

Simulations interoperable transport using intelligent algorithms for polymeric products manufacturing

B.A. Jugravu^{1,*}, T. Savu², C. Opran³

¹University POLITEHNICA of Bucharest, Manufacturing Engineering Department, Splaiul Independenței 313, Bucharest 060042, bogdan.jugravu@upb.ro

²University POLITEHNICA of Bucharest, Manufacturing Engineering Department, Splaiul Independenței 313, Bucharest 060042, tom.savu@upb.ro

³University POLITEHNICA of Bucharest, Manufacturing Engineering Department, Splaiul Independenței 313, Bucharest 060042, constantin.opran@upb.ro

Keywords. autonomous industrial vehicles, intelligent algorithms, simulations, transport orders

Abstract.

When an autonomous industrial vehicle moves to a certain point to take over or leave an order, intermediate commands may appear on its route that can be taken together with the first order. Orders will be allocated through an algorithm that analyzes delivery times and priorities. This paper presents results of researches regarding the development and use of a simulator to determine the efficiency of the algorithm for allocating transport orders in an intelligent polymeric products manufacturing line. It presents for comparison the variant in which the vehicle deals only with the first order and after its finish can take a new order. The paper comes from the development of previously made articles in which an algorithm was used to allocate the transport loads of autonomous industrial vehicles and a neural network that analyzes the capacity of batteries, thus estimating the distances that the vehicle can travel with certain percentages of battery.