

## Velocity Logs Error Reduction for In-Service Calibration of Vessel Performance Indicators

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**Abstract :** Vessel behavior in different operational and weather conditions constitutes the main area of interest for the ship operator. Ship speed and fuel consumption are the most decisive parameters in this respect, as their correlation provides information about the economic and environmental efficiency of the vessel, becoming the basis of decision making in terms of maintenance and trading. In the analysis of vessel operational profile for the evaluation of fuel consumption and the equivalent CO<sub>2</sub> emissions footprint, the indications of Speed Through Water are widely used. The seasonal and regional variations in seawater characteristics, which are available nowadays, can provide the basis for accurate estimation of the errors in Speed Through Water indications at any time. Accuracy in the speed value on a route basis can enable operator identify the ship fuel and propulsion efficiency and proceed with improvements. This paper discusses case studies, where the actual vessel speed was corrected by a post-processing algorithm. The effects of the vessel correction to standard Key Performance Indicators, as well as operational findings not identified earlier, are also discussed.

**Keywords :** data analytics, MATLAB, vessel performance monitoring, speed through water

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