

Use Case Description - Transportation Module

Create a Transportation Task

Use case name: Create a Transportation Task
Textual Description: The system creates a transportation task, assigning drivers and trucks according to their availability and matching licenses.
List of Actors: Transportation manager
Pre-conditions: <ul style="list-style-type: none">- The user is logged into the system- Items, zones, sites exist in the system.- available and matching driver, truck exist in the system.- available warehouse worker for the task exist in the system.
Post-conditions: <ul style="list-style-type: none">- A new transportation task has been created.- The task is associated with source and destination/s sites, driver, truck and warehouse worker.
Main success scenario: <ol style="list-style-type: none">1. The transportation manager makes new task, by choosing date, time and source site.2. The manager adds transportation docs to new task, by choosing destination sites and items for each destination.4. The system looks for available driver, truck, and warehouse worker, and assigns them to the task accordingly.5. The task is set in the system.
Alternatives/Extensions: <ul style="list-style-type: none">- invalid site address and zones, the system signals error to the user.- No available driver, truck (no weight matching between task and truck's capability) or warehouse worker for task. The system deletes task and signals error to the user.

Contracts - TransportationModule

Operation: makeNewTask(taskDate : String, taskDeparture : String, taskSourceSite : String)

Cross References: Use Cases: Create a Transportation Task

Preconditions:

- sourceSite, date and time inputs have been received.

Postconditions:

- A TransportationTask instance t was created (instance creation).
- Attributes of t were initialized.

Operation: addDocToTask (taskDate : String, taskDeparture: String, taskSourceSite: String, destinationSite: String, itemsChosen : HashMap<String, Integer>)

Cross References: Use Cases: Create a Transportation Task

Preconditions:

- A TransportationTask t has already been created with given date, time and source site.
- destinationSite s has been validated (exists, mapped to zone and task t).
- Items in itemsChosen have been validated (exist in database).

Postconditions:

- A TransportationDoc instance d was created (instance creation).
- d was associated with the current TransportationTask t (association formed).
- t.weightBeforeLeaving was updated based on items and their weight (attribute modification).

Operation: assignDriverAndTruckToTask(taskDate : String, taskDeparture : String, taskSourceSite : String)

Cross References: Use Cases: Add Task

Preconditions:

- A TransportationTask t has already been created with given parameters.
- Driver d exists in database and available for task.
- Truck t1 exists in database and available for task.
- WarehouseWorker w exists in database and available for task.

Postconditions:

- Driver d was associated with the current TransportationTask (association formed).
- d.isAvailable became false (attribute modification).
- Truck was associated with the current TransportationTask (association formed).
- t.isAvailable became false (attribute modification).

Operation: deleteTask(taskDate : String, taskDeparture : String, taskSourceSite : String)

Cross References: Use Cases: Add Task

Preconditions:

- A TransportationTask t has already been created with given parameters.
- Assigning driver and truck to task t failed.

Postconditions:

- task t was removed from the system.
- Any associated TransportationDoc instances mapped to this task are also removed from the system.