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METHODS FOR EVALUATION OF CAPACITY AND LEVEL OF SERVICE IN FERRY PORT

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ABSTRACT

Traffic related technological processes inside ro-ro ferry ports were analysed in this doctoral dissertation in order to divide the port in core subsystems. The port was divided into three main subsystems: wharf area, marshalling area and passenger facilities. Afterwards, an analysis of the Quality of Service concept and of the Level of Service concept was performed based on relevant manuals (HCM, ADRM, TCQSM). The Level of Service (LOS) concept provides a simple presentation of service level to all stakeholders by using six grade scales from A to F. Based on the findings, a methodology for evaluation of capacity and level of service in ro-ro ferry ports by using existing LOS scale was proposed. The proposed methodology was applied on the southern part of the City port in Split. Arrival earliness distribution of passengers and vehicles in ro-ro ferry traffic during high season was defined by using an empirical method, and a micro-simulation model of the analysed area was built. Scientific and applicative contributions to the scientific area of technical sciences, field of traffic and transport technology, are the following: the proposal of optimal methodology for identifying and measuring relevant peak hour period in ro-ro ferry port, proposal of a universal methods for evaluating capacity and quality of service of the ro-ro ferry port for domestic traffic through application of the Level of Service concept, and applicability of the simulation model for evaluation of the capacity and the level of service of the City port in Split during the relevant peak hour period and on other tourist ro-ro ferry ports.