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**GENERAL FISHERIES COMMISSION
FOR THE MEDITERRANEAN
COMMISSION GÉNÉRALE DES PÊCHES
POUR LA MÉDITERRANÉE**

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GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

Third session of the Compliance Committee

Tunis, Tunisia, 23-27 March 2009

**Report of the Ad Hoc Working Group on Vessel Monitoring System as a
Monitoring, Control and Surveillance tool**

Rome, Italy, 23 September 2008

OPENING OF THE MEETING

1. The Ad Hoc Working Group (WG) of the Compliance Committee (CoC) of the General Fisheries Commission for the Mediterranean (GFCM) on Vessel Monitoring System (VMS) as a Monitoring, Control and Surveillance (MCS) tool was held at FAO headquarters, Rome, Italy, the 23rd and 24th of September 2008.
2. The Working Group was attended by 7 experts from 5 GFCM Members, as well as by staff from the FAO, ICCAT and the GFCM Secretariat. A list of participants is included in Appendix B.
3. The GFCM Executive Secretary, Mr Alain Bonzon, called the WG to order and welcomed the participants. Mr Bonzon recalled the developments that occurred within the GFCM and its CoC in connection with VMS, especially the discussions held at the 31st and 32nd sessions of the Commission on the draft Recommendation concerning minimum standard for the establishment of a vessel monitoring system in the GFCM area¹. He noted that the GFCM endorsed the proposal from Committee on the convening of a working group aiming at sharing experiences and identifying common views on the implementation of VMS in the GFCM Area, in the context of the above mentioned GFCM draft Recommendation. This initiative was prompted by the remarks made by some GFCM Members on a number of technical, legal or financial constraints they were facing in the establishment of VMS at national level. Mr Bonzon underlined that the main expected output from the WG was to discuss a revised text of the draft Recommendation which includes elements of VMS-related

¹ Cf. Paragraph 72 and Annex D of the report of the 31th session of the GFCM

recommendations of other RFMOs, whilst taking into account the particular characteristics of GFCM fisheries.

4. In the absence of a representative of the Bureau of CoC, the GFCM Executive Secretary served as Chairperson of the WG. He called on the participants to address views on VMS issues in the broader context of MCS. The agenda as adopted is attached in Appendix A.

GFCM REGIONAL FLEET REGISTER, VESSEL LIST AND LOGBOOK: PROGRESS, INCLUDING LINKAGES WITH THE FAO GLOBAL RECORD

5. Mr Matthew Camilleri, GFCM Bio-Statistician, informed the meeting of the publication of the GFCM Authorised Vessels List (AVL) on the GFCM website including the release of the AVL browser software which allows users to consult the list and generate queries through an on-line internet connection. It was explained that restricted data and National Status Reports were only available for selected users (e.g. Heads of Delegation, national MCS authorities or equivalent) through the use of a username and password. In the ensuing discussions it was recalled that, besides providing useful fleet statistics, the AVL which comprises all fishing vessels of a length equal to or over 15m (overall), is meant to serve mainly as a fundamental MCS tool in the region.

6. The participants were also informed that, in parallel, the GFCM had started the process for the establishment of a fleet register, possibly including all fishing vessels irrespective of their size. The WG noted that this would serve, *inter alia*, as a fleet capacity monitoring instrument. The importance of assigning a unique identifier to each fishing vessel was also highlighted and it was agreed that this should be included as a mandatory data field in the AVL as well as on other databases like those related to the fleet register and, potentially, to VMS. In particular the WG expressed the views that the unique vessel identifier would not only allow for the proper management of historical records pertaining to each vessel but would also generally improve the efficiency of any MCS-related scheme.

7. The WG noted that, out of the 10,116 vessels (from 19 reporting Members) currently included in the AVL, only 24.43 % of the vessels are over 24 m in length (overall) and the majority of vessels (45.25%) form part of the 18-24m length class. Furthermore, the participants acknowledged the fact that by 1st January 2010 roughly half of the vessels included in the GFCM AVL would be required through the EU legislative framework and/or ICCAT management measures to have VMS installed. Thus, the importance of drawing up a GFCM recommendation on VMS which covers all fishing vessels of a length equal to or over 15 m operating in the GFCM Area was considered by the WG.

MONITORING, CONTROL AND SURVEILLANCE: THE GFCM EXPERIENCE, GENERAL BACKGROUND INFORMATION

8. Mr Nicola Ferri, GFCM consultant, presented an overview of the development and implementation of MCS within the framework of the GFCM. It was felt opportune to assess the consistency between action taken by the GFCM to strengthen MCS in the Region and MCS measures enacted and implemented by each GFCM Member.

9. Recognizing that MCS can be regarded as a mechanism for the implementation of agreed policies, plans or strategies for oceans and fisheries management, the WG noted that under Article 18 of the United Nations Fish Stock Agreement, measures to be taken by States

in respect of vessels flying their flag shall include, *inter alia*, MCS of such vessels by the development and implementation of VMS, in accordance with any national programme and those which have been regionally agreed among the States concerned. The WG further noted the interrelation among GFCM recommendations related to MCS, including Recommendation GFCM/2005/2 on a register of vessels authorised to fish, Recommendation GFCM/2006/4 establishing a list of vessels presumed to have carried out IUU fishing activities in the GFCM area and Recommendation GFCM/2008/1 on a regional scheme of port State measures, and the need to ensure consistency among them. It was observed that the adoption of these recommendations had derived from the need to implement the provisions of the Declaration of the Ministerial Conference for the sustainable development of fisheries in the Mediterranean (Venice, 2003) along with the 2005 GFCM Control and Enforcement Scheme.

10. The WG acknowledged that MCS measures were already in place in several GFCM countries, in line with Article 18 of the UN Fish Stocks Agreement, including the management of registers of fishing vessels, inspections and the establishment of VMS. The WG confirmed that the establishment of VMS throughout the GFCM Area would be necessary, including to promote an integrated approach to MCS instruments and beyond to favour enhanced fisheries governance in the Region.

PRESENTATION OF THE FAO SURVEY ON VMS: RESULTS FOR THE GFCM AREA

11. Ms Michele Kuruc, FAO MCS Officer, delivered a presentation on the status of VMS usage worldwide on the basis of the information received through the FAO global questionnaire on VMS which is being processed. She reported that the response rate of GFCM Members to the questionnaire exceeded 75% and that the information received was quite extensive.

12. It was observed that the use of VMS in the GFCM Area tends to be concentrated in the western and the northern part of the Region. According to the results of the FAO global questionnaire, most of the GFCM Members that are using VMS were doing so for compliance, fisheries management, search and rescue and other purposes. It was noted that many members from the southern and eastern shores of the Mediterranean and from the Black Sea have already taken action for the establishment of VMS in their country.

13. Following the presentation, the WG recognised the necessity for GFCM Members to identify how VMS would be utilized to support GFCM management measures and objectives. It was recalled that VMS needs supporting infrastructure, including skilled personnel, legal institutions, a developed MCS framework, resources and time, to be properly implemented. Matters related to data security and data sharing were also noted by the WG. For countries operating a limited number of fishing fleets, the feasibility of pooling resources for a fisheries monitoring centre was also addressed, including examples at national and regional levels.

14. The WG went on to discuss costs associated with VMS, including cost variations by size of the system, number of vessels, functionality of system and communication costs. Considerations on amortizing the costs and weighing the initial outlay against the costs of IUU and the reduction of IUU losses as a result of using VMS were also acknowledged. Some participants provided examples of reduced fisheries surveillance costs (both aerial and at sea) thanks to the implementation of VMS, aside the obvious benefits linked to more efficient search and rescue activities, when appropriate.

COMMENTS ON HOW VMS IS OPERATING IN GFCM MEMBERS

15. The Chairperson of the WG invited participants to report on the implementation of VMS at national level.

16. It was noted that in Turkey, the VMS was launched with the support of an EU twinning programme (hardware equipments and software programme) and the FMC capacities were strengthened. At present, some 190 fishing and carrier vessels engaged in the tuna fisheries are equipped with transponders. Concomitantly, the use of AIS has been made compulsory for all marine ships. There are plans to expand the system to all fishing vessels longer than 15m and starting in mid 2009, provided that the draft law on VMS, currently before the parliament will have been enacted. This draft law takes into consideration the European Union legal framework, especially EC Regulation No 2244/2003 laying down detailed provisions regarding satellite-based VMS and Regulation 1966/2006 on electronic recording and reporting of fishing activities and on means of remote sensing.

17. The participant from the European Community provided information on the implementation of the two above mentioned EC Regulations by EU member States. The operational and institutional practicalities related to the day to day running of the VMS, including the role of the FMC, were further detailed by the experts from Italy, based on ten years of implementation of the national system. The WG carefully reviewed the parameters laid down in the Electronic data exchange for transmission of data to the coastal member state, appended to Regulation 2244/2003 and expressed the opinion that this format should be taken into consideration in future VMS developments so as to ensure compatibility of data exchanges among FMCs and concerned RFMOs, as appropriate.

18. The expert from Croatia informed the WG that a hybrid system has been tested. The system allows for the communication of VMS data from the vessel to the fishing monitoring centre both via GPS and via satellite. The utilization of GPS significantly reduces costs. It was explained that the hybrid system switches automatically to satellite when there is no coverage for GPS transmission of data (e.g. in Croatia the signal extends up to waters under national jurisdiction). This allows the fishing monitoring centre to track the vessel continuously. The WG expressed support for initiatives aimed at reducing costs related to VMS, particularly if these initiatives contribute to the increasing of the number of Members with a VMS programme in place.

19. From personal communications the WG was informed that in 2008, Tunisia has established an operational system for Tuna vessels and is planning extension to other segments of the fleet. Similarly, notable progress was noted in relation to the Libyan system. In addition, the WG was informed that Albania adopted regulations on VMS and is building its FMC with the support of an EC project. It is foreseen that blue box will be installed for vessel >15m.

VMS AND RFMOs: ACTIONS TAKEN AND MEASURES ADOPTED

20. Mr Ferri delivered a presentation on the practice of selected RFMOs in connection with VMS and highlighted the relevant provisions in decisions adopted by various RFMOs. The distinction between RFMOs implementing a decentralized VMS (e.g: IOTC, IATTC) and centralized VMS (e.g: CCAMLR, NAFO, NEAFC, ICCAT) schemes was underlined. The

main provisions of measures adopted by these RFMOs to implement VMS, including VMS requirements and data management procedure were described. These are summarized in Appendix C. The trend toward using VMS outputs by RFMOs for scientific monitoring was underlined.

21. The WG noted that when decentralized VMS is in place, data are relayed to a fishing monitoring centre of the fishing vessel's Flag State and that the sole obligation of a Flag State towards an RFMO is to submit a national report on the implementation of VMS. In this case, the role of the Secretariat of the RFMOs is limited to monitor the implementation of the decisions on VMS as adopted and to suggest follow-ups. On the other hand, the WG noted that a centralized VMS scheme implies that both the Flag State and the RFMO receive data from the fishing vessels. The fishing vessel transmits the VMS messages to the Fisheries Monitoring Centre of its flag State. The role of the Secretariats of RFMOs and associated operational costs are more significant as they are to process the information they receive, which are handled according to defined confidentiality rules.

22. Ms Carmen Ochoa, Compliance Officer of the International Commission for the Conservation of Atlantic Tunas (ICCAT), summarized the content of recommendations adopted by ICCAT in connection with VMS. Provisions of the call for tender to set up VMS in ICCAT were cited, including procedures related to the selection of the contractor process. Components of this centralized system and how it is operated by the Secretariat were also described, including the handling of data received in conformity with confidentiality requirements. The WG observed that the ICCAT-VMS system runs automatically 24 hours a day and that a state of the art database system is in place to store and manage the data.

23. Although the GFCM has still to decide on what kind of VMS scheme to established, the WG recognized that VMS is already referred to in the text of some GFCM recommendations. Reference was made to Annex A of Recommendation GFCM/2008/1 on a regional scheme on port State measures (which obliges foreign fishing vessels seeking access to ports to provide information in advance, including, where appropriate, type of VMS required by the flag State and/or relevant RFMOs and details of the VMS unit to enable communication) and to Recommendation GFCM/31/2007/3 which include ICCAT Recommendation 06-05 to establish a multi annual recovery plan for bluefin tuna in the Eastern Atlantic and the Mediterranean. With respect to the latter, it was recalled that article 49 of this Recommendation (compulsory for all GFCM Members), states that VMS shall be implemented for bluefin tuna fishing vessels over 15 m with effect from 1 January 2010.

REVIEW OF THE REVISED GFCM DRAFT RECOMMENDATION ON VMS

24. In opening the discussions on the revised draft recommendation on VMS, the Chairperson clarified that the GFCM Secretariat took the initiative to produce a revised draft recommendation on VMS which reflects elements of VMS-related recommendations of other RFMOs, whilst taking into account the particular characteristics of the GFCM Area. He also referred to the summary document made available to the WG and entitled "Guidance to the revised draft recommendation" which is reproduced in Appendix E.

25. The main issues identified in the course of the discussions were those related to the application of the recommendation. In this respect, the WG, elaborating on the views previously expressed, suggested that the revised draft applies to fishing vessels exceeding 15m length overall. It was agreed that the recommendation, if adopted, would be implemented

preferably by 1st of January 2010 and not later than 31st December of the same year. The WG noted that this timeline would ensure consistency with that of ICCAT.

26. With respect to satellite tracking devices to be fitted onboard fishing vessels, the WG suggested that the relevant provisions of the revised draft take into account the possibility of operating hybrid systems (e.g. GPS-satellite), provided these systems are capable of automatically switching to satellite tracking. It was proposed that VMS data are collected and transmitted to the fishing monitoring centre, or equivalent authority, at least every two hours when the fishing vessel is out of its base port. Additionally, it was agreed that the revised recommendation allows the fishing vessel, when in its base port, to switch off the satellite tracking device subject to prior notification to the fishing monitoring centre of the Flag State.

27. As for the role of the Secretariat, the WG advised at this stage to opt for a “decentralized” system. Hence, the Secretariat should receive and compile annual reports from GFCM Members on the implementation of the recommendation for review by the Compliance Committee. A proposition was then made to establish and maintain a database on VMS summary information by the GFCM Secretariat by 1st of January 2011. The WG noted that this would require, *inter alia*, the establishment of data format for the fishing vessels or the fishing monitoring centres to relay the information to the GFCM Secretariat. In this respect, it was suggested to take into account the format elaborated by ICCAT (Recommendation 07-08 concerning data exchange format and protocol in relation to VMS for tuna fisheries within the Convention Area).

CONCLUDING REMARKS AND CONCLUSION OF THE WORKING GROUP

28. The WG concluded that the revised draft recommendation on VMS, as amended, (Appendix C) should be transmitted to the CoC for its consideration. It was noted with satisfaction that the text, as it stands, is linked to other MCS related recommendations adopted by the GFCM. To this end, references made to Recommendation GFCM/2005/2 (all fishing vessel of a length equal to or over 15 meters and in particular those fishing vessels included in the GFCM Authorised vessel list shall have VMS onboard; para. 2) and Recommendation GFCM/2008/1 (when there are reasons to doubt the correctness of the data transmission received and suspect that the fishing vessel concerned will seek access to the ports of a third Country, the port State shall be informed in advance so to ensure either that the fishing vessel is refused access to its ports or that the fishing vessel is subject to inspection; para. 11) were cited.

29. The WG expressed regret for the fact that, due to limited participation, there was not a chance to properly consider additional steps forward and opportunities, such as identifying training needs on VMS. Similarly, it was difficult to further assess the practical technical, administrative, legal or financial constraints to implement VMS, on the basis of the national comments which were flagged by a number of delegations during the Second Session of CoC. However, progress on the establishment of VMS in the Region, particularly by those Members that have been cooperating with the EU in implementing a system consistent with the European regulations, was acknowledged by the WG.

30. The WG concluded that the establishment and maintenance of VMS in the whole GFCM Area is feasible, particularly if the possibility is given to Members to utilize hybrid systems which would substantially reduce VMS costs (e.g. costs related to the establishment of VMS, infrastructures, equipment, data transmission, etc.). The WG expressed satisfaction

on the opportunity given in the meeting to exchange views on a broad array of issues, including evolving VMS technologies and suggested that such an exchange be pursued among GFCM Members during the implementation phase of the regional system. It was also suggested that further discussions on the subject, especially the possibility of launching a regional/sub-regional pilot project on VMS to assist concerned Members in developing the institutional frame and national capacity in setting up VMS, should continue at the third session of CoC.

31. The Chairperson, in closing the meeting, thanked the participants for their attendance and contribution. He extended his gratitude to ICCAT to kindly sharing its experience with participants, to the AdriaMed regional project for having supported the participation of some experts and to the FAO for having provided technical expertise.

ADOPTION OF THE REPORT

32. The Working group decided that its Report will be adopted by email.

APPENDIX A**Agenda**

1. Opening of the Ad Hoc Working Group
2. GFCM Regional fleet register, vessel list and logbook: progress, including linkages with the FAO Global Record
3. Monitor, Control and Surveillance: the GFCM experience, general background information
4. Presentation of FAO Survey on VMS: Results for the GFCM Area
5. Comments on how VMS is operating in GFCM Members
6. VMS and RFMOs: actions taken and measures adopted
7. Review of the revised GFCM Draft Recommendation on VMS
8. Concluding remarks and Conclusion of Working Group

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APPENDIX C

**REVISED DRAFT RECOMMENDATION CONCERNING MINIMUM STANDARDS
FOR THE ESTABLISHMENT OF A VESSEL MONITORING SYSTEM IN THE
GFCM AREA²**

The General Fisheries Commission for the Mediterranean (GFCM),

IN ACCORDANCE WITH the General Guidelines for a GFCM Control and Enforcement Scheme elaborated in 2005 to ensure, *inter alia*, effective monitoring measures,

RECALLING the Rome Declaration on Illegal, Unreported and Unregulated Fishing (IUU Fishing), adopted by the FAO Ministerial Meeting on Fisheries in 2005 to ensure, *inter alia*, that all large-scale fishing vessels operating on the high seas be required by their flag State to be fitted with vessel monitoring systems (VMS) no later than December 2008, or earlier if so decided by their flag State or any relevant regional fisheries management organizations (RFMOs),

RECOGNIZING the developments in satellite-based vessel monitoring systems (VMS) and their importance in ensuring the long-term conservation and management of living marine resources in the GFCM Area as part of effective monitoring, control and surveillance (MCS),

FURTHER RECOGNIZING the need for laying down agreed standards for the establishment of VMS in the GFCM Area,

NOTING that the establishment of such systems has been discussed in recent sessions of the Commission and has been considered by the GFCM ad hoc Working Group of the Compliance Committee on VMS as a MCS tool,

AWARE that many Parties, as well as several RFMOs, have established VMS,

ADOPTS, in conformity with the provisions of paragraph 1(b) and (h) of Article III and Article V of GFCM Agreement:

Objective

1. The objective of this Recommendation is to contribute to the long-term conservation and management of living marine resources in the GFCM Area through the establishment of VMS.

Application

2. This Recommendation only applies to fishing vessels which are operating within the GFCM Area and in particular those fishing vessels which are included in the GFCM Authorised Vessels List established by Recommendation GFCM/2005/2.

² As amended and endorsed by the CoC Working Group on 24th September 2008. Grey highlights show the changes made to the original draft Recommendation available as Annex D of the Report of the 31th session of the GFCM.

3. Each flag Party and Cooperating non-Contracting Party (CPnC) shall implement preferably by 1st January 2010 and no later than 31st December 2010, a satellite-based VMS for its commercial fishing vessels exceeding 15 meters length overall, in conformity with the requirements laid down in this recommendation.

Satellite tracking devices requirements

4. While specific operational details of Parties'/CPnCs' VMS may vary and include hybrid systems they shall ensure that the satellite tracking devices fitted onboard fishing vessels shall enable the fishing vessel to continuously collect and transmit automatically the following data, at least every two hours while out of its base port, to the Fisheries Monitoring Center (FMC), or an equivalent authority, in the Flag State:

- i) the vessel's GFCM Unique Identifier as recorded in the GFCM Fishing Fleet register and Authorised Vessels List;
- ii) the geographical position of the vessel (longitude, latitude) with minimum resolution of 500 metres, with a confidence interval of 99%;
- iii) the date and time of the fixing of the said position of the vessel;
- iv) the speed and course of the vessel.

When a fishing vessel is in its base port, the satellite tracking device may be switched off, subject to prior notification to the FMC of the flag State, or equivalent authority.

5. Each Party/CPnC shall:

- i) require its fishing vessels to be equipped with an autonomous system able to automatically transmit a message to the land-based FMC in the Flag State, or an equivalent authority, allowing a continuous tracking of the position of a fishing vessel by the Party/CPnC of that fishing vessel. If the satellite tracking device is turned off, either deliberately or due to malfunction, the system must be capable of sending an alarm signal to the FMC, or an equivalent authority, so to improve safety conditions for the crewmembers;
- ii) take all the necessary measures to ensure that the FMC, or an equivalent authority, receives through the onboard satellite tracking device the data in paragraph 4) in electronic format and, to this end, that FMC, or an equivalent authority, are equipped with computer hardware and software enabling automatic data processing and electronic data transmission;
- iii) provide for back-up and recovery procedures in case of system failures;
- iv) ensure, as much as possible, that the satellite tracking device(s) on board its fishing vessels are tamper proof and that are not susceptible to manual input of position data. To this end, the onboard satellite tracking device(s) must be located within a sealed unit and be protected by official seals of a type that reveal whether the unit has been accessed or tampered with; in the event that a Party/CPnC has evidence, following an inspection, that the onboard satellite tracking device(s) does not meet the requirements mentioned above, or has been tampered with, it shall immediately notify the vessel's Flag State.

Duties of the masters and owners/licensees of fishing vessels subject to VMS

6. Masters and/or owners/licensees of fishing vessels subject to VMS shall ensure that the satellite tracking device(s) on board their vessels are permanently operational and that the information identified in paragraph 4 is collected at least every two hours. Masters and/or owners/licensees of fishing vessels subject to VMS shall in particular ensure that:

- i) VMS reports and messages are not altered in any way;
- ii) the antennas connected to the satellite monitoring devices are not obstructed in any way;
- v) the power supply of the satellite tracking devices are not interrupted in any way;
- vi) the satellite tracking device(s) is not removed from the vessel.

7. In the event of a technical failure or non-operation of the satellite tracking device(s) fitted on board a fishing vessel, the masters and owners/licensees of fishing vessels subject to VMS, or their representative, shall communicate to the Flag State every four hours, starting at the time that the technical failure or the non-operation of VMS were detected, the up-to-date geographical position of the vessel by any available means (telephone text-message, email, facsimile, radio).

8. Fishing vessels with defective on board satellite tracking device(s) shall take immediate steps to have the device(s) repaired or replaced as soon as possible and, in any event, as soon as the fishing vessels enter a port. Fishing vessels shall not be allowed by the Flag State/the Port State to commence a further fishing trip in the GFCM Area without having defective device(s) repaired or replaced, unless authorized to leave by the competent Flag State/the Port State authority.

9. Until 31st December 2010 masters and owners/licensees of fishing vessels referred to in paragraph 3 which are not equipped with VMS shall report to the FMC, or equivalent authority, at least every four hours by any available means (telephone text-message, email, facsimile, radio). Such reports must include, *inter alia*, information on the official numbers (radio call sign and GFCM Unique Identifier), the name of the fishing vessel, the date, the time (UTC) and the geographical position (latitude and longitude) when transmitting the report, to their competent authorities, as well as:

- i) the geographical position at the beginning of the fishing operation;
- ii) the geographical position at the end of the fishing operation;
- iii) additional information on the geographical position while fishing operations occur.

Role of the Parties/CPnCs

10. When Parties/CPnCs did not receive data transmission, or have reasons to doubt the correctness of the data transmission they have received, they shall notify the masters and owners/licensees of fishing vessels subject to VMS, or their representative, as soon as possible. Where appropriate, Parties/CPnCs shall investigate the matter in order to establish whether the equipment has been tampered with. The outcome of this investigation, including any action taken by the Flag State (e.g. fines, withdrawal of fishing license, legal proceedings, etc), shall be forwarded to GFCM Secretariat that will report the matter to the Commission for

consideration/action (e.g. inclusion of the vessel in the GFCM list of vessels presumed to having carried out IUU fishing activities in the GFCM Area).

11. When Parties/CPnCs have reasons to doubt the correctness of the data transmission they have received and suspect that the fishing vessel concerned will seek access to the ports of a third Country within the GFCM Area, they shall notify the port State. The port State shall ensure either that the fishing vessel is refused access to its ports or that the fishing vessel is subject to inspection, consistent with the provisions in recommendation GFCM/2008/1 on a regional scheme on port State measures to combat IUU fishing in the GFCM Area;

12. Each Party/CPnC shall provide annually to the GFCM Secretariat a progress report on its VMS, consistent with this recommendation.

13. Each Party/CPnC shall notify the name, address, email, telephone and facsimile numbers of the relevant authorities of their FMC, or equivalent authority, to the GFCM Secretariat by 31st December 2009; each Party/CPnC shall also notify without delay to the GFCM Secretariat any changes in these contacts. The GFCM Secretariat will draw and maintain a list of contacts based on the information it receives by Parties/CPnCs.

14. Parties/CPnCs are encouraged to make VMS data available to the Scientific Advisory Committee of the GFCM in summary form to its meetings, including its Sub-Committees, to estimate fishing effort and for any other scientific purpose it deems important for its work.

Role of the Secretariat

15. Based on national reports received according to paragraph 13, the GFCM Secretariat shall report to Members at the session of the Compliance Committee on the implementation of and compliance with this recommendation.

16. By 1st of January 2011 the GFCM Secretariat will establish and maintain a database for VMS data.

Confidentiality/Data Security

17. The Executive Secretary of the GFCM shall ensure that any information provided to the GFCM Secretariat pursuant to this recommendation will be maintained in strict accordance with the provisions of recommendation GFCM/2006/7 on data confidentiality policy and procedures.

APPENDIX D**VMS and RFMOs: actions taken and measures adopted**
by Nicola Ferri**Introduction**

The thrust of this paper is to examine how the issue of VMS has been tackled within the framework of selected RFMOs. This will show that a number of steps have been taken already and that there is significant scope for GFCM Members to establish VMS, based on the practice developed thus far and bearing in mind the needs and the specificities of the GFCM Area.

Background

Article 18 of the UN Fish Stock Agreements, *inter alia*, affirms that measures to be taken by a State in respect of vessels flying its flag shall include monitoring, control and surveillance of such vessels, their fishing operations and related activities, by the development and implementation of vessel monitoring systems, including, as appropriate, satellite transmitter systems, in accordance with any national programmes and those which have been subregionally, regionally or globally agreed among the States concerned. Although VMS is the responsibility of the Flag State, as mandated by Article 18 of the UN Fish Stock Agreement, Flag States should fulfil their responsibility in accordance with what they agree in the context of relevant RFMOs.

RFMOs are increasingly promoting regional approaches to VMS. An evidence to this is the adoption of measures by many RFMOs to introduce mandatory VMS for vessels operating within their area of competence. Based on the practice developed at regional level, it is possible to make a distinction between the establishment of vessel monitoring systems that allow for the indirect reporting of VMS data to the RFMO and those that allow for a direct reporting of VMS data to the RFMO. The way VMS data are handled depends on the vessel monitoring system in place. Indirect reporting means that VMS data are relayed to a fishing monitoring centre of the fishing vessel's Flag State. The Flag State inform the relevant RFMO on the implementation of VMS by means of reports. In direct reporting, both the Flag State and the RFMO receive the data from the fishing vessel. The development of these two systems is due to the fact that security of VMS data has been a major issue for the fishing industry. The issue of confidentiality also raises concerns.

This document will examine actions taken and measures adopted by selected RFMOs, including ICCAT, which stands alone due to its linkages with the GFCM. In so doing, it will recap information on the features of both direct and indirect vessel monitoring systems without expressing any judgement/opinion on the merits of these two systems.

Decentralized VMS

Some examples of RFMOs using indirect reporting (VMS data are relayed to a fishing monitoring centre of the fishing vessel's Flag State) follows:

- **IATTC**

The IATTC has considered the issue of a Vessel Monitoring System (VMS) since 2000. A VMS resolution was discussed at the 69th and 70th meetings of the IATTC in June 2002 and June 2003, and Resolution C-04-06 on the establishment of a Vessel Monitoring System was approved at the 72nd meeting of the IATTC in June 2004.

Application of Resolution C-04-06: tuna-fishing vessels 24 or more in length operating in the eastern Pacific ocean and harvesting species for which the Commission has established conservation and management measures (by January 1, 2005, where possible, each CP must establish VMS, except CP that have already such a program in effect and are deemed to have satisfied the requirements in the Resolution). Governments non parties to the IATTC Agreement are encouraged to apply the resolution.

VMS requirements: information collected by the VMS shall include identification and position with an error of less than 500 meters at a confidence level of 99% and the date and time and position information will be collected at least once every six hours. VMS equipments has to be tamper proof, fully automatic for position data reporting, operational at all times and capable of manual transmission of reports and messages (if possible).

Reports: CPs and cooperating non Parties shall provide progress report on VMS to the Director of IATTC (first report was due by May 31, 2005, and then annually). Based on these reports, the Commission discusses how best to proceed with VMS to support conservation and management program at its Annual Meetings. The Director of IATTC ensures that the information provided according to the resolution is maintained in accordance with rules on confidentiality.

The role of the Secretariat, in the case of IATTC, is limited to supervise the implementation of the resolution based on the reports it receives. The obligation is for the fishing vessels to transmit to the Flag State.

- **IOTC**

In 2006 IOTC adopted Resolution 06/03 on establishing a VMS programme, after a pilot satellite based VMS was called for adoption in 2002. The pilot system allowed for a phased implementation of VMS.

Application of Resolution 06/03: CPs and cooperating non Contracting Parties shall adopted VMS for all vessels greater than 15 meters which are registered in the IOTC record of vessels and which operate in the IOTC Area, fishing for stocks covered by the Agreement.

VMS requirements: information collected by the VMS shall include vessel identification, the current geographical position of the vessel with a position error which shall be less than 500 meters at a confidence level of 99% and the date and time of the fixing of position. VMS equipments have to be tamper proof and located in a seal unit.

Reports: CPs and cooperating non Contracting Parties shall provide a report on the progress and implementation of the resolution. The Secretariat compiles a document based on the reports and presents it to the Compliance Committee. The Commission, at its annual session, discusses how best to proceed with the future consideration of VMS.

The role of the Secretariat, in the case of IOTC, is limited to supervise the implementation of the resolution based on the reports it receives. The obligation is for the fishing vessels to transmit to the Flag State.

Centralized VMS

- **CCAMLR**

CCAMLR has adopted in 2005 an automated satellite linked VMS (Conservation Measure 10-04).

Application of Conservation Measure 10-04: each vessel licensed by CCAMLR Members to fish in Convention Area is required to have VMS. The implementation of VMS participating only in krill fishery is not required.

VMS requirements: information collected by the VMS shall include vessel identification, the current geographical position of the vessel with a position error which shall be less than 500 m, with a confidence interval of 99% and the data and time of the fixing of the position. VMS equipments have to be tamper proof and located in a seal unit.

Data management: Contracting Parties have the duty to forward the data received by vessels to the CCAMLR Secretariat as soon as possible (but not later than 10 working days following departure from the Convention Area for the majority of fisheries). The data exchange format is specified in the Annex to Conservation Measure 10-04. If the Contracting Party so desires, it shall ensure that each of its vessels communicates data in parallel to the CCAMLR Secretariat. The CCAMLR Secretariat will handle data according to the confidentiality rules in place.

Reports: the CCAMLR Secretariat shall annually report on the implementation of and compliance with Conservation Measure 10-04.

The system is centralized as of 2005: Parties submit VMS data to CCAMLR as it is collected via the flag State or on a voluntary basis directly from the vessel to the Secretariat.

- **NAFO**

VMS is addressed in NAFO Conservation and Enforcement Measures (reviewed and updated every year), under article 25. These Measures apply to all fishing vessels used or intended for use for the purposes of commercial fishing activities conducted on fisheries resources in the Convention Area.

Application of art. 25: all vessels fishing in the Convention Area are required to be equipped with VMS.

VMS requirements: satellite monitoring device(s) on board shall ensure the automatic communication to the Flag State of data relating to the vessel identification, the most recent geographical position of the vessel (longitude, latitude) with a position error which shall be less than 500 metres, with a confidence interval of 99% and the date and time of the fixing of the position of the vessel.

Data management: Contracting Parties have the duty to communicate the data received by vessels to the Executive Secretary as soon as possible (but not later than 24 hours after their receipt). If the Contracting Party so desires, its fishing vessels shall communicate data in parallel to the Executive Secretary. The data exchange format is specified in the Annexes. The Executive Secretary will handle data in a confidential manner. The Executive Secretary shall make available as soon as possible the information received to other Contracting Parties with an inspection presence in the NAFO Area. The Executive Secretary shall make VMS data available in a summary form to the Scientific Council following specific requests from the Fisheries Commission to the Scientific Council to determine fishing effort on and around vulnerable habitats and for any other purpose.

The system is centralized and similar to that of CCAMLR.

- **NEAFC**

The Scheme of Control and Enforcement that governs NEAFC's Contracting Parties establishes, under article 11, that there must be a system for monitoring the activity of vessels in the Regulatory Area and a way of sharing that information between the Contracting Parties.

Application of art. 11: Contracting Parties shall implement VMS for their fishing vessels exceeding 20 metres between perpendiculars or 24 metres overall length which fish, or plan to fish, in the Convention Area.

VMS requirements: satellite device(s) on board shall enable fishing vessels to communicate to the Contracting Party the vessel identification, the most recent geographical position of the vessel (longitude, latitude) with a position error which shall be less than 500 metres, with a confidence interval of 99%, the date and time of the fixing of the position, where applicable, data relating to the catch on board and, where applicable, data relating to transshipment.

Data management: vessels report to their Contracting Parties and this information is shared via the NEAFC Secretariat's database. The information from all Contracting Parties is therefore available for use by inspection platforms and NEAFC inspectors entering the NEAFC Regulatory Area. The system is automatic and information is channelled in real time to assist efficient inspection, control and enforcement.

The system is centralized and the NEAFC Secretariat works closely with FMCs.

A case of particular relevance: ICCAT

ICCAT adopted in 2003 recommendation concerning minimum standards for the establishment of a VMS in the ICCAT Convention Area (Recommendation 03-14). Recommendation 03-14 applies to Each flag Contracting Party, Cooperating non-Contracting Party, Entity or Fishing Entity for its commercial fishing vessels exceeding 20 meters between perpendiculars or 24 meters length overall. These vessels have to be equipped with an autonomous system able to automatically transmit a message to the land-based Fisheries Monitoring Center of the flag State allowing a continuous tracking of the position of a fishing vessel. Data to be transmitted includes vessel's identification, 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% and the date and time of the fixing of the said position of the vessel. Subsequently, ICCAT adopted Recommendation 04-11 concerning implementation of

recommendation 03-14 to underline that the implementation date for that recommendation was November 1st 2005. In 2006, ICCAT adopted Recommendation 06-05 to establish a multi annual recovery plan for bluefin tuna in the eastern Atlantic and the Mediterranean. Article 49 of this Recommendation states that CPCs shall implement VMS for its tuna fishing vessels over 24 meters in accordance with Recommendation 03-14, but, with effect from January 1st 2010, this measure shall be applied also to tuna fishing vessels over 15 meters. In accordance with Article 49, ICCAT has adopted Recommendation 07-08 concerning data exchange format and protocol in relation to VMS for tuna fisheries within the Convention Area. This Recommendation decrees that CPCs, through its FMCs, shall now communicate electronically data to the ICCAT Secretariat (not later than 31 January 2008 CPCs shall transmit the messages every six hours according to the format set out).

Within ICCAT there has been a phased development of VMS. What is important to note is the implications of these measures for the GFCM. 21 Members of the GFCM out of 24 are also Members of ICCAT (safe for Israel, Lebanon and Montenegro). Bearing in mind this fact, a number of conclusions can be drawn.

Conclusive remarks

The GFCM has been seriously considering the implementation of VMS. In 2005 GFCM Members agreed to adopt policy guidelines for a control scheme, the so called GFCM Scheme (Appendix H to the report of the 29th session of the GFCM). Under the GFCM Scheme Flag State duties are spelled out. Among these duties, there is specific mention to the implementation of VMS as a means for Flag States to control their vessels. In 2007, a draft recommendation was submitted to the 31st session of the Commission concerning minimum standards for the establishment of a VMS system in the GFCM Area. After discussions on the draft, it was agreed to re-examine the proposal at the 32nd session of the GFCM in 2008. In the course of the 32nd session of the GFCM the issue of VMS was examined thoroughly. Several delegations stated that this system was already operating in their national fleet or was in the process of being established. It was also noted, however, that some technical, legal and financial constraints still need to be overcome to effectively establish VMS throughout the GFCM Area. The Commission eventually decreed that it was not in position to achieve consensus on the formal adoption of the draft recommendation on VMS. In turn, it agreed that in 2008 an ad hoc working group on VMS as a MCS tool be convened.

It has to be highlighted that the establishment of VMS is already implied in the text of some recommendations of the GFCM. Recommendation GFCM/2008/1, adopted by the 32nd session of the GFCM, in the Annex A, mandates foreign fishing vessels seeking access to ports to provide information in advance, including, where appropriate, type of VMS required by the flag State and/or relevant regional fisheries management organization and details of the VMS unit to enable communication. Also, in 2007 the 31st session of the GFCM adopted recommendation GFCM/31/2007/3, concerning selected ICCAT recommendations. Among these recommendations is included recommendation 06-05 by ICCAT to establish a multi annual recovery plan for bluefin tuna in the Eastern Atlantic and the Mediterranean. Article 49 of this recommendation states that CPCs shall implement a vessels monitoring system for its bluefin tuna fishing vessels over 24 metres in accordance with the 2003 *Recommendation by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area*. With effect from 1 January 2010 this measure shall be applied to bluefin tuna fishing vessels over 15 m. Not later than 31 January 2008, each CPC shall communicate without delay messages pursuant to this paragraph to the ICCAT

Secretariat, in accordance with the data exchange formats and protocols adopted by the Commission in 2007.

In addition to these precedents within the GFCM, there are various calls at international level concerning the establishment of VMS by RFMOs to improve MCS, including various UNGA resolutions on sustainable fisheries and the 2005 FAO Ministerial Declaration on IUU (which declared that it will renew its efforts to ensure that all large-scale fishing vessels operating on the high seas be required by their flag State to be fitted with VMS no later than December 2008, or earlier if so decided by their flag State or any relevant RFMO). If one looks at these calls, at precedents within the GFCM and at the practice of other RFMOs, the conclusion can be drawn that the GFCM should take action on the issue of VMS.

APPENDIX E

General Guidance on VMS implementation by Michelle Kuruc, FAO

Introduction³

While a number of options exist for vessel monitoring systems, the information presented in this guidance will be limited to satellite-based vessel monitoring systems and focused on the issues relevant to a determination on the Draft Recommendation Concerning Minimum Standards for the Establishment of Satellite Based Vessel Monitoring System in the GFCM Area.

A fishing vessel monitoring system (VMS) is a programme of fisheries surveillance in which equipment that is installed on fishing vessels provides information about the vessel's position. Although a VMS typically makes traditional surveillance and enforcement activities more effective, it does not replace them. Traditional MCS tools such as aerial and surface patrols and dockside inspections continue to be essential components of effective MCS programmes. VMS is generally recognized as a cost effective tool used to improve the effectiveness of MCS.

VMS programmes have expanded relatively quickly and are likely to continue to do so. At least 80 countries currently use or are planning to implement a VMS in the near future.

How It Works

In a satellite based VMS, shipboard electronic equipment is installed on board a fishing vessel and assigned a unique identifier. Most types of shipboard VMS equipment uses satellite communications systems that have an integrated Global Positioning System (GPS). The system calculates the unit's position, i.e. the vessel's position, and sends a data report to shoreside users. The standard data report includes the VMS unit's unique identifier, date, time and position in latitude and longitude.

The data report is communicated between the shipboard VMS unit and the monitoring agency's fishery monitoring centre. The preferred communications medium involves the use of satellite systems because the geographic coverage is greater.

In a satellite-based system, data reports sent from the vessel are transferred to a satellite and then on to a terrestrial, or "earth", station. The earth station validates and stores the data, and makes them available to the monitoring agency. The fishery monitoring centre retrieves the data, evaluates it and ultimately stores the data in a database.

³ This guidance is meant to provide a very general overview of some primary considerations for the Ad-Hoc Working Group of the Compliance Committee on VMS as a MCS Tool of the GFCM while it works to refine its draft recommendation concerning minimum standards for the establishment of a satellite based VMS in the GFCM Area. It is not to be taken as an all inclusive treatise on VMS but simply to raise a number of issues which it would be advisable to consider. Not all issues require complete resolution prior to adoption of the draft recommendation but it is useful to be aware of these issues and their potential ramifications. Additional suggested reading includes the Report of the Expert Consultation on the Use of Vessel Monitoring Systems and Satellites for Fisheries Monitoring, Control and Surveillance, FAO Rome 2006 and FAO technical Guidelines for Responsible Fisheries, Suppl. 1, Vessel Monitoring Systems (note this publication is in the process of being updated).

The data provider might also be required to store data and to establish quality control protocols regarding the functioning of the system. This might be necessary for future legal proceedings.

Position Reports: Frequency and Implications

The vessel's position information (in latitude and longitude) is sent to fisheries monitoring agencies at certain predetermined intervals, e.g. every two hours, every hour, every thirty minutes or more frequently. In certain situations, such as when a vessel is approaching a closed area or has already crossed the boundary into such a restricted area, i.e. is believed to be engaging in illegal activity, monitoring agencies prefer to obtain position reports very frequently.

From the vessel's position and speed, as provided in a number of consecutive position reports, it is possible for a monitoring agency to draw conclusions about the activities of a vessel. Some MCS agencies have been able to use these conclusions to present a circumstantial case in a court of law to establish a vessel's activities, i.e. a vessel is fishing. But to date, most legal cases have concentrated on position of the vessels, as established by VMS, or on failures to properly use VMS, for example, turning it off during certain segments of a fishing trip.

The shorter the intervals between reports, the more which can be determined about a vessel's activities, especially when used in conjunction with other available information. The requirement for frequency of position reports is normally related to the intensity of a given fisheries management regime and the resources available to respond to VMS observations.

The identity and location of shipboard VMS units can be presented on a map display, comparing vessel positions with features of interest, such as EEZ boundaries and regulated fisheries areas which assist authorities in evaluating the vessel's activities and taking timely action.

Position information for a fishery can also be used to identify fishing effort and fleet location to more efficiently plan for surveillance deployment and management purposes.

Criteria and Requirements

Determining operational and performance specifications of a VMS system are important prior to selecting a VMS service provider. Security, speed, cost, functionality, accuracy, reliability are a few of the considerations.

Consideration should also be given to installation of VMS units aboard fishing vessels by certified installers. Operability of repaired units should also be certified.

As part of establishing a VMS, which vessels will be required to install and operate a VMS needs to be determined. If harmonization with the requirements of other bodies, such as RFMOs is a factor, this should be considered.

The timing of any new requirements and exactly what will be required, effective dates, and feasibility of compliance need to be determined.

Prior to committing to VMS, it is advisable to determine exactly what function VMS will serve in supporting specific fisheries management objectives. Undertaking such an analysis will assist in formulating fishery management rules where VMS can assist and maximizing the benefit from VMS systems and information.

Appropriate legal provisions supporting the use of VMS need to be in place so VMS can be appropriately utilized by authorities; modifications may be needed at the national and regional levels.

Benefits

Fisheries management authorities and fishing vessel operators make use of VMS in several ways.

A VMS can enhance the monitoring, control and surveillance (MCS) of fisheries in a cost-effective manner. Traditional MCS methods, such as aerial and surface patrols, are deployed randomly, or based on assessments of historical vessel activity, if known, and third party information. This is an inefficient and expensive use of personnel and equipment, and the coverage of these traditional methods is relatively limited. A VMS continually informs the management authority of the location of each participant in a fishery at all times, at a fraction of the cost of traditional methods. Efficient patrols can be planned using the VMS. The VMS allows fishery agencies to deploy patrol assets effectively. Searching and travel times are reduced because the locations of the fishing fleet and individual vessels are known in advance of the patrols.

VMS can assist in conducting effective dockside inspections. The VMS can provide advance notice to fishery inspectors of routine arrivals into port by all fishing vessels, and also provide notification about the arrival of vessels that might be of special interest.

The VMS has proven its value in situations where vessel operators have been accused of alleged illegal activity, and the VMS provided information to the contrary.

For fishery management authorities, a VMS programme is not solely a technical solution to monitoring vessels. The additional components of the VMS are largely human, i.e. the policy makers and people who produce the legal framework, the technicians who install and maintain shipboard equipment, those who operate the communications links and staff the fishery monitoring centre, as well as the enforcement officers, investigators and legal personnel who analyze and respond to the information provided by the VMS. The VMS also includes the vessel operators and other industry contacts responsible for participation in the programme.

The VMS programme must be implemented and operated by people with an understanding of surveillance, computers and communications. In addition to the technical skills, however, the VMS staff must also have a comprehensive knowledge of the regulated fishing industry, including operations and activities. This knowledge is required to reliably interpret the information provided by the VMS, and also to plan and implement changes to the VMS and responses to provided information.

If integrated, the VMS database can also consolidate other information about vessels and operators (e.g. vessel characteristics, contact information, licenses and registries, etc.), making this information available in one convenient location.

The VMS equipment and service offers affordable and secure communications. The fishery management authority may authorize the use of the VMS unit as a communications device. If the equipment is capable of this function, it may provide relatively cost-effective and secure communications for many purposes. An example could be the arranging for sale of fish on board the vessel at sea, in advance of landing the fish in port.

VMS can also play a range of roles in vessel safety.

Limitations

A VMS is one of many tools that can be used in monitoring compliance with fisheries regulations. Traditional surveillance is also required to monitor vessels that are not part of a VMS programme, or to monitor vessels with faulty VMS equipment as some of these vessels may be fishing illegally. Traditional surveillance techniques are also required to detect illegal tampering with VMS equipment.

Tampering

On board the vessels, intentional tampering with VMS equipment exists in several forms. The simplest methods are blocking the antenna, disrupting the power source, removing the unit from the vessel, or otherwise disabling the unit's normal functionality. The blockage of normal transmissions can be difficult to prevent and identify, but some shipboard equipment has a built-in alerting function – if the antenna is disconnected or blocked, the end user is notified when it is reconnected or unblocked.

The disruption of power to shipboard electronics, including the VMS unit, is common on fishing vessels. Power failures are often accidental, but can sometimes be wilful. Like blocking the antenna, many VMS units will send a status report that power has been interrupted and restored. Physical removal or relocation of a unit is best detected by audits and inspections. Provisions should be made for these situations, i.e. a back up or alternative system of reporting, which can be used to communicate information in a timely way to the management authorities. Frequency of alternative reports and contents of reports should be carefully considered.

More egregious and technically more difficult types of tampering include the creation of unauthorized duplicate units (cloning), and the introduction of false information into data reports (spoofing). Cloning means the creation of a duplicate VMS unit, installed in some location that is legal from a fisheries management perspective and that appears to the management authority to report normally. During this time, the original unit aboard the regulated vessel is disabled and the vessel may be engaged in unlawful activity that is not detected via the VMS.

It should be noted that tampering is sometimes difficult to distinguish from normal failures of the electronic equipment. Management authorities should conduct routine inspections of VMS equipment, and have legal provisions for penalties that are appropriate for the various forms of documented tampering.

Security of VMS information

The security of VMS data is important both to fishing vessel operators and to fishery management authorities.

Security is essential to the fishery management authorities, as they have a responsibility to ensure that the VMS information is:

- Authentic and non-repudiated, i.e. the data were provided from a verifiable source, and that source cannot deny sending the data.
- Of high integrity, i.e. the data have not been altered from vessel to FMC, false data have not entered the system, and the chain of data transfers is recorded and auditable.
- Restricted access, if appropriate, i.e. the data have been protected from unauthorized access and usage as appropriately determined.

The FMC should be housed in a physically secure location that ensures that only certain personnel can access the VMS data. These personnel should have the appropriate training and authorization to access the VMS. The FMC should also have operational and policy provisions to guarantee that the data are safe from damage or disclosure.

Sharing of VMS Information

VMS programmes may incorporate several types of information that are desirable to exchange with other agencies, including VMS position information, permit and license registries, catch certificates and trade documents, electronic fishing logbook information, customs tariff codes and fish product tracing information.

Sharing VMS data with other management agencies should be considered to support the efforts to prevent, deter and eliminate IUU fishing and related activities. Linkages among Flag States, Port States, and Coastal States should be considered as VMS data is a desirable tool for detection of illegal activities when shared on a timely basis.

Role of Secretariat

RFMOs have taken a variety of approaches in implementing a VMS to meet their needs and circumstances. Often adopting a phased approach is advisable which will allow issues to be addressed on an as needed basis. Providing reports to the Secretariat for various purposes, such as scientific and administrative, allows collective solutions to be discussed and maximizes the utility of VMS data. Expectations should be realistic as a break in period to sort out problems will likely occur.

ANNEX 1

Summary table on VMS in the context of RFMOs

RFMO	VMS
Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)	Each vessel licensed by CCAMLR Members to fish in Convention Area is required to have VMS, monitored by flag State. Secretariat receives from flag States VMS position reports for vessels engaged in all toothfish fisheries. In 2004 a decision was made to centralize VMS; Parties now submit VMS data to CCAMLR as it is collected via the flag State or on a voluntary basis directly from the vessel to the Secretariat.
Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea (CCBSP)	VMS is required on all vessels. Location data are to be shared with all Parties on real-time basis.
Commission for Conservation of Southern Bluefin Tuna (CCSBT)	No centralized VMS scheme. All authorized fishing vessels are operating with VMS but report back to national administrations and not to CCSBT. Recently the CCSBT has agreed on a suite of MCS measures and is currently discussing the details of implementation. A resolution on VMS was tabled by Japan in 2007 but in adopting the report of the Compliance Committee of CCSBT, it was specified that the adoption of the resolution on VMS was not agreed. The proposal of Japan is therefore a draft and will be discussed again in the future.
General Fisheries Commission for the Mediterranean (GFCM)	No VMS at this time however VMS is currently under consideration; to be discussed at the CoC Working Group on MCS/VMS and subsequently at the 33 rd session of the Commission (which is expected to adopt a recommendation).
Inter-American Tropical Tuna Commission (IATTC)	Utilization of vessel monitoring system (VMS) for vessels of 24 meters or greater of overall length.
International Commission for the Conservation of Atlantic Tunas (ICCAT)	2003 Recommendation calling for CPCs to implement VMS no later than July 1, 2005 for commercial fishing vessels >24 m. VMS data, when available, to be transmitted to flag State and then to ICCAT. As of 2010, VMS requirements will apply also to >15 m tuna vessels.
Indian Ocean Tuna Commission (IOTC)	In 2002, passed non-binding resolution to establish pilot program to implement VMS on 10% CP and NCP vessels > 24 m. Information is to be sent to land based FMCs every 6 hours. In 2006 a resolution was adopted on establishment of VMS program for vessels >15 m registered in the IOTC record of vessels.
International Pacific Halibut Commission (IPHC)	IUU fishing is not an issue for the International Pacific Halibut Commission. There is therefore no VMS in place.
International Whaling Commission (IWC)	The issue of IUU fishing, including MCS and VMS, was being addressed in the context of the Revised Management Scheme (RMS). Discussions are ongoing but the work is currently on hold (since the commercial whaling moratorium is still in place, there are no firm plans to implement the provisions of post-UNCED fishery instruments, including those related to IUU).
Northwest Atlantic Fisheries Organisation (NAFO)	Since 2001, CPs fishing in NRA must be equipped with VMS (art. 25 of NAFO Conservation and Enforcement measures). Vessels transmit every 2 hours automatic positional and other reports to national fisheries monitoring centres, which, in turn, forward to NAFO Secretariat. NAFO and NEAFC are leading development of North Atlantic Format (NAF) of a comprehensive table of message types that can be transmitted through VMS.
North Atlantic Salmon Conservation	NASCO addressed the problem of fishing for salmon by non-NASCO Parties in the late 1980s through diplomatic efforts. Steps were also

Organization (NASCO)	taken to improve information exchange on surveillance efforts. There have been no reports of illegal activities since the early 1990s.
North East Atlantic Fisheries Commission (NEAFC)	Since January 2000, all vessels fishing outside EEZs require VMS (art. 11 of the Scheme of Control and Enforcement of NEAFC). Secretariat supplies CPs with an inspection presence, with up-to-date information about ongoing fishing activities. VMS is fully automated and is reported to CPs with an inspection presence. Frequency of position reports from fishing vessels has increased from 6 hours to 2 hours. CPs with an inspection presence are automatically supplied with real time information about ongoing fishing activities 24 hours a day, 365 days a year. NEAFC and NAFO are leading development of North Atlantic Format (NAF) of a comprehensive table of message types that can be transmitted through VMS.
North Pacific Anadromous Fish Commission (NPAFC)	Since 2006 an annual joint enforcement plan of the Parties is in force. It is a comprehensive plan resulting from the cooperative efforts of all the Parties which includes patrol vessel and aircraft surveillance of the Convention Area throughout the high threat season
Pacific Salmon Commission (PSC)	
South East Atlantic Fisheries Organisation (SEAFO)	There is a requirement of near-to-real time reporting of vessel movements by means including satellite surveillance. Vessels must have VMS installed and they must report their positions through VMS signals to SEAFO.
South Indian Ocean Fisheries Agreement (SIOFA)	The Agreement establishing SIOFA is due to enter into force ninety days after the date of receipt by the Depository of the fourth instrument of ratification.
South Pacific Regional Fisheries Management Organization (SPRFMO)	The Convention is to be yet negotiated (only in draft)
Western and Central Pacific Fisheries Commission (WCPFC)	Article 24(8) requires all vessels fishing in the Convention Area to use VMS. CPs must cooperate to ensure compatibility between national and high seas VMS. Options for implementing VMS will be considered by TCC in December 2005 including the possible expansion of the existing FFA VMS to include WCPFC Area.