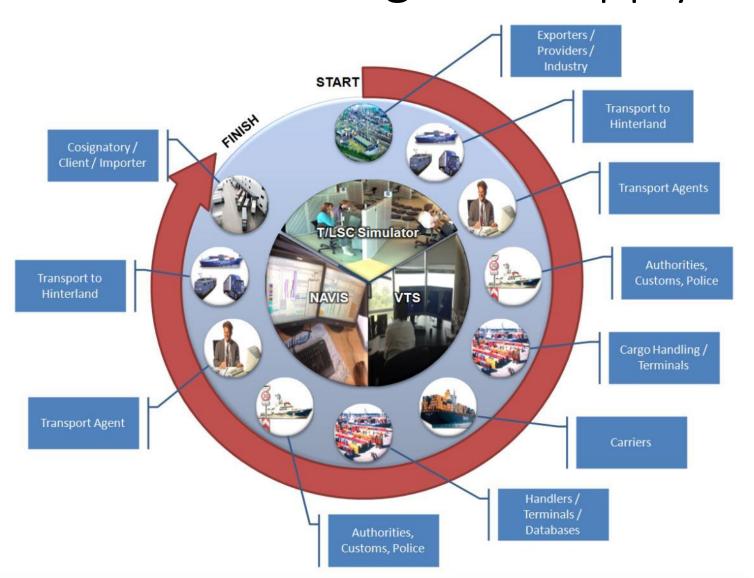# LOGISTICS CHAIN SIMULATOR (LSCSIM)

Maritime Logistics Supply Chain Simulator

The LSCSIM offers training to a variety of clients dealing with importing, exporting and transhipping of cargo through a port.

All processes, procedures and documentation are based on the **International Maritime Organisation's** standards, covering all important role players in the commercial, marine and terminal operations.

It features the emulation of internationally renowned port management software tools like **IPMS, Navis N4, SPARCS and Clearing and forwarding tools**.
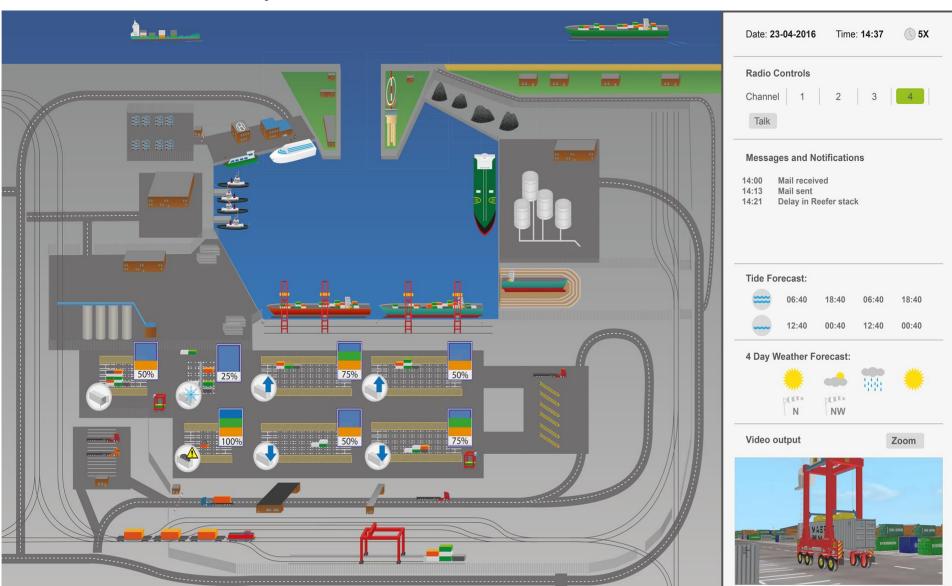
LSCSIM Role Players

The LSCSIM enables all important role players in the Maritime Logistics Chain to participate in the simulator training. Each role player has scenario specific, time critical activities to complete. The instructor can take over a role as required.

Commercial Services	Marine Services	Terminal Services
Vessel Agents / Vessel Owners	Vessel Traffic Controllers	Terminal Manager
Forwarding and Clearing Agents	Harbour Master	Planners (Vessel, Yard, Rail)
Customs Officials	Vessel Pilots	Compliance Officers
Port Revenue	Tug Masters	Customer Services
Buyers / Sellers	Marine Revenue	Equipment Controllers (Water, Land, Rail)
Bankers	Vessel Master	Cargo Controllers (Water, Land, Rail)
Intermodal transporters	Emergency Services	Transport Controllers
	Business Continuity Management	Terminal Revenue

2D Graphic User Interface

- Port Terminals with functionality

- Time-based simulation (up to 30x real-time)

- Active yard and Quayside operations, including trucks, trains and straddles

- Live updates with performance tracking

- Simulated or live weather feeds

- Embedded 3D window

- Clickable Hotspots for viewing port or terminal level

3D Virtual Port Environment

- Ports built on geo-specific terrain data

- Vessel Database includes:
  - Container Vessels (Panamax, new Panamax etc.),
  - Cruise Liners,
  - Liquid and Dry Bulk Carriers,
  - Small vessels,
  - Tugs,
  - Pilot boats

3D Virtual Port Environment (cont.)

- Container Database with serial numbers:
  - Standard containers (20', 40', 45'),
  - Reefers,
  - Out of gauge,
  - IMDG

- Helicopters, trucks and trains (locomotives with various wagons types)

- Terminal equipment:
  - Ship to shore cranes,
  - Rail mounted gantry cranes,
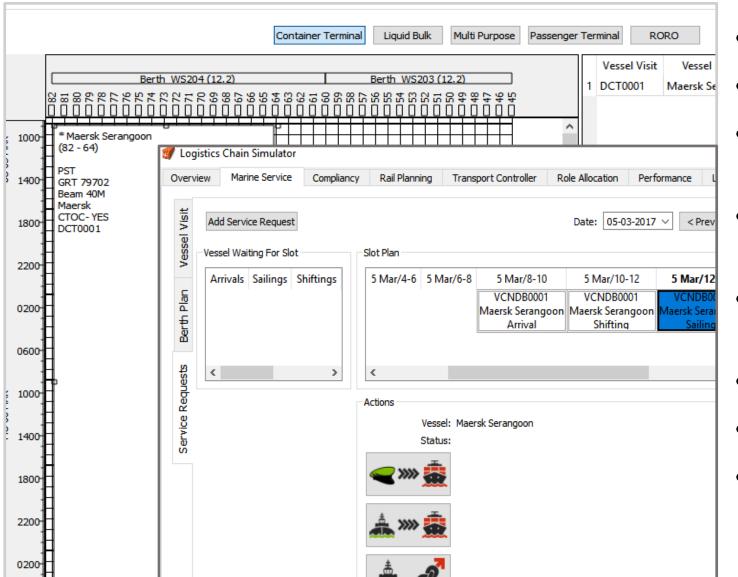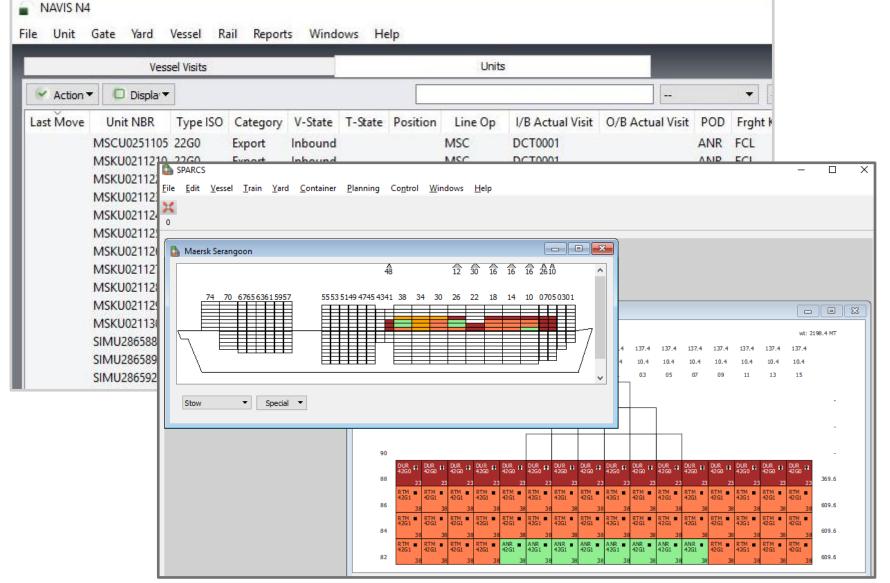 - Straddle carriers,
  - Mafi's

Marine Planning & Execution Tools

- Vessel arrival notifications

- Berth plans

- Emulation of the Integrated Port Management System (IPMS)

- Creation of time slots for berthing, sailing and shifting

- Helicopter and vessel pilot coordination

- Tug services

- Revenue collection for servicing vessels

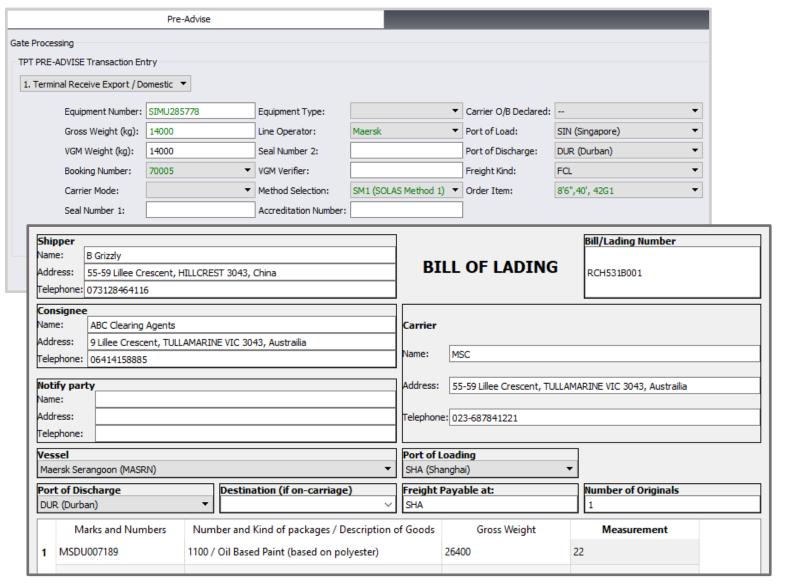- Weather, tidal and berth draft control

Terminal Planning & Execution Tools

- Emulation of Navis N4 and SPARCS

- Vessel schedules

- Vessel bay plans

- Yard stack plans

- Rail plans

- Road transport control

- Equipment and working gangs planning

- Latest UX features

- EDI importing and exporting

Commercial Planning Tools

Buyers and sellers need agents to assist with importing and exporting of cargo due to international trade regulations.
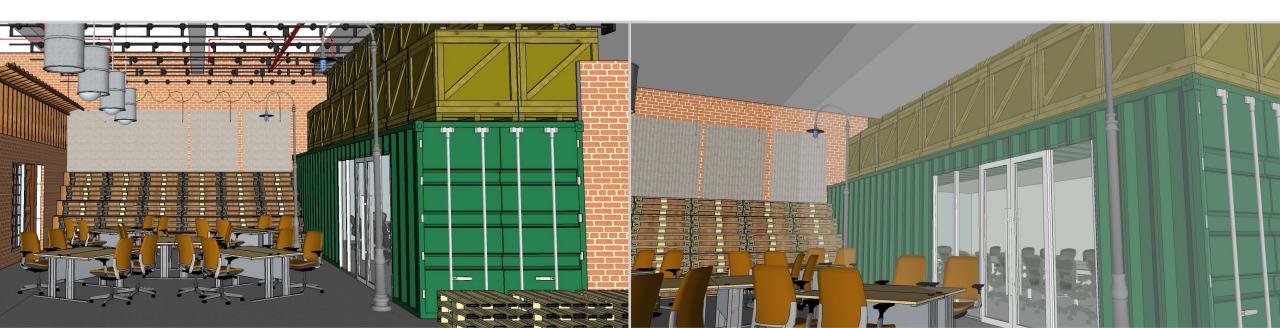
The LSCSIM offers the following, based on the IMO standards:

- Template documents for:
  - Invoices,
  - Bills of entry/lading,
  - Packing listing,
  - Customs,
  - Dangerous goods
- Loading of EDI's
- Booking and pre-advise of cargo
- Customs and duty tariffs payable

Simulator Infrastructure

- Ultra modern classroom setup with port artefacts

- Centralised training area accommodating 16 learners and instructor

- IP telephony system for the users, CCTV camera recordings of training

- Instructor office facilities

- Meeting room/boardroom for debriefings

LSCSIM Courses Overview

Course Name	Course Objective	Duration	Role Players
Induction Programme	A holistic overview of the end to end steps needed to import and export cargo.	5 days	Commercial, Marine, Terminal Services role players
Commercial Freight Handling	An overview of the commercial steps and documentation needed to import and export cargo.	3 days	Vessel Agents, Clearing and Forwarding agents
Marine Services	A holistic overview of the steps needed when a vessel arrives at, departs or moves inside a maritime port.	3 days	VTS, Tugs, Pilots,
Terminal Services	An overview of the terminal steps and documentation needed to import and export cargo.	5 days	Planners, Equipment & Cargo Controllers
Maritime Logistics Chain Programme	A holistic, in depth overview of the end to end steps needed to import and export cargo.	7-10 days	Commercial, Marine, Terminal Services role players
Business Continuity Management	Refresher training to deal with disasters at the port.	1 day	All port managers and emergency and rescue services

Performance Management Tools

- Marine Operational Performance (MOPs) parameters:
  - Time: dwelling, anchorage
  - Average time to complete the following service requests: berthing, sailing, shifting and warping
  - Time taken to move between the pilot point and berths

- Terminal Operational Performance (TOP's) parameters:
  - No. of moves per hour
  - No. TEU's per hour
  - Bay, stack and wagon load optimisation

- Revenue generated per vessel:
  - Marine revenue for services rendered
  - Terminal revenue for equipment and services supplied to service the vessel
  - Wasted expenditure due to poor vessel, yard and rail planning and execution. Unpaid restows etc.

Benefit to Cost, based on feedback from clients

- "on the job" training in the terminal environment has reduced from 3 months to under 3weeks;

- Rework in the commercial environment due to incorrect submission of documents has almost been eliminated;

- Improved efficiency in stacking containers in the yard and on board the vessel has improved the number of TEUs worked per hour;

- Vessel Traffic Services has managed to use the tool to reduce dwell times and improve berthing and sailing times;

- The simulator provides an environment to test new processes, procedures and methods before implementing it in the real world.

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