



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



SCIENTIFIC ADVISORY COMMITTEE (SAC)

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**Report of the Working Group on VMS and related control systems in the
GFCM area
Tunis, Tunisia, 1-2 October 2013**

OPENING, ARRANGEMENT OF THE MEETING AND ADOPTION OF THE AGENDA

1. The Working Group on VMS and related control systems in the GFCM area of the CoC was held in Tunis, Tunisia, on 1–2 October 2013. The Working Group was attended by 37 experts from GFCM Members, relevant organizations and entities. The list of participants is provided in Appendix B of this report.
2. Mr Josip Markovic, vice Co-Chair of the CoC and Moderator of the Working Group, called the meeting to order and read out the terms of reference of the working group.
3. Mr Hachemi Missaoui, from the Tunisian Directorate General of Fisheries and Aquaculture, welcomed participants. While underlying the importance for Tunisia to host the meeting. Furthermore, he emphasized that his country remained committed to cooperate with the GFCM in the field of monitoring, control and surveillance (MCS) as well as in other domains.
4. Mr Abdellah Srour, GFCM Executive Secretary, recalled the importance of the implementation of VMS in the GFCM area for the conservation of marine living resources. He indicated that the Commission had made considerable progress in matters relating to MCS since the adoption of Recommendation GFCM/33/2009/7 Concerning minimum standards for the establishment of a Vessel Monitoring System (VMS) in the GFCM area. Mr Srour then drew the attention of participants on the phased development of VMS and noted the importance of a centralized VMS system in Regional Fisheries Management Organizations (RFMOs) as a tool to strengthen controls.
5. The Agenda was introduced and adopted without changes (Appendix A).

GENERAL OVERVIEW ON MONITORING, CONTROL AND SURVEILLANCE WITH PARTICULAR REFERENCE TO THE GFCM AREA, INCLUDING THE ROLE OF CONTROLS IN SMALL-SCALE FISHERIES

6. The GFCM Secretariat informed the meeting about the role and the objectives of the GFCM regarding VMS. More precisely, the technical requirements currently in place within the GFCM for vessels over 15 m were enumerated and reviewed. Information was also provided in relation to the status of implementation of Recommendation GFCM/33/2009/7 as well as on recent initiatives launched by the GFCM to build MCS capacity at national level.
7. In the ensuing discussions it was expounded what data were expected to be sent from fishing vessels to national fishing monitoring centers (i.e. a GPS location with time and date of acquisition, the speed and

heading at the time of the acquisition) and what analyses could be performed on the basis of such data by GFCM Members. Whereas in most common cases VMS data analysis based on latitude/longitude would be used for the estimation of the fishing effort and the control of passage through sensitive fishing zones, with the addition of speed and course it would also be possible to detect and predict fishing activities and to determine compliance with given conservation and management measures. However, it was pointed out that similar tasks could be only performed at present at national level because Recommendation GFCM/33/2009/7 has brought about the establishment of a decentralized VMS system. Accordingly, the role of the GFCM Secretariat would remain limited to assess the implementation of Recommendation GFCM/33/2009/7 by GFCM Members until the establishment of a GFCM centralized VMS system.

VMS AND CONTROL SYSTEMS IN GFCM CONTRACTING PARTIES

8. National experts and participants shared with the Working Group their experience on VMS and control systems, including in matters within and beyond the scope of recommendation GFCM/33/2009/7.¹

9. Ms Mimoza Cobani, from the Albanian Fishery Directorate of the Ministry of Environment, reported that Albania has implemented VMS for 223 fishing vessels over 12 m combining both satellite and GPRS communication channels. This system was built to strengthen the national MCS and enable the sector to rely on satellite-based VMS to combat IUU fishing and to collect different data on fishery activities at the same time. After being collected from the vessels the data were transferred to a central national fishing monitoring center, processed, validated, analyzed, disseminated to regional fishing monitoring centers and presented to Fisheries Department users. Nevertheless, Ms Cobani explained that the system has not been operational lately due to the high costs of maintenance and that financial support would be needed to ensure that monitoring functions were resumed in the future.

10. Mr Ahmed Menai, from the Algerian Ministry of Fisheries and Marine Resources, presented the national VMS system in place, which was mandatory for all vessels engaged in tuna fishing. In addition, a broader control system was being developed with the goal of ensuring MCS operations over a 1.200 km strip of the national coast. This system, which would rely also on VHF and GPS, would be underpinned by the use of patrolling vehicles and inspections at ports. According to Mr Menai, this undertaking would improve efforts aimed at the conservation of fisheries resources and positive socio-economic effects (i.e. creation of employment opportunities, market transparency, etc.) would be generated too.

11. The moderator, in his capacity of national representative of the Croatian Marine Resources Management Department, reviewed the requirements of the Croatian VMS system. This system was first set up in 2007 and it would currently serve several purposes, from the control of the fleet to eliciting better compliance with MPAs and protected areas. Both satellite and GPRS communication channels (i.e. hybrid system) were being used by roughly 350 Croatian vessels equipped with transponders. Mr Markovic indicated that an additional 100 transponders were in store for installment by April 2014 and that efforts to integrate the VMS system with AIS and with the use of other tools aimed at fighting IUU fishing (e.g. e-logbook) were ongoing.

12. Mr Magdi, Abd El Wahed, from the Egyptian General Authority for Fish Resources Development, described progress in Egypt towards the establishment of a national control system. After specifying that two national tuna vessels were already equipped with VMS, he added that a pilot project was launched to design a navigation satellite device for coastal areas at reduced cost (about 600 US\$ per vessel) and in order to improve tracking and safety at sea. Technical assistance was requested to the GFCM which had performed a preliminary assessment of the pilot project and made proposals to increase its performances. It was noted that the project was still underway and that Egypt, with the support of the GFCM, would expect to finalize in due course what had been initiated.

13. Mr Frédéric Schmit, from the French Directorate of fisheries and aquaculture, recalled that 1192 fishing vessels over 12 m were equipped with VMS in France, all relying on new generation technology. This has enabled to integrate ground-breaking functions and alarms in order to avoid tampering. As a result, the number of infringements relating to tampering had drastically diminished. Also, with a specific alarm showing them that they are being surveyed, captains and masters of the vessels concerned were *de facto* more involved in MCS operations, as they often called back the national FMC to seek information. With

¹ All presentations delivered at the working group are available on-line at the following link:
<http://151.1.154.86/GfcmWebSite/CoC/2013/VMS/docs.html>

regard to vessels under 12 m, Mr Schmit introduced a recent experiment, conducted by the scientific mission of his directorate, for their geo-localization in marine areas of metropolitan France. Some vessels had been equipped with a transponder similar to VMS and based on GPRS thanks to the support of the national administration. Fishermen themselves directly participated in this undertaking whose final goal was the evaluation of the fishing effort rather than control of vessels. Consequently, fishermen were given access to a web interface giving them the possibility of monitoring the progress in the implementation of the initiative. It was clarified that more time would be needed to have final evidence of verified pros and cons under the experiment, which had started at the end of 2012.

14. Mr Stefanos Kavadas, from the Hellenic Centre for Marine Research, underscored that one of the peculiar characteristics of the Greek fisheries was the enormous development of the professional fishing fleet operating in the coastal zone, representing 96.5 percent of the total number of the fleet. All trawlers had been equipped with VMS and only 27 coastal fishing vessels were compelled to install VMS. The national fishing monitoring center had been entrusted with the responsibility of ensuring control of fishing activities of vessels and compliance with the rules of the EU Common Fishery Policy. VMS data collected were also used for scientific purposes. Because of confidentiality rules in force only the results obtained from the analysis of the data were being published at national level. Through the Fisheries Data Center of the Institute of Marine Biological Resources and Inland Waters of the Hellenic Centre for Marine Research evaluation, analysis and dissemination of said results was guaranteed, including with maps or statistical tabulated matrices. In the opinion of Mr Kavadas, the results of the analysis of VMS data could prove useful for the scientific community and for the fisheries administrators, giving them the possibility to make predictions and envisage scenarios to control the fishing effort and to elaborate management plans for the sustainability of stocks.

15. Mr. Daniele Praticò, from the Italian Ministry of Agricultural, Food and Forestry Policies, illustrated those activities performed by the Italian Coast Guard in relation to the daily control of fishing operations. He reported in particular about the implementation of VMS by Italy, from the very architecture of the system to its graphical interface, illustrating the software alert code, the exchange of data via the web, the segment of the fleet equipped with blue-box, etc. Mr Praticò also described the activities of the national fishing monitoring center, including Vessel Detection System (VDS) related activities, and noted the Italian continuous commitment to cooperation at regional and sub-regional level.

16. Mr Ahmed Abukhder, from the Libyan General Authority for Marine Wealth, stressed that Libya was devoted to the sustainable exploitation of living marine resources in the waters under its national jurisdiction as well as in the GFCM area for the benefit of present and future generations. He acknowledged that to further this endeavour cooperation among GFCM Members would have to be reinforced with a view to equally implementing all the recommendations in force and to exchanging relevant information on fishing activities. Concerning the national VMS system, Mr Abukhder explained that Libya, through its fishery authorities, was doing its best to implement GFCM recommendations. A plan had been already envisaged for the implementation in 2014 of the VMS system on all vessels above 15 m. As for vessels less than 15 m, the plan advocated the use of VHF. In both cases other MCS tools, such as inspection of the fishing gears and catch in ports and at sea, had been also foreseen.

17. Ms Rachel Galea, from the Maltese Department of Fisheries and Aquaculture, stated that ensuring sustainable fishing activities within the 25 nautical miles of the Fisheries Management Zone would remain a top priority for Malta. For this purpose, tracking devices were installed on a large portion of the fleet with a hybrid system comprising of VMS, AIS and GPRS. The latter communication system was used by a segment of the fleet under 12 m. Consistent with the requirements in Recommendation GFCM/33/2009/7, the interval of transmission of VMS data was 2 hours and devices installed were ensuring their automatic and direct communication to a land base station relaying them to the fisheries monitoring centres. Miss Galea concluded by indicating that some VMS data were at times requested internally for inspections or scientific purposes.

18. Ms Nada Lakicevic, from the Montenegrin Ministry of Agriculture and Rural Development, indicated that VMS had been developed thanks to the 2009 project on the sustainable development of marine fisheries. The centralized system had been installed in the Fishery unit of the Ministry of Agriculture and Rural Development, a branch of the national Fisheries Information System. Several laws had been enacted as well as a bylaw to lay down the requirements of the satellite monitoring system of fishing vessels and

identify the fishing vessels concerned. Every vessel longer than 10 m with a fishing license would be supposed to have a tamper proof blue box onboard. The device should collect and automatically transmit data to the fishing monitoring center every two hours, either via satellite or via sim card (in this case every 15 minutes). Data transmitted encompassed recent geographical positions of the vessel, with a positioning error of less than 500 meters and the time accuracy of 99 percent date and time of the position. Ms Lakicevic concluded by providing some statistics for Montenegro where 85 percent of transmission were made using GPRS.

19. Mr Bensalem Alaoui, from the Moroccan national surveillance center of fishing vessels, introduced the national system of localization of fishing vessels. After clarifying that Morocco relied mainly on VMS for controls, he emphasized that the system was a fundamental means to support management measures in place as well as to complement other control tools such as inspections and patrolling at sea. Mr Alaoui also expounded that thanks to VMS an effective control was ensured throughout the value chain for fisheries products. The capacity of the fishing monitoring centers was described as well as the fleet concerned by monitoring. With regard to the Mediterranean Sea, it was explained by Mr Alaoui that the control of Moroccan fishing vessels was mainly occurring in two geographical areas (west and east of Al Hoceima).

20. Mr Carlos Ossorio, from the Spanish General Sub-direction of Fisheries Control and Inspection, listed the various areas to which VMS contributed at national level, spanning from the control of closed or restricted areas to fishing effort and research. Exchange of VMS data on the national fleet operating in international or territorial waters to other States, agencies and organizations had been ongoing for several years. For the specific case of the Mediterranean Sea, 1020 vessels equipped with VMS were monitored which in turned enabled Spain to identify fishing patterns and provided a basis for any administrative and disciplinary procedure initiated at national level against wrongdoers. Mr Ossorio was of the advice that a GFCM centralized VMS system, although currently not foreseen by Recommendation GFCM/33/2009/7, would represent an excellent opportunity to put forth joint tools which could permit the exchange of information to manage Mediterranean resources, improve safety and reduce IUU fishing activities. Similarly, it would prompt joint trainings, the elaboration of national regulations and more sustainable fishing activities.

21. Mr Mohamed Hmani, from the Tunisian Directorate General of Fisheries and Aquaculture, affirmed that the establishment of a VMS system was regarded as an adequate response to the development of intensive fishing activities. After several measures were taken at national level, in 2008 this system was eventually set up. 60 Tunisian vessels were being monitored and steps were being made to extend the use of VMS to all the fishing vessels over 15 m, according to Recommendation GFCM/33/2009/7. Concerning the requirements entailed in the national VMS, Tunisia was abiding by those laid down in Recommendation GFCM/33/2009/7. Mr Hmani presented also some reconstructions of the fishing activities of vessels being monitored through VMS thanks to several maps where collected positions had been pinpointed.

22. Mr Murat Toplu, from the Turkish General Directorate of Fisheries and Aquaculture, asserted that Turkey has been relying on two communication systems for monitoring its fishing vessels, namely VMS, which was established in 2007 for all tuna vessels, and AIS for all fishing vessels above 15 m. The frequency of transmission for the former was every 2 hours whereas for the latter was more frequent because it would come without any additional communication costs. In the forthcoming period Turkey would plan to extend the system to monitor all fishing vessels over 12 m. In this respect, Mr Toplu acknowledged that a specific hybrid device would be needed so to function as an integrated system comprising VHF, VMS and the e-logbook.

23. Mr Xavier Vazquez Alvarez, from the Directorate General DG MARE of the European Commission, shared with participants some ideas about VMS issues. He focused in particular on certain aspects of the implementation of VMS under the EU control framework, mostly regarding possible exceptions to general applicable rules, the back-up procedure when the system is malfunctioning or disconnected and the compulsory use of AIS for vessels over 15 m. Mr Vazquez then introduced the latest development in the "FLUX system" (Fishing Language Universal Exchange) which would help to advance on the definition of an international standardize language system. Furthermore, this common language would facilitate the data transmission between fishing monitoring centers and would be ready to integrate any other sources of information (AIS, VDS, GPSr and ERS). It was clarified that the software, currently in a testing phase,

would be made available in open source as its underlying idea would be that of sharing experiences to promote a better sharing of data.

24. Mr Stefano Lelli, coordinator of the Pesca Libano Project executed by CIHEAM-IAM Bari in cooperation with the Lebanese Ministry of Agriculture, CNRS Lebanon and IAO, briefed participants on the background and the outcomes of a pilot project aimed at monitoring the Lebanese fleet carried out with the technical assistance of the GFCM. Although the pilot project was still ongoing, Mr Lelli had already identified some pros and cons linked to the use of VMS in Lebanon. In his view, the tested system (portable beacons and satellite airtime) was oversized in terms of cost-effectiveness and legal framework for the Lebanese fleet, almost exclusively small-scale. Also, the system relied excessively on the positive and proactive interaction of the fishermen as the beacons would be placed on board by them. On the bright side, the system had provided a snapshot of fishing activities almost real time and revealed significant potential to fill some capacity gaps at national level, including in terms of human resources. National companies had demonstrated interest in developing web-interfaces and IT systems in support of MCS and in view of future undertakings.

25. Mr Giuseppe Russo, from the European Maritime Safety Agency, described relevant initiatives launched by EMSA in the field of monitoring of vessels. More precisely, he referred to the SafeSeaNet project which had been carried out with a view to facilitate cooperation via the use of collective electronic means through which the EU Member States could exchange data on ships' positions, cargoes and incidents. Thanks to SafeSeaNet it had been possible, among others, to display selected types of ships, show their historical positions, track down the full positional details of their voyages and find specific ships using the name or IMO number. Thanks to the Integrated maritime data environment project (IMDatE) on the other hand, more options for data visualisation as well as new machine-to-machine interfaces and automated vessel behaviour monitoring had been crafted. In the case of fisheries, it had been possible to combine results obtained with the two projects to attain integrated VMS-AIS analysis of data and stack pros against cons for each system used. Mr Russo noticed that several synergies had come to the fore thus advising for a combined use of VMS and AIS in fisheries.

26. Mr Tommaso Russo, from the University of Rome Tor Vergata, discussed the progress in the analysis of VMS data in light of scientific insights from the Italian experience. Because fluctuations of resources and of environment characteristics were the traditional subjects of investigation and modelling, whereas an exhaustive analysis of fishing effort had been hampered by the lack of proper tools for the survey of fishing fleet activities in space and time, the introduction of VMS had presented new possibilities to scientists. Mr Russo underscored the revolutionary trait of analysis based on the tracking of fishing activities in space and time by satellite data about position, speed and course of fishing vessels. Moreover, the interactions between spatial dynamics of biological resources and fishermen strategies would generate complex spatial patterns of fishing mortalities on exploited stocks as well as of environmental disturbance. As a consequence, assessment and management of fisheries would move towards a class of spatially explicit and bio-economic approaches. This kind of assessment was being tested in Italy by using available VMS data.

27. Mr Nenad Hercigonja, VMS technology expert, displayed some new developments in MCS technology including hybrid communication, catch report transmission, embedded geo-zones, subsidized fuel usage control, net authentication, anti-tamper measures and private distress button. After a careful analysis of all these features, he deduced that VMS should not be considered a tool for obtaining solely position, speed and course as new technologies would enable the collection of precise and reliable information, thus supporting many other important aspects of fishery control.

OPEN DISCUSSIONS ON THE GUIDELINES FOR A TECHNICAL COOPERATION PROGRAMME IN THE MONITORING OF FISHING VESSELS IN THE GFCM AREA OF COMPETENCE, INCLUDING POSSIBLE AMENDMENTS TO THE TEXT AND RECOMMENDATIONS TO THE THIRTY-EIGHTH SESSION OF THE COMMISSION

28. In light of the information provided by national experts and participants through their presentations and departing from the text of the Guidelines for a technical cooperation programme in the monitoring of fishing vessels in the GFCM area of competence, the Working Group recognized the need for a VMS system

that should prove in the future to be reliable, robust, proportionate (e.g. depending on the fleet segments concerned by the monitoring), non-discriminatory (i.e. if vessels that less than XX m in one country were to be monitored, other countries should follow suit and extend monitoring to vessels of the same length) and integrative of other technologies. Although these principles were all implied in the guidelines, it was suggested that they would need further elaboration. A point of reference for the GFCM could be represented by the various experiences relating to VMS and other monitoring systems already in place (e.g. ICCAT, EFCA, EMSA, etc.) and any future move should hence take stock and advantage of these experiences.

29. A recurring problem of national VMS systems was considered to be the sharing of data among GFCM Members as questions such as what parameters should be used, how to save budgetary resources, etc., would be entailed. It was proposed to carry out a critical analysis of all national systems in order to facilitate the phased development of VMS as well as harmonization. However, reference was made to the document COC:VII/2013/Inf.8 on the Progress on the implementation of a Vessel Monitoring System and related control systems in the GFCM area which had been presented to the seventh session of the CoC (14–15 May 2013, Split, Croatia). In that occasion, the CoC concluded that the establishment of national VMS systems was uneven throughout the membership and solutions were required to bring about a level playing field so that VMS could be used as a tool to enhance compliance with all GFCM recommendations in force.

30. The Working Group agreed that inspectors in particular needed as many data as possible to properly plan and to perform their duties and prevent IUU products from reaching the market. Among others, it was pointed out that without these data no scientifically-sound multiannual management plans could be put forth. Furthermore, the tracking of vessels' positions could help to ensure that MCS and inspections are economically optimized by planning the use of means based on risk-management. As an option, when GFCM Members were not yet in position to establish their own control systems, the GFCM could provide support in addressing gaps relating to the lack of legislation and the incidence of fragmentation at national level. Standardization would also be needed at one point and confidentiality should be linked to the security of the transmission of data. A common language should be used to lower costs and facilitate the sharing of data. However, it was pointed out that in some cases the problem was not the lack of resources but rather that of political stability which would prevent the establishment of VMS.

31. Another issue which drew the attention of the working group was that of the depletion of the fish stocks in the Mediterranean Sea. In this connection, the goal to sustainably manage fisheries was recalled and the potential of VMS to play a multifaceted role was stressed (i.e. the data collected could help significantly in determining fishing patterns and the dynamics of fish populations). Also, the need to underpin the precautionary approach via the use of VMS was singled out. Concerning the possible use of VMS data as evidence in trials against fishermen having violated relevant conservation policies, no definitive answer would exist at present. Nonetheless, there was little doubt that the tampering with VMS should be regarded as a serious offence in all GFCM Members as VMS already constituted a means for the detection of infringements at national level. Analogies with the case of pollution at sea generated by vessels should be borne in mind when considering the use of VMS data as circumstantial evidence before a court.

32. Considering the predominance of small-scale fisheries in the Mediterranean Sea, control systems would have to envisage tracking requirements tailored to the real need and the specificities of the region and the sub-regions through an adaptive approach. Whereas conventional VMS would remain the solution of choice for vessels beyond 15 m for the time being, other vessels could be monitored thanks to non-conventional means, in accordance with paragraph 8 of the Guidelines for a technical cooperation programme in the monitoring of fishing vessels in the GFCM area of competence. For small-scale fisheries, GPRS and AIS could represent viable solutions as they were cost effective. As a matter of fact, all vessels which were already under the obligation of having transponders using similar channels of communication according to their national legislations should be monitored at regional level. For these vessels intervals of transmission other than 2 hours, like in the case of VMS, could be agreed upon as no additional costs would have to be borne. Reducing the intervals of transmission, regardless of the system chosen for tracking positions, would be fundamental to implement a proper monitoring and control system of Marine Protected Areas.

33. Clarifications were sought as to whether the possible establishment of a GFCM centralized VMS system would interfere with that of national fishing monitoring centers. It was clarified that not only such a centralized system would not encroach upon the sovereignty of GFCM Members to have their control

systems at national level, but that a GFCM centralized VMS system could lend significant support to GFCM Members by facilitating the sharing of technology and technical assistance. Furthermore, until the day certain GFCM Members will be devoid of a national fishing monitoring center, a GFCM centralized VMS system could make up for this structural deficiency and ensure the exchange of relevant data. It was suggested that technical brochures in English, French and Arabic should be prepared by the GFCM Secretariat to raise awareness at regional level on several aspects linked to VMS, including with a view to directly involving the fishermen in MCS.

THE WAY FORWARD: THE PHASED DEVELOPMENT OF A GFCM CENTRALIZED VMS

34. The GFCM Secretariat delivered a detailed presentation on the possible establishment of a GFCM centralized VMS system in order to better understand whether this solution could address the various issues emerged during the discussions at the Working Group while allowing the GFCM to move forward. In this very respect, the position by the Commission, which had advocated the need for a phased development of VMS in the GFCM from a decentralized to a centralized system, was recalled. Based on the level of technology existing at present, it was explained that various options would exist for setting up a GFCM centralized VMS system. In addition to a traditional centralized VMS, that would be physically located in the premises of the GFCM, there could be also the recourse to an external provider which would not need any installation of servers and equipment at the GFCM headquarters. On the contrary, the service would be ensured in this case via a web interface which would be accessible to selected users at national level through restricted and confidential policies.

35. In the ensuing discussions the Working Group expressed a positive opinion on the possible establishment of a GFCM centralized VMS system and identified the six building blocks which should be the pillar of this undertaking, namely the features of the system, its tracking requirements, the web based system, the use of data, the main implementation problems and constraints and technical assistance and capacity building.

36. The Working Group consequently agreed on the following recommendations:

- the establishment of a GFCM centralized VMS system tailored for the GFCM area of competence is advised for MCS, safety, scientific research and fisheries management purposes;
- a modular approach encompassing small-scale fisheries is needed to take into account the specificities of this sector, including the identification of case studies;
- this system should address the following:

BUILDING BLOCKS	RELEVANT ELEMENTS
<i>Features of the system</i>	<ul style="list-style-type: none"> • Objectives • Links with measures to counter IUU fishing • Costs • Benefits
<i>Tracking requirements</i>	<ul style="list-style-type: none"> • Vessels • Conventional vs. non-conventional means of tracking • Integration of existing controls tools • Frequency of transmission
<i>Web based system</i>	<ul style="list-style-type: none"> • Alert system • Confidentiality and safety of data transmission • Mapping, bathymetry • Data language to be used
<i>Use of data</i>	<ul style="list-style-type: none"> • Exchange of data • Use of data as possible evidence of IUU activities • Inspections

BUILDING BLOCKS	RELEVANT ELEMENTS
	<ul style="list-style-type: none"> • Scientific research • Links with vessel registers
<i>Main implementation problems and constraints</i>	<ul style="list-style-type: none"> • Tampering • De-installation of the transponders • Fragmentation among relevant national agencies • Regional legal framework • Maintenance of the system
<i>Technical assistance and capacity building</i>	<ul style="list-style-type: none"> • Involvement of relevant national companies for feasibility studies in MCS • Progressive establishment of FMCs at national level • Training, transfer of technology and exchange of experience

- technical assistance and transfer of technology will be encouraged and provided, with particular reference to those GFCM Members that need support in the establishment of their national fishing monitoring centers.

OTHER MATTERS

37. Participants thanked the government of Tunisia for the warm hospitality and the government of Italy for having provided financial support for the organization of the Working Group.

ADOPTION OF THE REPORT

38. The meeting formally adopted the recommendations of the Working Group, as reproduced in paragraph 36, on Wednesday 2 October 2013. The final report of the Working Group was endorsed via e-mail.

Appendix A

Agenda

- 1. Opening and arrangements of the meeting**
- 2. Adoption of the agenda**
- 3. Introduction of participants and meeting's objectives**
- 4. General overview on Monitoring, Control and Surveillance with particular reference to the GFCM area, including the role of controls in small-scale fisheries**
- 5. VMS and control systems in GFCM Contracting Parties**
- 6. Open discussions on the "Guidelines for a technical cooperation programme in the monitoring of fishing vessels in the GFCM area of competence", including possible amendments to the text and recommendations to the 38th Session of the Commission**
- 7. The way forward: the phased development of a GFCM centralized VMS (by GFCM Secretariat)**
- 8. Any other matter**
- 9. Conclusions and closure of the working group**

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