Introduction:

VMS is essentially a Global Position System carried on commercial fishing boats that transmits the boat's geographic position to various state enforcement agencies. AVMS allows one employee to monitor up to 500 boats for about $1.00/day per boat - about 1% the cost of aerial or marine surveillance and much more effective. Setting up the system is also very inexpensive: the cost per boat is about $1,200 and the entire land station, including servers, workstations, and internet connections costs a maximum of $50,000. Similar systems are operational already in the U.S, Canada, the E.U., Chile, and others.

Technology:

The AVMS (Aadhithya Vessel Monitoring Systems) unit, a Skywave DMR 800D+ Inmarsat-D+/GPS transceiver, is mounted in the vessel's is mounted on top of the wheelhouse or on a mast. The cost of the antenna, transceiver and installation is less than US$1,200. The GPS position is included in a data message that contains the vessel's identity, date and time. The data message may also contain other parameters such as course and speed, and special codes for antenna blockage, power failure, and others. This data message is transmitted automatically at pre-set intervals to an Inmarsat satellite. The monitoring department can remotely change the reporting interval, which can range from 1 minute up to 24 hours or once a week. The message is received at a land earth station, which processes the message into usable form, and makes it available to the VMS control center in Honolulu.

Cost and Infrastructure:

The control center that would cover all the Indian Ocean Region (the whole world for that matter) would cost a maximum of US$50,000, which would include servers, internet connection, analysis workstation, graphics monitor, software applications for VMS (database, base maps, office applications, mapping, etc.), service contracts, etc. Data are received and stored in a database and displayed on a mapping program, which allows storage, archival, manipulation and display of the vessel position information. A list of exception reports are available in the software so information on any vessel of interest, for example, one approaching a no fishing zone / Geo Fence area can be sent automatically via email or cellular phone call to the Navy or other authorized personnel. In U.S, U.K and Europe, Coast Guard watch standers are tasked with reviewing the control center every few hours to monitor system functionality and identify vessels of interest.

Comparisons of the cost-effectiveness of the AVMS versus traditional methods for surveillance and enforcement (ships and airplanes) show that the AVMS can monitor the activities of the fleet **for less than 1% of the cost of traditional methods**. The AVMS also offers a level of surveillance coverage that far surpasses traditional methods.

What needs to happen?

The Govt. should ensure that: It is mandatory for all Mechanized fishing vessels to be installed with a VMS Tracking units:

1. Implementation of Vessel Monitoring Systems

Participants are to develop, implement and improve systems to:

(a) Ensure that all of their vessels fishing in the Area are fitted with fully operational automatic location communicator (VMS) reporting back to the flag state.

(b) Ensure that VMS on their vessels remain operational, and report in accordance with this standard, at all times while operational in the approved fishing area.

(c) Maintain a record of all vessel position information reported while these vessels are operational in the area, such that this nformation may be used to document vessel activity in the approved fishing area, and to validate fishing position information provided by those vessels.

2. Frequency and Accuracy of VMS Position Reports

(a) AVMS position reports are reported by each of their vessels at least once every 2/4 hours while the vessel is within the fishing area.

(b) All AVMS Position reports are made in accordance with the specification in paragraph 3 of this standard.

(b) Under normal satellite navigation operating conditions, positions derived from the data reported are to be accurate to within 100 m2.

3. Content of VMS Position Reports

Participants are to ensure that all AVMS Position Reports made by their vessels include at least the following information:

Category Data Element Remarks

Vessel registration

Name of the vessel

International Radio call sign of the vessel

Activity detail - Latitude Position latitude (decimal degrees, to the nearest 0.01 degree)

Activity detail - Longitude Position longitude (decimal degrees, to the nearest 0.01 degree)

Message detail Date Position date in IST

Message detail Time Position time in IST

Please Note that:

Our AVMS devices meet International Maritime SOS requirements and this could be integrated with 4 I/O s and a RS232 communication port. We could use the device for two way communication too.