CF6-5.1 the 6<sup>th</sup> Co-Operation Forum 7-8 October 2013, Bali, Indonesia



## MARINE ELECTRONIC HIGHWAY (MEH) DATA CENTRE BATAM

## **MARINE ELECTRONIC HIGHWAY**



" The Marine Electronic Highway is the integration of maritime safety technologies and marine environment management and protection with precision navigation as its backbone ".







The Marine Electronic Highway project aims to establish a regional mechanism in the Straits of Malacca and Singapore for enhanced maritime safety and marine environment protection with a sustainable financial component in a co-operative arrangement with the three littoral States of Indonesia, Malaysia and Singapore and partnership with the Republic of Korea, the International Hydrographic Organization (IHO), the International Association of Independent Tanker **Owners (INTERTANKO) and the International Chamber** of Shipping (ICS).



The MEH system with its environmental modules can be used in marine pollution response and control such as to predict the direction and speed of oil spill and aid in response and clean-up. It is also possible to use it to identify and track ships that illegally discharge their bilges or dump other oily wastes.

MEH Data Centre is designed to integrate all data sensor from three littoral states i.e. Wind Sensor, Tide Gauge, Humidity, Temperature and Current.

### HAND OVER



Through an agreement between the IMO and the GMT Cybernatics of Korea, Marine Electronic Highway (MEH) IT System with supporting functions has been setup in the Project Management Office (PMO) in Batam, Indonesia. A technical component of the system and the upgrading was completed in June 2012.

The implementation of hand over MEH IT System from the IMO to the Government of Indonesia has also been made by the Secretary General of IMO on August 3, 2012 in Batam, which was attended by the three littoral states, World Bank, Republic of Korea, ICS, INTERTANKO and the representatives of the concerned and interested parties.

### WEB PORTAL OF MEH DATA CENTRE BATAM



## LOGIN PAGE TO MEH



	- Marine Electronic Highway - W P http://www.mehsoms.com/uat/	Andows Internet Exp	lorer		Naver.		
Favorites	CMS : MEH - Marine Elctronic	Hghway		] 🗟 • 🖻	) - 🖂 🖶 - Baa	e + Safety + Tools	- @-
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1	Fyou have forgotten your pass	word, <u>we can send yo</u>	u a new one.				
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## **PRESENT CONDITION**



#### MEH DATA CENTRE DATABASE SYSTEM

#### Problem :

Since May 2013, MEH Data Centre has troubles with Database Connection (TIRDB Connection) due to lightening strike. This also cause that website www.mehsoms.com can not be accessed.

#### Follow Up :

The Database has been repaired and work normally.



## **PRESENT CONDITION**

#### MEH DATA CENTRE SERVER EQUIPMENT

### **Problem :**

One of Dell RAID hardisk storage has a mulfunction and shall be replaced.

#### Follow Up:

Failure of the hardisk has been replaced with new ones and spare part is available in MEH Centre Batam.



## **PRESENT CONDITION**



### MEH DATA CENTRE WORKSTATION EQUIPMENT

#### **Problem :**

One of UPS (Dell UPS Tower 1000W 230V) for PC Workstation does work properly.

### Follow Up :

On behalf DGST, District Navigation of Tanjung Pinang will repair it.



# IMPROVEMENT OF LIGHTNING PROTECTION



Indonesia

## **IMPROVEMENT LIGHTNING PROTECTION**





Antenna receiver internet network has been moved from Media Link Tower to Batu Ampar Coastal Radio Station Tower which has a better grounding.



Additional arrester has been installed for LAN and Power Supply



The internet system has moved to MEH Data Centre Room with a new connection and construction.

## SUPPORTING BACKUP DATA CENTRE IP DETECTOR



To support MEH Back Up Data Centre Batam in Singapore and Malaysia, DGST built an IP Detector placed in VTS Batam Centre building. This system is automatically switch the web of MEH Data Centre to Singapore and Malaysia when the main web gets problem.

VTS Batam Centre has different internet (1 MB bandwith) and power supply connections with MEH Data Centre Batam. The different connections secure suitanabilty of the operation.



## **IMPROVEMENT OF BUILDING PROTECTION**

Fire extinguishers installed at server, workstation and administation rooms .

CCTVs installed at several rooms.







### SENSOR STATION IN INDONESIA FOR MARINE ELECTRONIC HIGHWAY



### **OVERVIEW OF MEH INDONESIA**

Based on the plan of MEH Indonesia project funded by GEF Trust Fund, there are 4 sensor stations located at Tanjung Medang, Hiyu Kecil, Nogsapura and Batu Ampar. 2 AIS base stations at Batam and Tanjung Medang, 3 sensor stations for tide gauge and weather sensor at Tanjung Medang, Hiyu Kecil and Nogsapura.

All of them transmit data to MEH Indonesia server in Batam.





## **HIYU KECIL SENSOR STATION**

The installation of some equipment at Hiyu Kecil sensor station have been done such as data logger, tide sensor , weather sensor, PC monitor and solar panel installed to supply power.





TIDE SENSOR



WORKSTATION



SHELTER



ANEMOMETER



DATA LOGGER

### **TANJUNG MEDANG SENSOR STATION**

Equipments installed at Tanjung Medang consist of:

- 1. AIS Base Station
- 2. Tide Sensor
- 3. Weather Sensor
- 4. Data Logger



WEATHER SENSOR



DATA LOGGER

### **NONGSAPURA SENSOR STATION**

Equipments installed at Nongsapura consist of:

- 1. Tide Sensor
- 2. Weather Sensor
- 3. Data Logger
- 4. AIS AtoN







## **BATAM DATA CENTRE**

Database server of MEH Indonesia is located at MEH Data Centre building. It is consists of 3 servers placed in one rack server to collect data from sensor sites and displayes at workstations.



#### WEATHER DATA



**AIS MONITORING** 



#### WORKSTATION



#### **AIS BASE STATION**





SERVER



In order to enhance the capability of MEH Data Centre, Intersection<sup>Inflonesia</sup> meeting between three littoral States (Indonesia, Malaysia and Singapore) has been held in Indonesia and Singapore.

#### 1. Batam Indonesia in May 2013

The agenda as follows:

- a. Problem of MEH Data Centre Batam which can not be accessed by users after handed over from PMO to DGST in December 2012.
- b. Backup data centre in Singapore and Malaysia.
- c. Supporting backup data centre.

#### 2. Singapore in August 2013

The agenda as follows:

- a. Updating MEH Data Centre and backup data centre
- b. Review of UKC concept study

## MEH DATA CENTRE BATAM

### **OUSTANDING ISSUES**



- 1. MEH Data Centre Batam built with Oracle system database by GMT Korea during MEH Demonstration Project. The source code that provided to develop was uncomplete and lot of bug so it made MEH system is very difficult to develop.
- 2. There should be a mechanism to exchange user data from MEH Data Centre to Backup Data Centre in Singapore and Malaysia and also the mechanism to select the first active Backup Data Centre from Malaysia or Singapore.
- 3. MEH Indonesia has been established, however has not yet integrated to MEH Data Centre.

### **SUGGESTION**

- 1. DGST will be able to maintain the system but it is not easy to develop the MEH system due to closed source code. DGST suggest TTEG to correspondence with the manufacture.
- 2. DGST recommends to held meeting between the three littoral states to discuss the data exchange and mechanism of switching.
- 3. DGST suggest TTEG to correspondence with the manufacture.

## **MEH INDONESIA**

## DGST Indonesia

### **OUTSTANDING ISSUES**

- 1. Ocean data bouy and DGPS are pending items of MEH Indonesia that have not yet been completed. This is due to the Contractor can not delivery the goods up to the last day of the contract. This project is financed by World Bank.
- 2. The data from MEH Indonesia can not be transferred to MEH backup Data Centre server in Singapore due to the integration matter.

#### FOLLOW UP

- 1. DGST has proposed budget allocation for purchase ocean data buoy and DGPS to the National yearly budget of 2014.
- 2. Installation for the sensors have been completed. However, the integration can not be established due to closed software/system. Therefore, at present, Singapore and Malaysia could receive information (AIS Message) from Indonesia Sensor Stations and not from MEH Indonesia server.

#### **PROPOSE BUDGET**

To maintain MEH Data Centre Batam, it is requires budget approx. USD 70.000 (seventy thousand US Dollar). Below is cost estimation:

No	Item	Qty	F	rice (US Dollar)				
SOFTWARE								
1	Maintenance Oracle Database (Software, Database and IT Supporting)	1 Lot	\$	12,800.00				
2	Extend the License of Oracle 10g Software	5 Lot	\$	11,000.00				
3	Software Integration for MEH Data Centre Indonesia to MEH Data Centre Batam	1 Lot	\$	2,500.00				
4	Supporting Software to exchange the data between MEH Data Centre Batam and Backup Data Centre	1 Lot	\$	2,500.00				
		SUB TOTAL	\$	28,500.00				
HARDWARE								
1	UPS Tower 230V 1000W	1 pc	\$	600.00				
2	Dell 7.2K RPM SATA 3.5" Hot Plug Hard Drive 1 Tera Byte	12 pcs	\$	3,600.00				
3	UPS Server 1000 VA	8 pcs	\$	5,000.00				
		SUB TOTAL	\$	9,200.00				
1	10 MBps Bandwith dedicated for MEH Data Centre	1 Lot	\$	24,000.00				
2	1 MBps Bandwidth for IP detector	1 Lot	\$	3,000.00				
3	Maintenance Link and Networking	1 Lot	\$	5,000.00				
		SUB TOTAL	\$	32,000.00				
		TOTAL	\$	70.000.00				



# CLOSING



Result of 5th Co-operation Forum on September 2012 in Singapore that the Forum agreed on the need to work closely with one another to further advance and scale-up the MEH.

Another issues needs to further discussed is the future funding for MEH. Therefore, on this Forum, we propose to further discuss on the above related matters.

Indonesia would like to express the gratitude to IMO, World Bank, ICS, Malaysia, Singapore and all delegation for contribution and supporting in the MEH Project.

