

# **Ministry of Agriculture Fisheries Department**

## **Vessel Monitoring Systems Annual Report 2019**

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## INTRODUCTION

The effective monitoring of any fishery is pivotal in maintaining a high level of sustainability. In an effort to satisfy the requirements of Marine Stewardship Council (MSC), the seabob industry began the bid for a vessel monitoring systems (VMS) service provider. Collecte' Localization Satellite (CLS) has been Guyana's sole VMS service provider for the past six (6) years. Providing mostly Marge V2 beacons and the Metafishery Software to aid in the monitoring of industrial (seabob and prawn 2013) and deep-sea pelagic (2015).

The software has developed a number of issues over the years which has made monitoring of the fishery challenging, such as:

- Outdate software
- Data gaps observed in spite of daily acquisitions
- Data Deletion

In an effort to rectify these issues the Fisheries Department's vessel monitoring centre (VMC) has worked closely with CLS and has made changes to the system unit supporting the software. However, the challenges still persisted and discussions were had to have the software upgraded to Themis. This was so due to the Metafishery Software only attracting technical support from CLS and no further software improvements.

In 2019, coupled with the issue presented above, there was an event affecting the electric transmission and distribution system that has industry concerned about the potential for a major disruption. This was the week number rollover of the global positioning system (GPS), the week number that uses the 10-bit binary system reached its limit of 1,024 weeks and was forced to roll over and be reset to week 0 (**Pesin 2019**).The GPS reset had a major impact on the vessel monitoring equipment used by the industrial and deep-sea pelagic fleet.

It was observed after April 2019, that some 92 vessels were not transmitting or only transmitting for a short period daily. The Department along with the Guyana Association of Trawler Owners

and Seafood Processor (GATOSP) in understanding the magnitude of the challenges faced at the time began pursuing a solution from April 2019. A number of meetings were held between the Department, GATOSP and CLS to determine the following:

- Reasons for there being no data transmitted – It was highlighted that the majority of beacons used by the industry at the time were Marge V2 and due to the reset the fleet would be required to upgrade to Marge V3.
- Upgrading the industries beacons – CLS was approached to provide a quote for the necessary upgrade. The prices provided by CLS was considered to be high by GATOSP, it was also argued that there was no prior notice of the changes that were to come.

Description	Unit Price	Quantities	Total	Discount	Total Preferential Price
MARGE-V3	\$ 1 700	92	\$ 156 400	<b>-41%</b>	\$ 92 000
Airtime Argos for MARGE-V3 - <b>Yearly</b>	\$ 900	92	\$ 82 800	<b>-2%</b>	\$ 80 960
THEMIS WEB Standard Features VMS Tracking and Fleet Management - <b>Yearly</b> validated for a 3 Years period	\$ 12 400	1	\$ 12 400	<b>-52%</b>	\$ 5 900
Upgrade FMC from Methafisheries to THEMIS Web - <b>One shot</b>	\$ 2 500	1	\$ 2 500	-	\$ 2 500

**Table 1: CLS Quotation**

- Feasibility of remaining with CLS - GATOSP began sourcing a new service provider, SASCO (cheaper option). The Department has had held firm to its position of the service provider does not matter, as long as the vessels are being tracked.



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## Quotation for Noble House Seafoods

	Price Each	Price 100+
<b>Sasco BB3 Iridium Satellite Communicator</b> .....	\$1500	\$1199
<i>Includes:</i>		
<ul style="list-style-type: none"><li>• Iridium satellite communicator</li><li>• Uses Iridium mini-Low Earth Orbiting satellites</li><li>• Internal Garmin GP50L GPS receiver</li><li>• Marine grade Iridium and GPS antennas and cables</li><li>• Initial Provisioning fee for registering unit with Iridium.</li><li>• Sends immediate report if ship's power lost.</li></ul>		
<b>Skywave Orbcomm Inmarsat ST6100 Satellite Terminal</b> .....	\$850	\$750
<i>Includes:</i>		
<ul style="list-style-type: none"><li>• Marine Grade Self-contained standalone terminal</li><li>• Uses the geostationary Inmarsat Satellite stationed over Belem</li><li>• Inmarsat Satellite M2M Data Network</li><li>• Supplied with SS mount and power cable</li></ul>		
<b>Optional Backup 48 hr battery assembly for ST6100</b> .....	\$149	\$129
<i>Includes:</i>		
<ul style="list-style-type: none"><li>• Watertight enclosure to be mounted inside vessel</li><li>• Reference LED on lid confirming that ship is supply power.</li><li>• Battery power for independent 48 hours operation</li><li>• Sends immediate report if ship's power lost.</li></ul>		
<b>Satellite Data Reporting Fees</b>		
<b>Position Speed and Heading Reports every 30 minutes</b> .....		\$45.00/month
<i>Includes:</i>		
<ul style="list-style-type: none"><li>• Web access for viewing data and plots via Username Password access</li><li>• Plots on nautical chart showing 8 fathom contour</li><li>• History of all past position data easily accessible</li><li>• Alerts by text or email in event of data report anomalies</li><li>• Suspension and reactivation as requested</li></ul>		
<b>Re-provisioning Fee (The initial Provisioning fee was included in sale price)</b> .....		\$30.00/unit
<i>When a unit has been deactivated (removed) from the satellite system at the request of the client then its account with the satellite providers will be terminated. That means starting over and paying the fees to open a new account with Skywave. Previous vessel history is available if the vessel name remains the same as before. Written request must be emailed to Sasco for audit trail.</i>		

Figure 1: SASCO Quote

- Moving to SASCO and conducting trials

In recognition of the laws of Guyana, the Fisheries Department in November 2019 notified GATOSP and its members of what is required of them in the event of their vessels not transmitting data and the penalties of not adhering to such an activity.

There were two scheduled trials for both CIS's Themis web-based software and SASCO's web-based software in August/September and December 2019, respectively. Themis was favoured by the Department, as it provided smoother manipulations and was much more developed. SASCO was a limited, however the Department was assured that the discrepancies found can be rectified and three can be modification to suite the client.

The Department had intensified its MCS activity to ensure that the industry is monitored throughout this period. The closed caption television (CCTV), turtle excluder device (TED) & bycatch reduction device (BRD), Vessel and Wharf Surveillance inspections ensured that the industry is under constant monitoring.

Note: This report provides an update/review on the activities surrounding the VMS and does not focus on any analysis as such.

## Reference

Pesin, 2019. "The April 2019 Global Positioning System (GPS) Week Number Rollover," <https://www.energy.gov/oe/articles/april-2019-global-positioning-system-gps-week-number-rollover>