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Joint WCPFC and FFA Secretariat paper on possible cost savings for WCPFC VMS

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In line with efforts to try to refine and where possible reduce Commission costs, this paper presents some suggested ways for some cost savings to be made for the WCPFC VMS along the lines of the concepts which were set out in the 2011 Joint Review of the FFA/WCPFC VMS. The figures presented in the paper are preliminary, and would need to be checked thoroughly by both parties.

The paper is provided to WCPFC9 for consideration and direction to the Secretariats as to whether any or all of these options should be further explored.

FFA/WCPFC Integrated Vessel Monitoring System

1. Introduction

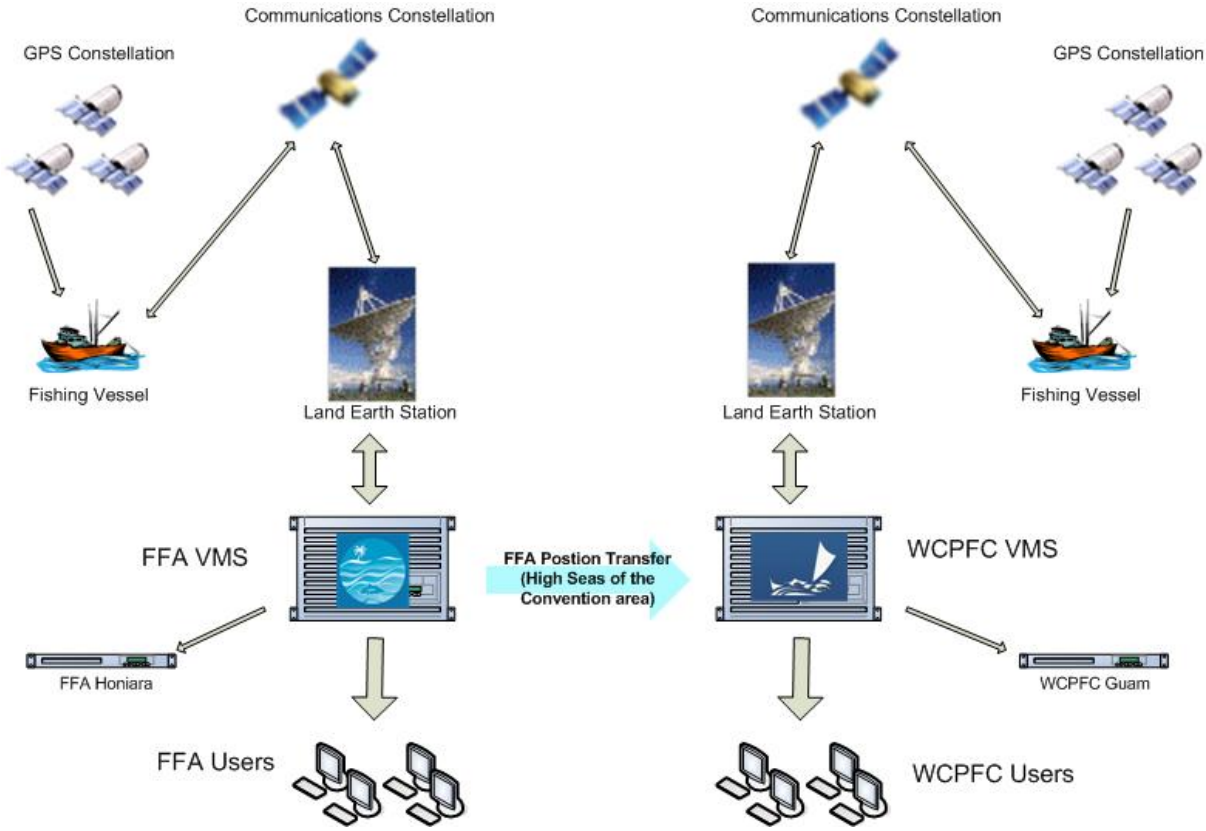
A key issue for FFA and WCPFC is the ongoing operational costs of the Vessel Monitoring System (VMS). Under the current setup, the FFA and WCPFC VMS's are two separate systems with corresponding licensing costs for databases and software.

This paper outlines how the two systems could be integrated to reduce these costs while maintaining the requirements for a "stand alone" WCPFC system and data access restrictions. It further outlines the cost efficiencies of system integration and looks at other areas where cost efficiencies can be found.

2. Current Situation

The two systems are maintained on duplicate sets of software with commensurate ongoing costs for licensing; in addition WCPFC is running on older generation software which does not provide the ability for WCPFC Secretariat to add users and vessels themselves. These features are now available in newer generation software.

The current setup is represented by the following diagram:



2.1 Data Ownership

Data ownership is critical to discussions on integration of VMS, data ownership between FFA and WCPFC can be summarised as follows:

Agency	Data Ownership
FFA	All data relating to vessels on the FFA Vessel Register, regardless of area.
WCPFC	All data related to: • Vessels directly reporting to WCPFC (i.e. not reporting directly via FFA), regardless of whether the data is quarantined under the access restrictions or not. • A copy of all data relating to vessels directly reporting to FFA on the High Seas of the Convention Area (under the current situation this is transferred from FFA to WCPFC).
Note: under an integrated system the data ownership does <u>not</u> change.	

2.2 Data Access Restrictions

The data access restrictions applied to the FFA and WCPFC VMS's are critical to understand and retain as part of this discussion, the access restrictions are summarised here:

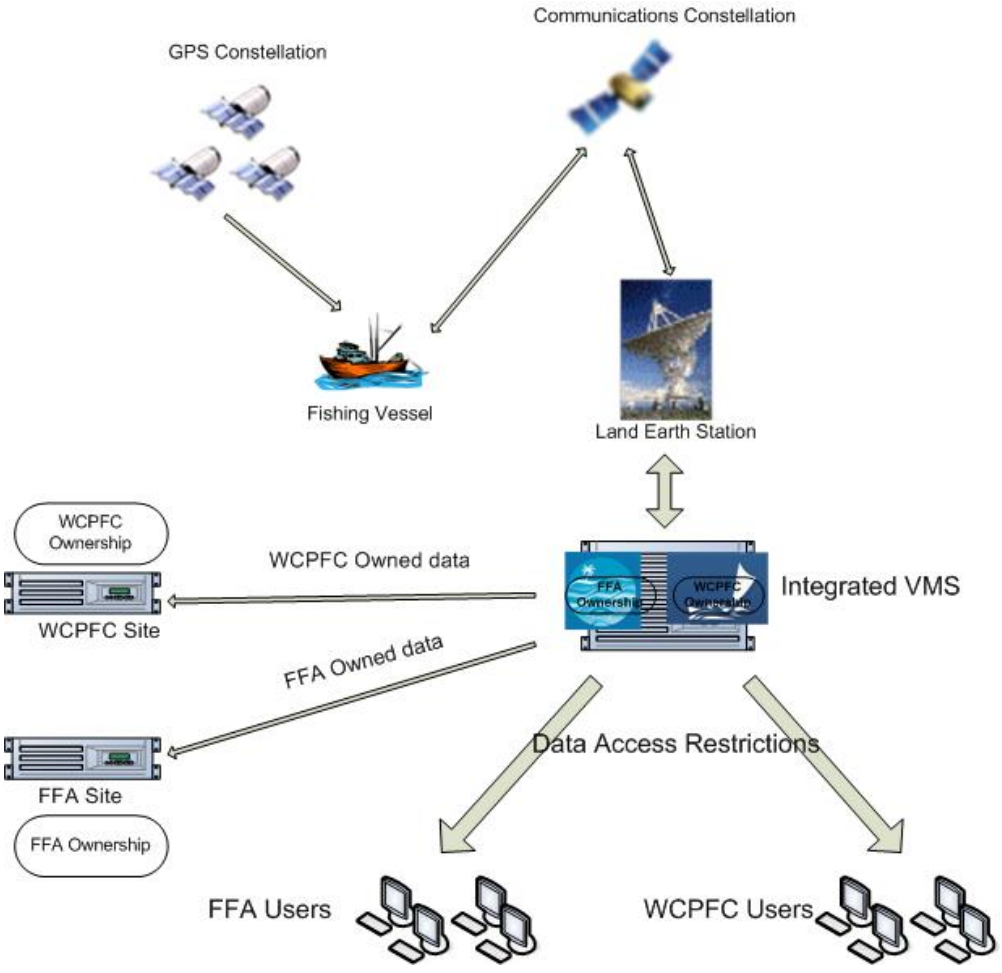
FFA VMS Users	Area Access	Vessel Access
FFA Secretariat	No restriction	No Restriction
FFA Members	Own EEZ	No Restriction
	Shared EEZ, High Seas, Other areas	As per agreed FFA policies and procedures and member's domestic legislation, rules and procedures.
WCPFC VMS Users	**Area Access**	**Vessel Access**
WCPFC Secretariat	High Seas of the Convention area	As per Commission data rules on non-public domain data access.
	EEZ under 24.8 (only applies to certain CCMs)	As per Commission data rules on non-public domain data access.
WCPFC CCMs	High Seas of the Convention area	Flag Vessels
	EEZ under 24.8 (only applies to certain CCMs)	As per the agreement between the relevant CCM and the WCPFC secretariat.
	High Seas Pocket Monitoring (SMA) (only applies to two pockets)	As per the arrangements outlined in the relevant CMMs and procedures adopted by the Commission. (only applies to certain CCMs)
	100NM buffer to CCM EEZ	As per Commission data rules on non-public domain data access.
	Access to specified high seas areas for MCS operations	As per Commission data rules on non-public domain data access.

3. An Integrated System

Under an integrated system, the key issues are that of data ownership and data access as outlined above. It is critical to understand that an integrated system unequivocally retains the existing data ownership and data access restrictions as required by FFA and WCPFC. As a result, the data is "stand alone" even though the actual systems are integrated to reduce the overall cost.

Under an integrated system the relevant data for the two agencies would be replicated to sites chosen by FFA and WCPFC (WCPFC currently uses a site in Guam) thus a copy of the data is held and maintained by the two agencies in a completely independent manner. The relevant replicated data is then available to FFA and WCPFC for other purposes should that be required.

An integrated system is represented in the following diagram:



This integrated system is in line with the following recommendations emanating from the Joint FFA/WCPFC VMS Review completed in August 2011:

(Paragraph 114) *"…A clear statement of work needs to be developed and approved by FFA and WCPFC for the implementation and maintenance of a centralized database or "cloud computing" system…"*

(Paragraph 115) *"…FFA and WCPFC should develop one central database or "cloud computing" system to store all original VMS data received with a goal of eliminating redundant, separate satellite transmissions (and associated costs) to multiple entities. This centralized database system would then provide a true copy of the data which would be directly accessible automatically, securely and near real-time by both agencies, and as appropriate, discrete portions of the data would be directly accessible automatically, securely and near real-time by member countries…"*

(Paragraph 116) *"…In order to protect the integrity to the data, ideally this centralized database or system would receive the data directly from the Land Earth Stations/Gateways receiving the data from the satellites…"*

4. Cost Efficiencies

VMS operational costs are a major concern for both FFA and WCPFC. There are a number of key areas where system rationalisation could assist in reducing the VMS costs. This paper looks at these key areas, it does not provide a full cost on the provision of a rationalised system as that would require more detail than is currently available. As such these costs are **indicative** only.

Key areas of cost rationalization include:

1. Amalgamating FFA and WCPFC VMS (while maintaining the business rules of each agency)
2. Air time (particularly Inmarsat C)
3. Infrastructure costs

This report looks at each issue and outlines the overall cost rationalisations that might be made. Costs in the report are based on actual data from the first six months of 2012, which is then multiplied by two, providing an estimated annual cost. It should be noted that vessel numbers and positions are subject to variance over the course of a year.

4.1 Integration of the FFA and WCPFC VMS

There are vessels directly reporting to either FFA or WCPFC and in some cases to both. In addition, vessels reporting on the high seas in the Convention Area to FFA have the data transmitted to the WCPFC system by a system known as the FFA Position Transfer Server (FFA PTS). While there are no airtime costs associated with the vessels reporting to WCPFC through the FFA PTS, there are licensing costs for these vessels once in the WCPFC VMS.

The number of vessels for the first half of 2012 is outlined below:

	January	February	March	April	May	June	Total for Year
WCPFC Direct Reporting	847	808	1192	849	801	1042	11078
WCPFC FFA PTS	858	916	897	941	909	894	10830
Total	1705	1724	2089	1790	1710	1936	21908
Current Cost (estimated)	$15,763.00	$15,866.00	$19,544.50	$16,488.50	$15,736.50	$18,019.00	$202,835.00

Based on the current licensing/infrastructure costs, integrating the two systems would result in the following estimated costs for the WCPFC VMS where the WCPFC FFA PTS charges are eliminated:

Integrated System	January	February	March	April	May	June	Total for Year
Total WCPFC Direct Reporting Vessels	847	808	1192	849	801	1042	11078
Cost per month	$8,470.00	$8,080.00	$11,920	$8,490	$8,010	$10,420.00	$110,780.00

Estimating the cost rationalization on an *annual* basis gives the following results:

Current Costs: $202,835
Integrated System Cost (FFA Hosted): $110,780
Difference: **$92,055**

It should be noted however that the cost difference indicated above does not include the licensing costs associated with those vessels reporting to the FFA VMS and for those vessels whose positions in the high seas of the WCPFC convention area are transferred to the WCPFC VMS.

4.2 New Generation Software

The integrated system provides WCPFC with later generation software which would provide greater administrative abilities for the WCPFC Secretariat to manage vessels and users (within the data access rules determined by the Commission). The new generation software will reduce the ongoing support costs for vessel activations, account activations, etc. Furthermore, it is expected that the integrated system would be provided inclusive with the newer generation software whereas, under the current set up, it would be offered as an upgrade. With the use of newer software, the costs for activating a new vessel/unit or new users are greatly reduced as the WCPFC Secretariat would be able to conduct these operations themselves at no charge (unless the service provider is asked to process a request directly).

However due to the high variance in the number of such requests, it is difficult to estimate the cost rationalisation of using the newer generation software. Based on the number of support requests for the first six months of 2012, the estimated cost could be reduced by approximately **$30,100 annually**. Actual cost efficiencies gained over time are substantial but difficult to quantify accurately.

4.3 Fully Managed Service – Infrastructure & Airtime

Under a fully managed service, the costs for maintaining the infrastructure and the airtime are included in the service, thus allowing for the following cost efficiencies (for Inmarsat C units):

	January	February	March	April	May	June	Annual (est)
Estimated WCPFC Current Airtime Cost	$3,953.88	$4,429.04	$5,616.63	$5,662.37	$5,773.92	$5,348.46	$61,568.60
Estimated New Provider Cost	$3,614.98	$4,049.41	$5,135.20	$5,177.02	$5,279.01	$4,890.02	$56,291.26
Difference	$338.90	$379.63	$481.43	$485.35	$494.91	$458.44	**$5,277.34**
If all vessels reporting Single Packet:							

Current Provider (estimated)	$2,125.27	$2,411.43	$2,968.95	$2,988.23	$3,040.24	$2,826.43	$32,721.08
New Provider (estimated)*	$2,003.83	$2,273.63	$2,799.29	$2,817.47	$2,866.51	$2,664.92	$30,851.30
Difference	$121.44	$137.80	$169.65	$170.76	$173.73	$161.51	**$1,869.78**

Due to volume discounts, the price per packet (one packet/two packets) is different at the lower volume.

5 Other areas for Cost Efficiencies

5.1 Strengthening the Type Approval Process

A large number of WCPFC vessels are reporting two packet positions. This is unnecessary and costs twice as much as single packet positions. The WCPFC process has very little control on the units which has led to the majority of vessels reporting two packet data. Correct configuration of VMS units is vital to maintain control over both the units (i.e. to ensure effective reporting) and to control costs. The current estimated costs compared to all vessel single packet reporting can be seen below:

SINGLE PACKET	**January**	**February**	**March**	**April**	**May**	**June**	**Annual (est)**
WCPFC	8476	11252	9179	8974	8759	8697	110674
TWO PACKET	**January**	**February**	**March**	**April**	**May**	**June**	**Annual (est)**
WCFPC	52246	57646	75648	76404	78105	72058	824214
Estimated Current Airtime Cost	**$3,953.88**	**$4,429.04**	**$5,616.63**	**$5,662.37**	**$5,773.92**	**$5,348.46**	**$61,568.60**
Estimated cost if all vessels single packet reporting	**$2,125.27**	**$2,411.43**	**$2,968.95**	**$2,988.23**	**$3,040.24**	**$2,826.43**	**$32,721.08**
Difference	**$1,828.61**	**$2,017.61**	**$2,647.69**	**$2,674.14**	**$2,733.68**	**$2,522.04**	**$28,847.52**

Please note that these figures are based on the data within the WCPFC VMS not on actual billing. Actual billing is likely to be higher and thus the rationalisation costs greater. The above costs do not include commands sent to units as this is highly variable and constitutes a smaller component of the overall costs.

It is important to note the process of changing unit configurations would take a long period to complete, so the costs provide an indication of where rationalisation could achieve a cost reduction if fully realized. It is acknowledged that this specific area of cost reduction would not be achieved in short order.

5.2 Other Issues

There are some other matters that may assist in cost rationalisation in the longer term. Detailed costs for these are difficult to estimate at this point; however, consideration could be given to these matters in the longer term.

5.2.1 Electronic Forms

The use of electronic forms for the submission of catch data could reduce costs associated with paper log books.

5.2.2 Reporting rates

A cost-benefit analysis could be conducted to review the reporting rates of vessels outside the areas of direct interest to FFA and WCPFC. With some modern VMS units it is possible to incorporate internal geo-fences so that the unit determines when it is in a specific area and automatically reduces the reporting rate (and therefore reduces airtime cost). However, few unit types can be managed over the air for this issue and the cost of manually configuring the units would be very high. New units are available which allow full configuration (by authorized users only) of the geo-fencing over the air which makes this a more feasible option.

Changing reporting rates can also be accomplished automatically through VMS software. However (particularly in the case on Inmarsat C), this involves sending commands to the unit and it may be the case that the cost of sending commands is higher than leaving the reporting rate 'as is'.

For the reasons detailed above, it is suggested that the FFA and WCPFC Secretariats work with the service provider to produce a cost benefit analysis of changing reporting rates outside the areas of interest.

6. Conclusion

All figures should be taken to be indicative. However, they provide a good indication of where cost rationalisation might help reduce the VMS operational costs to WCPFC.

Primary Consideration	Cost Rationalization
4.1 Integrating the two Systems into one	$92,055.00
Total ESTIMATED savings for primary consideration	**$92,055.00**

Secondary Consideration	Cost Rationalization
4.2 New generation software	$30,100.00
4.3 Fully managed service – infrastructure and airtime	$5,277.00
5.1 Type approval and single packet reporting	$28,848.00
Total ESTIMATED savings for secondary consideration	**$64,225.00**

Total ESTIMATED cost rationalization savings	**$156,280.00**

It should be understood that the figures given do not represent the full costs of running an integrated VMS. These figures provide an indication of where costs to WCPFC could be reduced through rationalisation. Should WCPFC decide to investigate one or more of the options of cost rationalization, this may require a decision of the Commission. Based on this outcome, discussions would need to be held between the WCPFC Secretariat, FFA Secretariat and current service provider on how to proceed. At that time, a full specification and costing could be developed.