

## ASIGURAREA CALITĂȚII – QUALITY ASSURANCE

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# EWMA control chart by Dynamic Bayesian Network

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## Abstract

This paper presents a modeling method of the EWMA control chart by a Dynamic Bayesian Network (DBN). The construction method of the network is proposed, and the algorithm for calculating the conditional probability table (CPT) is detailed. A simulation example illustrates the method and show the equivalence between these different tools.

**Keywords:** detection, dynamic Bayesian network, EWMA control chart.

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# On Quality of Training Process Analysis

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## Abstract

Quality of the training process is an important issue for both the trainers and learners. A good training model is essential for its successful implementation and learner fulfillment. The model produces the best results only if it operates under the optimal levels of the supporting parameters. In this paper, a methodology is proposed for quantitatively optimizing the quality of the training process and enhancing benefits for the learner. Orthogonal Arrays proposed under Taguchi's robust design methodology are employed for selecting an intelligent subset of the parameter space. Orthogonal arrays help in lessening the number of experimental runs, on the basis, of which controlled experiments are designed. The experiments are conducted through objective experimentations. The methodology is presented through a case study of real world training scheme entailing teaching and post training evaluation. This paper offers novel thoughts for improving the quality of the training processes. The case study presented and the results derived demonstrate the practicality of the approach that has been extremely successful in manufacturing. This paper shows that training processes can also be quantitatively understood in terms of the process features that affect the intention. In conclusion, the paper demonstrates that Taguchi robust design techniques can identify levels of controllable training process variables at which the outcome of quality variations is sustained at a minimum level. These in-process variables are used to establish and evaluate process performance.

**Keywords:** Software Process Quality, Robust Design, Taguchi Method, Analysis of Variance, Orthogonal Arrays, KLOC, Signal/Noise Ratio.

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# Probleme de fiabilitate ale diodelor cu siliciu realizate prin tehnologia bipolară

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## Abstract

The main characteristics of the silicon diodes achieved by bipolar technology are described, followed by the typical failure mechanisms, which are identified and explained. In each case, corrective actions are suggested, aimed to reduce the failure risks and to improve the reliability of the electronic systems made by using these silicon diodes.

**Keywords:** silicon diodes, failure mechanism, corrective actions, reliability.

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# Improvement Opportunities for Water Supply Services Operators in Quality - Water Safety Management Systems

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## **Abstract**

The successful keeping of a performing water management in an integrated manner by quality –water safety systemic approach allow the investigation of management system and leads to the objectives and targets fulfillment. The motivation to raise a management integrated system, with SMART features and objectives by reporting to standard requirements, has as support internal forces (manager vision) or external forces (requirements related to regulation). A quality – water safety management system to include issues regarding: satisfaction of clients' requirements, staff training, deal with claims, improvement of relationships with interested parts, the control risks regarding the safety of drinking water should be a strategic decision of each operator from the field of water supply services. This article presents the concept of integration, equivalence between the management systems and the valuation issues in the management integrated system, as well as the opportunities to improve the operators of water supply services which adopt this systemic approach.

**Keywords:** quality, water supply, water safety, hazard analysis and critical control points, systemic approach

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# A Study of Exponential-Arrhenius Model

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## Abstract

In this paper, a complete study of Exponential-Arrhenius model for constant accelerated stress is investigated. The maximum likelihood and Bayesian estimators are dealt with and compared. A Monte Carlo simulation has been performed to examine the asymptotic behavior of these different estimators. An example shows the interest to use the Bayesian approach in integrating available knowledge in model parameters and the asymptotic behavior of Bayesian estimators. It is important to mention that the Arrhenius model is used when the damaging mechanism is temperature sensitive.

**Keywords:** Accelerated stress, Exponential-Arrhenius model, Monte Carlo simulation, Bayesian approach

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