

A One Day Workshop:

Designed for compliance engineers and test lab personnel

EU EMC-Lab Assessor's critical Review of Automotive -Military- Commercial- Telecom/Wireless RF-Test Requirements, Comparing international Standards.**Issues addressed in this course include:**

- Why do Lab clients demand accredited testing?
- What is meant by technically comparing relevant standards of neighboring fields.
- Commercial EMC/Telecom/Automotive/Mil-Std focusing on component/sub/system level testing and typical lab design are highlighted. Both common factors and differentiators and whether the same physics apply. How do normative requirements feed into current, internationally recognized quality rules in Lab accreditation such as ISO/IEC/EN 17025 (general requirements for competence of test/cal. labs) and superimposed latest Big 3 US automaker specs (AEMCLRP 3.Ed).
- Relevant technical standards from ISO, IEC, CISPR, ETSI, IEEE, ANSI, SAE, Mil-Std are discussed as well as the correct interpretation.
- Typical, recurrent failures and catastrophic mistakes in product testing and audits.
- International, anonym case studies demonstrating why radio frequency and microwave EM-field testing may be tricky. Typical hardware/software configurations and solutions including good personnel lab training programs will be shown.
- How should measurement uncertainty (MU) and calibration (Cal.) be dealt with?
- If the EMI test receiver is accurate down to a couple of dB , what role does the EUT setup play, with potential cable position changes that are one order of magnitude higher?
- Does it make sense to set up a multi million Euro (10m measurement distance) absorber lined chamber, up to 40 GHz or 100 GHz ? Various trends in today's test lab industry are explained based on products and application area.

Summary of Program:

A critical view of a lead quality auditor/technical assessor as well as a perspective of an international consultant is presented. A debate on whether EMC/Automotive/Telecom/Mil-Std (CE-MRA-Mil) testing is just another set of regulatory, normative or contract requirements? Why radiated issues are difficult. There are major technical differences in reaching cost effective EMC compliance solutions in this field. The technical strategy implied in the relevant standards.

The focus is on world wide, technical case studies from assessments under European (EA) accreditation rules. Countries entering the EU can avoid costly mistakes by implementing new test facilities and adapting to new regulations and standardization from the start. For the rest of the professionals, savings are in time to market and cost and other issues like the various labs and equipment best suited for them.

The importance of accreditation and its importance to lab clients in the EU. Important accreditation rule changes, US-MRA, US big three car manufacturer, AEMCLRP-mandatory lab accreditation and recognition issues including general ISO/EN 17025 challenges are a few of the important highlights of this workshop.

Technical norms will be compared within both own and neighboring fields. The progress in the unification of standards. Some typical EMC/ Automotive /Telecom certification/testing solutions will be provided. The commonly occurring mistakes will be discussed.

Requirements of lab personnel training will be outlined and details of how measurement uncertainty and calibration will be dealt with. When does it make sense to set up a multi million Euro 10m (1/3/5)m absorber (fully lined or with GP) lined chamber, up to over 40 GHz, and if so, how soon can it be professionalized to save cost.

Procedures and methods which are (already) unified and harmonized in different test sectors will be evaluated. Checks for test result sanity, consistency and interpretation that are followed. All data handled is based on real world experience, however no details violating client's confidentiality can be disclosed. Therefore sanitized, generic case studies will be used.

What you gain from this course:

The One Day Workshop, ensures that you understand the technical differences and similarities in EMC test/compliance areas. That you appreciate hidden limitations in test facilities e.g. test object size even on a 10m measurement distance site. Learn to correctly interpret Electromagnetic Compliance test reports in automotive components, military subsystems/modules, telecom/wireless and commercial applications.

Content-Keyareas:

Motivation and Goals, Introduction, History, Background and Basics of EMC/EMI Testing Services, Selecting a Quality Lab, Measurable Lab Quality (ISO 17025) only by Accreditation?, typical Problem Areas in technical Assessments, Calibration, Measurement Uncertainty, Traceability, technical Training, EN 55022 Round Robin Testing in Germany, Are all Test Standards flawless and require no Interpretation?, comparing Standards, Considerations for specialized Labs, Automotive (Big 3, AEMCLRP, Component Testing), Military (Mil-STD 461 E, subsystems), Telecom /Radio/Wireless Testing, Commercial, classical ITE, ISM EMC-Testing, major problems with Radiated EM-Field Spec EMC Testing, how to meet the global regulatory challenge technically. Illustrations of selected, international Test Facilities, Recommendations and Conclusions

For more details on the course or for further customization of this program, please email diethard.hansen@ieee.org