The MACS3 loading computer is a graphic-oriented application that performs all required calculations for the transport of containerized cargo. It is available in an onboard and an office version, with both approved by all major classification societies.

**Safety** | The onboard MACS3 loading computer not only handles a wide range of calculations related to hydrostatics, intact stability and longitudinal strength; the high-end instrument also offers advice on loading and stowage, ballast water distribution and exchange, damage stability, grounding scenarios and trim optimization.

**Certificates** | MACS3 is approved by the world's leading classification societies. Furthermore, ship crews and planners can both rely on the loading computer's adherence to current IMO regulations, regular updates on dangerous goods, ship-specific lashing rules and early implementation of new rules.

**Variety of Features** | MACS3 offers a rich variety of features that range from reading Baplie files (versions 1.x-3.1) to carrying out various condition checks e.g. for the lashing, visibility line, stability stress and dangerous goods including proposals for problem solving. These features also include customizable two- and three-dimensional graphic visualizations as well as report functions for all calculations and lists.

Combining the onboard loading computer MACS3 with the office-based stowage planning software StowMan ensures seamless, time-saving integration of all necessary cargo and vessel information during the planning process.

**BENEFITS AT A GLANCE**

- Type approval from all major classification societies for intact stability, intact strength and lashing calculations
- Two- and three-dimensional visualization of various vessel and cargo views
- Dangerous-goods checks in according to IMDG, DOC and company rules
- Facilitation of trim optimization by ballast water operations
- Various condition checks, including proposals for problem solving
- Various customizable reports comprising all available container data, e.g., IMDG cargo as list or as a graphic image in the form of arbitrary bay plans
FEATURES

Besides the basic functionality module MACS3.net, MACS3 for container vessels includes various additional modules:

Basic

- MACS3.net includes graphical tank plans of the vessel indicating the current conditions of trim, heeling, stability and stress, user warning points and the tank online interface to tank automation systems.

Add-on modules

- BELCO container module enhances fast and easy container management and features the following:
  - Data includes container information (size, type, weight, port of loading/discharge, operator, etc.), full EDIFACTS support, UN/LOCODE database, port rotation with date/time and query, and statistics such as result table with unrestricted selection of criteria.
  - Cargo handling includes efficient loading, discharging, modifying and exchange of containers; visual editing of reefers positions and hot areas; loading and discharge list; plan and fully functional layer view; hatch cover handling; symbolic presentation of the pier; result table with unrestricted selection of criteria; several undo steps; break-bulk handling.
  - Visibility and condition checks covers visibility (IMO and Panama) check with blind sectors, easy check of critical conditions at a glance (stack weights, flying containers, reefers positions, hatch cover clearance, type, UN/LOCODE, oversized, handling instructions, container numbers).

- Sealash includes route- and weather-specific calculations and lash optimizations. Lashing forces are calculated according to major classification-societies rules. It generates various reports such as inventory list, lash forces by bay, stack and tier. Lashings can automatically be applied according to the cargo-securing manual.

- Dangerous goods checks the fulfillment of stowage and segregation requirements and includes emergency schedules as well as firefighting and safety plans according the latest IMDG code.

- Stowage planning includes import and export of ASCII or XLS files and manual planning functionalities.

- Verified gross mass (VGM) is also a check that is carried out.

- Tank online periodically reads tank filling levels and temperatures into MACS3. It relieves the user of having to manually enter the values needed for the stability and strength calculations. Drafts, trim and heeling can also be read online and compared with the MACS3 calculations. Connecting to over 25 different makers, "Tank online" is available for all major onboard measurement systems.

- Ballastman supports in the planning and supervising of ballast water exchange by, for instance, generating an appropriate ballast water exchange report.

- Residual strength calculations can be made.

- Mooring consists of customizable piers including vessels.

- Grounding module calculates the effect of grounding considering different situations.

- TROP trim optimization module saves fuel by optimizing tanks and cargo-weight distribution.

REFERENCES

Market share: Established in 1994, the ship library includes more than 4,500 ship profiles. MACS3 holds a share of approximately 65% for the container vessel segment. MACS3 is also available for multipurpose vessels and bulk carriers as well as for tanker, offshore and ro-ro vessels.

Educational software: The MACS3 loading computer software has been in use for training purposes since 1999. Initially only available to German naval schools, it is now also deployed at European and Chinese maritime universities.

If you have any enquiries or would like to set up an appointment with one of our sales representatives, please phone or e-mail us:

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