Department of Ocean Engineering
National Technology Centre for Ports, Waterways and Coasts (NTCPWC)
Indian Institute of Technology Madras
Chennai – 600 036, INDIA

Dr. K.Murali
Professor

RECORD NOTES OF FIRST STAKEHOLDERS WORKSHOP

Date: 27th April, 2018

Time: 14:00 – 17:00

Venue: Hall 2, IC & SR Building, I.I.T Madras

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Participants:

IIT Madras	**Stakeholders***
Prof. R.Sundaravadivelu	Shri. Sasidar keppeed - New Mangalore Port Trust
Prof. K. Murali	Capt. A.C Sahu - Paradip Port Trust Shri. S.K. Panigrahi
Prof. V.Sundar	Shri. V.G.Gharat - Jawaharlal Nehru Port Trust
Prof. S.A.Sannasiraj	Shri. P.Radhakrishnan - Kamarajar Port Trust
Prof. P.Krishnankutty	Shri. R.Arun Kumar - VOC Port Trust
Prof. B.S. Murty	Shri. Faiz Sultana – Chennai Port Trust Capt. P.T. Sadhanandhan Shri. G.Srinivasan
Prof. P.Ananthakrishnan	
Prof. R. Vijayakumar	
Prof. V. Sriram	Shri. Depasish Guha - Kolkata Port Trust
Prof. P.Rajagopal	
Prof. Venu Chandra	

* A separate workshop is being organized for IWAI.

Opening remarks:

Prof Sannasiraj, Head of the Department, Ocean Engineering in his welcome speech invited all the participants for the first stakeholders workshop conducted by NTCPWC. He mentioned that this workshop is very important in terms of stakeholders' active participation and inputs with reference to the various activities that were proposed under the centre. He informed that IWAI has asked for a separate workshop involving only IWAI.

Prof Sannasiraj invited Prof Murali to present about NTCPWC and to conduct an interactive session to receive feedback and suggestions on the different activities proposed under the centre.

Prof Murali invited all the participants for a self-introduction. Prof Murali briefly introduced the history and the purpose behind the

establishment of the centre at IITM and also provided the details of the various centre activities. He invited stakeholders representation, feedback, suggestions and ideas for different activities of the centre. He stated that NTCPWC is being set up at a cost of Rs 70.53 crore to be shared by Ministry of Shipping, IWAI and the Major Ports. Ministry of Shipping's grant is towards capital expenditure for creating facilities like Field Research Facility (FRF), Sedimentation and Erosion Management Test Basin and Ship/Tow Simulator. The centre will be self-sustainable in three years through industry consultancy projects for Indian and global port and maritime sector. Dean IC & SR will provide the necessary guidance on the financial operations of the centre. He also stated that NTCPWC includes Inland Waterways Authority as well and they requested for a separate workshop and brainstorming session which will be proposed soon. Prof Murali introduced the 11 projects under the centre and invited the respective Project Principal Investigators to briefly report on each of their proposals for necessary feedback from the stakeholders. Prof Murali then invited Prof. Ravindra Gettu, Dean IC & SR, IITM to deliver the Presidential address. Dean IC&SR in his speech requested all the stakeholders to collaborate actively and drive the centre to serve them better and also to develop new projects to address the different issues so that solutions could be sought from the centre through detailed scientific studies.

The different projects and its respective principal investigators are listed as below:

1. Development of a customizable 3D numerical Hydrodynamics and Siltation tool.
   Dr. K. Murali, Dept. of Ocean Engg.
2. Inlet dynamics and shoal processes – a complete numerical, laboratory and field study.
   Dr. V. Sundar, Dept. of Ocean Engg.
3. Development of AutonoMoAs Surface Vehicles (ASVs) for Mapping Marine Environments And Water Quality
   Dr. Prabhu Rajagopal, Dept. of Mech. Engg.
4. Assessment tool for assessing the impact of Ship/Boat Wake Waves on the banks and protection measures for Inland Waterways
   Dr. V. Sriram, Dept. of Ocean Engg.

Tel : 091- 44-22574816; Fax : 091- 44-22574816/4802; Mobile : 091-9444008627
E-mail :murali@iitm.ac.in**; Web: www.oec.iitm.ac.in**

5. Demonstration of Dragflow Dredger for Silt trap & Shoal Dredging
   Dr. R. Sundaravadivelu, Dept. of Ocean Engg.
6. Impact of Navigation on Flow and Sediment Transport at River Confluences: An Experimental Study
   Dr. Venu Chandra,Dept. of Civil Engg.
7. New Concepts of Pile Supported Breakwater With Berthing Facility
   Dr. Sannasiraj Dept. of Ocean Engg.
8. Controllability , f Ships In Harbour and Navigational Channels
   Dr. P. Krishnankutty, Dept. of Ocean Engg.
9. Technology Development and Demonstration of Micro Bubble Drag Reduction (MBDR) and maneuvering of vessels in Inland Water Transportation
   Dr. R. Vijay Kumar, Dept. of Ocean Engg.
10. Hydrodynamic Study and Simulation of Multiple Ship Interactions in Inland Waterways and Shallow Waters
    Dr. P. Anantha Krishnan, Dept. of Ocean Engg.
11. Hydrodynamic Comprehensive study of the maintenance dredging requirements of all major ports and rivers and strategies and technical solutions to reduce the cost in short term and long term.
    Dr. K. Murali, Dept. of Ocean Engg.

Feedback and Comments

Prof Murali invited Prof Sundar to be the moderator for the feedback and suggestion session from stakeholders.

Sl. No.	Comments/Suggestion/Ideas	Response	Remarks
1.	Will the centre include sea and fresh water confluence mixing in the 3D numerical modeling studies? Specific request was made by Chennai port authorities on the confluence of the river mouth and port to be included.	Prof Murali confirmed that the proposed project covers the aspect of the river mouth confluence modeling for the ports.	
2.	Will the centre be able to collaborate with other entities/centres to develop a	Prof Murali informed to the participants the centralized data	

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	centralised data repository collected by other entities E.g. (CPWPRS) and centres through various projects for the ports.	repository is one of the objectives of the centre which will be carried out with the support of ports on providing the leads/contacts on such availability of the data. He also clarified that collaboration with other institutions will be taken up on need basis.	
3.	What is the maximum depth the proposed autonomous vehicle can able to go and measure?	Dr Prabhu informed the vehicle can go up to 10 meters depth, whereasthe sensors can measure up to 200 meters subjected to sea state.	
4.	Is it possible to carry out bathymetry surveys using autonomous vehicle for the entire Chennai port area	Dr Prabhu and Prof Sundaravadivelu stated currently the vehicle is designed to carry out even shallow water bathymetry survey to compliment where conventional bathymetry not possible at the near shore locations. Prof Murali also added that once the vehicle is demonstrated it could be deployed for regular use in ports and	Further enhancements on the system will be needed to operate it at isolated waters under the control of remote navigators.

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		waterways with different sensors and payloads for cost effective data collection methods.	
5.	Issue on ship wreck /non-metal object detection which is currently carried out using magnetometer only & provides only the anomaly not object detection/classification. It's essential to find out what type of debris (E,g post world war ammunition) in the seabed before dredging.	Dr Ananthakrishnan proposed bottom profiler as an option for mapping the objects. Dr Kumaran Raju suggested Synthetic Aperture Sonar for more detailed mapping, detection and classification of man-made and mine like objects	
6.	Will the study on assessing the impact of Ship/Boat Wake Waves on the banks also cater to impact on berths due to ship wakes.	Dr Sriram confirmed that the study will also address the impact on berths due to ship wakes	
7.	Will the assessment study also include sedimentation specific studies in approach channels	Dr Sriram confirmed that the study will also include the sedimentation in approach channels	
8.	Construction of Pile supported shallow water breakwater at Palghar, Gujarat raised by Kandla port authority. The proposal was submitted by Brazilian company for implementation.	Prof Sundar mentioned that the Pile supported breakwaters was proposed a decade ago by him and Prof Sannasiraj but at that time the proposal was turned down. Now it is	

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		gaining importance.	
9	Using Drag flow dredging method what is the deployable depth, quantity that can be achieved in a day and the cost	Prof Sundaravadivelu confirmed the dredger can be deployed in water depth less than 10 meters and possible achieve 2000 cubic meter solids /day and cost will be Rs 200 – 250/ cubic meter. Also based on the sea state and the soil condition the dredger can be customized.	Prof Murali suggested that cost optimization should be looked into considering the competitive rates under charter hire.
10	What is the size of the dredger?	Prof Sundaravadivelu stated the size of the dredger is 6 m x 5m and it can be easily transported by land.	
11	When and where will be the demonstration of the dredger	Prof Sundaravadivelu stated the demonstration will be in Ennore port first and then in Haldia port. The time can be fixed based on the specifications that need to be achieved.	
12	How to handle the disposal of dredging material	Prof Sundaravadivelu stated the dredged material will be disposed along the banks in the land identified and also in beaches were its	

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		barren.	
13	Will the simulator include the effects of shallow water impacts for ship maneuvering?	Prof Krishnan Kutty confirmed the shallow water hydrodynamic coefficients will be included as part of the simulator. In addition individual port specific shallow water characterization will be addressed as part of the simulator.	
14	Potential solution for recommendation on the complex issue of Ship maneuvering inside the bottle neck channel of Chennai port	Prof Krishnan Kutty informed the authorities that it requires a site visit to understand the issue more in detail for necessary assessment.	

Prof Murali informed that, in addition to the above areas the center will look into the current needs of the ports such as DUKC, Night navigation, Automation of port machinery etc. This was appreciated.

Vote of Thanks: Vote of thanks was proposed by Prof. Sundar who thanked the Ministry and the Hon'ble Minister Shri Nitin Gadkari, Ministry for Road Transport & Highways, Shipping and Water Resources for kindly approving the Centre at IITM and also to provide the necessary financial support for successful operation of the centre. He thanked all the stakeholders from different ports for their time to participate in the workshop and to provide their valuable feedback and suggestions. He also thanked IC & SR and all the faculty and staff of the centre for their kind support towards successfully conducting the workshop.

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