

-- Metcore International Pte Ltd

ABOUT US

The mandate of mass flow meter (MFM) marine fuel oil delivery started on 1st January 2017. This transits into a new era for bunkering, bring about a paradigm shift in the industry and opens up new opportunities in increasing efficiency, transparency and productivity.

Metcore International Pte Ltd founded in 2014, provides independent and trusted technical expertise for complete fuel measurement solutions. We are a Singapore base company, highly recognized by the shipping industry for our work in bunker measurement with MFM.

Over the years, we have expanded globally into Europe, Middle East and East Asia. Together with Lloyd's Register, we form an independent and valueadded certification service for the mass flow metering systems for bunkering application. It has brought greater trust of the quantity measured to buyers of bunker fuels, resulting in high efficiency of the bunker delivery operations.

Metcore has recently been appointed as an Authorised Verifier (AV) by Weights & Measures, Enterprise Singapore (ESG) for MFM verification. With our increasing expertise, we are able to expand our services to other industry and application. The mass flow metering system is definitely not a plug and play system. Constant monitoring and deliberate changes to the operations has to be introduced into the processes to ensure that the metering system metrological integrity continues to be entrusted, in both accurate measurement and maintaining confidence in the MFM system operation readiness.



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OUR SERVICES

Our expertise revolves in a holistic approach for the maintenance of MFM systems. Our newly acquired AV status allows us to verify MFMs meant for trade and custody transfer use, with the purpose of stamping with the weights and measures (W&M) verification seal and affixing the Accuracy Label.

Furthermore, Metcore's enhanced services continue to build confidence with our clients, so as to enable a peace of mind when comes to their metering systems. Our services ranging from project management for verification tests to bunker delivery data analysis. You can find our list of services in the table below:



Fulfilling a peace of mind

- MFM system 0.5% uncertainty verification (SS 648)
- Direct mass verification with master meter
- Zero verification
- Renewal of W&M Accuracy Label

Enhanced total quality management

- Readiness assessment on MFM systems
- Oil loss management
- Mass flow metering system monitoring program
- Data analysis on operational performance
- Dispute investigation data analysis

FULFILLING A PEACE OF MIND

The local relevant authorities have prescribed requirements to ensure that the MFM and its system metrological and measurement performance remain accurate and entrusted for custody transfer usage. The integrity of the MFM has to be continually maintained and verified for its intended use. That means the MFMs have to be verified yearly either via meter verification (direct mass verification) or zero verification to fulfil the relevant standards and legislation.

MFM system 0.5% uncertainty verification (SS 648)

One of the key requirements in meeting TR 48 (which was upgraded to SS 648 in November 2019) guidelines. MFM system must be subjected to tests based on the test protocol formalized (Acceptance Test), before they are approved for bunker custody measurement by the local implementing authority, if the MFM system meets the overall 0.5% measurement uncertainty. Integrating the bunker tanker with MFM measuring system is

Metcore's expertise. We are capable supporting the industry in ensuring seamless testing and achieving the required end result, without compromising the MFM system measurement performance and integrity. Metcore has been engaged by the system owners and operators for numerous testing in Singapore, and had assisted them to achieve huge downtime saving, The lowering of the bunker tankers' downtime results in significant cost savings ultimately.



Direct mass verification with master meter

MFM, when constantly used, should have their performance validated periodically. It not only provides the assurance of measurement performance, but will also help to withstand scrutiny during quantity dispute situations.

While calibration in the accredited flow laboratory constitute a high level of metrological control and traceability; the approach however required the dismantling of the unit. It contributes to large amount of downtime and manpower effort. Direct mass verification using master meter can provide a good alternative to laboratory calibration, while maintaining metrological control and traceability assurance.

FULFILLING A PEACE OF MIND

Metcore leads the industry in successfully implement direct verification (normally mass termed as proving) approach with a Coriolis mass master meter. This method is performed in-situ at installation site in actual operational process conditions. It provides a secondary level check in the actual condition, that is not easily replicated in laboratory environment: to verify the performance of the MFM system.



Our very first Coriolis master meter performance, evaluated by NMi Certin B.V., capable of testing flowmeters with the following specifications:



Currently we are offering Maritime and Port Authority (MPA) an alternative method for annual verification of the MFM system. The aim is to achieve and maintain a high level of confidence and assurance towards the performance of current MFM bunkering systems.

FULFILLING A PEACE OF MIND

Zero Verification



According to American Petroleum Institute (API) Chapter 5.6, clause 3.20 on zeroing, it states that deviation of the zero-value can be observed over time. As an independent party and appointed AV, Metcore is authorized by the authority to provide a "peace of mind" to the system owners that the zero-set value is accurately verified periodically, to the prescribed requirements. Apart from conducting regular zero verification, Metcore's system specialist will also assist the client in conducting the MFM and piping system integrity inspection, upon request.

Renewal of W&M Accuracy Label

As required by ESG, flowmeter used for custody transfer has to be verified by an AV for its accuracy, and thereafter stamped with the W&M verification seals and affixed with Accuracy Label under the W&M Programme. Accuracy Label has a validity of 12 months. The Accuracy Label will be renewed after the flowmeter has been re-verified for its accuracy to ESG's prescribed maximum permissible error or MPE. With the AV status, Metcore is able to provide a one-stop solution to verify the MFMs and renew the Accuracy Label.



ENHANCED TOTAL QUALITY MANAGEMENT

Metcore recognized the MFM systems have brought the bunkering industry better efficiency and transparency in custody transfer measurements. However, this MFM system is not meant for "plug and play" situation. There are several factors that can affect the measurement and ultimately the accuracy of the system. One factor of consideration is the handling of delivery operation. The MFM is sensitive to aeration; requiring the operating procedure to be refined to lower the aeration in the cargo.

Readiness Assessment on MFM System

One of Metcore's services include assessment of the MFM system readiness for acceptance tests and actual delivery operation. The assessment validates the tanker crew competency in carrying out the required implementations, tests and operations, effectively and efficiently.

In Singapore, MPA mandates that use of MFM systems for all bunker deliveries. Implementing and maintaining the MFM system is costly and time consuming. Metcore comprehensive assessments ensure the tanker crew is equip to perform the critical tasks correctly during operation, every single time.



ENHANCED TOTAL QUALITY MANAGEMENT

Oil Loss Management

Oil loss is an ongoing challenge among the bunker supply chain. Due to the price of the cargo, financial and reputation is adversely impact. Metcore's oil loss management program provides our clients a comprehensive approach in mitigating and reducing the risk, while enhancing delivery efficiency.



A Top 10 Singapore Supplier
Has Bunker Tankers
Suspended Over Mass FlowMFM measurement performance can be affected by a number of factors. In mass
flow metering system monitoring program. Metcore can provide independent and

Ship@Bunker

Pannil's website indicates it operates a fie

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Meter Irregularities

The Maritime and Port Authority of Singapor

(MPA) Tuesday said it has suspended the

harbour craft licences of five bunker tankers

operated by top 10 bunker supplier Panoil

Petroleum Pte Ltd (Panoll) due to irregularities with pining futures associated with its mass flow

"MPA conducts regular spot checks on bunker

Fuenday March 14, 2017

meter (MEM) setur



consistent assessment in the area of:

System Monitoring Program

ENHANCED TOTAL QUALITY MANAGEMENT

- System integrity
- Metering operations
- Remote data quick analysing
- Loading oil loss check

Monitoring the operation and non-compliance of the system remotely can be a challenge. If non-compliances are not addressed immediately, may lead to fraudulent actions are being detected by the authorities. It could result to adverse implications, like supplier/operator license being revoked by the authorities.

System Integrity Traceability of Measurement Readiness

This monitoring program assist to detect possible non-conformity and issues early to

allow system owner to provide appropriate rectification. Generally, the program improve the MFM system measurement efficiency, thereby promoting good working relationship between supplier and buyer. In addition, Metcore's knowledge in the bunkering applications enable us to provide advice to address shortfalls discovered through the program.

With Metcore providing continuous assessment of the metering system to ensure compliance to the relevant standard adopted and legal requirements, our client (and system owners) can be assured of the tanker operational readiness.

ENHANCED TOTAL QUALITY MANAGEMENT

ENHANCED TOTAL QUALITY MANAGEMENT

Data Analysis on Performance/ Dispute Investigation



Data analysis can be very helpful in conducting dispute investigations and operational audits. Metcore has supported the industry with numerous data analysis, to understand and interpret tanker MFM system operation behavior and measurement trend.

With the implementation of the MFM system and despite the fulfilment of the relevant requirement, the trust of the measurement of the meter is still been questioned even when there is a slight difference in the delivery and receiving quantity. It can further complicate the dispute situation when there are continuous fraudulent practices in the water front. To counter the aforesaid, a full data analyzing provides factual information that helps in the investigation.

There is a large amount of data collected from one delivery. Analyzing the enormous amount of data collected can be tedious. Our experts with in-depth knowledge of the tanker system and mass flow metering system, can accurately understand the operational condition and events that happened during the bunker delivery.

In dispute resolution situation, Metcore experts look into the full spectrum of measurement data (not just the critical ones) collected, to provide



DISPUTE RESOLUTION

a more comprehensive analyzing of the specific MFM system delivery operation. The analogy aims to ensure the analysis concluded can withstand scrutiny if legal proceeding is to be involved.



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METCORE, YOUR TRUSTED PARTNER

Metcore as an independent and trusted technical expert, provides a holistic solution to our partners and potential clients. Our aim is to enable our clients to optimize their operations, while maintaining compliance and upholding the successful image of the businesses. Clients will definitely have a peace of mind when engaging Metcore's services in monitoring and maintaining the MFM system operational readiness.

Please feel free to approach any of our sales representatives for more information and advice!

CONTACT US

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