**ABSTRACT**

Environmental adaptation method (EAM) is one of the evolutionary algorithms for solving single objective optimization problems. After the first proposal of EAM, other variants have been suggested to speed up the convergence and to maintain the population diversity. Among them, IEAM-RP works with real numbers and was able to achieve the desired goal during the optimization process. In this paper, IEAM-RP is used to predict the effort required to develop the software product. The experiments are carried out on NASA software project dataset to check the effectiveness of IEAM-RP. The experimental results demonstrated that the overall performance of IEAM-RP is quite satisfactory in predicting the effort required to develop a software.

COCOMO II is an objective cost model for planning and executing software projects. It is an important ingredient for managing software projects or software lines of business. A cost model provides a framework for communicating business decisions among the stakeholders of a software effort. COCOMO II supports contract negotiations, process improvement analysis, tool purchases, architecture changes, component make/buy tradeoffs and several other return-on-investment decisions with a credible basis of estimate. COCOMO II incorporates several field-tested improvements to both broaden its applicability and improve its estimating accuracy for modern software development approaches. COCOMO II includes two underlying information models. The first is a framework for describing a software project, including models for process, culture, stakeholders, methods, tools and the size/complexity of the software product. The second is an experience base that can be used to estimate the likely includes significant updates to COCOMO to improve its applicability to modern processes, methods, tools and technologies. It also includes a much larger, more pertinent database of modern precedents and improves the adaptability of the model so it can be optimized across a broad spectrum of domains and project circumstances