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ANNUAL REPORT ON THE COMMISSION VMS

WCPFC-TCC13-2017-RP01 rev1[1]
27 September 2017

Paper prepared by the Secretariat

Purpose

1. The purpose of this paper is to present the Annual Report of the Commission VMS for the consideration of TCC13.

Introduction

2. The Annual Report for the Commission VMS is prepared in accordance with VMS SSPs requirements paragraphs 7.3.9 and 7.3.10.

3. The paper is structured as follows:
- Background and Introduction;
  - Service level agreement with FFA
  - Contracts with Mobile Communication Service Providers;
- Commission VMS Database;
- List of Approved MTUs/ALCs;
- VMS Audit Report;
- Manual Position Reporting;
- Provision of High Seas data for MCS activities;
- Update on Tasking from WCPFC12;
- Security and integrity of Commission VMS, including SOP; and
- Recommendation

Background and Introduction

4. Article 24(8) of the Convention obliges each Member of the Commission to require its fishing vessels that fish for highly migratory stocks on the high seas of the Convention Area to use an ALC/MTU which meets agreed WCPFC Standards, Specifications and Procedures, while in these areas. To implement this requirement, the Commission has adopted CMM 2014-02 Commission Vessel Monitoring System Conservation and Management Measure, a set of Standards, Specifications and Procedures (SSPs) which were initially approved in 2008 (WCPFC5) and that were

[1] Replaces version issued on 20th September 2017. This version includes corrections to the names of the ALC units included in Table 2. An edit was included in paragraph 27 includes mention of the "MAR-GE V3" unit as an additional unit to which the analysis by the Secretariat applies, and the draft recommendation text has been updated to reflect this update.

most recently modified in 2016 (WCPFC13), and a set of Standard Operating Procedures (SOPs) which were approved in 2009 (WCPFC6).

5. Additionally, in 2012 (WCPFC9) the Commission adopted a Statement of Purpose and Principles for the Commission VMS. The stated purpose of the Commission VMS is "to cost-effectively monitor the activities of fishing vessels authorized by flag States to fish for highly migratory fish species in the Convention Area in areas beyond jurisdiction of the Flag State. Data collected by the Commission VMS will be securely stored and used by the Commission and its Members, Cooperating Non-Members, and Participating Territories (CCMs) to achieve compliance with Conservation and Management Measures (CMMs), fisheries scientific analysis and sound fisheries management decision-making in the Convention Area."

6. The Commission VMS primarily covers high seas waters of the Convention Area. WCPFC9 agreed to a decision related to the application of the Commission VMS solely to waters under the jurisdiction of Members and to complement and support Members' national VMS. Since the "*Flick the Switch*" proposal was approved at WCPFC9 the following CCMs - Australia, Federated States of Micronesia, France (including New Caledonia, French Polynesia and Wallis and Futuna), Nauru, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, the United States of America have provided letters of notification for the Commission VMS to cover their EEZ. Since 8 April 2016, to date no additional CCMs waters have been included in the coverage of the VMS.

7. The approved structure of the Commission VMS system allows vessels to report to the WCPFC through two ways: i) directly to the Commission VMS, or ii) to the WCPFC through the FFA VMS. There are a number of contracts that the Secretariat maintains to facilitate the necessary arrangements for the Commission VMS. These are described in the paragraphs below.

Service Level Agreement with the FFA

8. Paragraph 7.3.3 of the SSPs requires, in part, the Secretariat to develop and manage a service level agreement (SLA) with the FFA for provision of VMS services. This SLA was signed by the secretariats of the WCPFC and FFA in early December 2008, and the Commission VMS became operational in April 2009. VMS service is provided through and Service Level Agreement with FFA and since 30 June 2016, the service provider has been TrackWell (www.trackwell.com).

9. The TrackWell VMS user interface is implemented as a suite of web modules contained within a common frame application. These modules are selectable from the main menu. More than one module can be opened at the same time, in separate browser tabs. The VMS web application is "asynchronous JavaScript and XML" (AJAX) driven.

10. In the previous system user access was limited to one per CCM due to the high cost user activation account. The TrackWell system do not charge for user account. Most CCMs now have several users. There are now 96 users from 31 CCMs, however only 15 users from 8 CCMs are actively using the system. The list of CCMs with user logins to the Commission VMS is provided in **WCPFC-TCC13-2017-RP07_rev1 Annex 3**.

11. Since the change of VMS service provider from Pole Star to TrackWell, the SLA with FFA was revised to reflect the changes in the cost structure.

12. The Secretariat presently has no matters of note to raise for TCC's attention with respect to the Service Level Agreement with the FFA.

Contracts with Mobile Communications Service Providers

13. Paragraph 7.3.5 of the SSPs requires the WCPFC Secretariat to enter into, and to maintain, direct contracts with mobile communications service providers for the provision of position (and other) data from the MTUs/ALCs that are activated to report directly to the Commission VMS. For this purpose, the WCPFC Secretariat has contracts with:

- SpeedCast (formerly Satcomms Australia) – for Inmarsat C, D+ and Faria_watchdog Iridium services;

- CLS Argos – for Argos and Halios/Iridium services; and
- Vizada – an operational agreement for Inmarsat C DNID management;

14. The Secretariat presently has no matters of note to raise for TCC's attention with respect to the Contracts with Mobile Communication Service Providers.

Commission VMS Database

15. Paragraph 2.8 of the SSPs requires the Secretariat to administer a Commission VMS database. It further states

> "For each fishing vessel required to report to the Commission VMS the flag CCM will submit all necessary data to complete its data file in the Commission's VMS database. This data will include the name of the vessel, unique vessel identification number (UVI), radio call sign, length, gross registered tonnage, power of engine expressed in kilowatts/horsepower, types of fishing gear(s) used as well as the make, model, unique network identifier (user ID) and equipment identifier (manufacturer's serial number) of the ALC that vessel will be using to fulfil its Commission VMS reporting requirements."

16. To facilitate the submission of necessary vessel tracking data for each fishing vessel required to report to the Commission VMS, the Secretariat has provided for flag CCMs use a guideline VTAF form. In March 2017, the Secretariat published an updated VTAF form (MS Excel, pdf, word format) and made it available on the wcpfc website: https://www.wcpfc.int/vessel-monitoring-system

17. In recognition of the approved structure of the Commission VMS system allowing vessels to report to WCPFC through the FFA VMS, the Commission in 2013 (WCPFC10) agreed to exempt vessels on Good Standing on the FFA Vessel Register from submission of VTAF data.

18. During 2016 and 2017 the Secretariat has invested considerable effort and staff time into the development and implementation of a VTAF management system and databases at the Secretariat in Pohnpei. This work was also support by IMS consultant Taz-E.

19. The Secretariat has worked with TrackWell to develop IT tool mechanisms that enable the Commission VMS to display the present WCPFC Record of Fishing Vessels (RFV) information. The Commission VMS system also uses the Secretariat hosted-MTU Register as the source of information for associating the RFV information to the reported positions for a vessel that are received by the Commission VMS.

20. Some general statistics on the Commission VMS over time are provided in the following charts (**Figures 1-3**) below. Some summary information by flag about the current status of VTAF records is provided in **Table 1** below. As at 30 June 2017, there were 3777 vessels that were considered to be activated to report to the Commission VMS: 42% are reporting through Service Provider "Speedcast", 33% are reporting through FFA and 15% are reporting through CLS.

Figure 1. Vessel activations by year, as at 30 June 2017

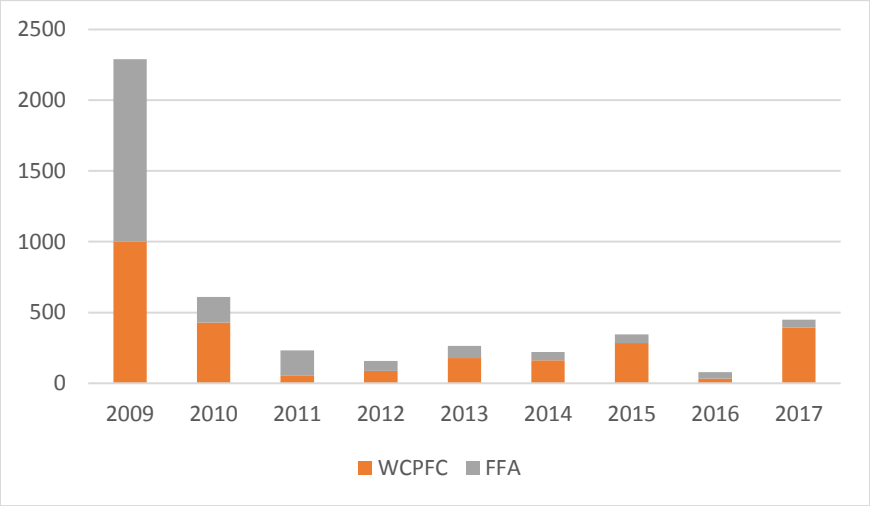


Figure 2. Number of VMS vessels against RFV list, as at 30 June 2017.

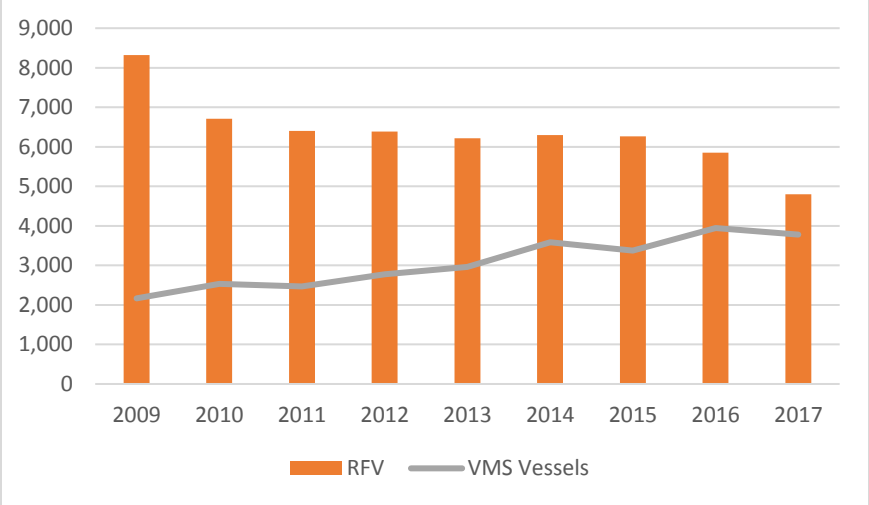


Figure 3 The percentage of vessels currently reporting by CommSystem on Commission VMS as at 30 June 2017

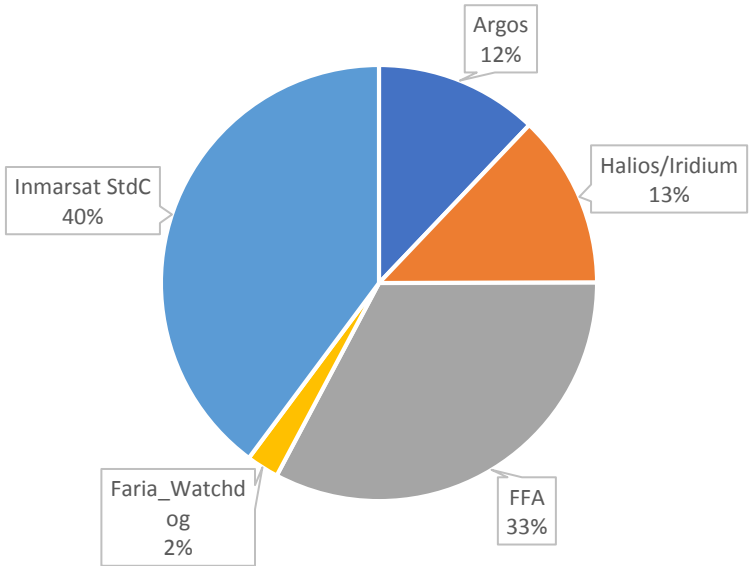


Table 1. Summary of the number of vessels by flag for which the Secretariat has VTAF details (VTAF_Recorded_Cnt) in 2016 and 2017 and received position reports in areas covered by the Commission VMS (VMS_Tracked_Cnt) as at 15 September 2017.

For comparison, it lists the number of vessels with an "*Active*" status on the WCPFC Record of Fishing Vessels (Vessel count), information available to the Secretariat on count of FFA good standing status (FFAGoodStanding_Cnt), and reported by the flag CCM as fished beyond its national jurisdiction (Fished_Cnt).

Column Labels	2016					2017			
Row Labels	VesselCount	Fished_Cnt	VTAF_Recorded_Cnt	FFAGoodStanding_Cnt	VMS_Tracked_Cnt	VesselCount	VTAF_Recorded_Cnt	FFAGoodStanding_Cnt	VMS_Tracked_Cnt
AU	71	12	42	0	36	62	42	0	35
CA	12	0	1	0	0	15	1	0	1
CK	15	6	11	14	15	16	12	14	14
CN	698	444	469	312	388	633	448	285	374
EC	11	3	5	5	5	7	5	5	5
EU	80	11	19	4	7	78	19	4	5
FJ	75	39	14	56	40	75	14	55	34
FM	38	37	26	38	38	41	26	38	39
ID	400	0	1	0	1	15	1	0	0
JP	861	575	597	138	400	879	600	120	332
KI	36	30	23	28	30	35	23	22	24
KR	306	180	154	153	161	212	151	148	152
LR	34	3	9	7	11	33	9	5	7
MH	19	13	8	16	16	14	6	13	13
NC	18	2	11	0	4	17	11	0	2
NZ	7	5	3	3	5	4	3	2	3
PA	109	81	40	84	76	119	44	78	78
PF	83	0	0	0	0	76	0	0	0
PG	72	24	15	36	29	51	13	31	23
PH	872	301	220	60	180	400	223	50	202
SB	9	3	1	9	8	10	1	10	10
SV	4	2	3	4	2	4	3	2	2
TH	8	0	2	2	0	8	2	0	0
TO	1	0	0	0	0	1	0	0	0
TV	6	5	4	4	4	6	5	5	5
TW	1679	651	942	186	491	1669	943	158	475
US	224	183	174	37	187	222	177	34	175
VU	125	96	101	70	90	107	91	44	77
Grand Total	5848	2706	2895	1266	2224	4797	2873	1123	2087

List of WCPFC Approved MTUs/ALCs

21. WCPFC12 approved an amendment to Section 2.7 of the VMS SSPs which came into effect in February 2016, and there is now a list of approved Mobile Transceiver Units (MTU)/Automatic Location Communicators (ALC)s, and prescribed a process for how proposals for new ALCs will be included or removed from this list. The current list is published on the WCPFC website at this link: https://www.wcpfc.int/vessel-monitoring-system. A copy of the CCM approved MTUs is appended in **Annex 1** to this paper.

22. Noting that the approved structure of the Commission VMS system allows vessels to report to WCPFC through the FFA VMS, the Secretariat has clarified in the WCPFC approved list of Mobile Transceiver Units (MTU)/Automatic Location Communicators (ALC)s that FFA requirements determine the ALC units that are able to be used for reporting through the FFA VMS system. The latest information on FFA VMS units can be found on the FFA website: http://www.ffa.int/node/40.

23. Paragraph 2.7 of the Commission VMS SSPs states,

> "The Secretariat will assess proposals for inclusion of additional ALC makes and models on this list from both CCMs and equipment manufacturers and make recommendations for the TCC's consideration and the Commission's approval. Approval of ALCs will be based on the Secretariat's assessments of ALCs against minimum standards for the Commission VMS as set out in Annex 1 of CMM 2014-02 (or its successor measure), WCPFC SSPs, as relevant, by determining that the ALC make and model has the ability to successfully report to the Commission VMS, and by using the methodology established by the FFA with expenses for type approval processing to be borne by the proposing entity. By 31 July 2016, and as needed thereafter, the Secretariat will recommend removal from the list of approved ALC types any makes and models it has determined do not meet the minimum standards set out in Annex 1 of CMM 2014-02 (or successor measure), or do not have the ability to successfully report to the Commission VMS. If an ALC make and model is removed from the list of approved ALC types, flag States will ensure that their fishing vessels replace non-type approved ALCs with approved ALCs by the next replacement of the ALC but no later than three years after the Commission's decision."

Secretariat recommendations in response to requests for new inclusion of new MTUs/ALCs to the approved list

24. The Secretariat has received through requests from CCMs for inclusion of new MTUs/ALCs on the WCPFC approved list the following devices:

i) Model: Triton Advance MTU, Manufacturer: CLS OROLIA, Service Provider: CLS

This is presently FFA-type approved, and some CCMs have also approved it for their national system. The Secretariat's assessment is that this unit meets minimum standards for the Commission VMS as set out in Annex 1 of CMM 2014-02 (or its successor measure) and WCPFC SSPs, as relevant, and has the ability to successfully report to the Commission VMS.

ii) Model: SkyMate I1500 VMS, Manufacturer: SkyMate Inc. Service Provider: SkyMate Inc.

The U.S. have type approved "SkyMate I1500 VMS" for use in certain U.S. fisheries as well as the high seas. The Secretariat's assessment is that this unit meets minimum standards for the Commission VMS as set out in Annex 1 of CMM 2014-02 (or its successor measure) and WCPFC SSPs, as relevant, and has the ability to successfully report to the Commission VMS.

iii) Globalstar Smartone B, Manufacturer: Globalstar, Service Provider: Globalstar

The Philippines have approved Globalstar Smartone B for use by vessels operating within the Philippines EEZ. The Secretariat view that this MTU is not suitable for vessels operating in the Convention area as its area of coverage does not cover part of the Convention Area.

Secretariat recommendation on MTU/ALCs to be removed from WCPFC approved ALC/MTU list

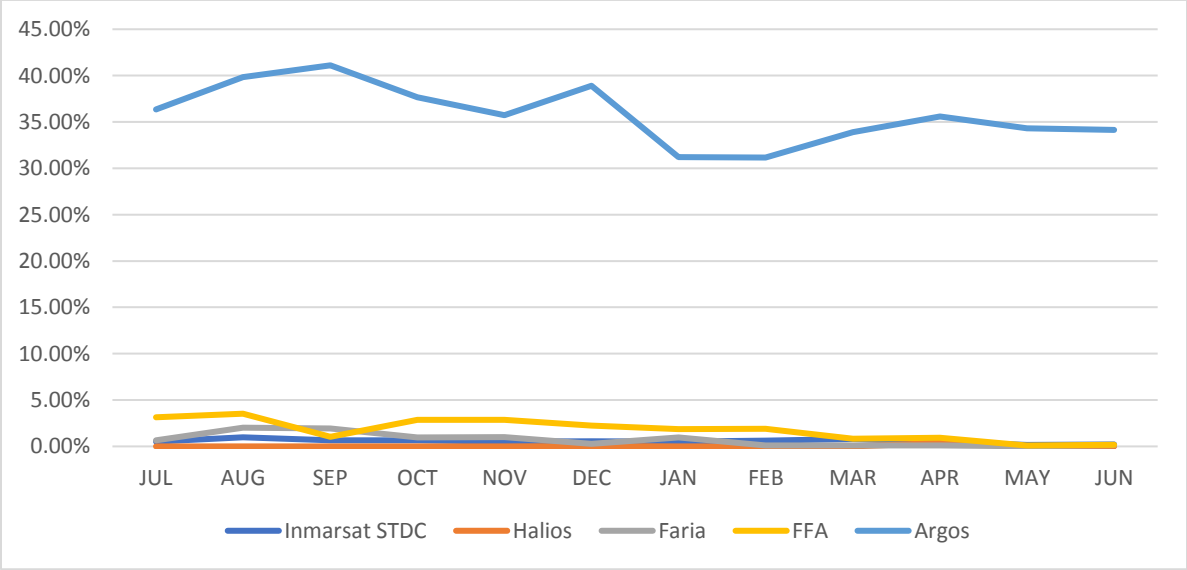
25. In accordance with section 2.7 of the VMS SSPs the Secretariat is tasked with recommending by 31 July 2016, removal from the list of approved ALC types any makes and models it has determined do not meet the minimum standards set out in Annex 1 of CMM 2014-02 or do not have the ability to successfully report to the Commission VMS. In response to the VMS SSPs requirement the Secretariat recommended to TCC12 the removal of four MTUs from the list of approved ALC types. The outcome from TCC12 was:

> "TCC12 noted the Secretariat advice and recommendation provided in accordance with VMS SSPs 2.7 requirement, that three Argos units (ARGOS – FVT; ARGOS – MAR-GE and ARGOS – MAR-GEV2) do not meet the agreed VMS requirements in Annex 1 (paragraph 4) of CMM 2014-02, and the DMR unit is presently not able to report to the Commission VMS, and these MTUs should be removed from the list of CCMs' approved MTUs." (TCC12 Summary Report, paragraph 200)

26. The justification for the removal of the DMR unit from the list of approved ALCs is that the Secretariat has no progress to report on developments of new gateways for DMR, and as a result this unit is presently not able to report to the Commission VMS.

27. In the view of the Secretariat the three Argos MTUs (ARGOS – FVT; ARGOS – MAR-GE and ARGOS – MAR-GE V2) remain non-complaint with Annex 1 of CMM 2014-02 and an additional Argos MTU (ARGOS MAR-GE V3) is also considered by the Secretariat to be non-compliant with Annex 1 of CMM 2014-02. A vessels position must be received within 90 minutes. Previously we reported more than 50% of Argos positions were overdue. Because the way Argos positions are transmitted some position reports were counted twice. The Secretariat has re-analyzed Argos position data and as shown in the graph below in **Figure 4** overdue reports are around 35% percent which remain non-compliant.

Figure 4. Percentage of overdue reports by month from July 2016 to Jun 2017;



VMS Audit Report

28. Paragraphs 2.9 and 2.13 of the SSPs state that CCMs are to carry out a periodic audit of a representative sample of installed ALCs. The results of these audits are to be provided to the Commission by CCMs in the Part 2 Annual

Report to the Commission (WCPFC VMS SSPs 7.2.2). Since 2013, the WCPFC Secretariat has provided CCMs with an electronic facility to report their MTU audit inspection results as shown in **Table 2** below.

Table 2. Number of MTU audits by type from 2013 to date.

MTU Model	MTU Manufacturer	2013	2014	2015	2016	2017
RSS405A	Anritsu	8	5	2		
FVT	CLS SEIMAC		11			
LEO	CLS ELTA	26	6	138	130	24
MAR GE	CLS SERPE-IESM		5	5	4	
MAR GE V2	CLS MARTEC SERPE-IESM		22	25	25	
MAR GE V3	CLS MARTEC SERPE-IESM				44	
Thorium TST-100	CLS KENWOOD	93	104	125	68	
TRITON	CLS OROLIA				1	
750VMS	Faria - Watchdog	100	5	5	29	3
750VMS SB	Faria - Watchdog	74	9	46	14	
750VMS W/VTerm	Faria - Watchdog	40	168	44	1	
FELCOM12	Furuno		3		2	
FELCOM15	Furuno		5	1		
FELCOM16	Furuno	142	269	259	211	38
FELCOM19	Furuno			1	3	2
JUE-75C	JRC		1			
JUE-95VM	JRC	15	36	43	44	15
H1622D	Sailor	1	1			
Sailor 3027D	Thrane & Thrane		2	22	1	
Sailor 6140	Thrane & Thrane	31	66	70	109	1
Sailor 6150	Thrane & Thrane	10	19	34	36	
TT-3020C	Thrane & Thrane		2	2		
TT-3022D	Thrane & Thrane	88	75	99	34	
TT-3026	Thrane & Thrane	2	9	12	3	
TT-3026D	Thrane & Thrane	33	33	31	19	
TT-3026S	Thrane & Thrane	63	57	68	53	
TT-3027M	Thrane & Thrane			30	27	
TT-3027S	Thrane & Thrane			1	1	
TT-3062D	Thrane & Thrane		2	2		
TNL 7001	Trimble	3	1	2		
Total		**729**	**916**	**1,067**	**859**	**83**

29. All CCMs that have vessels that were reported to have "fished" beyond its national jurisdiction in 2016 have carried out and reported MTU/ALC audit inspections from 2013 - 2016 for some of their flag vessels as shown in **Table 3** below.

Table 3. List of flag states and number of MTU audits undertaken, compared to the count of vessels that the flag CCM advised fished in the Convention Area beyond its flag CCMs jurisdiction during 2016.

CCM (Flag)	Active on RFV in 2016	"Fished" in 2016	2013	2014	2015	2016	2017 to date
Australia	61	13	9		52		
Canada	11	0	1	2	2		
China	616	437	187	216	346	338	3
Cook Islands	14	5	12	8	11	11	2
Ecuador	7	3	7		3		
El Salvador	4	2	4	4	2	2	
European Union	78	11	6	6	4	3	0
Federated States of Micronesia	38	37	27	28	32	22	1
Fiji	75	40	53	67	54	35	
French Polynesia	75	0					
Indonesia	11	0					
Japan	818	567	19	105	99	114	51
Kiribati	35	29	2	22	26	10	
Korea (Republic of)	208	178	86	114	49	35	1
Liberia	31	3	5		1		
Marshall Islands	14	10	14	11	11	11	
New Caledonia	17	2		18			
New Zealand	4	4	1	4	3	2	
Panama	108	80	5	18	5	4	
Papua New Guinea	50	21	16	11	17		
Philippines	369	300	97	118	142	132	
Solomon Islands	9	3	1		6		
Thailand	8	0					
Tonga	1	0					
Tuvalu	5	7	1	1	3	1	1
Chinese Taipei	1,659	650	13	5	6	17	
United States of America	209	175	121	154	151	100	24
Vanuatu	107	104	42	4	42	22	

30. Paper WCPFC-TCC13-2017-RP04 on the *Annual Report on the WCPFC High Seas Boarding and Inspection (HSBI) Scheme* provides a summary of the WCPFC a Summary of the High Seas Boarding and Inspection activities since 1 January 2016. Of note in 2016, there were 13 out of 108 high seas boarding's where VMS violations were noted, and from 1 January to 31 July 2017 there were 9 out of 55 high seas boarding's where VMS violations were noted.

31. The Secretariat observes that there are some vessels' MTU/ALC that have not been reporting consistently to the Commission VMS. The Secretariat requests the support from CCMs to work with the Secretariat in checking Commission VMS reporting and where necessary CCMs place these vessels in priority for MTU/ALC audit/inspection.

Manual Position Reporting

32. The Secretariat maintains a log of all vessels placed on manual reporting as required by the SSPs on VMS. The manual reports are also entered in the Commission VMS database as shown in **Table 4** below.

Table 4. Number of vessels by flag that provided manual position report (July 2016 – June 2017)

CCM (Flag)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
China	5	2	3	5	4	1	7	3	7	2		1
Federated States of Micronesia				1								
Japan	1	2	1	4	2			2	1		2	3
Kiribati								1				
Korea				2	2							
Papua New Guinea	1	1									1	
Philippines							1	1	1			2
Chinese Taipei					1	1		1	1			
Total	**7**	**5**	**4**	**12**	**9**	**2**	**8**	**8**	**10**	**2**	**3**	**6**

Provision of High Seas Data for MCS Activities

33. 2009 WCPFC Rules and Procedures for the Protection, Access to and Dissemination of High Seas Non-Public Domain Data and Information allows for CCMs conducting MCS activities, including in areas under national jurisdiction to request and receive, Commission VMS data, from high seas areas.

34. Seventeen (17) CCMs have requested access to 100nm high seas buffer, some on an ongoing basis, and others for the purposes of specific MCS activities. Access to the EHSP-SMA Commission VMS data has been provided to the adjacent CCMs: Cook Islands, French Polynesia and Kiribati. Some FFA members have nominated the FFA Regional Fisheries Surveillance Centre in Honiara, Solomon Islands, as one of their MCS entity to receive Commission VMS data on their behalf. A list of the approved access to Commission VMS data is provided in **WCPFC-TCC13-2016-RP07** *Report on the Administration of the Data Rules.*

Update on tasking from WCPFC12

35. WCPFC12 tasked the Secretariat with developing a technical solution to make available to authorised CCM MCS personnel through a secure login, a list of all current RFV vessels Commission VMS reporting status (Attachment P to WCPFC12 Summary Report). Such a list may be accessed by authorized CCM users from the CCM Portal on secure section of the WCPFC website: https://www.wcpfc.int/ccm/wcpfc-vms-report

36. Feedback to the Secretariat on the tool has been positive, with some CCMs indicating that it assists as an additional source of information in planning their MCS activities and other CCMs indicated that it was a helpful tool to check on the status of Commission VMS reporting. Through use, some CCMs have expressed to the Secretariat that it would be helpful if an export feature for this list could be included, so as to enable the list being exported to a csv or Excel file. The Secretariat confirms this is technically feasible, and would welcome TCC's direction on this matter.

Security and Integrity of the Commission VMS, including Standard Operating Procedures

37. VMS SSP 6.10 requires the integrity of the Secretariat's VMS data will be verified annually by qualified personnel exterior to the Commission Secretariat staff. Deloitte Touche Tohmatsu Limited was contracted to carry the audit this year. Outcome of the report will be posted as **WCPFC-TCC13-2017-RP08**.

38. Noting that a set of revised Standard Operating Procedures is well overdue, the Secretariat intends to work on a revised draft during 2017/18, and present it to TCC14.

Recommendation

39. TCC13 is invited to

a. Note the report and discuss the activities of the Commission VMS.
b. Note the Secretariats assessment that the following units meet the minimum standards for the Commission VMS and are capable to successfully report to the Commission VMS:
    i) Model: Triton Advance MTU, Manufacturer: CLS OROLIA, Service Provider: CLS
    ii) Model: SkyMate I1500 VMS, Manufacturer: SkyMate Inc., Service Provider: SkyMate Inc.
c. Recommend to the Commission the addition of the units in b. above to the WCPFC approved ALC/MTU list;
d. Note that the Secretariat has reiterated its advice from TCC12 that three Argos units (ARGOS – FVT; ARGOS – MAR-GE and ARGOS – MAR-GEV2) do not meet the agreed Commission VMS requirements and the DMR unit is presently not able to report to the Commission VMS;
e. Also note that the Secretariat has advised that ARGOS-MAR-GE V3 ALC does not meet the reporting requirement in Annex 1 of CMM 2014-02; and
f. Consider a recommendation to the Commission that the following MTUs should be removed from the WCPFC list of CCMs' approved MTUs:

Model / Approved MTU Type	Manufacturer	Comm System	Service Provider
FVT	CLS SEIMAC	ARGOS	CLS
MAR GE	CLS SERPE-IESM	ARGOS	CLS
MAR GE V2	CLS MARTEC SERPE-IESM	ARGOS	CLS
MAR GE V3	CLS MARTEC SERPE-IESM	ARGOS	CLS

Annex 1.

CCMs approved MTUs as at 22 June 2017

Also published at https://www.wcpfc.int/vessel-monitoring-system

Model / Approved MTU Type	Manufacturer	Comm System	Service Provider
MAR GE V2	CLS MARTEC SERPE-IESM	ARGOS	CLS
MAR GE V3	CLS MARTEC SERPE-IESM	ARGOS	CLS
FVT	CLS SEIMAC	ARGOS	CLS
MAR GE	CLS SERPE-IESM	ARGOS	CLS
750VMS	Faria - Watchdog	FARIA_WATCHDOG	Speedcast
750VMS SB	Faria - Watchdog	FARIA_WATCHDOG	Speedcast
750VMS W/VTerm	Faria - Watchdog	FARIA_WATCHDOG	Speedcast
LEO	CLS ELTA	HALIOS/IRIDIUM	CLS
Thorium TST-100	CLS KENWOOD	HALIOS/IRIDIUM	CLS
TRITON	CLS OROLIA	HALIOS/IRIDIUM	CLS
RSS405A	Anritsu	INMARSAT STDC	Speedcast
FELCOM10	Furuno	INMARSAT STDC	Speedcast
FELCOM12	Furuno	INMARSAT STDC	Speedcast
FELCOM15	Furuno	INMARSAT STDC	Speedcast
FELCOM16	Furuno	INMARSAT STDC	Speedcast
FELCOM18	Furuno	INMARSAT STDC	Speedcast
FELCOM19	Furuno	INMARSAT STDC	Speedcast
JUE-75C	JRC	INMARSAT STDC	Speedcast
JUE-75C-FFA	JRC	INMARSAT STDC	Speedcast
JUE-85	JRC	INMARSAT STDC	Speedcast
JUE-87	JRC	INMARSAT STDC	Speedcast
JUE-95C	JRC	INMARSAT STDC	Speedcast
JUE-95VM	JRC	INMARSAT STDC	Speedcast
H1622D	Sailor	INMARSAT STDC	Speedcast
ELB 2000	SATLINK	INMARSAT STDC	Speedcast
ELB2004	SATLINK	INMARSAT STDC	Speedcast
NERA MINI-C	SATLINK	INMARSAT STDC	Speedcast
Sailor 3027D	Thrane & Thrane	INMARSAT STDC	Speedcast
Sailor 6140	Thrane & Thrane	INMARSAT STDC	Speedcast
Sailor 6150	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3020C	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3022D	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3026	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3026D	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3026S	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3027M	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3027S	Thrane & Thrane	INMARSAT STDC	Speedcast
TT-3062D	Thrane & Thrane	INMARSAT STDC	Speedcast
TNL 7001	Trimble	INMARSAT STDC	Speedcast
TNL 7002	Trimble	INMARSAT STDC	Speedcast
TNL 8001	Trimble	INMARSAT STDC	Speedcast
TNL7005	Trimble	INMARSAT STDC	Speedcast