



2005 For-EMC: Implementation of EMC Directive and the new conformity assessment system in România

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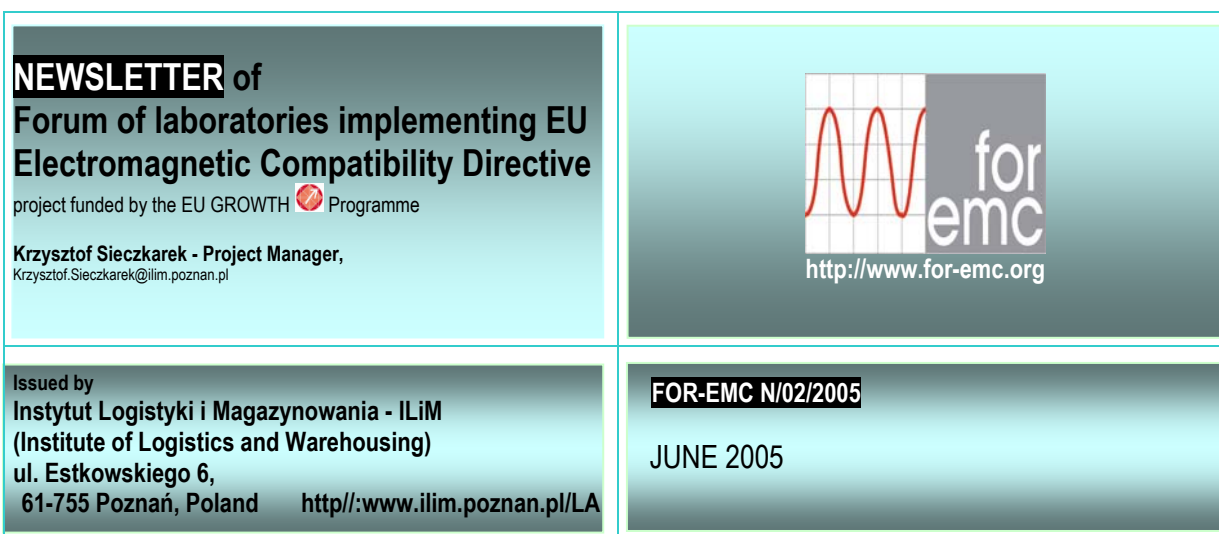
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Implementation of EMC Directive and the new conformity assessment system in România

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The legal framework for introducing the New Approach directives in România was established by an act, Law No. 608 dated 31 October 2001 concerning conformity assessment system and accreditation guidelines and which also revised and replaced some of the earlier regulations (Monitorul Oficial nr. 712/8 November 2001).

1. The standardization works regarding Electromagnetic Compatibility in România.

The progress of the standardization works regarding Electromagnetic Compatibility, carried out in the frame of the Romanian Technical Committee 30 "Electromagnetic Compatibility", and Romanian Technical Committee 6 "Radio communications" In 2004 have been prepared and approved 23 European standards (including some amendments), 16 by translation and 7 by endorsement. In the second part the authors emphasize some recent changes of EMC standards in the field of radio disturbance and immunity measuring apparatus and testing methods (reorganization of CISPR Publication 16).

2. EMC Test Laboratories

Electromagnetic compatibility laboratories in România are organized hierarchically based on their know-how and competence. The top of this hierarchy is reserved for so-called Competent Bodies. The Competent Body responsible for EMC is appointed by the Ministry of Infrastructure. This unit should have the required technical infrastructure and essential employee base.

2. 1. Research and Testing Institute ICMET Craiova

Since 1997, the EMC tests have begun to be accredited by Romanian National Body RENAR (member of ILAC and EA) according to EN 45001 and ISO / IEC – 25 Guide.

In 2000 it was put into operation the semi-anechoic chamber, the first of this kind in Romania.

The Lab is the result of a close co-operation between ICMET Craiova and Physikalisch Technische Bundesanstalt – PTB Braunschweig, Germany.

ICMET has set up the first Romanian modern Laboratory for Electromagnetic Compatibility (EMC) which is intended to ensure EMC for electric power equipment and power electronics (http://www.icmet.ro/lab_emc.htm). At present the immunity tests and conducted disturbance measurement performed by this laboratory are accredited by RENAR. In 2000 it was put into operation the semi-anechoic chamber, the first of this kind in Romania.

In order to expand the activities in the field of testing, ICMET has set up the first Romanian modern Laboratory for Electromagnetic Compatibility (EMC) which is intended to ensure EMC for electric power equipment and power electronics.

http://www.icmet.ro/lab_emc.htm

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2. 2. Research Centre in EMC and High Voltage (CEMTI), Electro-Energetic Faculty, Polytechnica University Bucharest.

National Inter-University Centre for High Voltage Engineering and Electromagnetic Compatibility

Interuniversity National Center for EMC Polytechnica University Bucharest (TICEM). <http://el.poweng.pub.ro/TICEM/index.htm>

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2. 3. Research Center for Instrumentation, Measurements and EMC

Research Center in EMC, Technical University Timișoara (IMCEM).

prof. dr. ing. Alimpie IGNEA - Director IMCEM

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Universitatea POLITEHNICA Timisoara,

Departamentul de Masurari si Electronica Optica



3. Books and Manuals on EMC

Hortopan Gh., *Principii si tehnici de Compatibilitate Electromagnetica*, Ed. Tehnica, București, 1998.
P. Ogrușan, Fl. Sandu, "Compatibilitate electromagnetica", Editura Transilvania Brașov, 1999, ISBN 973-98796-9-1
Ungureanu Anton, (2000) "Compatibilitatea electromagnetica in instalatiile electroenergetice", ICEMENERG
A. Ignea, *Introducere in compatibilitatea electromagnetica*, Editura de Vest, Timisoara, 1998.
Schwab, A.J. – "Compatibilitatea Electromagnetica", Editura Tehnică, București 1996
Carmen Golovanov, *Aparate electrotehnice – Probleme de compatibilitate electromagnetica*, Ed. ICPE, București, 1997

4. Courses

Multimedia course in EMC http://www.ee.tuiasi.ro/~aadascal/Curs_CEM/index01.html

Course Objectives: The entry into force of the EEC Directive 336/89 on the electro-magnetic compatibility gave a big boost to regulatory activity within the context of national and European markets. Many manufacturers and users of electrical and electronic equipment are now faced with legal obligations in a field where their previous interest may have been only peripheral. To place their products on the market or to take equipment into service, certain actions must be taken in respect of design, construction, manufacture, certification and installation in order to satisfy the minimum market entry requirements. In the process of transition towards a market economy, Romania must reconsider the engineering education process in order to produce a new type of engineer with new skills and attitudes. They should understand the inter-relationship between various engineering fields; principles of scientific investigation and methodology of engineering design should be well mastered. So, the use of computer in engineering education is a must. The objectives of this course are: 1. To gain an understanding of EMC principles and their application to data acquisition and analysis; 2. To properly implement, through laboratory experimentation, various sensors and transducers in order to understand the application of each; 3. To design instrumentation systems; including both hardware and signal processing considerations.

Laboratory Work: A laboratory experiment will be assigned each week. A well documented lab book must be kept to record all pertinent data, and in which to draw results and report on the findings of the lab work.

Final Project: A final, comprehensive design project will be completed in the last four weeks of the course. Everybody will submit an initial feasibility study for the final project and an individual final project report. Cross-major teams are strongly encouraged.

5. EMC Legislation

1. Directive EMC 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

- Text of the Directive 89/336/EEC amended by Directive 91/263/EEC, Directive 92/31/EEC and Directive 93/68/EEC
http://europa.eu.int/comm/enterprise/electr_equipment/emc/directiv/text.htm
- EMC Directive 89-336-EEC Translation into Romanian at the web address <http://www.acero.ro/direct2.doc>

2. Guidelines On The Application Of Council Directive 89/336/EEC OF 3 May 1989 On The Approximation Of The Laws Of The Member States Relating To Electromagnetic Compatibility, (Directive 89/336/EEC Amended By Directives 91/263/EEC,

3. Government Act no. 497, 18 April 2003 regarding EMC



Romania has also implemented a number of measures to protect the public against exposure to electromagnetic fields. The national authority dealing with energy fields, (the Romanian Electricity and Heat Regulatory Authority - ANRE), has laid down a set of General Occupational Health and Safety Regulations (AGPN), which were enacted by the Ministry of Labour and Social Solidarity (MMSS) in 1996. These regulations set out the maximum authorised limit value for exposure to electromagnetic fields and a number of measures aimed at reducing them. The General Occupational Health and Safety Regulations are legally binding and were based on specific standards applying to various fields of activity:

6. Other activities in the area of EMC in Romania

6.1. Romanian EMC Association, ACER (<http://www.acero.ro/>) aims to:

Support any initiative having a contribution to EMC field promotion/development in Romania

Participate in drawing up technical normative documents, standards and law proposals and to promote them to the appropriate competent authorities

Organize and participate, at national and international level, in scientific and technical activities concerning EMC and connected fields of interest

Support trade companies, private or state owned companies with expertise and prognosis scientific research works, quality analyses, drawing up of standards and norms within the frame of its activity field, under contract determined conditions

Establish and maintain professional relationships with national and international organizations having a research-development, production, standardization profile

Edit its own publication "Buletinul ACER"

6.2. Romanian EMC Chapter (<http://www.acero.ro/ct-chapter.htm>).

The IEEE Romania Section–Electromagnetic Compatibility Society Chapter has been formed (Romanian EMC Chapter) on 19 noiembrie 2002. Romanian EMC Association (ACER) founded the IEEE Romanian EMC Chapter.

EMC Romanian Projects

DeCQuTest Project is an EU-funded technology transfer project, aimed at improving Electromagnetic skills in Romania.

One objective is to achieve a multi-national curriculum of training in EMC, at two levels.

The project has partners from Romania, the UK, Germany and Italy:

- The Faculty of Electrical Engineering, Technical University, Iasi, Romania
- Warwick Manufacturing Group, University of Warwick, Coventry, England
- The EMC Laboratory "Leopoldo Nobili", Bologna University, Reggio Emilia, Italy
- Department of Electrical Measurements, The Technical University of Darmstadt, Germany
- VEB Consult, Firenze, Italy

DeCQuTest Publications:

• Electromagnetic Compatibility Testing and Measurement - Practical Manual A. Adascalitei, R. Ball, M. Cretu, V. David, P. Lever, I. Montanari, M. Paede, A. Salceanu, July 2002 The University of Warwick, UK. ISBN 0 902683 55 1. Produced as part of DeCQuTest, A Leonardo da Vinci Pilot Project.

• Electromagnetic Compatibility Testing and Measurement - Theory Manual A. Adascalitei, R. Ball, M. Cretu, V. David, P. Lever, I. Montanari, M. Paede, A. Salceanu, July 2002 The University of Warwick, UK. ISBN 0 902683 54 3. Produced as part of DeCQuTest, A Leonardo da Vinci Pilot Project.

