1. Passenger level of service estimation model for queuing systems at the airport

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Abstract: This paper presents a model for the management of passenger service operations at airports by the estimation of a global index of the level of service. This paper presents a new approach to the scheduling of resources required to perform passenger service operations at airports. The approach takes into account the index of level of service as a quantitative indicator that can be associated with airport revenues. Taking this index into account makes it possible to create an operating schedule of desks, adapted to the intensity of checking-in passengers, and, as such, to apply dynamic process management. This offers positive aspects, particularly the possibility of improvement of service quality that directly translates into profits generated by the non-aeronautical activity of airports. When talking about level of service, there can be distinguish other important indicators that are considered very often (eg maximum queuing time, space in square meters). In this model, however, they are considered as secondary. Of course, space in square meters is important when designing a system. Here this system is already built and functioning. The concept of the model is the use of a hybrid method: computer simulation (Monte Carlo simulation) with multiple regression. This paper focuses on the presentation of a mathematical model used to determine the level of service index that provides new functionality in the current simulation model, as presented in the authors' previous scientific publications. The mathematical model is based on a multiple regression function, taking into account the significance of individual elementary operations of passenger service at an air terminal. (21 refs)
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