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### **Development of an ocean surveillance system**

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Now-a-days, underwater sensor networks are gaining considerable importance, for Ocean Surveillance applications. A minimally configurable three-node sensor network is found to be capable of performing localization as well as tracking of underwater targets. Each node comprises of a surface buoy having processing modules, controller hardware and support electronics for estimating the direction of arrival. The development of the node system comprising of controller and processing modules is presented in this paper. The controller hardware, consisting of a gear assembly, magnetic compass and a precision digital signal controller, helps in sampling the ocean by way of steering the hydrophone arrays and capturing the target emanations, while the processing module performs the computation of the direction of arrivals. The target emissions picked up by the hydrophone arrays are analyzed and processed for computing the direction of signal arrival with reference to the geomagnetic meridian. The direction of maximum signal arrivals computed by the three nodes, lead to the estimation of the target position. Localization of the target is carried out by effectively utilizing the information furnished by Global Positioning System incorporated in the node hardware, which has an efficient power management mechanism, as well.