Western and Central Pacific Fisheries Commission

SCIENTIFIC COMMITTEE

TENTH REGULAR SESSION

Majuro, Republic of the Marshall Islands
6-14 August 2014

An update of the E-Reporting initiatives coordinated by the SPC

Malo Hosken[1], Peter Williams[1] and Emmanuel Schneiter[1]

Oceanic Fisheries Programme,

Secretariat for the Pacific Community

[1] Oceanic Fisheries Programme, Secretariat of the Pacific Community (SPC-OFP), New Caledonia

1. EXECUTIVE SUMMARY

This paper provides an update on **Vessel and Observer E-Reporting trials** which SPC has been managing with national fisheries authorities from member countries, regional agencies and the fishing industry.

E-Reporting trials are currently being conducted in American Samoa, in the Federated States of Micronesia Republic, in the Marshall Islands, in the Solomon Islands and in New Zealand. The data collected from these trials were subsequently loaded into respective national and regional tuna fisheries databases.

- o Purse seine electronic logsheet systems **eTUNALOG** :
  - 26 purse seine vessels, from four different fleets are equipped with eTUNALOG.
  - A total number of 55 trips have been submitted since June 2013.

- o Observer electronic reporting systems **eTUBs** :
  - Six observers from two member countries have conducted TUBs trials.
  - Five laptops are equipped with TUBs for at sea trials.
  - 13 Trips have been conducted since August 2013.

2. INTRODUCTION

This paper covers the following areas:

- − A brief status report on E-Reporting in the REGION;
- − SPC's perceived role in E-Reporting;
- − A brief update on the status of the E-Reporting initiatives managed by the SPC and the work plan for 2014-2015;

The paper reiterates SPC's role in providing technical assistance to the WCFPC, and member countries, in collaboration with the other regional agencies, PNA and FFA. It highlights that, for the implementation of E-Reporting, support provided to member countries will be clearly in SPC's area of expertise, that is, the collection and management of scientific data for stock assessments.

The International Seafood Sustainability Foundation (ISSF) is a major contributor for the E-Reporting and E-Monitoring work conducted by SPC during 2014 through the funding support of, *inter alia*, the Regional Electronic Reporting Coordinator position contracted by SPC.

3. E-REPORTING – CURRENT REGIONAL STATUS

1.   There has been considerable interest in implementing E-Reporting throughout the region in the past year, with some improvements in the coordination aspect and the launching of several specific E-Reporting trials. A WCPFC/SPC-funded study was conducted during 2013 to look at the potential of E-Reporting and E-Monitoring in the WCPFC Tuna Fisheries[2]. This study is the most comprehensive and

---

[2] Potential of E-Reporting and E-Monitoring in the WCPFC Tuna Fisheries. 2013. Steve Dunn and Ian Knuckey.
http://www.wcpfc.int/system/files/WCPFC10-2013-16_rev1%20Potential%20for%20E-Reporting%20and%20E-Monitoring%20in%20the%20Western%20and%20Central%20Pacific%20Tuna%20Fisheries.pdf

relevant work looking into E-Reporting in our fisheries to date and provided FIVE KEY STRATEGIC RECOMMENDATIONS to focus on initially:

> *Strategic Recommendation 1: To improve quality and timeliness of the data available for science, compliance, and management, to enhance and streamline reporting obligations, and to provide an additional means of effective observer monitoring, this report recommends the Commission, its members, and its partner regional organisation within the WCPO implement both E-Reporting and E-Monitoring programs without delay.*

> *Strategic Recommendation 2: The Commission should adopt an approach of developing standards, specifications, and certification procedures for both E-Reporting and E-Monitoring, against which any provider can seek to be certified, in preference to seeking a single provider.*

> *Strategic Recommendation 3: The implementation of E-Reporting for logsheets, observer reports, and CMMs should be undertaken in a phased approach determined by technical feasibility, and practical considerations and constraints. The process for development of E-Reporting standards, specifications and type approvals should be led by the Commission Secretariat as amongst the first and high priority actions.*

> *Strategic Recommendation 4: E-Monitoring be formally recognised and adopted as a legitimate, appropriate and acceptable monitoring tool as both an alternate to human observer programs and a supplement to observer programs, for certain WCPO tuna fisheries. The process for development of E-M standards, specifications and type approvals should be led by the Commission Secretariat as a priority and E-M should be progressively rolled out to support compliance with Commission's CMMs, improve fishing practices, and increase fisheries knowledge. The use of E-M using sensors alone should be considered as appropriate, based on fishery monitoring goals.*

> *Strategic Recommendation 5: Implement separate but parallel processes to move E-Reporting and E-Monitoring technologies forward towards implementation. These processes should involve the establishment of an Implementation Working Group (IWG) for each technology, each with a Project Manager, and both under the oversight, direction and control of an Internal Governance Committee (IGC) to monitor project risks, budgets, potential conflicts of interest, and progress against agreed goals.*

2.   Strategic Recommendation 2 is a critical first step involving the development of standards, specifications and certification procedures for E-Reporting and E-Monitoring for prospective service providers. There are standards already established for SCIENTIFIC DATA[3] [4] to build on and enhancing the existing information to an E-Reporting standard should be relatively straight-forward.

3.   However, there appears to be a few areas to consider when developing the E-Reporting data standards, for example,
   a.   There is yet to be regional WCPFC Tuna Fisheries data field standards established for some of the non-scientific data purposes (e.g. Catch Documentation Systems-CDS);
   b.   There may be overlap between data used for two distinct purposes, for example, logbook data are a fundamental for stock assessments, but also for a CDS, and at this stage, data field standards have been established with only one of these purposes in mind (i.e. scientific data standards);

---

c. Requirements at the national level may be slightly different from the WCFPC data standards. For example, there are some observer data fields requested at the national level and subsequently incorporated into the regional standard data collection forms through the SPC/FFA Data Collection Committee forms, but these fields are not in the WCFPC Regional Observer Programme (ROP) minimum data standards.

4. In responding to the Dunn/Knuckey study, the Tenth Regular Session of the Commission (2-7 December 2013, Cairns, Australia) recommended convening a WCFPC E-Reporting and E-Monitoring workshop which was held in late March 2014[5] and progressed, *inter alia*, the recommendation to develop of data field standards.

5. Another meeting covered E-Reporting and E-Monitoring issues with respect to MCS – the World Wildlife Fund (WWF) MCS Emerging Technologies Workshop was held in Honiara, Solomon Islands - March 21-22, 2014[6].

6. Several trials of E-Reporting products were conducted in the WCFPC region during 2013 and 2014, including,

a. The PNG iFIMs E-Reporting systems, developed by Quick Access Computing.[7]
b. The MARLIN E-Reporting system in the Philippines.[8]
c. The SPC-developed eTUNALOG (Electronic logbook for the SPC/FFA Regional Purse Seine Logbook)
d. The SPC-developed eTUBS (for onboard observer data entry – purse seine and longline)

The first on the list is a comprehensive implementation of logbook and observer E-Reporting which is described in another SC10 Working Paper. The last two initiatives will be described in in Section 5.

7. With the establishment of regional data standards, specifications and certification procedures for E-Reporting and E-Monitoring (according to the Dunn and Knuckey recommendation), we expect to see more E-Reporting products become available in the next few years, although agreement on standards at the WCPFC/regional level will be critical to any progress in this area.

---

[5] http://www.wcpfc.int/meetings/e-monitoring-and-e-reporting-workshop
[6] https://drive.google.com/a/wwf.panda.org/folderview?id=0B79T78ZKDRNiV1Y1NkJjRF83blk&usp=sharing#
[7] Refer to D.Karis, P.Lens, B.Kumasi and M.Oates. 2014. The Use of Electronic Reporting for Regional Purse Seine Log Book and Regional Observer Work Book Data. SC10 ST SWG WP-07.   http://www.wcpfc.int/node/19081
[8] Ramiscal R. V. A. C. Dickson, M. Demo-os, I Tanangonan and J. A. Jara. Pilot Test of MARLIN(Electronic Logsheet) Operation in High Seas Pocket 1. SC10 ST SWG IP-08.   http://www.wcpfc.int/node/19050

4. SPC'S PERCEIVED ROLE IN E-REPORTING

8.   SPC's mandate is to provide technical assistance to its member countries. The development of the two E-Reporting products (eTUNALOG and eTUBS) is one way that SPC has responded to member countries requests. These products have been developed to respond to two immediate needs. The first is to improve the efficiency of data collection/management and the second is to have data available in a more timely manner. These are the overriding objectives for both member countries and the SPC, and are consistent with the reporting obligations of member countries to the WCFPC.

9.   We envisage that more comprehensive, integrated E-Reporting systems developed by third-party service providers will become available in the future, (for example, the PNG/NFA iFIMS E-Reporting system launched in January 2014) and that SPC needs to be involved in a collaborating role when countries choose to use these systems.

10. In the future, SPC will provide technical support to member countries on E-Reporting in a number of areas, including:

   a. Development, enhancement and support for E-Reporting products like the eTUNALOG and eTUBS, where this is required;
   b. Providing assistance to member countries to develop data loaders into their NATIONAL database systems (e.g. TUFMAN), if they choose to use a third-party E-Reporting product;
   c. Providing assistance to member countries on how data from third-party E-Reporting products should be submitted to regional authorities (e.g. SPC as the WCPFC data managers).

5. SPC'S E-REPORTING PRODUCTS

11. The main area where E-reporting has been identified as providing significant efficiency gains is with scientific observer and logsheet data, since the data field standards are already established and the volume of the hard-copy data is considerable. The SPC/OFP has been requested by several of their member countries to investigate the potential of E-Reporting in collaboration with the FFA, WCPFC and the PNAO To date, SPC has developed two products[9] which are currently undergoing trials in SPC member countries:

   o **eTUNALOG**   Purse seine E-Logbook

   o **eTUBS**   On-board purse seine observer data entry

12. SPC has also just completed the development of a LONGLINE version of eTUNALOG and trials of this product will commence in August/September 2014.

---

[9] . For more information on the products refer to http://www.spc.int/oceanfish/en/ofpsection/data-management/spc-members/e-reporting

5.1 eTUNALOG

13. The **eTUNALOG** product is an application designed to run on any Windows-based laptop, tablet or desk-top installed on-board commercial tuna fishing vessels operating in the WCPFC Area. The eTUNALOG application is designed to replace the need for skippers to manually complete the Regional Purse-Seine Logsheet (RPL) (in hard-copy form) for submission to national and sub-regional authorities as a licensing condition. eTUNALOG uses a smart PDF interface which encodes data into XML format (very low file size) which is efficient for transmission via email and which can be directly imported into SPC's regional vessel logsheet database, removing the need for data to be re-entered at the risk of typing mistakes.

14. Figure 1 provides an indication of the flow of eTUNALOG data to authorised recipients. eTUNALOG data can be transmitted back to shore via email at any time; that is, complete or incomplete trip data can be transmitted to the authorised onshore base(s) at any time (the system will allow for many authorised recipients to receive the emailed data simultaneously). On receipt at the national fisheries authority offices, the XML formatted data are easily uploaded into the TUFMAN database system through a series of prompts which includes an audit of the data. The application will be available, free of cost, after online registration.
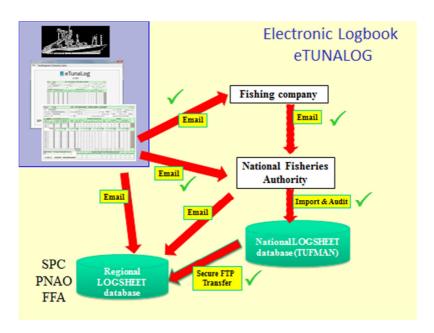

Figure 1.   Flow of data collected under the eTUNALOG system

15. To date, SPC, in collaboration with several national fisheries authorities and with the cooperation of fishing companies and vessels, have installed eTUNALOG on 26 purse seine vessels on a trial basis (refer to Table 1 in the APPENDIX). The eTUNALOG system is now very stable and very positive feedback has been received from both vessel skippers and national fisheries authorities; the three national fisheries authorities trialing this product have reported that they can very easily load their eTUNALOG data directly into their TUFMAN systems without the need for data entry.

5.2   eTUBS

16.   **eTUBS** is a web-based OBSERVER database management system developed by the SPC/OFP to enter purse seine and longline observer data collected on the SPC/FFA Regional standard observer forms, although it does not need internet connectivity to enter and store the data locally on the observer's laptop. Previous versions of this system have been used at SPC for more than 15 years. Figure 2 provides an indication of the flow of data collected under eTUBS, which plans to support the import of eTUBS data collected by the observer into the national TUBS/Observer database during the 3rd/4th quarters 2014.
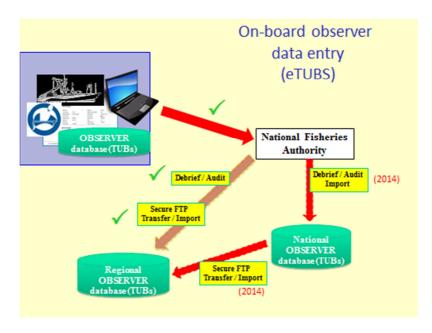

Figure 2.   Flow of data collected under the eTUBs system

17.   Trials for on-board observer data entry on purse seine vessels have been conducted in FSM and RMI during 2013 and 2014. To date, there have been thirteen (13) trips conducted by seven (7) observers on-board purse seine vessels (see Table 2 in the APPENDIX) with most of data from the trials audited during the debriefing stage and then loaded into the regional databases.

6. SPC INVOLVEMENT IN OTHER E-REPORTING/E-MONITORING INITIATIVES

6.1   E-Monitoring on Longline vessels

18.   Since March 2014, SPC has been collaborating with national and regional agencies and the fishing industry on a video E-Monitoring project involving two large tuna long line fishing vessels. The preliminary results for this project are presented in the following paper: WCPFC-SC10-2014/ST-WP-03[10]

6.2   Assistance to other E-Reporting initiatives

19.   In July 2014, SPC released a first version of the LONGLINE eTUNALOG (Figure 3). The smart PDF electronic logsheet application for long line vessels follows the same concept as the PURSE SEINE eTUNALOG and provides an interface for skippers to record their catch on a form consistent with the regional standard LONGLINE logsheet and then to export the data into XML via the vessel's email or USB transfer (it can also be printed for signature and stamping). The initial plan is to deploy this system on tablets on a trial basis. SPC has received requests from several member countries (e.g. Cook Islands) for trials and also looking to any national fisheries authority and industry partners that would be interested in trying this new application.
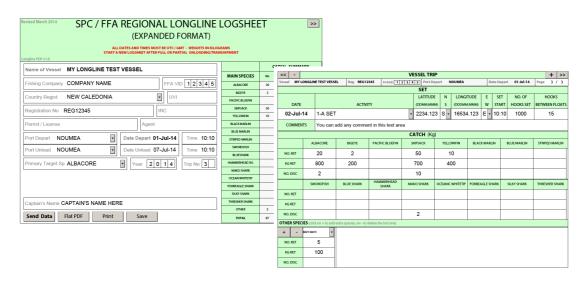

Figure 3. The new LONGLINE eTUNALOG system

6.3   Appointing and training an Electronic Reporting Officer

20.   Since July 2014, SPC and the Marshall Islands Marine Resource Authority (MIMRA) are collaborating on the appointment, training and supervision of an Electronic Reporting Officer (ERO) based at MIMRA. Through a Memorandum of Understanding (MOU), SPC is able to provide funding for this position for 30 month. SPC will continue a regional coordination of the E-Reporting projects as well as support the work of the ERO at MIMRA. MIMRA will provide direct supervision and an office space. The ERO will be tasked to coordinate E-Reporting and E-Monitoring trials at the national level. Given the evolving nature of these projects, the tasks undertaken by the ERO will be adapted. Every six months, the ERO's work will be assessed and the MOU revised accordingly.

---

[10] http://www.wcpfc.int/node/18880

7. FUTURE WORK

7.1 Lessons learnt, recommendations for implementation and future work

21.   The trials have shown that the eTUNALOG can be used to complete the RPL. The RPL can be lodged electronically (as XML file) via vessels' email systems at low costs. However, if given a choice, like in this trial project, a large proportion of the captains/navigators are currently much more likely to continue completing the 'old' RPL (MS Excel) instead of the 'new' RPL (smart PDF).

22.   For E-Reporting products like eTUNALOG to reach its full potential it would need to be made mandatory when installed on a vessel. To allow for a period of adaptation, the vessel would only have to complete both the 'new' and 'old' RPL for four trips. After this, only the smart PDF would be used to complete the RPL (used for printing and sending/saving the XML data).

23.   National fisheries authorities from member countries and fishing companies willing to implement E-Reporting will need to consider the legal obligations with respect to E-Reporting products like eTUNALOG, which would include, for example, agreement on clear and simple protocols for submission of the XML data logsheet to the national authority.

24.   For observer E-Reporting to reach its full potential with large-scale implementation, one area to consider from an efficiency side is having a UNIQUE platform (laptop) which could be purchased in bulk (50-100) and used for the medium scale deployment of eTUBs. Regional, national and private sources of funding should be joined into such effort. This will be much more cost effective than if member countries would retail purchase their own platforms. Also, a UNIQUE platform guarantees easy maintenance processes and effective and efficient technical support for the user (observer).

25.   SPC will continue to expand the trial with eTUNALOG (longline and purse seine) and eTUBS in the coming year, as well as continued collaboration in the other E-Reporting and E-Monitoring initiatives in the region.

.

8. APPENDIX
Table 1. Status of eTUNALOG trials as at July 2014

Fleet	Vessel name	Vessel #	First installation of eTUNALOG	No. of eTUNALOG data received at SPC
Solomon Islands	SOLOMON EMERALD	1	June 2013	2
	SOLOMON PEARL	2	June 2013	10
	SOLOMON JADE	3	June 2013	4
	SOLOMON OPAL	4	June 2013	2
	SOLOMON RUBY	5	June 2013	8
FSM	TAIYO POHNPEI	6	August 2013	1
	TRINIDAD III	7	August 2013	8
	QUEEN MARY	8	August 2013	4
	MELLISSA	9	August 2013	
NZ	SAN NANUMEA		In process	
	SAN NIKANAU		July 2014	1
USA	AMERICAN VICTORY	10	October 2013	1
	PACIFIC PRIDE	11	October 2013	1
	CAROL LINDA	12	April 2014	1
	JUDIBANA	13	April 2014	1
	FRIESLAND	14	July 2014	1
	RAFFAELLO	15	July 2014	1
	WESTERN PACIFIC	16	April 2014	1
	CAPE HORN	17	July 2014	1
	CAPE FINISTERE	18	June 2014	
	CAPE HATTERAS	21	April 2014	2
	CAPTAIN VINCENT GANN	22	April 2014	1
	CAPE COD	23	April 2014	2
	CAPE BRETON	24	April 2014	
	CAPE ELISABETH III	25	April 2014	2
	CAPE SAN LUCAS		In process	
	CAPE FERRAT		In process	
	CAPE MAY		In process	
		26 Vessels		**55 E-Logs received**

Table 2. Status of eTUBs trials as at July 2014

National Observer programme	Observer name	First eTUBs	Trips undertaken using eTUBs	No. of eTUBs trip data received
FSM – NORMA	Randy tawerluf	August 2013	5	3
	Joel Wegiseo	October 2013	2	2
	Maverick Adolf	August 2013	1	1
	Lancaster walter	March 2013	2	1
Marshall Islands – MIMRA	Iaokari Barai	October 2013	2	1
	Makbi Bwijko	October 2013	1	1