Abstract

Statistical process control is a method of monitoring product in its development process using statistical techniques with the presumption that the products produced under identical process condition shall not always be alike with respect to some quality characteristic(s). However, if the observed variations are within the tolerable limits statistical process control (SPC) methods would pass them for acceptance. This philosophy is adopted to decide the reliability and quality of a developed software by defining some quality measures and proposing a probability model for the quality measurements. The well-known linear failure rate distribution (LFRD) is considered to propose a software reliability based on non-homogenous Poisson process (NHPP). Its mean value function is taken as a quality characteristic and SPC limits for it are developed. These control limits are exemplified to a live failure data to detect the out of control signals for the quality of the software based on the software failure data.

Index Terms

Computer Science

Software Engineering
Keywords

IRD, MLE, MSE, NHPP, SRGM