

Services

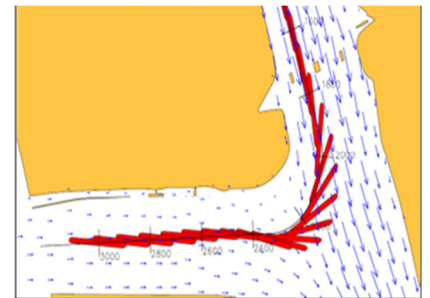
- Ship maneuvering studies using Full bridge, Small Ship and Desktop Simulators
- Channel design (depth and width)
- New Terminal sizing and Mooring Analysis
- Optimization of Port and Channel layout
- Pilot and Tug Mater Simulator Training
- Forensic Analysis

Nautical aspects in Ports and fairways

Ports are the interface at which Ships interact with the shore for cargo loading and unloading as well as for other facilities. Ships enter ports to reach jetties or berths or terminals where they can be moored for facilitating movement of people and cargo. Depth of water available in ports, tide variations, currents, wind speed, other passing ships etc. impact the Ships movements within the Port. Since space available is limited both in the Port approach channels as well as with in the Port basins, there are several studies that need to be carried out to determine the forces that act on the ship. The determination of these forces allows the Port authorities to ensure safe operation of ships within the Port.

Mathematical Model study

A mathematical model of a ship of given dimensions can be used to carry out a study to determine its behavior in ports, fairways and restricted waters like inland waterways. Such a study can throw light on the limits of forces that act on ships while entering and leaving harbor/ channel, while passing by another ship under power or while moored.



Information derived from such studies are useful for masters and pilots to safely maneuver their ships in ports, fairways and inland waterways.

Ship maneuvering - Risk assessment

Port authorities and terminal operators require information on safety of vessels in their harbors and ports. They are often interested in the number of ship to ship collisions that can be expected within an area. External safety is also an issue. We can deliver important input for such calculations. Capacity of navigational channels can be calculated and the feasibility of navigation in confined waters can be investigated with fast time simulations or real time simulator research and quantitative assessment of shipping safety and feasibility of navigation in confined waters can be given.



Using full mission bridge simulators the behavior of ships in a harbor environment can be simulated. The assessment of feasibility of harbor maneuvers such as berthing and approach can provide quick and relatively cheap answers to maneuverability questions. We simulate a real ship, helmed by a pilot.

The following answers can be given through simulation:

- Feasibility of Navigation of Vessels including VLCCs.
- Simulation of Emergency Conditions and analysis of Procedures.

Contact Us

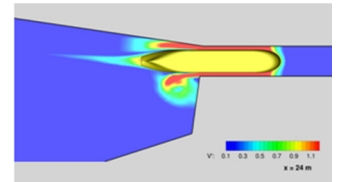
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- Assessment of Limiting Conditions for safe vessel maneuvering.
- Sufficiency of Available/ Planned Tugs
- Optimization of Port Layouts
- Risk of stranding of ships.
- Influence of measures on the overall safety level such as Vessel Traffic Services (VTS), pilotage, use of tugs or traffic separation schemes.
- Pilot & Tug Master Training
- Forensic Analysis.
- Study of Vessel Traffic Data and Analysis of Safe Navigation in Restricted Waters.

Optimization of Layout of Ports and Waterways

The design of port and an approach channel/or inland waterways encompasses several disciplines including ship handling and maritime engineering to design waterways to a desired level of navigability and safety. This requires the assessment of several key elements, including vessel size and behavior, human factors in ship handling and effects of the physical environment. Designing the port's waterways involves designing the layout and dimensions of a port's main water area regarding:



- the alignment and width of approach channels and port entrances,
- the depth of approach channels,
- the size and shape of maneuvering spaces within the port, regarding stopping and swinging areas.

Designing the inland waterways involves simulating the vessel movements in the waterway, assessing locations for waiting of vessels around areas of lesser channel width, study of jetty approach and design and design of the vessel, if required, including extensive model tests and CFD analysis.

About Conceptia, India



Conceptia is an Indian engineering company that is working to bring world class technologies, proven expertise and innovative solutions required by the Indian industry for development of maritime assets in India.

Conceptia's core expertise is in providing design engineering services to shipyards, ship owners and oil and gas companies. We undertake detailed engineering for most types of ships and offshore structures and basic design of small vessels.

Engineering services for the Port sector is offered together with MARIN, Netherlands.

About MARIN, Netherlands



Since 1932, MARIN (the Maritime Research Institute Netherlands), has been a reliable, independent and innovative service provider in hydrodynamic and nautical research. MARIN has the accumulated know-how, expertise and experience to provide tools and solutions for Concept Development, Design & Operations Support and Tool Development.

Our services incorporate a unique combination of simulation, model testing, full-scale measurements and training programs. We have seven facilities and several bridge simulators available to solve specific design and research issues.

For further Information

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