ComNets
Institute of Communication Networks
TUHH

Exercise 2

Probability Distributions

The goal of this exercise is to gain a deeper understanding of different probability distributions, their properties and application for simulations using OMNeT++.

Create a simple model consisting of a sender S and a receiver R. The sender creates new messages with a random time interval T and sends it to the receiver . The receiver records the inter-arrival time of the messages.

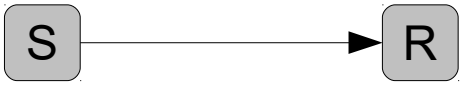

Figure 1: Sender-Receiver- Model

Choose at least two different probability distributions for the random variable T (see Chapter 7.4.4. in the OMNeT++ Manual for a list of distributions) and for each of them

- Draw the Probability Density Function (PDF) and the Cumulative Distribution Function (CDF) of the distribution.
- Record and visualize the histogram and vector data of the inter-arrival times of the received messages when you stop the simulation after 100, 1000, 10000 messages.
- What are the sample mean, sample variance and the standard deviation of the simulation results?
- Compare the results to the theoretical expectations.