# From Noon Reports to Real Time Insight

## Why High-Frequency Ship Data Wins

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# Rethinking Ship Data:

## Precision, Compliance, and Fuel Savings

High-frequency ship data turns fragmented daily snapshots into continuous, reliable insight. With better accuracy, earlier detection of performance losses, and compliance-ready outputs, operators can save fuel, cut emissions, and stay ahead of regulatory demands.

### The Limits of Noon Reports

Most fleets still rely on "noon reports", a single manual snapshot every 24 hours to judge performance. They are helpful for continuity, but they compress a full day's changes in draft, trim, weather, and power into one point, inheriting rounding/observer bias (Smith et al., 2013). High-frequency sensor data (seconds to minutes) differs in that it captures propulsion, fuel, navigation, and metocean signals continuously, allowing you to normalize for conditions, separate the signal from noise, and track speed loss as it develops, not weeks later (ISO 19030; ISO 15016).

### Turning Data into Decisions

When you replace daily points with continuous streams, the mathematics shifts in your favor. Comparative research indicates a roughly order-of-magnitude reduction in uncertainty when performance is estimated from continuous monitoring rather than noon reports, making small but financially significant drifts visible earlier (Aldous et al., 2015). Earlier detection means earlier action: timely propeller polishing, targeted hull cleaning, and better trim choices, all of which protect speed and fuel efficiency before losses compound (ISO 19030).




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# Scalable Insight, Immediate Impact

On savings, a conservative view is the most credible. Fleet practice and public programs report a fuel reduction of ~0.5–3% when trim and day-to-day execution are supported by normalized high-frequency data, with higher gains in some trades and well-managed campaigns (IMO GreenVoyage2050).
Those percentages may seem small, but over the course of a year, they add up. For a vessel burning ~8,400 t/year, even 1–3% equates to ~84–252 t of fuel and ~260–780 t of $CO^2$ avoided (EF=3.114 $tCO^2$/t fuel), with payback typically measured in months once a basic sensor/analytics stack is in place (EC MRV/ETS Guidance; IMO GreenVoyage2050).




High-frequency pipelines also simplify compliance. Data are organized in an OVD structure aligned with ISO 19847 (shipboard data servers for collecting/sharing field data) and ISO 19848 (standard data model for shipboard machinery and equipment). Harmonized units and tags (e.g., as per ISO 80000) reduce manual collation and enable clean packaging for MRV/EU-ETS/FuelEU/CII and auditor-ready exports that align with THETIS-MRV workflows.

Trust-Ocean operationalizes this approach without requiring fleets to rip and replace systems. It ingests high-frequency streams (and digital noon logs where needed), runs QA/QC and consistency checks, and computes verified speed-loss and efficiency KPIs using ISO 19030-aligned indicators. It also packages MRV/EU-ETS/FuelEU/CII-ready outputs with audit trails and flags hull/propeller inflection points, per ISO 19030, so maintenance is triggered by evidence, not habit. For vessels not yet fully instrumented, Trust-Ocean coexists with incumbent tools and immediately improves noon-based workflows, then scales as sensors are added

# References


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