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A COMMUNICATION NETWORK WITH ERLANGIAN SERVICE TIME AND RANDOM PHASES OF SERVICE

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Abstract

In this paper we develop and analyze a communication network with the assumption that the arrival of request in a communication network follows a poisson process and the service in the service station is in phases. The service time of a customer follows an Erlangian distribution with k phases of service.

Assuming the system is in steady state, the probability generating function, the average number of requests, the average waiting time distribution are derived and analyzed with respect to the parameters.

Key Words: *Communication network, Probability generating function, Erlangian distribution,Random phases of service.*