor the fishing activities of vessels flying their flags. The FMC shall be equipped with computer hardware and software enabling automatic data processing and electronic data transmission. Each CPC shall provide for back-up and recovery procedures in case of system failures.
2. The CPC of the vessel shall take the necessary measures to ensure that the data received from its fishing vessels to which VMS applies are recorded in computer readable form for a period of three years.
3. The satellite tracking devices installed on board the fishing vessels shall ensure the automatic transmission to the FMC of the flag CPC, at all applicable times.
4. Each CPC shall take the necessary measures to ensure that its FMC receives the requested VMS data.

## Annex 2

### Format for the Communication of VMS messages by fishing vessels

#### A. Content of the position message

Data element	Field code	Mandatory /optional	Remarks
Start record	SR	M	Message detail; indicates start of record
Address	AD	M	Destination: ICCAT
Sequence No.	SQ	M <sup>1</sup>	Message detail; message serial number in current year
Type of message	TM <sup>2</sup>	M	Message detail; “POS” as Position message to be communicated by VMS or other means by vessels with a defective satellite tracking device
Radio call sign	RC	M	Vessel registration detail; international radio call sign of the vessel
Trip No.	TN	O	Activity detail; fishing trip serial number in current year
Vessel name	NA	O	Vessel registration detail; name of the vessel
Contracting Party internal reference No.	IR	O	Vessel registration detail. Unique Contracting Party vessel number as flag State 3-alpha country code followed by number
External registration No.	XR	O	Vessel registration detail; the side number of the vessel or IMO number in the absence of a side number
Latitude	LA	M <sup>3</sup>	Activity detail; position at time of transmission
Longitude	LO	M <sup>3</sup>	Activity detail; position at time of transmission
Latitude (decimal)	LT	M <sup>4</sup>	Activity detail; position at time of transmission
Longitude (decimal)	LG	M <sup>4</sup>	Activity detail; position at time of transmission
Date	DA	M	Message detail; date of transmission
Time	TI	M	Message detail; time of transmission
End of record	ER	M	System detail; indicates end of the record

<sup>1</sup> Optional in case of a VMS message.

<sup>2</sup> Type of message shall be “ENT” for the first VMS message from the Convention area as detected by the FMC of the Contracting Party. Type of message shall be “EXI” for the first VMS message from outside the Convention area as detected by the FMC of the Contracting Party, and the values for latitude and Longitude are, in this type of message, optional.

Type of message shall be “MAN” for reports communicated by vessels with a defective satellite tracking device.

<sup>3</sup> Mandatory for manual messages.

<sup>4</sup> Mandatory for VMS messages.

#### B. Structure of the position message:

Each data transmission is structured as follows:

- Double slash (//) and the characters “SR” indicate the start of a message.
- A double slash (//) and field code indicate the start of a data element.
- A single slash (/) separates the field code and the data.
- Pairs of data are separated by space.
- The characters “ER” and a double slash (//) indicate the end of a record.



**COMMISSION  
ELEVENTH REGULAR SESSION**  
Faleata Sports Complex, Apia, SAMOA  
1 - 5 December 2014

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**COMMISSION VESSEL MONITORING SYSTEM<sup>1</sup>**

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**Conservation and Management Measure 2014-02**

*The Western and Central Pacific Fisheries Commission (WCPFC),*

*Recalling* the relevant provisions of the Convention, in particular Articles 3 and 24 (8), (9) and (10);

*Noting* the importance of the vessel monitoring system as a tool to effectively support the principles and measures for the conservation and management of highly migratory species within the Convention Area;

*Mindful* of the rights and obligations of Commission Members, Cooperating Non-Members and participating Territories (CCMs) in promoting the effective implementation of conservation and management measures adopted by the Commission;

*Further mindful* of the key principles upon which the vessel monitoring system is based, including the confidentiality and security of information handled by the system, and its efficiency, cost-effectiveness and flexibility.

*Adopts*, in accordance with Article 10 of the WCPFC Convention the following process relating to the implementation of the WCPFC Vessel Monitoring System (Commission VMS):

1. A Commission VMS.
2. The system shall commence, to be activated 1 January 2008, in the area of the Convention Area south of 20°N, and east of 175°E in the area of the Convention Area north of 20°N.
3. With respect to the area north of 20°N and west of 175°E, the system will be activated at a date to be determined by the Commission.<sup>2</sup>
4. Any fishing vessels fishing for highly migratory fish stocks on the high seas within the areas of the Convention Area described in para 2 above that move into the area north of 20°N and west of 175°E shall keep their ALCs activated and continue to report to the Commission in accordance with this Conservation and Management Measure.

5. Definitions

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<sup>1</sup> By adoption of this CMM (CMM-2014-02) the Commission rescinds CMM-2011-02 which has been revised and replaced.

<sup>2</sup> Activated on 31 December 2013

(a) Automatic location communicator (ALC) means a near real-time satellite position fixing transmitter;

(b) FFA Secretariat means the Secretariat of the Pacific Islands Forum Fisheries Agency based at Honiara, Solomon Islands;

(c) FFA VMS means the vessel monitoring system developed, managed and operated by the FFA Secretariat and members of the Pacific Islands Forum Fisheries Agency;

#### 6. Applicability

(a) The Commission VMS shall apply to all fishing vessels that fish for highly migratory fish stocks on the high seas within the Convention Area.

(b) It shall apply to all vessels in excess of 24 metres in length with an activation date of 1 January 2008, and it shall apply to all vessels 24 metres in length or less with an activation date of 1 January 2009.

(c) Any CCM may request, for the Commission's consideration and approval, that waters under its national jurisdiction be included within the area covered by the Commission VMS. Necessary expenses incurred in the inclusion of such area into the Commission VMS shall be borne by the CCM which made the request.

#### 7. Nature and specification of the Commission VMS

(a) The Commission VMS shall be a stand-alone system:

- developed in and administered by the Secretariat of WCPFC under the guidance of the Commission, which receives data directly from fishing vessels operating on the high seas in the Convention Area; and
- with the added capability that it can accept VMS data forwarded from the FFA VMS, so that the fishing vessels operating on the high seas in the Convention Area will have the option to report data via the FFA VMS.

(b) The Commission shall develop rules and procedures for the operation of the Commission VMS, including, *inter alia*:

- vessel reporting, including the specifications of the data required, its format and reporting frequencies;
- rules on polling;
- ALC failure alternates;
- cost recovery;
- cost sharing;
- measures to prevent tampering; and
- obligations and roles of fishing vessels, CCMs, the FFA Secretariat and the Commission Secretariat.

(c) Security standards of the Commission VMS data shall be developed by the Commission, consistent with the WCPFC Information Security Policy.

(d) All CCM fishing vessels required to report to the Commission VMS shall use a functioning ALC that complies with the Commission's minimum standards for ALCs.

(e) The minimum standards for ALCs used in the Commission VMS are appended at Annex 1.

8. In establishing such standards, specifications and procedures, the Commission shall take into account the characteristics of traditional fishing vessels from developing States.

9. Obligation of CCMs

(a) Each flag CCM shall ensure that fishing vessels on the high seas in the Convention Area comply with the requirements established by the Commission for the purposes of the Commission VMS and are equipped with ALCs that shall communicate such data as determined by the Commission.

(b) CCMs shall cooperate to ensure compatibility between national and high seas VMSs.

10. Review

After two years of implementation, the Commission shall conduct a review of the implementation of this Conservation and Management Measure and consider further improvements to the system as required.

**Draft Minimum Standards for Automatic Location Communicators (ALCs) used in the Commission Vessel Monitoring System**

Pursuant to Article 24 (8) of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Convention), the Commission hereby establishes the following minimum standards for ALCs:

1. The ALC shall automatically and independently of any intervention on the vessel communicate the following data:
  - (i) ALC static unique identifier;
  - (ii) the current geographical position (latitude and longitude) of the vessel; and (iii) the date and time (expressed in Universal Time Constant [UTC]) of the fixing of the position of the vessel in para 1 (ii) above.
2. The data referred to in paras 1 (ii) and 1 (iii) shall be obtained from a satellite-based positioning system
3. ALCs fitted to fishing vessels must be capable of transmitting data referred to in para 1, hourly.
4. The data referred to para 1 shall be received by the Commission within 90 minutes of being generated by the ALC, under normal operating conditions.
5. ALCs fitted to fishing vessels must be protected so as to preserve the security and integrity of data referred to in para 1.
6. Storage of information within the ALC must be safe, secure and integrated under normal operating conditions.
7. It must not be reasonably possible for anyone other than the monitoring authority to alter any of that authority's data stored in the ALC, including the frequency of position reporting to that authority.
8. Any features built into the ALC or terminal software to assist with servicing shall not allow unauthorized access to any areas of the ALC that could potentially compromise the operation of the VMS.
9. ALCs shall be installed on vessels in accordance with their manufacturer's specifications and applicable standards.
10. Under normal satellite navigation operating conditions, positions derived from the data forwarded must be accurate to within 100 square metres Distance Root Mean Squared (DRMS), (i.e. 98% of the positions must be within this range).
11. The ALC and/or forwarding service provider must be able to support the ability for data to be sent to multiple independent destinations.
12. The satellite navigation decoder and transmitter shall be fully integrated and housed in the same tamper-proof physical enclosure.

## **RESOLUTION 15/03**

### On the vessel monitoring system (VMS) programme

► **KEYWORDS:** Vessel Monitoring System (VMS).

**The Indian Ocean Tuna Commission (IOTC),**

**TAKING NOTE** of the results of the Intersessional Meeting on an Integrated Control and inspection scheme, held in Yaizu, Japan, from 27 to 29 March, 2001;

**RECOGNISING** the value of satellite-based Vessel Monitoring Systems (VMS) for the Commission's conservation and management programmes, including compliance;

**RECOGNISING** IOTC Resolution 02/02 [superseded by Resolution 06/03 and subsequently by Resolution 15/03] which called for the adoption of a pilot satellite-based vessel monitoring system (VMS) by 1<sup>st</sup> January 2004;

**TAKING NOTE** that the Resolution 02/02 [superseded by Resolution 06/03 and subsequently by Resolution 15/03] has allowed the progressive incorporation of these systems to accommodate Contracting Parties that lack sufficient capacity for immediate implementation at a national level;

**RECOGNISING** that this Resolution 02/02 [superseded by Resolution 06/03 and subsequently by Resolution 15/03] provides a process for developing States of the region to build the capacity to implement this Resolution;

**AWARE** that many Parties have established VMS systems and programmes for their fleets and that their experience may be very helpful in supporting the conservation and management programmes of the Commission;

**ADOPTS** in accordance with the provisions of Article IX paragraph 1 of the IOTC Agreement, that:

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- 1.** Each Contracting Party and Cooperating Non-Contracting Party (CPC) shall adopt a satellite-based vessel monitoring system (VMS) for all vessels flying its flag 24 metres in length overall or above or in case of vessels less than 24 meters, those operating in waters outside the Economic Exclusive Zone of the Flag State fishing for species covered by the IOTC Agreement within the IOTC area of competence.
- 2.** Those CPCs currently without a VMS for any additional vessel now meeting the criteria for inclusion in the VMS obligation since Resolution 06/03 was superseded, as defined in paragraph 1 above, shall submit an implementation plan to the Compliance Committee in April 2016 that sets out a phased approach to full implementation of their national VMS obligation within a maximum of 3 years, i.e. by April 2019, with at least 50% of all qualifying vessels compliant by September 2017.
- 3.** Any CPC with vessels not yet equipped with VMS as already required under Resolution 06/03 (or any subsequent superseding Resolution; superseded by [Resolution 15/03](#)) shall be required to fully implement its national VMS obligation within a maximum of 1 year, i.e. by April 2016 in respect of those vessels.
- 4.** The Commission may establish guidelines for the registration, implementation and operation of VMS in the IOTC area of competence with a view to standardising VMS adopted by CPCs.
- 5.** Information collected shall include:
  - a)** the vessel identification;
  - b)** the current geographical position of the vessel (longitude, latitude) with a position error which shall be less than 500 metres, at a confidence level of 99%; and
  - c)** the date and time (expressed in UTC) of the fixing of the said position of the vessel.
- 6.** Each CPC shall take the necessary measures to ensure that their land-based national Fisheries Monitoring Center (FMC) receives through the VMS the information required in paragraph 5, and that the FMC is equipped with computer hardware and software enabling automatic data processing and electronic data transmission. Each CPC shall provide for backup and recovery procedures in case of system failures.
- 7.** Each CPC shall ensure that the information in paragraph 5 is transmitted to the FMC at least once every 4 hours. Each CPC shall ensure



the masters of fishing vessels flying its flag ensure that the satellite tracking device(s) are at all times fully operational.

- 8.** Each CPC as a Flag State shall ensure that the vessel monitoring device(s) on board its vessels are tamper resistant, that is, are of a type and configuration that prevent the input or output of false positions, and that they are not capable of being over-ridden, whether manually, electronically or otherwise. To this end, the on-board satellite monitoring device must:
  - a)** be located within a sealed unit; and
  - b)** be protected by official seals (or mechanisms) of a type that will indicate whether the unit has been accessed or tampered with.
- 9.** The responsibilities concerning the satellite-tracking devices and requirements in case of technical failure or non-functioning of the satellite-tracking devices are established in Annex I.
- 10.** Fishing vessels referred to in paragraph 1 which are not yet equipped with VMS shall report to their FMC at least daily by email, facsimile, telex, telephone message or radio. Such reports must include, inter alia, information required in paragraph 5 when transmitting the report, to their competent authorities, as well as:
  - a)** the geographic position at the beginning of the fishing operation;
  - b)** the geographic position at the end of the fishing operation.
- 11.** CPCs that cannot fulfil the obligations as outlined in this Resolution shall report to the IOTC Secretariat (i) the systems and infrastructure and capabilities existing with respect to the implementation this Resolution, and (ii) the hindrances for implementation of such a system and (iii) requirements for implementation.
- 12.** Each CPC shall provide to the IOTC Secretariat, by 30 June each year, a report on the progress and implementation of its VMS programme in accordance with this Resolution. The IOTC Secretariat shall compile reports prior to the annual Session of the Commission and present a report to the IOTC Compliance Committee. Based on these reports, the Commission will discuss how best to proceed with future consideration of VMS to support its Conservation and Management Measures.
- 13.** CPCs are encouraged to extend the application of this Resolution to their fishing vessels not provided for in paragraph 1 if they consider this to be appropriate to ensure the effectiveness of IOTC Conservation and Management Measures.

- 14.** Resolution 06/03 *On establishing a Vessel Monitoring System Programme* is superseded by this Resolution.

// RESOLUTION 15/03 //

## **ANNEX I**

### **Responsibilities concerning the satellite-tracking devices and requirements in case of technical failure or non-functioning of the satellite-tracking devices**

**A)** In the event that a CPC has information to suspect that on-board vessel monitoring device(s) do not meet the requirements of paragraph 4, or have been tampered with, it shall immediately notify the IOTC Executive Secretary and the vessel's Flag State.

**B)** Masters and owners/licensees of fishing vessels subject to VMS shall ensure that the vessel monitoring device(s) on board their vessels within the IOTC area of competence are at all times fully operational. Masters and owners/licensees shall in particular ensure that:

- a) VMS reports and messages are not altered in any way;
- b) the antennae connected to the satellite monitoring device(s) are not obstructed in any way;
- c) the power supply of the satellite monitoring device(s) is not interrupted in any way; and
- d) the vessel monitoring device(s) are not removed from the vessel.

**C)** A vessel monitoring device shall be active within the IOTC area of competence. It may, however, be switched off when the fishing vessel is in port for a period of more than one week, subject to prior notification to, and approval of, the Flag State, and if the Flag State so desires also to the IOTC Secretariat, provided that the first position report generated following the re-powering (activating) shows that the fishing vessel has not changed position compared to the last report.

**D)** In the event of a technical failure or non-operation of the satellite tracking device fitted on board a fishing vessel, the device shall be repaired or replaced within one month. After this period, the master of a fishing vessel is not authorised to commence a fishing trip with a defective satellite tracking device. Furthermore, when a device stops functioning or has a technical failure during a fishing trip lasting more than one month, the repair or the replacement has to take place as soon as the vessel enters a port; the fishing vessel shall not be authorised to commence a fishing trip without the satellite tracking device having been repaired or replaced.

**INTER-AMERICAN TROPICAL TUNA COMMISSION**

**87<sup>TH</sup> MEETING**

**Lima, Peru  
14-18 July 2014**

**RESOLUTION C-14-02**

**RESOLUTION (AMENDED) ON THE ESTABLISHMENT OF A  
VESSEL MONITORING SYSTEM (VMS)**

*The Inter-American Tropical Tuna Commission (IATTC), meeting in Lima, Peru, on the occasion of its 87<sup>th</sup> Meeting:*

*Recognizing* the value of satellite-based Vessel Monitoring Systems (VMS) for the Commission's conservation and management programs, including compliance;

*Aware* that many Parties have established VMS systems and programs for their fleets since the adoption of Resolution C-04-06, but that there is no compulsory VMS system for Members and Cooperating non- Members of the Commission (hereinafter referred to as "CPCs") harvesting tuna and tuna-like species in the Convention Area;

*Taking into account recent developments in other Regional Fisheries Management Organizations (RFMOs) operating in the Pacific Ocean;*

*Agree that:*

1. Members and Cooperating non-Members of the Commission (CPCs) shall ensure that all their commercial fishing vessels 24 meters or more in length operating in the Eastern Pacific Ocean (EPO) and harvesting tuna or tuna-like species shall be equipped, by 1 January 2016, with a satellite-based vessel monitoring system (VMS).
2. While specific operational details of CPCs' VMS requirements may vary, CPCs shall ensure that:
  - a) The information collected by the VMS for each vessel shall include:
    - i) the vessel's identification;
    - ii) the vessel's geographical position (latitude and longitude), with an error of less than 100 meters at a confidence level of 98%;
    - iii) the date and time (UTC) of the fixing of the vessel's position, and;
    - iv) the vessel's speed and course.
  - b) The information in paragraph 2.a) above shall be collected at least every four hours for longliners and two hours for other vessels by the land-based Fisheries Monitoring Centre (FMC) of the flag CPC.
  - c) VMS equipment installed on vessels will, at a minimum, be tamper evident<sup>1</sup>, fully automatic for regular position data reporting, operational at all times regardless of environmental conditions, and, if possible, capable of manual transmission of reports and messages.

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<sup>1</sup> Namely any tampering shall be evident upon inspection, it shall be protected against input or output of false positions and the system cannot be over-ridden.

3. In the event of a technical failure or non-operation of the satellite tracking device fitted on board a fishing vessel, the device shall be repaired or replaced within one month. After this period, the master of a fishing vessel is not authorized to commence a fishing trip with a defective satellite tracking device. When a device stops functioning or has a technical failure during a fishing trip lasting more than one month, the repair or the replacement has to take place as soon as the vessel enters a port; the fishing vessel shall not be authorized to commence a fishing trip without the satellite tracking device having been repaired or replaced. The Commission shall develop guidelines and templates for manual reporting.
4. If practicable, the VMS equipment should be usable to transmit to the Director the data required in the relevant IATTC Resolutions, including C-03-04 and C-03-05.
5. The Commission strongly encourages non-Members whose flag vessels fish in the EPO to participate in the VMS program established on implementation of this Resolution. To this end, the Director will make the appropriate contacts with those parties and notify CPCs of actions taken and any response received. The Commission shall consider at each Annual Meeting appropriate action concerning those non-Members in order to encourage cooperation with IATTC.
6. Each CPC shall provide to the Director, by 31 May, 2017, a progress report on its VMS consistent with this resolution. The Commission will discuss how best to proceed with future consideration of VMS to support its conservation and management program at its annual meeting in 2017, including the possible development of a stand-alone IATTC VMS scheme.
7. The Director shall ensure that any information provided to the Director or the Commission pursuant to this resolution is maintained in strict accordance with the Commission's rules and procedures on confidentiality.
8. This Resolution replaces Resolution C-04-06 on 1 January 2016

## CCSBT resolutions

### **Resolution on the development and implementation of a Vessel Monitoring System**

*(adopted at the Thirteenth Annual Meeting – 10-13 October 2006)*

#### **Resolution on the development and implementation of a Vessel Monitoring System**

The Extended Commission for the Conservation of Southern Bluefin Tuna,

*Noting* the intention of the Extended Commission to introduce an integrated package of monitoring, control and surveillance measures to improve compliance with the conservation and management measures of the Extended Commission in order to ensure the long-term sustainability of the stock;

*Recognising* the need for monitoring, control and surveillance measures to apply to all sectors of the global Southern Bluefin Tuna fishery;

*Further recognising* the value of an effective and fully operational satellite-based Vessel Monitoring System in combating illegal, unregulated and unreported fishing for Southern Bluefin Tuna and ensuring compliance with the Commission's conservation and management measures;

*Aware* that some Members and other regional fisheries management organizations have established Vessel Monitoring Systems and that the experiences of such Members and organizations may be useful in developing and implementing a Commission for the Conservation of Southern Bluefin Tuna Vessel Monitoring System;

*Agrees* that:

1. The Commission Members and Cooperating Non- Members shall develop and implement their satellite-linked Vessel Monitoring Systems for fishing vessels catching SBT and flagged to Members and Cooperating Non-Members .
2. Members and Cooperating Non-Members shall finalise the details of their Vessel Monitoring Systems in inter-sessional meetings before the Fourteenth Annual Meeting of the Commission, in order to agree minimum standards at that meeting. These Vessel Monitoring Systems shall be implemented by 1 January 2008.
3. The Vessel Monitoring Systems shall include the following elements:
  - (i) Flag states/fishing entities shall monitor and manage their vessels equipped with vessel monitoring devices.
  - (ii) Rules and conditions of use shall be developed intersessionally to protect and ensure the confidentiality of any data transmitted to the Secretariat.
  - (iii) The following data shall be continuously and automatically reported, at a frequency that allows the fishing activity of a vessel to be identified, while the vessel is fishing: the vessel identification; its geographical position; and the date and time.

- (iv) Vessel monitoring devices shall be tamper-resistant and located in a sealed unit with official seals that indicate whether the unit has been accessed or tampered with.
  - (v) In the event of a technical failure of the device, the master or owner of a vessel shall be required to report to the flag state/fishing entity, at a frequency that allows the fishing activity of a vessel to be identified, the vessel's identification, its geographical position, and the date and time.
4. Members and Cooperating Non-Members shall implement a mandatory Vessel Monitoring System for fishing of SBT inside the Exclusive Economic Zone by 1 January 2008 for vessels above a specified size.
  5. The VMS shall not derogate from the rights and responsibilities of flag states/fishing entities.
  6. Arrangements in other regional organisations shall be drawn upon in developing rules and conditions relating to confidentiality.
  7. Members and Cooperating Non Members shall ensure their domestic regulations and rules enable them to act in accordance with the Vessel Monitoring System to be developed under paragraphs 1 and 2.
  8. This resolution shall bind all Members and Cooperating Non-Members.

## **Resolution on establishing the CCSBT Vessel Monitoring System**

*(adopted at the Fifteenth Annual Meeting – 14-17 October 2008)*

The Extended Commission for the Conservation of Southern Bluefin Tuna (CCSBT),

*Recalling* that, at its thirteenth annual meeting, the Extended Commission Members and Cooperating Non-Members agreed to develop and implement their Vessel Monitoring Systems (the 2006 VMS resolution);

*Recognising* the need for monitoring, control and surveillance measures to apply to all sectors of the global southern bluefin tuna fishery;

*Recognising* the importance of these Vessel Monitoring Systems as an integral part of an effective monitoring, control and surveillance regime for the southern bluefin tuna fishery, in particular to ensure the long-term sustainability of the stock;

*Mindful* that a vessel monitoring system was identified as one of the important monitoring, control and surveillance measures to deter illegal, unreported and unregulated fishing in the Course of Actions adopted at the Kobe Joint Meeting of Tuna Regional Fisheries Management Organisations from 22 – 26 January 2007;

*Recognising* the need to stipulate minimum standards for the Vessel Monitoring Systems;

*Aware* that some Members and other regional fisheries management organizations have established Vessel Monitoring Systems and that the experiences of such Members and organizations may be useful in developing and implementing a Commission for the Conservation of Southern Bluefin Tuna Vessel Monitoring System;

*Agrees*, in accordance with paragraph 3(b) of Article 8 of the Convention for the Conservation of Southern Bluefin Tuna, that:

1. The Members and Cooperating Non-Members of the Extended Commission shall adopt and implement satellite-linked Vessel Monitoring Systems (VMS) for vessels fishing for Southern Bluefin Tuna on the following basis:
  - a. for such vessels fishing in the IOTC Area, in accordance with IOTC Resolution 06/03 On Establishing a Vessel Monitoring System Programme (including Annex 1 to that Resolution);
  - b. for such vessels fishing in the WCPFC Area, in accordance with WCPFC Conservation and Management Measure 2006-06 “Commission Vessel Monitoring System” (including Annex 1 to that Measure);
  - c. for such vessels fishing in the CCAMLR Area, in accordance with CCAMLR Conservation Measure 10-04 (2006) “Automated Satellite-Linked Vessel Monitoring System (VMS)” (including Annex 10-04/A and Annex 10-04/B to that Measure);

- d. for such vessels fishing in the ICCAT Area, in accordance with ICCAT Recommendation 03-14 "Recommendation by ICCAT concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area"; and
  - e. for such vessels fishing in any other high seas area where there is no VMS, in accordance with IOTC Resolution 06/03 On Establishing a Vessel Monitoring System Programme (including Annex 1 to that Resolution).
2. The application of the VMS provided for in paragraph 1(a-e) shall be consistent with any modifications to those VMS that may be adopted by those respective Commissions from time to time.
  3.
    - a. The Members and Cooperating Non-Members of the Extended Commission shall provide VMS summary reports annually in advance of the Compliance Committee meeting and in the format approved by the Commission.
    - b. In relation to incidents concerning specific vessel(s) when the vessel(s) are suspected to have operated in contravention of CCSBT conservation and management measures, Members and Cooperating Non-Members of the Extended Commission may request another Member and Cooperating Non-Member of the Extended Commission which is the flag state/fishing entity of the vessel(s) to provide VMS data on the vessel(s) on a case by case basis. The Member and Cooperating Non-Member which receives such request shall:
      - (i) investigate the incidents and provide details of the investigation to the Member or Cooperating Non-Member which requested VMS data; or
      - (ii) provide VMS data on the vessel(s) to the requesting Member or Cooperating Non-Member, which will inform the results of its investigation to the Members or Cooperating Non-Member which is the flag state/fishing entity of the vessel(s).
  4. The Extended Commission agrees to adopt the confidentiality and security provisions attached in Annex I in relation to the information provided pursuant to paragraph 3(b).
  5. With the assistance of the Secretariat the Compliance Committee shall review and report to the Compliance Committee in 2009 on the implementation of this resolution and any possible measures to improve its effectiveness as a component of the monitoring, control and surveillance regime for the SBT fishery. Such review shall take account of any developments by other RFMOs, including development of a harmonised VMS across tuna RFMOs
  6. This resolution does not supersede the 2006 VMS resolution adopted at CCSBT 13.



## **Annex I – Confidentiality, Use and Security of VMS Data**

### **Confidentiality and use of VMS Data**

1. VMS data shall be confidential and may only be provided or used as permitted by this resolution.
2. Members and Cooperating Non-Members of the Extended Commission which receive VMS data from another Member or Cooperating Non-Member of the Extended Commission shall maintain the confidentiality of those data and shall not use the data except as specified in the resolution. In particular, Members and Cooperating Non-Members of the Extended Commission which receive VMS data may only provide those data to representatives and officials of the Member or Cooperating Non-Member for the purposes outlined in paragraph 3 of this Annex.
3. Members and Cooperating Non-Members of the Extended Commission may only use those VMS data to monitor compliance with CCSBT conservation and management measures.

### **Information technology security**

4. Members and Cooperating Non-Members of the Extended Commission which receive VMS data shall adopt secure information technology systems to ensure that the confidentiality of VMS data is maintained.

### **VMS Data Confidentiality Policies**

5. Members and Cooperating Non-Members of the Extended Commission which propose to request VMS data shall prepare a VMS Data Confidentiality Policy and provide that Policy to the Secretariat and all other Members and Cooperating Non-Members of the Extended Commission. The VMS Data Confidentiality Policy shall outline all measures which the Member and Cooperating Non-Members of the Extended Commission proposes to implement to ensure it complies with the requirements in Annex I of this resolution.