

## **The Design of a Mixed Matrix Model for Activity Levels Extraction and Sub Processes Classification of a Work Project (Case: Great Tehran Electrical Distribution Company)**

**Authors :** Elham Allahmoradi, Bahman Allahmoradi, Ali Bonyadi Naeini

**Abstract :** Complex systems have many aspects. A variety of methods have been developed to analyze these systems. The most efficient of these methods should not only be simple, but also provide useful and comprehensive information about many aspects of the system. Matrix methods are considered the most commonly methods used to analyze and design systems. Each matrix method can examine a particular aspect of the system. If these methods are combined, managers can access to more comprehensive and broader information about the system. This study was conducted in four steps. In the first step, a process model of a real project has been extracted through IDEF3. In the second step, activity levels have been attained by writing a process model in the form of a design structure matrix (DSM) and sorting it through triangulation algorithm (TA). In the third step, sub-processes have been obtained by writing the process model in the form of an interface structure matrix (ISM) and clustering it through cluster identification algorithm (CIA). In the fourth step, a mixed model has been developed to provide a unified picture of the project structure through the simultaneous presentation of activities and sub-processes. Finally, the paper is completed with a conclusion.

**Keywords :** integrated definition for process description capture (IDEF3) method, design structure matrix (DSM), interface structure matrix (ism), mixed matrix model, activity level, sub-process

**Conference Title :** ICETM 2015 : International Conference on Engineering and Technology Management

**Conference Location :** Venice, Italy

**Conference Dates :** November 09-10, 2015