

Exhaust and Effluent Monitoring System



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YOKOHAMA JAPAN

URL: <http://www.u-p-i.co.jp>

Background of development

Resolution
 Exhaust Gas Cleaning System
 MEPC.259(68) (2020~)
 Marine Environment Protection
 Committee MEPC.66 Tier III
 (2016~)



Effluent & Exhaust Gas Monitoring and Record
NOx → Effluent
SOx → Effluent & Exhaust Gas

Monitoring System is indispensable to resolution

Demand resolutions

Continuous Measurement

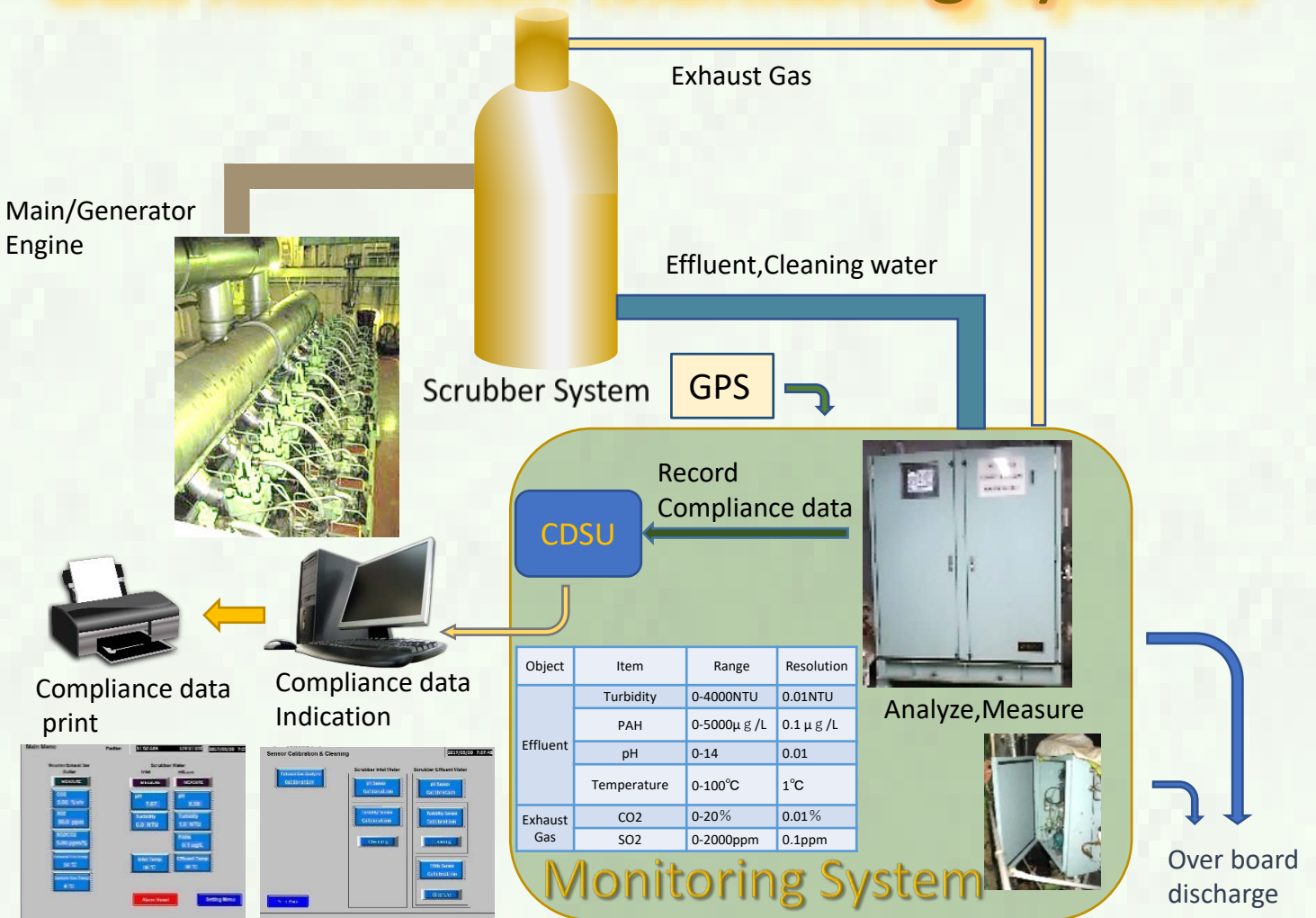
Compliance data indication & print

Restore compliance data for 18 months

Class NK Certificate



SOx Resolution Monitoring System



Exhaust and Effluent Monitoring System

The system, EEMU comply with IMO resolution MPEC.259(68) requiring to reduce SOx and WWMU comply with MEPC 66 and Tier III requiring to reduce NOx. Resolutions indicated in 2015 Guideline for Exhaust Gas Cleaning system. Reflecting the guideline, EEMU consists of Monitoring & Recording system that is required in Scheme B of this guideline.

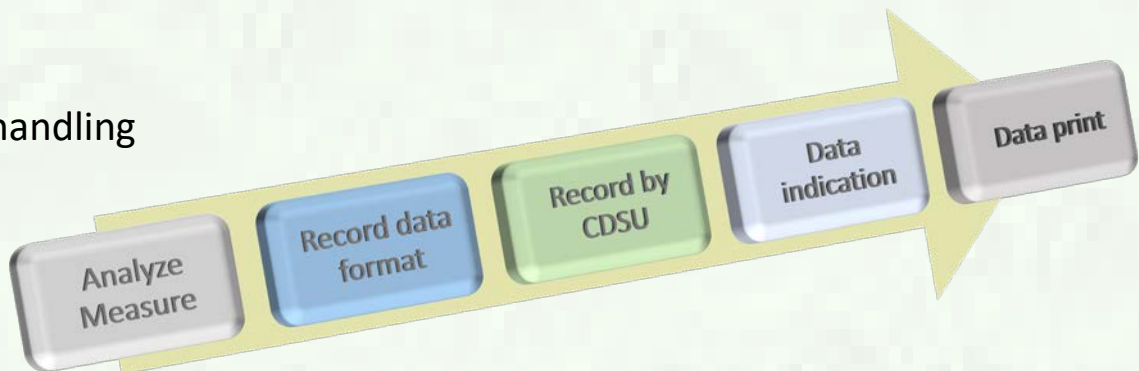
The EEMU is consisting of Exhaust Gas Analyzer and Effluent Analyzer.

Exhaust Gas Analyzer measures SO2 and CO2 from scrubber outlet Gas, and Effluent Analyzer measure pH, Turbidity, and PAH from Scrubber wash water.

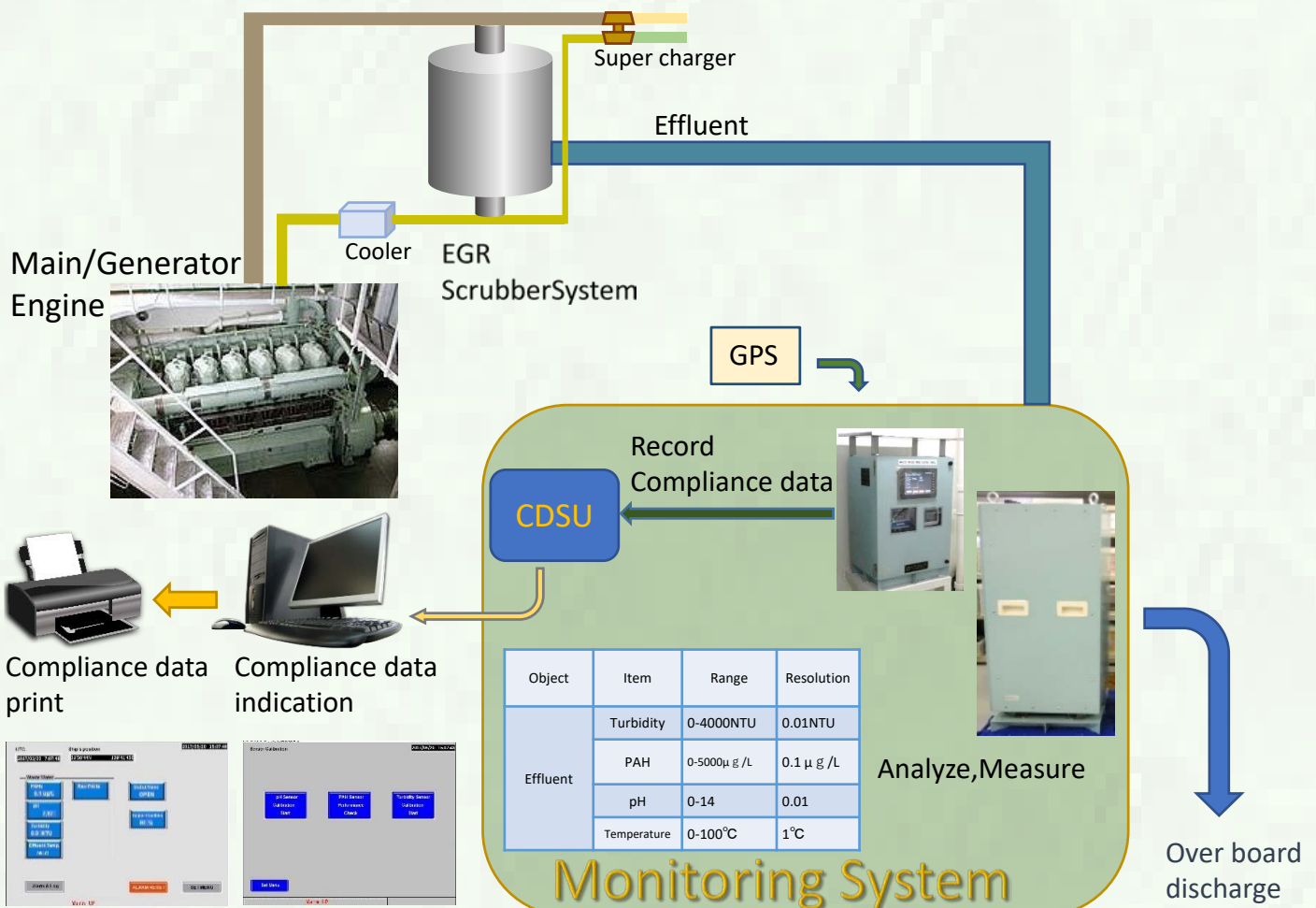
WWMU measures pH, Turbidity and PAHs from EGR scrubber water.

Both of analyzed value obtained through the system will be recorded for 18 months in robust tamper-proof designed memory by CDSU together with position and Time data.

Data handling



NOx Resolution Monitoring System



Touchscreen for SOx Resolution Monitoring System

Main Menu Position 31°50'44N 129°41'45E 2017/03/20 7:07:48

Scrubber Exhaust Gas Outlet		Scrubber Water Inlet		Scrubber Water Effluent	
MEASURE		MEASURE		MEASURE	
CO2	5.00 %V/V	pH	7.67	pH	6.58
SO2	50.0 ppm	Turbidity	0.0 NTU	Turbidity	1.0 NTU
SO2/CO2	5.00 ppm/%	PAHs	0.1 ug/L	Effluent Temp.	40 °C
Exhaust Gas Temp.	58 °C	Inlet Temp.	30 °C		
Sample Gas Temp.	0 °C				

Alarm Reset Setting Menu

2017/03/20 7:07:48

Sensor Calibration & Cleaning

Exhaust Gas Analyzer Calibration

Scrubber Inlet Water

pH Sensor Calibration

Turbidity Sensor Calibration

Cleaning

Scrubber Effluent Water

pH Sensor Calibration

Turbidity Sensor Calibration

Cleaning

PAHs Sensor Calibration

Cleaning

Main Menu

Touchscreen for NOx Resolution Monitoring System

UTC 2017/03/20 7:07:48 Ship's position 31°50'44N 129°41'45E 2017/03/20 15:07:48

Waste Water

PAHs 0.1 ug/L

pH 7.67

Turbidity 0.0 NTU

Effluent Temp. 40 °C

Raw PAHs

Outlet Valve **OPEN**

Engine Condition 80 %

Alarm & Log ALARM RESET SET MENU

Warm UP

2017/03/20 15:07:48

Sensor Calibration

pH Sensor Calibration Start

PAH Sensor Performance Check

Turbidity Sensor Calibration Start

Set Menu

Warm UP

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