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SYMULACJA CENTRUM DYSTRYBUCYJNEGO TYPU CROSS-DOCKING W ŚRODOWISKU DOSIMIS-3

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SIMULATION OF CROSS-DOCKING DISTRIBUTION CENTER IN THE DOSIMIS-3 ENVIRONEMENT

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Słowa kluczowe: centrum dystrybucyjne, cross-docking, symulacja.
Keywords: distribution center, cross-docking, simulation.

Nowadays it is very important to properly organize supply chain management processes. Variable market expectations, intensifying price competition, the maintenance costs of goods in transport chains and effective customer response (ECR), cause an increase in demand for cross-dock warehouses. This solution is used in the market practice by many logistic operators ie. Raben Logistics, Goodman and DB Schenker.

The aim of the paper is to simulate the theoretical ceoss-docking distributin center in the Dosimis-3 environement.

The paper explains what a cross-docking distribution center is and what its basic assumptions and levels are. A model of the theoretical cross-dock warehouse, with three input docks and four output docks, was built with the given assupmtions.

Then the model was modified to compare the three following variants in the terms of the use of input and output docks and the time of pallets stay in the system.

Variant 1. A model, in which the transport trolley remains in the place of the last unloading, awaiting for the next transport request.

Variant 2. A model, in which free transport trolleys are sent to the central input dock, where are awaiting for the next transport request.

Variant 3. A model, in which each transport trolley is assigned to one of the input docks and are sent back to them, where are awaiting for the next transport request.

The adaptation of the cross-docking distribution centers allows a significant reduction of the storage and warehousing costs of cargos. This solution allows to skip warehousing processes and to optimize delivery costs on the last mile section. However, it requires a very precise synchronization of all processes of accepting and spending cargos, because all operations are made in the loading ramps area.