WindEnergy

NETWORK

COMMUNICATION HUB FOR THE WIND ENERGY INDUSTRY

Aids to Navigation
GRID CONNECTIONS

Oils & Lubricants

INNOVATIONS

Rescue Equipment

New remote vessel monitoring means cost savings and efficiencies

A new maritime remote sensing and engine diagnostic system, iRAMS (intelligent remote asset monitoring solution), protects commercial vessels, CTV, leisure and workboats by remotely monitoring the engines and generators combined with spatial location data. Data is transmitted shore side via satellite or GSM to a web based, graphic user interface (GUI), in near real time, providing comprehensive diagnostic/efficiency reports and automated anomaly/exception alerts via SMS or e-mail.

INTEGRATION

Information collected by iRAMS can be integrated into a Vessel Management System, offering increased cost reduction benefits; from full automation, (no need to manually fill out daily progress reports recording daily engine hours), to predictive maintenance schedules based on live data.

SPECIFIC INDUSTRY DEVELOPMENT

Remote vehicle monitoring has been widely adopted within many different industry sectors for many years and is now understood. However, the new iRAMS solution has been developed specifically for the maritime market and can become an integral part of a vessels SEEMP strategy, reducing emissions and meeting compliance regulations. Remote vessel management offers reduced down time for unplanned engine maintenance, automation of DPR, reduced fuel consumption (by monitoring Skipper behaviour) and combines engine diagnostics and automated vessel efficiency reporting.

GLOBAL OPERATION

Operating globally via satellite, iRAMS will be of particular interest to vessel operators with limited engineering resources on board as it provides a range of engine logging data and diagnostic information shore side via the GUI. Combined with a range of configurable alerts, sent via SMS or e-mail to the Operations Manager or Fleet Engineer, the system provides early warning alerts of anomalies before they become problematic.

ENGINE AGNOSTIC SOLUTION

iRAMS is an engine agnostic solution which means it's not restricted to any one make of vessel engines in the market. The solution archives engine logs and spatial data which can be referenced at any time by the user, over any time period via the GUI, allowing retrospective investigation, should it be required.

DEMONSTRATION 1

A recent example of cost saving was demonstrated when a shore side Operations Manager was reviewing his fleet's fuel consumption report provided by iRAMS and noticed one particular vessel was consuming more fuel than expected.

By investigating the near real time data remotely using iRAMS, it was clear the vessel's port engine boost was operating less efficiently in comparison to the starboard engine, indicating a 'boost leak off' or a turbo fault.
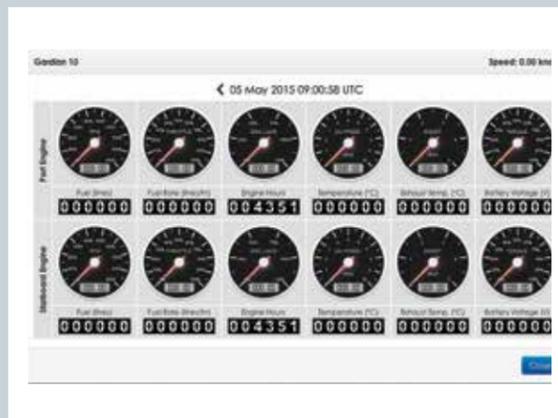
As there was no engine fault alarm on the vessel, the crew were unaware of the issue. The subsequent physical investigation showed the turbo inducer wheel tips had broken up. Had it failed completely, the potential outcome could have been an expensive engine repair/replacement.

DEMONSTRATION 2

Another reported example established how iRAMS assisted in optimising vessel efficiency by reducing fuel consumption. An Operations Manager comparing different vessel fuel efficiencies within the fleet from an iRAMS report noticed an anomaly where one vessel was consuming more fuel than others on similar operations.

Data collected confirmed the vessel's engines were operating within normal efficiency parameters. However, by configuring the iRAMS GUI to send alerts through when the throttle position exceeded the operators pre-set parameters, the Operations Manager was able to identify when the vessel's throttle position exceeded 95% and the times and dates of the occurrences.

By utilising the iRAMS alerting function and the archived data reports during the investigation, it revealed that the Skipper was consistently travelling at maximum throttle. Remedial education was undertaken with the Skipper and resulted in a reduction of fuel usage for the vessel in question.

IMPROVING VESSEL EFFICIENCY

The reporting functionality of iRAMS has been developed to improve vessel efficiency allowing users to create automated reports that are e-mailed on a daily/weekly/monthly basis using either user defined parameters or pre-set comparison reports e.g. engine hour v fuel consumption.

Users can also configure a wide range of engine data and location alert parameters in the GUI to trigger early warning alerts for irregularities.
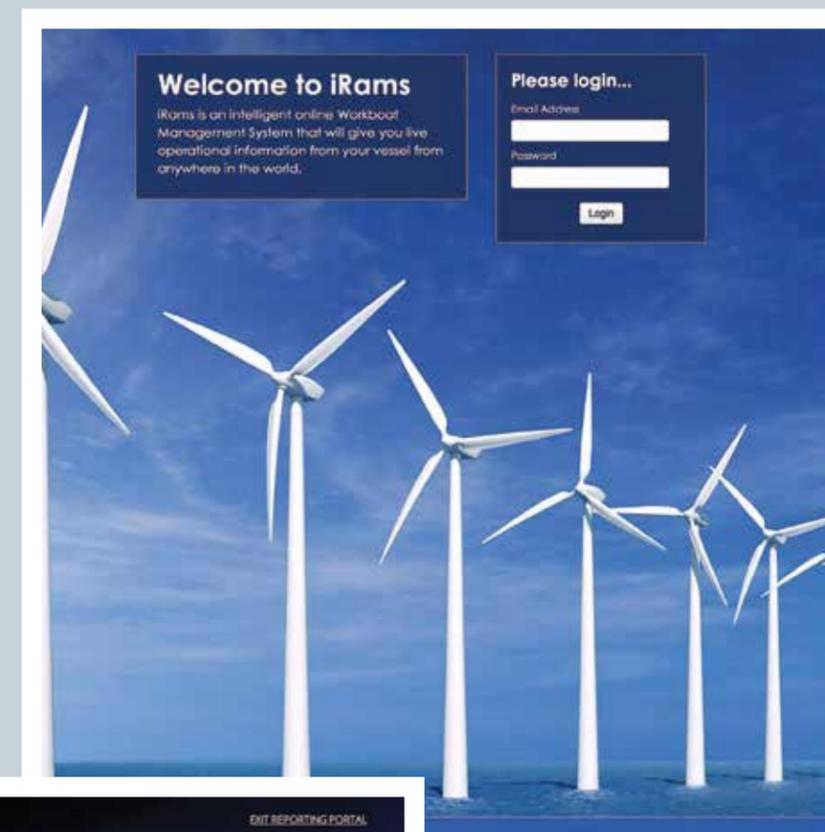
SPATIAL MAPPING DATA

Included in the iRAMS GUI is 'spatial mapping data', offering detailed global windfarm locations. This enables users to set geo fences/alerts around particular windfarms, or even individual wind turbines, notifying when a vessel arrives or departs its destination. AIS data can also be fed into iRAMS and displayed on the GUI mapping, allowing the geo-fencing alerting function to be available to all AIS vessels.

EASE OF INSTALLATION

An iRAMS installation on a vessel typically takes four hours and the small form factor on board system passively monitors the engines without any intrusive electronics or interference required.

AST Marine Services