

Extended Summary KRAL AG.

Role of Fuel Consumption Measurement in new IMO and EU regulations. Ship Fuel Consumption Monitoring, Reporting and Verification (MRV).

Purpose of this presentation:

To give an overview about IMO-DCS (International Maritime Organization – Data Collection System) and EU-MRV (European Union – Monitoring, Reporting and Verification) regulations with focus on comparison of acceptable methods in both regulations with regards to data processes to fulfil their requirements.



IMO aims to reduce shipping Green House Gas (GHG) emissions.

At its 70th meeting in October 2016 IMO MEPC adopted the regulations for data collection, reporting and verification.

Main features of Data Collection System is:

- Applicable to ship`s above 5 000 gt
- All ship`s voyages worldwide
- Energy efficiency based on fuel consumption and dwt
- Aggregated data to be reported to IMO and stored in database
- Responsibility by Port State Control

Data to be reported:

- Ship IMO number
- Reporting period – annually
- Techn. Character of ship: type, dwt M/E and A/E power, EEDI
- Total fuel consumption by fuel type
- Distance travelled
- Hours underway
- Method(s) used for collecting fuel consumption data

Applicable fuel consumption measurement methods:

- Use of bunker delivery note (BDN)
- Use of flow meters
- Use of bunker fuel tank monitoring on board
- Indirect measurement of fuel consumption using CO₂ measurement



Which ship`s are concerned?

- Ship`s larger than 5 000 gt
- Calling at an EU port from 1st January 2018
- Carrying cargo or passengers for commercial purposes

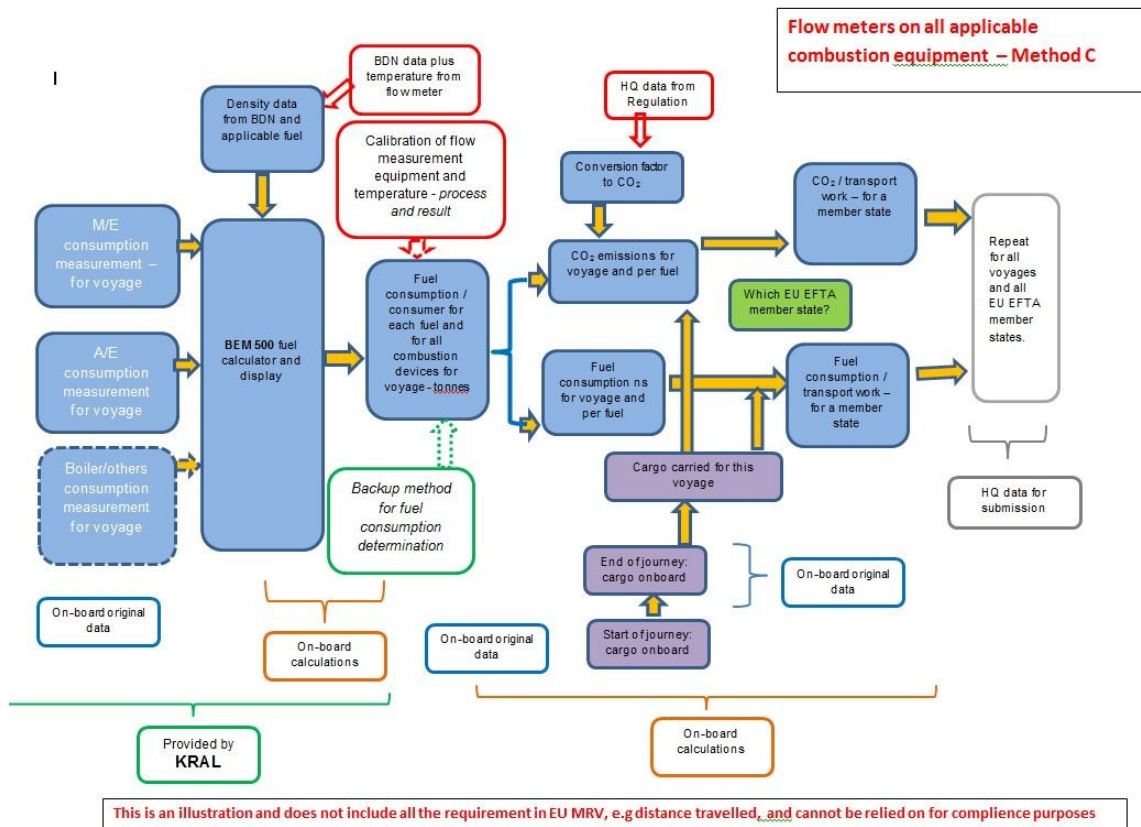
Companies shall monitor emissions for each ship on a per voyage basis and aggregate data in an annual report and shall cover following parameters:

- Fuel consumption at sea and berth
- Distance sailed
- Cargo on-board
- Time at sea
- Energy efficiency parameters
- Transport work
- Emission sources (M/E, A/E, Boilers, Gas turbines, Inert Gas Generators)

Fuel monitoring and reporting shall complete and cover CO₂ emissions from all combustion fuels while the ships are at sea and at berth. It shall be determined and calculated using one of the following methods:

- Bunker fuel delivery note (BDN) and periodic stocktakes of fuel tanks
- Bunker fuel tank monitoring on board
- Flow meters for applicable combustion processes
- Direct CO₂ emissions measurement

Example about data process for flow meter measurement method:



EU-MRV time line

EU-MRV vs. IMO DCS