Know Your Standards

So what happened in Ottawa?
CISPR and IEC TC 77 and their sub-committees met in Ottawa just before the previous issue of the Journal. Much discussion took place but it remains to be seen exactly how much progress was achieved.

Liaison between IEC SC77A and TC85
Earlier this year, TC85 made a bid for major authority by producing a standard IEC 62638 on 'recurrent test and test after repair' that seemed to claim to apply to everything electrical and electronic, which caused a storm of protest. The text of the standard was internally inconsistent, so even in TC85, different people could have understood it differently. Remedial steps are in progress.

Meanwhile, SC77A and TC85 experts have been discussing measuring instruments for use with IEC 61000-4-30. Two standards, for different types of instrument, are concerned - IEC 62586-1 on instruments for measuring power quality and IEC 62586-2 on instruments for basic tests. These standards have passed the second voting stage (FDIS) and should be published shortly.

There is a potential future conflict, insofar as SC77A already has standards for measuring instruments – IEC 61000-4-7 and -15, and two reports (not yet published) on verification of test systems – IEC TR 61000-3-37 and -38. Will TC85 want to take these into its tender care? We may learn.

CISPR/H
This committee is concerned with setting limits and justifying them. The level of interest can be seen form the attendance being 30 people, including 5 from China and 7 from Korea, some of whom were presumably Observers. This is presumably a form of training, a form which British industry does not generally recognise or value. There is no doubt that China, Japan and Korea invest much more in international standards work than Western countries, and in Europe, Germany invests much more than other countries.

Some work has suffered delays – the update of IEC 61000-4-4 is delayed from August 2013 to March 2014 and the updates of the Generic standards scheduled for December 2014 will not be ready until August 2015. The CDs for amendments to IEC 61000-6-3 and -4 have now been circulated and are available from BSI as Drafts for Public Comment. CISPR TR 16-2-5 has a new stability date of (somewhen in) 2016.

The revision of CISPR 31 – database of radio services characteristics – needs more liaison activity with ITU, to gather missing information.

The complicated issue of limits for DC power ports of power converters, and solar photo-voltaic systems in general was discussed. It was decided to study how to manage the project and to report at the next CISPR meeting, next year. The emission levels depend very much on the way the installation is configured, especially considering that the panels are efficient antennas at some frequencies, and system components using switching techniques may be mounted at a high level. Although CISPR 11 has texts on in-situ measurements, they may not be applicable and CISPR doesn't really have emissions standards for systems, only products. In any case, the concept of carrying out in-situ emission measurements on every solar PV installation doesn't make economic sense and is impracticable. The point raised in the British National Committee has not been passed to CISPR, it seems. The IEC standard for electrical installations is IEC 60364 and it already has a section on EMC, so TC64 should be involved.

The work of the SC A/SC H JWG on reverberation chambers has been delayed due to lack of experts and funding.

SC77B MT12
This very active committee takes care of several standards. The revision of IEC 61000-4-5 has passed the first voting stage. Several national committee comments seem to have been dismissed for 'traditional' reasons, which may well cause problems later. It is, in fact, surprising that not enough national committees voted against the CDV , with technical comments. The conclusion was that six major items are deferred to the next maintenance cycle.

Technical issues related to IEC 61000-4-9 were also discussed. Considerable changes to the standard are planned, but the actual impact of these on whether the Equipment Under Test (EUT) meets the relevant requirements in its product standard is uncertain. For the ESD standard IEC 61000-4-2, ten subjects for attention in the next revision have been identified. The current stability date is 2014, so presumably it will be reconfirmed and a new date set, perhaps 2017. The plan for IEC 61000-4-4 includes three major study topics, two of which concern calibration. These should obviously be addressed in Calabria in the calabrese season.

SC77B
Both the Secretary and the Chairman are retiring, so changes in the administration are likely. This will be welcomed by the British committee, which is not impressed with the efficiency of the work in the WGs and MTs.

CISPR A
WG1 of CISPR A attracts a very large number of experts, which makes the work difficult and slow. To combat this, the committee sets up ad-hoc committees, which meet during the time allocated between plenary sessions. This is probably less efficient than the setting up of Task Forces which can work between meetings by electronic communication. The outcomes of the ad hoc meetings is very detailed and cannot be reported.

WG2 is having some success in transferring test methods for CISPR 13 and 22 into CISPR 16. The amendment to CISPR 16-2-3 to introduce the CMAD (ferrite clamp type common mode absorption device) has reached the FDIS stage. Work on

the Coupling and Decoupling Network for Emissions (CDNE) continues. A CD to amend CISPR 16-2-3 to introduce measurements below 30 MHz will probably be circulated next year. CISPR 116-4-2 needs to be amended to take into account measurement uncertainty when two measurements can give different values for the standard measurand. A Joint Task Force is requested to deal with measurements of emissions from grid-connected power conditioners (GCPC).

An issue has been found with CISPR 16-2-3; after much discussion it was agreed that if the testing of a small EUT in a Fully Anechoic Room (FAR) requires the receiving antenna to be moved, this is permitted. Wording is seen to need improvement, but it is not clear which text is being addressed.

TC77

TC77 has a new Secretary, which is likely to result in some changes. There is concern that work on the frequency range 2 kHz to 150 kHz in TC77, SC77A and CISPR might overlap and create confusion. IEC 61000-2-3 will be incorporated in a future edition of IEC 61000-1-1. IEC 61000-4-1 will also be revised and may become a Technical Report (it contains nothing that can be passed or failed; would that all EMC standards were similar!). SC77A will take responsibility for IEC 61000-2-1.

TC77 and its sub-committees will next meet in the Autumn of 2015.

SC77C

The revision of IEC 61000-4-24 is going well and should reach the CDV stage soon. However, work on IEC 61000-4-36 was delayed but is now progressing towards a CDV soon. A proposal to revise IEC 61000-4-23 was accepted. IEC 61000-5-1 and -2 should be revised but there are no resources. This is not too surprising; they are effectively textbooks, uncompetitively priced. Should IEC be writing textbooks?

SC77A

The work of the WGs and their Task Forces is proceeding as well as can be expected, considering the number of technically difficult and controversial issues involved. IEC 61000-3-2 has three amendments at the CDV stage, so a new edition will automatically be produced from the combined FDIS text, but a full editorial revision, sorely needed, will begin as soon as possible in order to create a 5th Edition.

IEC61000-4-11 specifies very short rise and fall times for the test waveform, which causes implementation problems. It will be studied whether the specification can be relaxed. The important standard IEC 61000-4-19 on immunity to conducted differential-mode disturbances, critical for smart meter specifications, has reached the CDV stage. The work on compatibility levels in the 2 kHz to 150 kHz frequency rage is progressing but is difficult. A CD may appear by the end of next year.

Next time

We haven't looked at the developments in CISPR sub-committees B, F and I this time, so they are delights to come.

J. M. Woodgate B.Sc.(Eng.), C.Eng. MIET MIEEE FAES
Email:desk@nutwooduk.co.uk
Web: www.jmwa.demon.co.uk