

UK GTEM User Group

Minutes of the meeting held at MTL on 24th June 2003

Present

Roger Dixon (RD)	IFR Ltd [Chairman]
Ian Alderman	Consultant [Secretary]
Howard Chetwin	Measurement Technology Ltd
Andy Perkins	Schaffner
Farquhar Galbraith	University of Paisley
Joe Wilkinson	University of Paisley
Richard Neyton	Apollo
Tim Hague	EMV
Eddie Veater	UKAS
Dave Imeson	Compliance Europe Ltd

Apologies received

Harbinder Bharj [joint secretary]
Michael Davies
Neil Coote
Martin Alexander
Dennis Burns
Alan Hutley
Angela Nothofer
John Wombwell
John Birkett
Jon Jones
Dennis Burns
Stephen Lee
Stuart Bright
Graham Blissett
Ben Loader
Didier Bozec

Chairman opens meeting

The Chairman (RD) opened the meeting and welcomed all attending members.

1. Dave Imeson, Compliance Europe Ltd - Presentation on the SLIM Initiative

SLIM = Simpler Legislation for the Internal Market – Not just for EMC but all New Approach Directives. The essential requirements of the New EMC Directive have not changed, what has changed is the detail and definitions. If approved, the timetable of introduction may be as follows; Publication 1Q2004, Transition 1-2years, Effective 2005/2006

Q & A session after the presentation

Q1 - Evidence of EMC testing and performance - is this mandatory?

Ans – The process of EMC Assessment is important - Due diligence means that if you state it you must be able to prove it.

Q2 – What about GTEM's? Currently those using GTEM's accredited to EN61000-4-3 are allowed to do so because the standard allows other methods of creating the EM field (other than a screened room). There have been proposals for this to be removed from a future draft of EN61000-4-3 and since IEC61000-4-20 has not yet been converted to an EN then the GTEM Users community will not have a test method which can be accredited to an accepted EN basic standard. The new Directive calls for testing to Standards – it will take a long time to introduce EN61000-4-20 into the Product Specific Standards.

Ans – this appears to be a problem!

Post Meeting Note: Dave Imeson has been in touch with committee contacts and flagged up this problem for consideration.

Q3 – Use of ATE jigs and equipment in factory environments?

Ans – OK if the fixture is benign but if not this kind of fixed installation can be covered with a TCF.

Comment – Cables are now included but tests on products with Cables are often complicated by varying length - so it is important to define electrical length by ferrites but this technique is not being adopted by committees!

Q4 – If a fixed installation is moved why does it need to be re-tested or assessed? Second hand equipment is, after all, exempt!

Ans – All equipment must meet the essential requirements of the directive. Must make an assessment of the parts that are already CE marked and make an engineering judgement of the parts that are not.

Comment – good engineering practice requires that installation ferrites are shipped with the equipment, if needed.

Comment – Class A emission products will need to be identified.

Q5 – Do Declarations of Conformity need to be reissued when the new EMC Directive becomes effective?

Ans - Dave thought not.

Q6 - What influence do we have as a group?

Ans - Through trade associations such as GAMBICA and EMCTLA. Also GEL210 meets at BSI Chiswick a few times a year. The secretary is now Geraldine Salt (John Childs has retired).

As regards the situation with –4-3 EMCTLA can deal with this issue in WGC.

Next meeting of EMCTLA will be at RFI Basingstoke in October.

Post meeting note – The EMCTLA WG(C) meeting is at Wrag Barn on the same day as the next GTEM User Group!

The chairman expressed his thanks on behalf of the Group to Dave Imeson for giving his time to come and speak to us.

Business section of meeting.

2 Minutes Of The Last Meeting

The minutes of the last meeting were accepted without comment

3 Membership news

Neil Coote had mentioned (by email) that the RCA have a GTEM and wondered if we had any contact with them. Tim Hague agreed to give contact details for John Mellish at RCA. The chairman asked that an up to date membership list be sent out with the minutes.

4 General News and Exchange of Information

4.1 Discussion re: emissions testing in the GTEM

RD asked about accreditation of the use of the GTEM for emissions measurements. EV replied that if a suitable method was put forward which included validation on an OATS (for example) then there would be no objection to UKAS accrediting such a procedure.

RD proposed that the GTEM UG should write a procedure as a Technical Guidance Note which can then be accredited by UKAS and can be published on our User Group Web Site.

FG described the emissions test method used by the University of Paisley which is carried out in their GTEM 1100 which includes OATS validation(see also 5.3). ***It was suggested that members of the group swap and circulate their emissions test procedures between now and the next meeting to help formulate ideas for drafting a suitable guidance note. Please circulate using the email addresses shown on the covering email to which these minutes were attached.***

4.2 Discussion re: Cell resonances

How do GTEM users deal with cell resonance's when Radiated Immunity testing? It is observed that when the field probe is left in the chamber when the EUT is being tested that often high levels of RF fields are observed as the cell resonates with the EUT and its cables at certain frequencies. There is a temptation to perform the frequency sweep of the EUT with the system actively levelling the measured field strength?

It was pointed out by several members that active levelling is not a good idea, the presence of the EUT means that the measurements of field strength will be unreliable and probably misleading. The EUT will cause some resonance effects due to its cabling etc even in an anechoic chamber and this is a fact of life which has to be accepted.

4.3 Discussion re: Suitable low cost materials for jigs in RF chambers

Polystyrene was used by many for its useful properties of cheapness and generally transparent to RF. Nokia were using closed cell foam materials and it would be helpful to get more information on this.

Post Meeting Note: Neil Coote sends us this address for info
www.dow.com/styrofoam/europe/uk/proddata/gbpdf101.htm

4.4 GTEM Best Practice Guide – Angela Nothofer will be presenting the guide at York EMC on 1st July. Martin Alexander says it will be available later in pdf format. The guide will be published on both the NPL and YES web sites in due course. It was also felt that this should go on to our own website as well if NPL/YES are in agreement.

4.5 NPL

RD reported from Martin Alexander that NPL were unable to say whether there will be any further work on GTEM's until the next work program is finalised in September.

4.6 IEC61000-4-20 is now available price £85-50 or register with the IEC and get a free issue!

4.7 New Field Probe

RD mentioned a new novel field probe from Indexsar (www.indexsar.com) The EFT 50 gathers data at 500Hz which is close to being able to monitor fields with the 1kHz mod on!

Post Meeting Note – David Riley has been in touch to confirm development of the new EMC probe for which details will be available in a few months.

4.8 Functional Safety tests

There is a proposal for an amendment to EN61326 to include functional safety tests - this increases the test severity.

Post Meeting Note – Jim Duck says the Standard will be split in 3 parts; Part 1 General, Part 2 Product Specific, Part 3 Functional Safety. The draft part 1 includes frequencies up to 2.7GHz (two point seven) and says that this is based on proposals for the Generic Standards (subject to approval)

4.9 BSI

Daniel Griffin asked about the use of the GTEM down to 10kHz. The cell is rated down to 0Hz but associated equipment might be a problem at low frequencies.

Derek Barlow of DB Technology has got BSI's GTEM 1750

4.10 Higher Stress levels

There is another proposal to raise the immunity test frequency to 2.5GHz and to increase the field strength to cope with specific requirements – depending on the application of the product. (eg Insulation Testers IEC 61557-8 and –9 : 80-1000MHz=10V/m, 1.4-2GHz=10V/m, 2.4-2.5GHz=3V/m? plus 80% AM)

5. Feedback from discussion with Guest Phil Carter at the last meeting

5.1 Comment on Q6, about field surges during RF sweeps caused mainly by some signal generators having an unacceptable performance during frequency/level changes.

This was felt to be less of a problem now as it was noticeable with older instruments and there are now mod kits available to improve this side effect. The need to have to ramp up and down at each frequency will inevitably add undesirable delays to the sweep time.

5.2 Comment on Q1, about the adequacy of 1 point calibration. Whilst accepting Phil Carter's formal answer for accreditation purposes the practical options are probably a) centre line bottom or b) centre line half way up for single point calibrations. But be aware that the door could have an influence on the field pattern in b).

5.3 Comment on Q14, regarding the frequency characteristic in GTEMS. Paisley Uni have checked between their GTEM and OATS using a CNE (noise emitter) and found a divergence of only 5dB at 1GHz.

5.4 Comment on Q15, regarding the poor flatness of MTL's GTEM frequency response. Apart from the characteristic frequency of the cell, which depends on its size, TH suggested that the launch connector was crucial to the performance. This connector assembly is possibly a sliding joint to allow for the difficulties of manufacturing a perfect mechanical fit. This joint must be clean. So before spending a lot of money on any major work this connector should be checked. (Ben Loader at NPL reports they had problems after moving their cell.)

6. Due to lack of time the remaining agenda items were deferred to the next meeting, especially as it was clear that there were still relevant items for the group to discuss. So the two items for you to think about are: a) The future and aim of the group, and b) The use and maintenance of the website, kindly established by Alan Hutley. How do we score 0 out of 10?

7 Date of the next meeting

The next meeting will be on 28th October at Schaffner at Wokingham courtesy of Andy Perkins.

8 Close

MTL were thanked for their hospitality. The arrangements were made by Howard Chetwin. Enjoy your holidays.