TOS SYSTEM

Terminal Operating System
TARGETS:

- Reduced vessel working hours: Improved service = more vessels.
- Waterfront management of the vessels.
- Direct contact between the port and the ship agent while operating the vessel.
- Greater utilization of port’s equipment (i.e. shore cranes, tugs, yard etc.).
- Improved service to trailers / trucks.
- Technology of the 21st century – no papers and certificates – precision and professionalism.
How the system operates?

- Yard Planning
- Gate operation
- Ship Planning and coordinating (waterfront)
- Vessel & Yard operation
Planning the yard/blocks by grouping factors – export based on booking, import by yard layout.
TOS system models:

Gate system: trucks

Yard planning
Precheck Gate – precheck truck, driver, container data.

Driver receive Job card with yard position.

Driver ID: 012345678
Front LPR: 99-123-55
Back LPR: 11-999-22

Container 1: MCLU1234567
Weight: 2.4 (Ton)

Container 2: MCLU7654321
Weight: 2.6 (Ton)

Total weight: 9.4 (Ton)

Container Information
- Container: MCLU7654321
- Cargo Type: Dangerous
- Operation Type: Export
- Full/Empty: E
- IS0 Code: 20RG
- Document No:
- Weight: 2.6 (Ton)
- Exporter:
- Seal No:
- Custom Seal:
- Hazardous Information
  - IMDG: 5.5
  - UNNo: 1248

Pre-Advice
- Export container list
  - Container No: MCLU1234567
  - S/T: 20RF
  - Position: Y21-231
  - Container Status: OK
  - Container No: MCLU7654321
  - S/T: 20RG
  - Position: Y21-231
  - Container Status: OK

Import container list
- Container No: MCLU2345671
  - S/T: 20RF
  - Position: Y21-233
  - Container Status: OK
- Container No: MCLU2345699
  - S/T: 20RF
  - Position: Y21-233
  - Container Status: OK
- Container No: MCLU2345559
  - S/T: 20RF
  - Position: Y21-233
  - Container Status: Costum Hold
- Container No: Empty MSC QR
  - S/T: 20RG
  - Position: Y21-233
  - Container Status: OK

Vessel Information
- Vessel:
- Voyage:
- Manifest:
- Shipping Company:
- Line Code: POL
- Shipping Agent:
- POD

Cargo/Storage Information
- Customs Agent:
- Booking Number:
- Final Destination:
- Customs Release Code:
- Export Document No:

Stacking Information
- Yard Position: Y11-122-6-2
- Direct Delivery:

Driver Picture
Truck Picture
View Pictures
Pass
Reject
Trouble
General Cargo
GATE – main gate

Seal
Damage
IMDG

Checking actual data of driver, data, container

Reject option
TOS مو Doctrine of Systems

Gate system: trucks

Yard planning

Ship planning

In the system and principles of modules of TOS: Ship planning, Yard planning, Gate system: trucks.
0. Vessel definition – Technical and physical data of all vessels: Holds, Hatches, stability, weight capacity etc.
1. Discharge planning process and determining discharging sequence:

Ship planner will determine discharging sequence & shifting for each bay according to the general plan and agent’s instructions.
2. Planning the loading for the vessel upon receiving loading profile from agent.

HONG KONG
20 RG
20-25 TONS
2. Planning the loading – Determining the loading sequence.
Ship planner will place containers from the yard to the specific slots in the vessel. This is how the loading sequence is determined for each bay.
3. Determining Crane working sequence:

Ship planning

Diagram showing loading and discharge areas with numbered sections.
TOS
מודולים וקרויות במוערכת

Gate

Yard planning

Checking data and Ship planning

operation
All port’s equipment will be provisioned with wireless terminals. The jobs will be sent to the wireless terminals from TOS system. All working stations are dependant on each other.
Yard crane/Forklift operator screen:
**YARD TRACTOR SCREEN:**

<table>
<thead>
<tr>
<th>Equipment: YT548</th>
<th>TSB</th>
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<tbody>
<tr>
<td><strong>YARD:</strong> Y10-023</td>
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<tr>
<td>KAMU2510490</td>
<td>20RG</td>
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<tr>
<td>F</td>
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</table>

**GC:** G231
TOS

CONTROLING From TOS room

GATE

Yard planning

Checking data and Ship planning

OPERATION
Monitoring the productivity, identifying and solving operational problems.

CONTROLING actual Discharging and Loading operations as per the sequence.
Identifying equipment location and monitoring job sequence

Controlling the jobs and yard location

Resource monitoring
REAL TIME YARD CONDITION

REAL TIME DECISION MAKING
REAL TIME OPERATION
SOME ASHDOD’S PORT STATISTICS

VESSELS IN 2010
2820 VESSELS
18,000,000 Tons divided into charge and discharge:

General charges (cars, metals, fruits and vegetables, wood, etc)

Bulk charges (sugar, sulphur, phosphate, concrete, etc)

Container charges

CONTAINER CHARGES
(in TEU - Twenty Equivalent Units, A 40 feet container = 2 containers of 20 feet)

2009 = 893,080 containers
2010 = 1,017,480 containers

13.9% enlargement

25 CONTAINERS CHARGING AND DISCHARGING PER HOUR IN AVERAGE
INTELLIGENT AND OPTIMIZED PLANNING SYSTEM

NAVIS (USA) 200 PORTS

CATOS (KOREA) 100 PORTS