

53 shades of RE-D

TC Safety & ERM TG 17

Brian Copsey Chair



Shades

Shades are the actual conditions we have experienced, a dictionary definition of Shade is:

Comparative darkness

This is the condition we have had to climb out of although in the case of TC Safety we are still there

TC Safety: EMF

- EC Mandate M 305 which for the first time made a link between harmonised product performance standards and limits on human exposure to EMF. It covered only the general public and required that emissions from products should not give rise to exposure exceeding the levels of Recommendation 1999/519/EC(5). Mandate M/305 covered standards prepared under the LVD and R&TTED. Accompanying this was a tripartite Co-Operation Agreement(6) between CLC, the Commission and ICNIRP which explained in detail the roles and responsibilities of each party, and how the Mandate would operate.
- With the transition to the RED, Mandate M/305 is withdrawn, removing the mandated link to normative limits for both LVD and future RED standards and negating the tripartite Co-Operation Agreement that explained the roles of each party
- ***Where do we go from here?***

ETSI ERM TG 17 Broadcast and Ancillary equipment

- TG 17 covers a very wide range of equipment with powers ranging from $<2\text{mW}$ to in excess of one megawatt and sizes: from in ear units to Broadcast transmitters.
- Covering a frequency range from 0KHz to 50GHz
- The RED has proved challenging as we have had to consider equipment which previously had no RF standards and include in existing standards equipment we have great difficulty in generating repeatable measurements for.

TG 17 Equipment Standards cover:

- TV and Radio Broadcast Transmitters
- TV and Radio Broadcast Receivers (New)
- Inductive loop System transmitters for Hearing Aids (new below 9 KHz)
- Radio Microphones and Assistive Listening Devices(ALDs) which now include Telecoil(new) for hearing aids
- Wireless Video Links
- TV Domestic RF amplifiers (new)

People

Whilst TG 17 had access to relevant people in their existing standards the challenge was to bring in expertise (and members) for areas we previously had no expertise in, including Broadcast TV and Radio Receivers, Inductive loop systems, Telecoil and Domestic TV RF amplifiers

People Success ! (mainly)

- Broadcast TV Receivers:
- Many of the TG 17 members involved in other standards also have expertise in TV receivers and I am pleased to report that John Wilson who leads the group with help from other manufacturers , EBU and Broadcasters achieved consensus by June 2015 and the draft standard is now out for ENAP. A second version may be required depending on the decisions of WRC and CEPT on use of the 700MHz band and especially the guard band

Broadcast Radio Receivers

This is one area we have not been as successful whilst the TV industry has an established group via EBU and Digital Television Group the radio sector has no such group and Lindsey Cornell the group leader has struggled to bring the diverse manufactures into the process.

However in spite of the many problems Lindsey's group has managed to produce a draft standard which is now out for ENAP

Broadcast Receivers

With the circulation of standards for ENAP a number of highly technical comments have been received, my *personal* thoughts are that they are not easily resolved and further work is required which means the unreasonable time scale imposed by the EC (march 2016) will not be met, But I *personally* believe that a good standard is more important then a timescale.

Broadcast Receivers

Both Groups TV and Radio have had many technical challenges and a number of measurement campaigns have taken place which would not have happened without the RED. Achieving compliance to the RED without imposing unreasonably costs on manufacturers is a fine line which so far I believe we have achieved. In the case of TV receivers a new interference test signal has been generated and distributed with the draft standard. An ETSI First I believe

Inductive Loops

- Whilst these have been in existence since the 1920s and are widely used in theatres, lifts, public buildings and shop counters they have not required a radio standard being below 9KHz.
- A totally new group has joined ETSI, in the main manufacturers of these devices and have achieved consensus on test methods and limits in this difficult measurement area, with a draft standard waiting for EDIT help to go out for ENAP

Telecoil

This is the receiver in a hearing aid which picks up the inductive loop signal.

Again a device which has not had a radio standard before. Especially difficult to measure receiver performance due to the small very small and very very small hearing aids which fit over, and in the human ear and the physical size means that filtering is impossible

Radio Microphones and ALDs

Whilst these standards are well under way it requires some very time consuming and difficult measurements to define limits and reasonable test methods.

Wireless Video links

High definition video cameras with a radio link, the standard has again required many hours of testing equipment to arrive at an acceptable balance between what the test achieves and cost, given that the radio section of a hand held camera is physically small.

However again the team led by Karl Brooks has achieve a draft standard which is with Edit Help

Domestic TV amplifiers

Whilst there has been a non harmonised ETSI standard in place for many years, it was primarily aimed at preventing interference from CB transmission(27MHz)

The revised standard focuses on the UHF TV band and looks at LTE as the main interferer.

The group has met twice with a third meeting in December. The standard requires test methods which can be easily used but achieves immunity. The group members have carried out a number of measurement campaigns and have attracted new manufactures to assist in the work

Overall conclusion

Each of the new or revised standards have not been simple to achieve and ENAP is bringing in new work and perspectives on each draft standard as ETSI Members consider the issues of limits and measurement

BUT the RED has required receivers to be included, this is long overdue and will improve spectrum efficiency.

Conclusions :Broadcast & PMSE

The outcome of WRC 15 may well require further changes to at least the receiver standards for all the groups except Inductive loop transmitters.

The timescales and technical conditions for introduction of the allocations within Europe will determine when standards should be updated.

Thank you for your attention

For Further information :

BC@copsey-comms.com

