In call centers, hospital emergency departments and most other service systems, the arrival rate varies strongly over each day. Thus, a natural arrival process model for a queueing model to be used in performance analysis is the nonhomogeneous Poisson process (NHPP), but this should be supported by analyzing system arrival data. We discuss how the conditional-uniform property of the homogeneous Poisson process (HPP) can be applied to generate a statistical test of the NHPP. We discuss additional measures that need to be taken in order to detect important deviations from the NHPP model.