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ABSTRACT

Satellite applications are being used in land, sea, air and space studies and management applications in the sea covering a wide spectrum of fields, such as oceanography (bathymetry, tides, waves, sea level, currents, surface water temperature), fisheries (resources distribution and monitoring of fisheries), Shipping (fleet monitoring, communication, safety and rescue, pollution detection and monitoring), and navy (security, strategy, safety). Further, satellites can be used in the process of educating people onboard.

The present research is a study of three satellite applications for Ocean and Coastal Zone Management (OCZM). Radar sensors which are used in bathymetric exploration are useful in the oil pipeline industry and in coastal navigation. Thermal and radar imaging have been used to detect indirectly the resource distribution of the tuna fisheries and lately also other fisheries. The Global Position System (GPS) and data communications today permit fleet monitoring system an follow the same principle.

An interesting point is the cost although this technology may appear expensive, it is in effect not. One of the objectives of this dissertation is to compare the value of traditional methods and satellite applications. With this I intend to give a new perspective of the capabilities of the new technology and its application in developing countries.

The Ocean and Coastal Zone (OCZ) is a very wide area. Normally, the control and monitoring of this would take days, if traditional systems are used, and all analyses would be post-facto. Satellites can provide a wide variety of applications besides data communications technology. They can send position, type of vessel, speed, and other parameters in near-real time and therefore the ability of OCZM can be substantially increased. Herein lies the interest in exploring the employment of satellites as OCZ management tools.

The methodology followed in the development of this paper is to conduct an analysis of remote sensing capabilities. This includes comparing remote sensing images and data with traditional methods of obtaining and analysing data for the management of the natural resources within the coastal and ocean areas of a country. In addition Internet capabilities and library resources have been used extensively to research the arena of satellite science.