Abstract

In this paper, Software reliability is the anticipation of operations which are free of error in the software in a stated environment during the detailed time duration. Statistical Process Control can survey the gauging of software failure and thereby devote significantly to the enhancement of software reliability. Such an assessment assists the software development team to pinpoint and diagnose their actions during software failure process and hence, assure superior software reliability. A control mechanism planted on the cumulative observations of interval domain failure data using mean value function of the Half Logistic Distribution (HLD) based on Non Homogeneous Poisson Process (NHPP) is proposed. The maximum likelihood estimation approach is used to estimate the unknown parameters of the model. A new mechanism is coded to analyze the observations instead of using regular control charts.

References

1. N. Boffoli, G. Bruno, D. Cavivano, G. Mastelloni; Statistical process control for Software: a
Monitoring Software Failure Process using Half Logistic Distribution


11. Mutsumi Komuro; Experiences of Applying SPC Techniques to software development processes; 2006 ACM 1-59593-085-x/06/0005.


13. Dr. R Satya Prasad, K Ramchand H Rao and Dr. R.R. L Kantham (2011),” Software Reliability Measuring using Modified Maximum Likelihood Estimation and SPC” IJCA Journal, Number 7 – Article1


**Index Terms**

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**Keywords**

Statistical Process Control (SPC); Software reliability; Probability limits; HLD; Maximum Likelihood Estimation; Failure count data