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Vessel Monitoring System (VMS) in Ships

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SUMMARY

Vessel Monitoring System (VMS) a recent technology used to provide customized solutions and technical support for fishery authorities, fishery managers, coast guards, and navies to safe guard the exclusive fishery resources and seas. These VMS facilitates in getting powerful information related to fisheries monitoring, IUU fishing detection, search and rescue operation, resource management and real time EEZ monitoring. Further, the VMS is very reliable, direct and relatively inexpensive means of communication through which you can communicate between the vessel and the monitoring agency.

INTRODUCTION

Vessel Monitoring Systems (VMS) is a general term that describe, the systems that are used in commercial fishing sector to allow environmental and fisheries regulatory organizations to track and monitor the activities of fishing vessels. Both at national and international level VMS take part in monitoring control and surveillance (MCS). VMS is particularly used to monitor fishing operations of the vessels in the territorial and Exclusive Economic Zones (EEZ) waters of the country. Prior to VMS, fisheries management authorities have had to rely upon the information that are provided by vessel operators, which may or may not be accurate. To fill the gap and get accurate data, VMS was invented, which always provides accurate data to the administrators. It is vastly used to protect the marine fishery resources and ecosystem through continuous monitoring on fishing practices and of illegal fishing, and thus ultimately protect and enhance the livelihoods of fishermen. The VMS uses the Global Positioning System (GPS) to display the accurate geographic position of the vessel. The satellite monitoring device transmits the information from the vessels to the Fisheries Monitoring Centres (FMCs). Countries with registered fishing vessels that employ VMS, generally agree to set up a Fisheries Monitoring Center (FMC), which has a data network connection to the FMCs of other states as well as other maritime stakeholders within the country.

VMS Components

The components of the VMS are as follows;

GPS Receiver or Transponder:

The GPS receiver plots the position of the vessel in the sea. To gain the position of ship in sea a GPS receiver must have four GPS satellites within line-of-sight. Since, GPS satellites are Low Earth Orbiting satellites arranged in constellation at least six satellites are within line-of-sight from almost anywhere on the Earth's surface.

Communications system:

The communication system transfers the position of the fishing vessels with the help of communication satellites like INMARSAT. The communications system moves data between the transmitter/transceiver on the vessels and the monitoring agency. The position of the fishing vessel is received by the ground station in the land from the communication satellites which is then transferred to the fisheries Management agency with the help of public data network or telephone network.

Automated reporting system:

The automated reporting system is capable of being programmed to send position reports at specified time intervals.

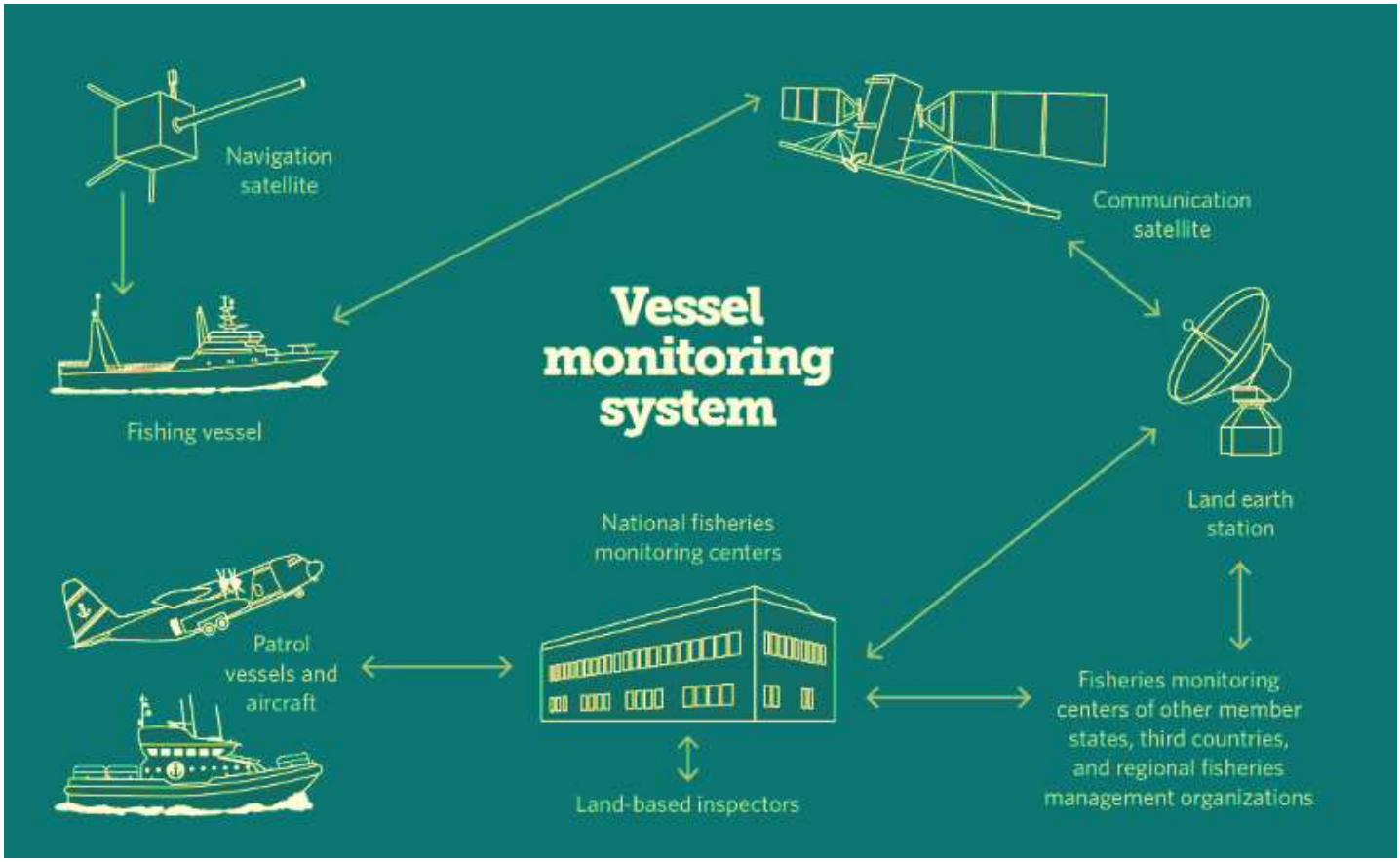

Figure 1: Vessel Monitoring System

Data provided by VMS

- VMS provides movement of fishing vessel to the monitoring agencies It informs the monitoring agency where a vessel is and where it was at periodic time intervals.
- It helps in assessment of economic status of the fishery; ecological health of the fishery; geographical nature of the fishery; type of fishing conducted; quantity and size of fishing vessels etc.
- It is possible for the monitoring agency to draw conclusions about the activities of a fishing vessel through the vessel position and speed.
- VMS allows the transmission of catch and effort data from the fishing vessel to a monitoring agency in near real time.
- VMS also allows the transmission of a variety of data like notification of the vessel's intentions such as entering a port or fishing zone, or could be information about the activity of other vessels.

Benefits of VMS

- The availability of real time information on fishing activity
- It can facilitate greater transparency and cooperation between flag states and coastal states
- It would help to eliminate the reporting delays
- VMS can help in fisheries management practice
- It will facilitate the cross referencing of VMS data with logbook entries of fishermen
- It enhances the efficiency of inspection authorities and have control at sea and in port.
- It will significantly reduce the administrative and reporting burden of fishermen.

CONCLUSION

Vessel Monitoring System is a boon to the administrators, who can monitor and control fishing activities of commercial fishing vessel from their desk. This system will stop stock depletion through preventing illegal and irresponsible fishing practices there by the livelihood of the fishermen will be protected and assured for longer time. Further, this VMS can monitor the movement of fishing vessels via satellite continuously so that fishing that does not comply with the permission will be identified easily. Thus, the installation of VMS in every fishing vessel must be encouraged among the fishermen to prevent and minimize violations in sea.

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