

Capabilities

SHIPMA is a program for simulating the manoeuvring behaviour of ships, taking into account the influences of:

- the ship's manoeuvring characteristics,
- the kind of manoeuvre and desired track,
- rudder and engine actions,
- tug assistance,
- wind, waves and currents,
- shallow water and
- bank suction.

Rudder, engine and tug(s) are controlled by a combination of:

- a track keeping autopilot and tug controller,
- input data as defined by the user.

The autopilot responds to deviations from the desired track and course angle. In the case of curved tracks and changes in the current-pattern, the autopilot will anticipate on these changes, while taking into account a user-defined "anticipation distance".

SHIPMA computes the track and course angles of the ship, the required actions for the rudder, the engine and the tugs, on time-step basis during the manoeuvre. All forces acting on the ship and the speeds, rotations and accelerations of the ship will be determined as well, and stored in output files. In addition, the actual water depths, current velocities, wind speeds, wave heights, tug orders, tug forces and so on, are calculated.