# The intelligent way to fully integrated pro active Jetty Management

## Mampaey Offshore Industries, The Netherlands

**Controlled Berthing & Mooring Systems**

**OVER ONE HUNDRED YEARS OF MARITIME EXPERIENCE MAKES FOR THE WORLD'S LEADING EXPERT IN JETTY MANAGEMENT SYSTEMS**

Established in 1904, Mampaey Offshore Industries is the proud owner of a long track record in the design, development and manufacturing of berthing, mooring and towing systems for the shipping- and oil & gas industry. Next to this extensive experience, Mampaey's solid reputation is the result of the outstanding quality of the products that are produced.

Put together, these company assets result in a long lifespan of products at the lowest possible operational costs. Maintenance is reduced to a minimum by using only the best components and made easy by the small amount of spare parts that are being used in Mampaey products.

***The low, total costs of ownership turn every Mampaey solution into a fully rendering investment.***

**MAMPAEY'S ATEX APPROVED *iMoor*® SYSTEM: SAFE, SOUND AND SOLID JETTY MANAGEMENT**

As all other products, the ***iMoor*** system is an 'in house' development by Mampaey Offshore Industries. Design, testing and manufacturing were conducted in the best possible manner. All according to the high quality, industrial standards that are standard within our company. As a result *i-Moor*

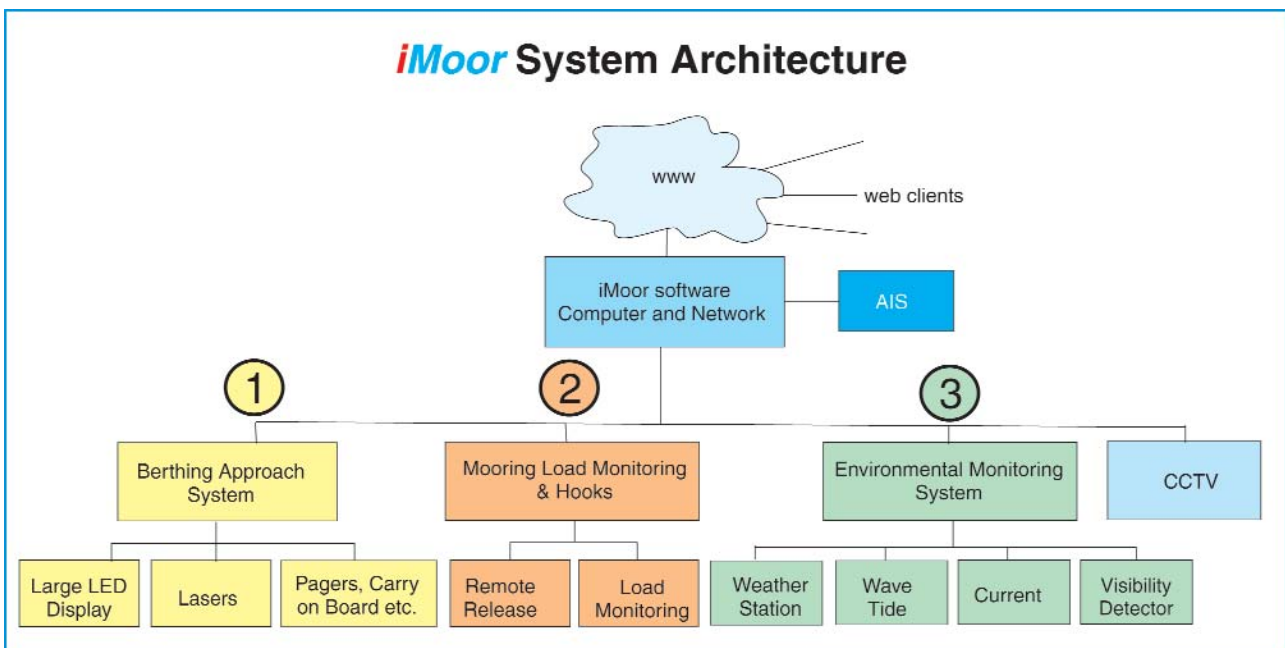**Reduces:** operational costs, jetty- and fender damage, ship's- and installation's down time
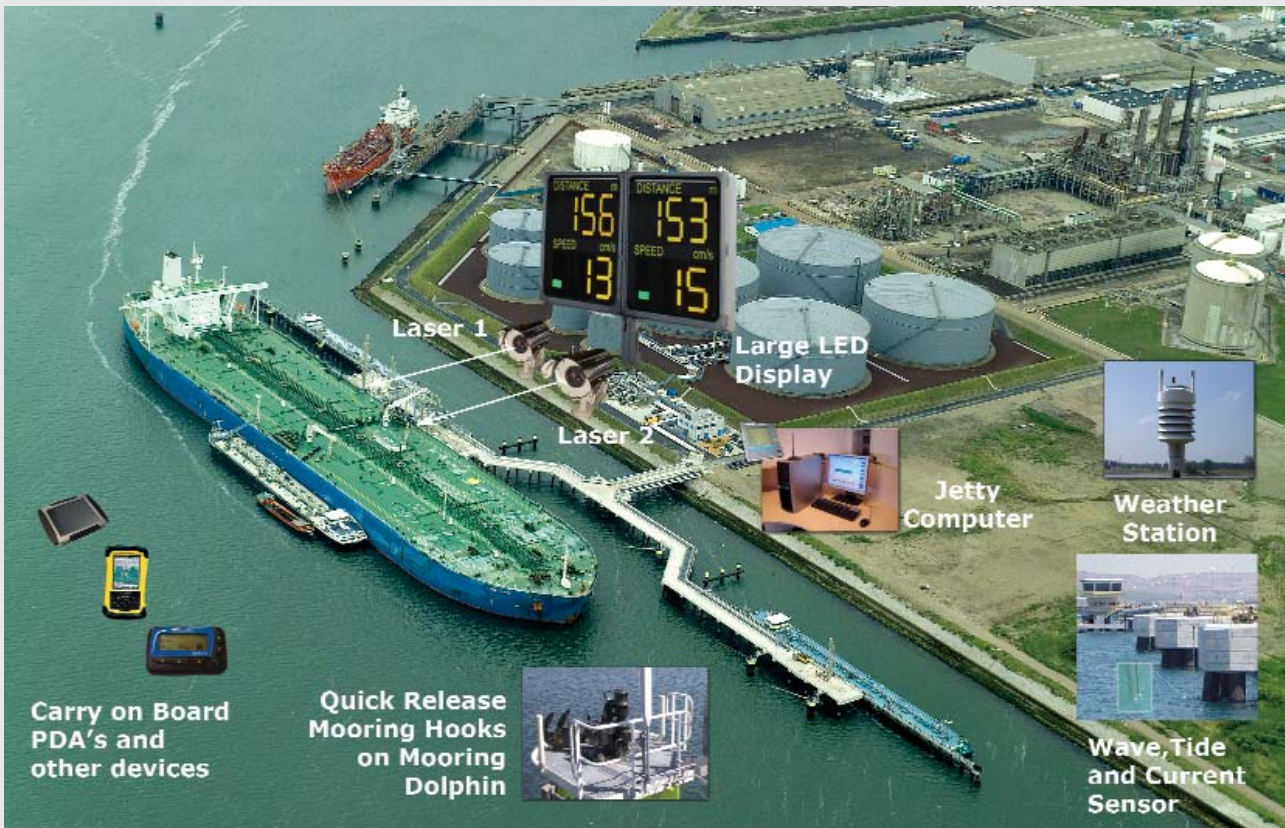**Enlarges:** control, monitoring and safety
**Enables:** stand alone functionality, local data recording, monitoring important information during shipping discharge & loading, histogram trends
**Increases:** durability and overall jetty economy
**Introduces:** clear day- , night- and bad weather visibility, flexible data entry, multifunctional display
**Includes:** modular expandability, turn key installation, low maintenance, small amount of spare parts

Laser 1
Large LED Display
Laser 2
Jetty Computer
Weather Station
Carry on Board PDA's and other devices
Quick Release Mooring Hooks on Mooring Dolphin
Wave, Tide and Current Sensor

Mampaey's **iMoor®** system is based upon a modular design comprising three, easily installed, sturdy and user friendly PLC's.

1. **Berthing Approach System (BAS)** assists pilots and crew by closely measuring the ship's speed, distance and angle to the jetty
2. **Mooring Load Monitoring (MLM)** keeps a close and constant eye on the mooring lines' loads and controls the remote and quick release of all mooring hooks
3. **Environmental Monitoring System (EMS)** collects and displays relevant water- and weather information

**iMoor®'s BAS KEEPS A CLOSE AND CLEAR EYE ON THE BERTHING PROCESS**
Two (eye safe) Lasers, a large LED display, audio alarms and hand-held devices (pagers, PDA's, etc.) make for an innovative approach system that leaves no room for uncertainty. Mampaey's BAS can operate as a 'stand alone' and consist of:

● Two high quality, robust, ATEX-approved, eye safe Lasers.
● Highly visible Large LED Display, clearly indicating speed, distance and various other factors.
● After the berthing process has been completed, the device can be put to further use by displaying mooring- and/or environmental information
● Weather station and wave, tide & current sensor
● High quality handling data, tuned to achieve the best possible accuracy at the fastest refreshing speed

### *iMoor*®'s MLM HOLDS A SAFE AND STEADY GRIP ON THE MOORING PROCESS

One of many, Mampaey's own development: the Quick Release Mooring Hooks form the solid basis of the MLM-mooring system. Together with the remote control panel and the hook load monitoring computer they make for the innovative Mampaey Mooring System. A quick scan reveals:



● **Quick Release Mooring Hooks**, designed for safe manual or remote release of mooring lines under full load conditions. Single action, resetting possibilities. Installations can be equipped with integral capstans and electrical or hydraulic remote control systems

● **Jetty management PLC** controls MLM (Mooring Load Monitoring) and several hook release functions. All hook assembly units can be fitted with a small, local overload alarm display



● **Complete and simultaneously** monitoring and controlling up to four jetties (four monitors per computer) is possible with *iMoor*. Information can be distributed via the internet and thus be shared globally and/or by the ship's crew



● **Clear and present display** of all meteorological and oceanographic quantities, composed of current speed & direction, wind speed & direction, wave & tide, water depth, specific seawater weight, precipitation (rain, snow, hail), visibility (meteorological optical range of sight), relative humidity, air temperature and  pressure.
The ideal location for *iMoor*'s EMS-sensors is stipulated by the Jetty lay out & orientation, global location and environmental circumstances.



● **The relevant information** from *iMoor*'s MLM/Quick Release, BAS- and EMS' PLC's is extracted from the field data, and further transmitted to (and visualized by) the Jetty Computer. The connection is made by a Profibus or Ethernet. This form of local processing ensures the stand alone functionality of the main modules.



● **Histogram trends** can be provided for each vessel as ship's data is stored centrally. Specific data bases include mooring schedules, rope tension limits, trend logs, event- & alarm archives and configurable, automatic emergency release information. Typical *iMoor* applications, such as mooring hook load monitoring, remote hook release & hook status, berthing approach data and meteorological & oceanographic info as well as AIS or CCTV images can be made visible. All info can be distributed locally or globally by the Jetty PLC and be monitored via LAN/WLAN or the internet (for instance on board of the vessel).
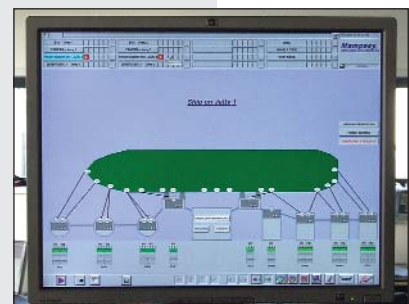
● **Jetty and ship's safety** is assured by *iMoor*'s adjustable sets of signal, warning and alarm systems indicating (for example) the ship's speed, distance and angle during the berthing process. Or undertake the configured action when hook loads exceed the preset mooring load levels.



## *iMoor*®'s OPTIONAL FEATURES PROVIDE EVEN MORE CONTROL AND SAFETY

● **The Automatic Identification System** (AIS) - part of the Global Maritime Safety System -indictates all ships (over 300 m) to broadcast their position by AIS. When fully integrated in i-Moor this international safety standard can be set to further use providing real time information (such as ship's name, dimensions, position, speed and course) on the Jetty Control Room display systems. Thus providing a well documented bases for a time saving, pro active intake procedure



● **Closed Circuit Television** (CCTV) provide a clear view of the Jetty and the approaching vessel. Images can be displayed on the Jetty computer. Up to six cameras can distribute streaming video over the CCTV Ethernet. Operators can select live views from the (approaching) vessel, loading arms, mooring lines, etc.



● **Ship-to-Shore Link**: *iMoor* can be connected to the DCS, Ship-to-Shore Link (SSL), Loading Arms, etc.



*ALL iMoor's APPLICATIONS ARE DESIGNED, DEVELOPED AND MANUFACTURED USING ONLY THE BEST COMPONENTS ACCORDING TO THE LATEST, GLOBALLY ACCEPTED STANDARDS FOR INDUSTRIAL AND PROCESS CONTROL EQUIPMENT.*
*ALL SPARE PARTS ARE AVAILABLE WORLDWIDE.*
*ALL COMPONENTS AND FUNCTIONS ARE HIGHLY MODULAIR PROVIDING CLEAR AND PRESENT (SHIP AND JETTY) HANDLING INFORMATION TO PILOTS-, TUGS-, SHIP- AND JETTY CREWS AND OPERATORS.*
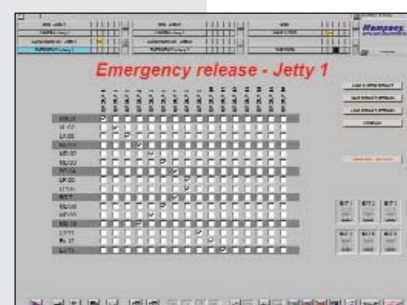
**Mampaey Offshore Industries** also offers
**Commissioning** and **Training**. After being installed
and electrically connected equipment can be
commissioned and started-up by a Mampaey
Engineer. Training for jetty and control room
personnel can also be performed either at
Mampaey's premises or at site
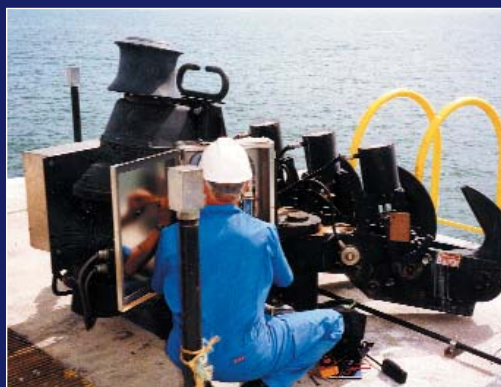


## Other products from Mampaey Offshore Industries:







*Dynamic Oval Towing System*   *Offshore Hooks [ FPSO ]*   *Mooring Buoys*