

ASIGURAREA CALITĂȚII – QUALITY ASSURANCE

CUPRINS – CONTENTS

- ❑ **In memoriam Joseph M. JURAN (1904-2008).**
The Quality Trilogy. A Universal Approach to Managing for Quality (2)
Ioan C. Bacivarov
- ❑ **Joseph M. JURAN. Trilogia calității – o contribuție fundamentală a lui J.M. Juran** (9)
Ioan C. Bacivarov
- ❑ **Enhancing the Quality of a Web Application through Responsive Design** (11)
Sabina Daniela Axinte, Ioan C. Bacivarov
- ❑ **Test, Testability and Reliability Aspects of Integrated Circuits** (16)
Titu-Marius I. Băjenescu
- ❑ **Challenges of Migration from OHSAS 18001 to ISO 45001** (22)
Cristian Roncea

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, photocopied, recorded or otherwise, without written permission from the editor. When authors submit their papers for publication, they agree that the copyright for their article be transferred to the Romanian Society for Quality Assurance (SRAC), if and only if the articles are accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints and translations.

Permission for other use. The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying.

Disclaimer. Whilst every effort is made by the publishers and the Editorial Board to see that no inaccurate or misleading data, opinion or statement appear in this journal, they wish to make it clear that the data and opinions appearing in the articles, as well as linguistic accuracy, are the sole responsibility of the author.

The materials in this publication is for general information only and is not intended to provide specific advice or recommendations for any individual. The publisher disclaims all liability in connection with the use of information contained in this publication.

In memoriam Joseph M. JURAN (1904-2008). The Quality Trilogy. A Universal Approach to Managing for Quality

Ioan C. BACIVAROV

EUROQUALROM, Facultatea de Electronică, Telecomunicații și Tehnologia Informației,
Universitatea POLITEHNICA din București, România

Abstract

Ten years ago, the great Quality Management Guru Joseph M. JURAN passed into eternity. In order to mark this moment, we publish one of his most representative papers, the well-known Juran Quality Trilogy. In 1987, I asked Dr. Juran to send a message addressed to the Romanian specialists in quality, together with a representative paper to be published in a Romanian technical journal. Dr. J. M. Juran send me this message together with this famous paper on “Quality Trilogy”, with the permission to publish it in a Romanian journal. Dr. Juran left us with many important fundamental methods and tools during his years as the leading expert in the field of Quality Management. The Juran Quality Trilogy is made up of three important managerial tools that work together to help organizations realize the full benefits of Quality Management in the pursuit of Quality Leadership. Dr. Juran’s Trilogy represents the concepts of Quality Planning, Quality Control, and Quality Improvement. In the Six Sigma language, the Quality Planning and Quality Improvement processes are called DMADV and DMAIC. Juran referred to these processes as “universal.” These processes represent the sequences of events to effectively Plan, Control, and Improve Quality. These processes have been used widely in all industries around the world for many years. (ICB)

Keywords: Quality, Quality Management, Juran, Quality Trilogy, Plan, Control, Improvement

Enhancing the Quality of a Web Application through Responsive Design

Sabina-Daniela AXINTE, Ioan C. BACIVAROV
EUROQUALROM - ETTI, University POLITEHNICA of Bucharest, Romania
axinte_sabina@yahoo.com

Abstract

An attractive design engages even the most fastidious users and alleviates most concerns over the investment acumen of any marketing strategy involving future web application development. Integrating responsive design ensures that the content properly displays on a large variety of terminals, including desktop computers, mobile phones and tablets. This article addresses managers, quality assurance engineers and junior developers with an interest towards qualitative web development. It highlights essential information for upcoming development and testing phases, focuses on quality and usability and virtually guarantees a successful product. Containing time-saving tips, it outlines the transformation process required to reach the stage of seamless, modern Responsive Web Design (RWD) and concentrates on the quality assurance perspective through deeper understanding of the development and testing requirements.

Keywords: Responsive design, Quality Improvement Process, Cross-platform Testing, Adaptive design

References:

- [1] E. Marcotte, "Responsive Web Design", Second Ed., ISBN: 978 -1-9375571-8-8, Dec 2, 2014.
- [2] M. Soegaard, "Adaptive vs. Responsive Design", July 2018, <http://interaction-design.org>
- [3] J. Strachan, "Adaptive vs responsive web design", December 2017, <http://uxplanet.org>
- [4] "Responsive Web Design - Media Queries", <http://w3schools.com>
- [5] P. LePage, "Responsive Web Design Basics", <http://developers.google.com>, retrieved June 2018.
- [6] Responsive Web Design Testing Tool, <http://mattkersley.com/responsive/>, retrieved July 2018.

Test, Testability and Reliability Aspects of Integrated Circuits

Titu-Marius I. BĂJENESCU

La Conversion, Switzerland
tmbajenesco@bluewin.ch

Abstract

The role of testing is to detect whether something went wrong and the role of diagnosis is to determine exactly what went wrong. Testability is a design criterion and should be included in design reviews. Quiescent power supply current (IDDQ) testing of a CMOS integrated circuit is a technique for production quality and reliability improvement, design validation, and failure analysis. It has been used for many years by a few companies and has now receiving wider acceptance as an industry tool.

Keywords: ASIC, IDDQ, NNR, SEC, TCV, operational test, test methods, reliability

References:

- [1] IEEE, IEEE STD 1522-2004 Trial-Use Standard for Testability and Diagnosability Characteristics and Metrics, Jan. 2004.
- [2] Department of Defense, MIL-STD, 2165 Military Standard Testability Program for Electronic Systems and Equipments, Washington, DC, January 26, 1985.
- [3] Testability.com, The Information Source for System Testability and Diagnostic, <http://www.testability.com/Reference/Glossaries.aspx?Glossary=Testability>.
- [4] High Performance Analog Solutions, Lexicon of Semiconductor Terms, <http://rel.intersil.com/docs/lexicon/T.html>.
- [5] K.-T. Cheng, et al., "A Partial Scan Method for Sequential Circuits with Feedback," IEEE Trans. on Computers, Vol. 39, 1990, No. 4, pp.544-548.
- [6] R. Gupta, et al., "The BALLAST Methodology for Structured Partial Scan Design," IEEE Trans. on Computers, Vol. 39, No. 4, 1990, pp.538-543.
- [7] Y. Bo, et al., "Testability Design for Sequential Circuit with Multiple Feedback," Proc. The fourth Internat. Conf. on Solid-State and Integrated-Circuit Technology, Beijing, China, Oct. 24-28, 1995, pp.208-210.
- [8] J. M. Soden, et al., "IDDQ Testing: A Review," A Special Issue of Journal of Electronic Testing; Theory and Applications (JETTA), No.3, 1992, pp. 291-303.
- [9] R. K. Gulati, and Ch. F. Hawkins (Eds.), "IDDQ Testing of VLSI Circuits." A Special Issue of Journal of Electronic Testing; Theory and Applications (JETTA), Vol. 3, No. 4, 1993.
- [10] R. Rajsuman, IDDQ Testing for CMOS VLSI, Norwood, MA, Artech House, 1994.
- [11] R. Rajsuman, "IDDQ Testing for CMOS VLSI". Proceedings of the IEEE. 88 (4)2000, 544-568.
- [12] W. R. Daasch, et al, Neighborhood Selection for IDDQ Outlier Screening at Wafer Sort, <http://doi.ieeecomputersociety.org/10.1109/MDT.2002.1033795>
- [13] W. Riordan, et al., "Microprocessor Reliability Performance as a Function of Die Location for a 0.25 μ , Five Layer Metal CMOS Logic Process," Reliability Physics Symposium Proceedings, 1999, 37th Annual IEEE International Symposium, 1999, pp. 1-11.

- [14] P. D. T. O'Connor, Practical Reliability Engineering, Chichester, New York, J. Wiley, 2002.
- [15] T. I. Băjenescu, Reliability of Electronic Components, Bucharest, Tehnica Publishing House, 1996.
- [16] T. I. Băjenescu and M. I. Bâzu, Component Reliability for Electronic Systems, Artech House, Boston & London, 2010.
- [17] S. Kayali, G. Ponchak, R. Shaw, "GaAs MMIC Reliability Assurance Guideline for Space Applications," Chapter 7, <https://parts.jpl.nasa.gov/mmic/7.PDF>
- [18] S. Hamdioui, "VLSI Test Technology and Reliability," <https://www.researchgate.net/file.PostFileLoader.html?id...>, 2010.
- [19] IEC 61000-4-30: Testing and Measurement Techniques.
- [20] H. Vermaak, Design-for-Delay-Testability. Techniques For High-Speed Digital Circuits, Ph. D. Thesis, Universiteit Twente, 2005.
- [21] J. M. da Silva, "Test and Design for Testability of Analog and Mixed-Signal Circuits," 2010, <https://indico.cern.ch/event/78641/attachments/1058996/1510087/TDfTAMS-part1.pdf>

Provocările migrării de la OHSAS 18001 la ISO 45001

Cristian RONCEA
SRAC CERT, București, România
cristinel.roncea@srac.ro

Abstract

This paper outlines some of the novelties brought by the new ISO 45001: 2018 standard and outlines both aspects that should be considered by organizations for their implementation and third party auditors to audit these new requirements.

Keywords: Standardization, ISO, OHSAS 18001, ISO 45001 Occupational health and safety, Communication, Implementation, Audit

References:

- [1] Anexa SL – High Level Structure Apendix 2 al directivei „ISO/IEC Directives, Part 1, Consolidated ISO Supplement, 2012”.
- [2] ISO 45001:2018 – Occupational health and safety management systems – Requirements with guidance for use.
- [3] BS 45002-0:2018 – Occupational health and safety management systems, Part 0: General guidelines for the application of ISO 45001.
- [4] BS 45002-1:2018 – Occupational health and safety management systems, Part 1: Guidance on managing occupational health.
- [5] BS 45002-3:2018 – Occupational health and safety management systems, Part 3: Guidance on incident investigation.
- [6] IRCA&CQI, ISO 45001:2018 – Understanding the International Standard, CQI, Report, 2018.
- [7] IAF MD 21:2018 – Requirements for the Migration to ISO 45001:2018 from OHSAS 18001:2007.
- [8] IAF MD 22:2018 – Application of ISO/IEC 17021-1 for the Certification of Occupational Health and Safety Management Systems (OH&SMS)
- [9] CQI Policy for migrating to ISO 45001.
- [10] Politica SRAC privind migrarea la ISO 45001:2018 de la OHSAS 18001:2007.
- [11] Politica SRAC privind recunoașterea auditorilor conform ISO 45001:2018.

