

7th Edition - Summer 2011



Product Service

Choose certainty.  
Add value.

# EMC :: Talk

Your No1 EMC Partner for Testing, Consulting, Certification & Training

## INSIDE:

- EMC and Functional Safety
- Introduction to the ERP Directive
- NEW Service - RTCA DO-160G
- Training in 2011
- And Much More

[www.tuvps.co.uk](http://www.tuvps.co.uk)



# Dear Readers:

Welcome to the seventh edition of EMC Talk, the EMC Newsletter from TÜV SÜD Product Service. We continue to communicate important information and news, keeping you aware of changes in EMC standards and the EMC regulatory environment as well as in our activities.

We trust you will enjoy this seventh issue. If you have any questions on any of the related topics please contact us, and we will be happy to help.  
Jean-Louis Evans - Managing Director

## Industrial EMC Upgrades to Teseq®'s Compliance 5 Emissions Software

The Industrial EMC group for many years have been successfully performing Radiated and Conducted emissions testing using Teseq®'s Compliance 3 Emissions software in both its Bearley and Octagon House Laboratories

The upgrade to Compliance 5 will help improve the efficiency of test throughput, open the possibilities of extended specification and frequency range of automation coverage and help improve the integration of final test results into TÜV SÜD's ever improving report production system.

TÜV SÜD engineers are working closely with Teseq engineers to ensure the best application of the upgraded system can be implemented quickly and efficiently.

**Link to Teseq web site** - [http://teseq.com/com/en/products\\_solutions/emc\\_radio\\_frequency/software/index.php](http://teseq.com/com/en/products_solutions/emc_radio_frequency/software/index.php)

**Link to Compliance 5 Information** - [http://teseq.com/com/en/products\\_solutions/emc\\_radio\\_frequency/software/Compliance\\_5\\_Software\\_Suite\\_e.pdf](http://teseq.com/com/en/products_solutions/emc_radio_frequency/software/Compliance_5_Software_Suite_e.pdf)

## EMCTLA EVENT - EMC and Functional Safety Workshop

TÜV SÜD Product Service sponsored the EMC and Functional Safety Workshop on 28 June 2011 in Henley-in-Arden organised by the EMC Test Laboratory Association. It was attended by some 60 Industry and EMC representatives.

What is EMC and Functional safety? - It is well known that sources of electromagnetic energy in the environment such as radio transmitters can upset the operation of equipment causing susceptibility. Under the EU EMC Directive 2004/108/EC this is termed the immunity of the equipment but what is less well realised is that the EMC Directive is not a safety directive and does not address EMC and Functional Safety.

Examples were given in the Workshop where EMC susceptibility of a safety related system led to an unsafe condition where people were harmed or damage occurred. The requirement for equipment to remain safe falls under EU Directives such as the Low Voltage Directive 2006/95/EC and Machinery Directive 2006/42/EC amongst others. The overall functional safety standard for electrical and electronic safety related systems recognised by the UK Health & Safety Executive is IEC 61508 and an overview was given by one of the IEC 61508 committee members.

The Workshop focussed on the guides produced to help meet EMC and Functional Safety aspects of IEC 61508 such as IEC/TS 61000-1-2 Methodology for the achievement of functional safety of electrical and electronic systems including equipment with regard to electromagnetic phenomena' and the IET 'Electromagnetic Compatibility for Functional Safety'. Some sectors such as the

Rail Industry have been satisfying EMC and Functional Safety for many years although the rail approach is based on different standards such as the 'Yellow Book' Engineering Safety Management. What needs to be done to meet EMC and Functional Safety? It is not just a matter of more thorough EMC immunity testing. The Workshop examined how testing can be enhanced by the addition of 'safety factors' to immunity limits. Some, however, argue that testing can never demonstrate that a safety related system remains immune under all conditions (e.g. low probability events, combinations of EMC phenomena, physical environment extremes, faults, misuse, ageing).

Ageing was a particular topic where it was suggested that Highly Accelerated Life Testing (HALT) should be applied to test samples prior to other testing in order to simulate ageing. The design of the safety related system, its analysis and verification come to the fore in EMC and Functional Safety. The design has to withstand the maximum environment. The installation, commissioning, through-life maintenance and repair all form part of the process.

The Workshop concluded that each industry sector may require a specific approach and that industry best practice needs to be established for EMC and Functional Safety.

# Midlands Lab Helps Customer Meet Tight Deadline

At TÜV SÜD we appreciate that sometimes customers carry out approvals testing with little time to spare before delivery to the end client. This can cause a lot of stress to the customer, particularly when the product is not ready for its pre-booked test slot or, worse still, it fails during testing.

This is where TÜV SÜD's Midlands laboratory near Stratford-Upon-Avon can help; we have a long history of being flexible in our scheduling and can fit testing in at short notice. If a product fails we have the expertise to diagnose the problem and help to fix the product even when the client is not in attendance. Our aim is to keep the product in the lab until it has met the requirements of the test standard thus reducing the impact a test failure could have on the client's delivery programme.

**This is what Malcolm McKay at Kongsberg Maritime had to say about his experience with TÜV SÜD:**

"Kongsberg Maritime is a leading supplier for underwater cameras to the offshore diving and ROV market. In this particular project, Kongsberg Maritime were chosen to develop a remote pole-mounted camera for inspection of overhead high voltage lines for the rail transport industry.

As with most development programmes, unforeseen problems emerged causing possible delay to the overall test and delivery schedule. Kongsberg Maritime had contracted TÜV SÜD to perform the essential EMC compliance testing which was crucial for approval of field testing on a live network.



After missing an agreed schedule for the EMC testing due to technical problems with our product, TÜV SÜD were able to turn around a compliance test at short notice, thus enabling highly organised field trials to proceed as scheduled.

We found that the service provided by TÜV SÜD was exceptional as they were flexible and willing to comply with additional requests outside of their normal remit."

**Our Midlands facility can be contacted on 01789 731155**

# An Introduction to the ERP Directive

**As the world becomes ever more concerned about the effects of climate change, many national authorities are looking at numerous ways of reducing carbon emissions. A major contributor to emissions is the energy consumption of electrical products in the home.**

The European union have over the years moved to address this issue and in 2005 created the Energy Using Products (EUP) directive, which was later revised in 2009 to the Energy Related Product (ERP) directive, 2009/125/EC, which established a framework for the setting of eco-design requirements.

Most electrical products will fall under the scope of the ERP directive; however, the eco-design requirements will only apply to a product if an Implementing Measure (IM) has been created to cover that type of product. It is an area that is continually evolving with more IMs being created to cover different products. If there is an IM that covers a particular product, the manufacturer would need to meet the requirements of the particular IM and of all the other applicable directives before being able to affix the CE mark to his product. Some of the current IM's are listed below:

- EC 1275/2008: 17.Dec.2008 - Standby Off
- EC 107/2009: 04.Feb.2009 - Simple Set Top Box
- EC 244/2009: 18.Mar.2009 - Non direction household lamps
- EC 245/2009: 18.Mar.2009 - Fluorescent lamp, ballast, luminary
- EC 278/2009: 06.Apr.2009 - External PSU
- EC 640/2009: 22.Jul.2009 - Electric Motor
- EC 641/2009: 22.Jul.2009 - Circulator
- EC 642/2009: 22.Jul.2009 - TV

As an example, products being left in standby can cause a significant use of energy, but it is something that is relatively easy to reduce by good design.

In terms of the allowed power consumption in standby there are two stages for the manufacturer to consider on the 1st January 2010 the allowed consumption in standby was 1.00W; however stage 2 which comes into force on 1st Jan 2013 the allowed consumption is reduced to 0.50W. TÜV SÜD can test this for you by testing to EN 62301 and issue you with a test report as evidence of compliance for your technical file.

The directive and subsequent IMs are continually evolving but TÜV SÜD can advise you on whether your products are covered by an IM. At our Midlands facility we can also carry out EMC and Safety testing offering the client a true 'one stop' service.

**Our Midlands facility can be contacted on 01789 731155**

# Take your learning to a higher level



TÜV SÜD Product Service is providing a range of specialist training courses throughout 2011, including:

- **Design for EMC**  
3 Days – 13th-15th September – Fareham
- **EMC Compliance of Military and Avionics Equipment**  
1 Day – 20th October – Fareham

**book now**

Sandie Peacock  
Tel: 01489 558227  
Email: [info@tuvps.co.uk](mailto:info@tuvps.co.uk)  
[www.tuvps.co.uk/training](http://www.tuvps.co.uk/training)

## Brief News

### EN 61000-4-16 : Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz

This test standard is identified in the Marine Standard IEC 60533 (Electrical and Electronic Installations in Ships) and is applicable to AC and DC Power supplied equipment. Testing to this standard is increasingly being requested by manufacturers of Rail, Telecoms, and Marine and Industrial products to comply with their own internal quality requirements as well as with those of the EU EMC Directive.

TÜV SÜD Product Service is ISO/IEC 17025 accredited (UKAS NO:0141) to perform testing in accordance with the EMC standard EN 61000-4-16, covering single and three phase ac powered systems, DC powered systems and Screened and Un-screened signal lines.

### NEW SERVICE - RTCA DO-160G

TÜV SÜD Product Service's EMC department is now UKAS accredited to conduct RTCA DO-160G testing for Sections 15 to 22 and Section 25, including the additional Multiple Burst Lightning Waveform 6 and Induced Signal Susceptibility E-Field into Equipment tests. RTCA DO-160G (Environmental Conditions and Test Procedures for Airborne Equipment) was issued on 8th December 2010. We are pleased to be able to offer our civil aerospace clients this new service.

