

Information system development is a complex endeavor, one which is fraught with peril if one do not follow a proven method. The Rational Unified Process (RUP) is one such method which could help to organize the development process of any information system. The RUP takes an evolutionary approach to development which has been shown to be far more effective than the traditional approach which is based on simple procedure. Unified Modeling Language (UML) is a RUP graphical language for visualizing, specifying, constructing, and documenting the artifacts of a information system. UML offers a standard way to write a system's blueprints which is crucial for any information system development. The main goal of the study is to develop electronic patent (e-patent) system by RUP approach and UML standard tools. Afterwards artificial neural networks are applied to predict potential economic growth (GDP) based on science factors including patents. Extreme learning machine (ELM) is used for training process of the networks. Extreme learning machine (ELM) is a class of single-hidden layer feedforward neural network (SLFN). In theory, ELM algorithm tends to provide good generalization performance at extremely fast learning speed. Experimental results show that ELM has very high correlation with current economic dispatch.