



## **SIMULTRA PROJECT**

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## **SIMULATION OF LOGISTICS AND TRANSPORT PROCESSES**

### **INTELLECTUAL OUTPUT 05**

#### **Learning materials for the container Terminal operations**

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## 1. INTRODUCTION

This manual will give the players of the container terminal game a theoretical background enabling the successful completion of the game.

## 2. What is the container terminal Game (CTG)

The simulator allows planning and organization of all (human) resources and equipment (fixed and self-propelled cranes) necessary for the management of a ship arriving at the quay of a container terminal. It aims to facilitate and perform the unloading and loading operations of containers in the time window required by the port's operations. The simulated process refers to the task mainly carried out by the container terminal resource planner.

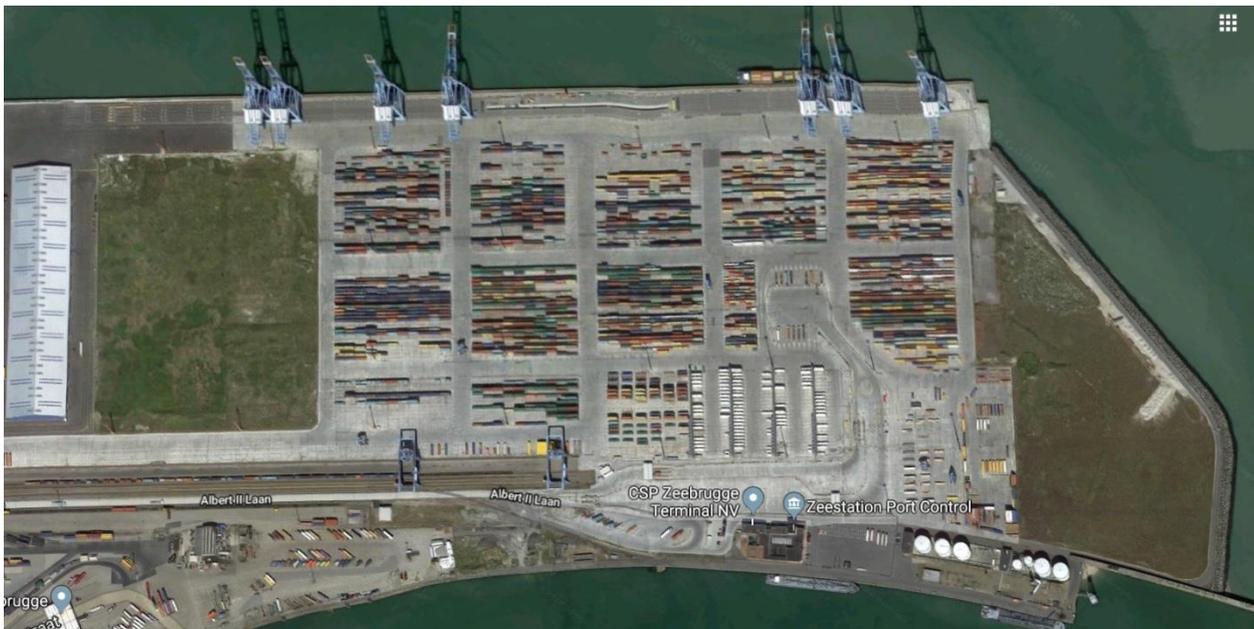
### Important terms

The player needs to be familiar with the following terms;

- Container Terminal
- TEU-Container
- Container Ship
- Straddle Carrier
- Container Gantry Crane

### 2.1 Container Terminal

A container port and more particularly a container terminal is a facility where cargo containers are transhipped between different transport vehicles, for onward transportation. The transshipment may be between container ships and land vehicles, for example trains, barges or trucks, in which case the terminal is described as a maritime container port. Alternatively, the transshipment may be between land vehicles, typically between train and truck, in which case the terminal is described as an inland container port.



## 2.2 TEU – Container

The twenty-foot equivalent unit (often TEU or teu) is an unit of cargo capacity often used to describe the capacity of container ships and container terminals. It is based on the volume of a 20-foot-long (6.1 m) intermodal container, a standard-sized metal box which can be easily transferred between different modes of transportation, such as ships, trains and trucks.



## 2.3 Container Ship

Container ships are cargo ships that carry all of their load in truck-size intermodal containers, in a technique called containerization. They are a common means of commercial intermodal freight transport and now carry most seagoing non-bulk cargo.



## 2.4 Straddle Carrier

Generally, a straddle carrier is a term for a vehicle for use in port terminals and intermodal yards that are used for stacking and moving standard containers.



## 2.5 Container Gantry Crane

A container crane (also container handling gantry crane or ship-to-shore crane) is a type of large dockside gantry crane found at container terminals for loading and unloading intermodal containers from container ships. Container cranes consist of a supporting framework that can traverse the length of a quay or yard on a rail track. Instead of a hook, they are equipped with a specialized handling tool called a spreader. The spreader can be lowered on top of a container and locks onto the container's four locking points ("corner castings") using a twist lock mechanism. Cranes normally transport a single container at once, but some newer cranes have the capability to pick up two to four 20-foot containers at once.

