Software reliability may be used as a measure of the Software system’s success in providing its function properly. Software process improvement helps in finishing with reliable software product. Software process improvement includes monitoring software development practices and actively seeking ways to increase value, reduce errors, increase productivity, and enhance
the developer’s environment. Statistical process control (SPC) is one of the best available approaches to monitor and control the software process. SPC is the application of appropriate statistical tools to processes for continuous improvement in quality, reliability of software products and services and productivity in the workforce. In this paper we proposed a control mechanism, based on time between failures observations using Half logistic distribution, with Modified Maximum likelihood Estimation (MMLE) which is based on Non Homogenous Poisson Process (NHPP).

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Index Terms

Computer Science
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**Key words**

- Modified MLE (MMLE)
- Half logistic Distribution (HLD)
- Statistical Process Control (SPC)
- Software reliability
- Control limits
- Non Homogenous Poisson Process (NHPP).