Oil Spill Monitoring in Eastern Straits - A Techno-Managerial Framework og GIS, GPS and RS Technologies

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Oil spills a global concern and often refer to marine oil spills where in oil is released into the ocean not only pose danger to the economy but cause an irreparable damage to the environment if left unchecked. The availability of modern satellite data and integrated use of them with a robust system seem to be paying dividends. Some of the international success stories in satellite based oil spill monitoring include PROMED in Mediterranean seas, INSTOP in Canada, ScanEx RDC for North Caspian Sea etc., Agencies like European Maritime Safety Agency (EMSA ) achieved Cleanseas/ Safeseas in Europe. EMSA generates near real time alerts for oil spills and has successfully identified the polluting vessels.

India has a long coastline of 7500 kms along with major oil installations along the coast line and growing maritime trade across major and minor ports; oil spill management is a major national requirement of the day. Also, the straits of Andaman etc., through which the oil of the East is transported is also important route. Hence oil spill management in the eastern part of the globe is vital. Normally as seen from the above examples, emphasis has been on Persian Gulf / Homruz Straits. But the level of traffic in the Eastern Straits and leads to the need for application to this part of the world.

Realizing the importance of oil spill management, the Government of India took a few initiatives like formation of Oil Spill India and National Oil Spill – Disaster Contingency Plan. However, continuous monitoring of oil spills and concerted efforts for environmental and economic priorities can be achieved only through operational services on a 24x7 basis. For this, the combination of advanced technologies like Remote Sensing, GIS and GPS/IRNSS can be used and more importantly the power of their convergence can be tapped for delivering ‘right information’ to the ‘right people’ in ‘right time’.

The availability of Satellite based Imaging in Microwave SAR (RISAT-1) and optical bands and positional information due to IRNSS has expanded the scope for improving the efficiency of oil spill detection and monitoring. Also India has Bhuvan / NICES GeoPortals of ISRO, and INCOIS centre involved in oceanic studies. Hence, this part of the globe has the need with long coast and all potential technologies for delivering the services. The pertinent need is a Techno-Managerial Framework for Oil Spill Monitoring in Eastern Straits to realize such an end-to-end solution. Coupled with various elements like oil & gas production/infrastructure data, oil spill signatures along with location information, the various Stake holders can be alerted for prevention, mitigation and management of oil spills. The paper will present such a techno-managerial framework for an operational service involving the stake holders as it will pay rich dividends to the economy and environment.