



INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

CISPR Report

**Second International Workshop on Mutual Recognition
Agreements for Conformity Assessment of EMC and
Telecommunication Regulations
National Institute of Standards and Technology**

**Gaithersburg, Maryland USA
May 7, 2009**



Don Heirman

Chairman

**International Special
Committee on Radio
Interference (CISPR)**

CISPR is:

- IEC Special Committee
 - CISPR = International Special Committee on Radio Interference

with the main purpose of

- Protecting Radio services
 - since 1935

- **Officers**
 - Don Heirman, chair starting 1 October 2007
 - Martin Wright, vice-chair starting 1 October 2007
 - Steve Colclough, Secretary—starting 1 April 2009
- **Subcommittee chairs (reconfirmed starting 1 October 2007)**
 - Manfred Stecher—chair SC A (basic measurements)
 - Bernd Siolefsky—chair SC B (ISM)
 - Poul Andersen—Chair SC D (automotive)
 - Beniamino Gorini—Chair SC H (generic limits)
 - Martin Wright—Chair SC I (IT, Multimedia, Receivers)

Why protect radio and similar regulated receivers?

- Radio is a key industry
- Radio spectrum is valuable
 - limited natural resource
- We all benefit from radio

CISPR Structure

- Plenary Committee
- Steering Committee
- Chairman's Advisory Group (CAG)
- Sub – Committees
- IEC (**International Electrotechnical Commission**) Rules

CISPR Membership

- National Committees
- International Trade Bodies
- ITU* participation

* ITU = International Telecommunication Union

Measurement considerations

- Test Frequencies
- Test methods
- Test site validation
- Product Size
- Application above 1 GHz
- Test Time/Cost versus accuracy



- **Basic Standards**
 - **CISPR A**
 - **CISPR 16**
 - **Test Facilities**
 - **Test Methods**
 - **Test equipment**
 - **Measurement Uncertainty**
- **Generic Standards**
 - **CISPR H**
 - **Interference Model**
- **Product Standards**
 - **CISPR B, D, F, I**

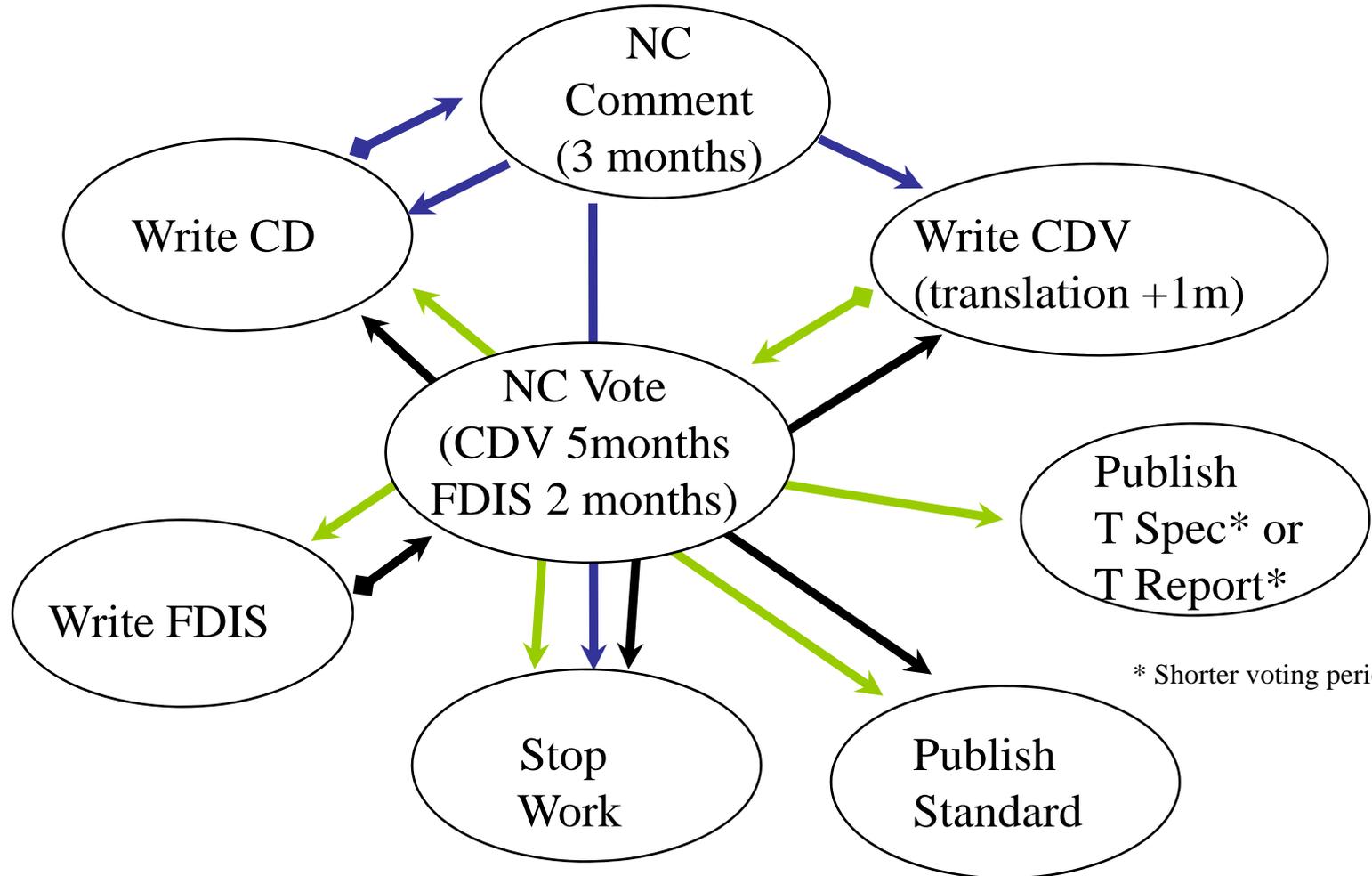
Basic Principles

- **CISPR A (measurements and statistical methods)**
 - **CISPR 16- Revised edition in fifteen parts**
 - **Sets measurement methods/test equipment**
- **CISPR H (Limits)**
 - **Generic Standards**
 - **Sets limits through Interference model**
- **Product Committees**
 - **Justified deviations for limits in product standards**

Product specific applications

- **SC B** (Industrial, scientific, and medical)
- **SC D** (Vehicles and Internal Combustion engines)
- **SC F** (Household appliances, tools, lighting)
- **SC I** (Information technology, multimedia and receivers)

<i>Short form</i>	<i>Translation</i>
CLC	CENELEC
IEC	International Electrotechnical Commission
Parallel Voting	CLC/IEC standards voted in both organisations simultaneously
UAP (CLC)	Unique Acceptance Procedure
CISPR/I/XXX/NWIP	IEC Document Identifier
INF	Information Document
NWIP	New Work Item Proposal
DC	Draft for Comment
Q	Questionnaire
CD	Committee Draft
CC	Compilation of Comments
CDV	Committee Draft for Voting
RVC	Result of Voting on a CDV
FDIS	Final Draft International Standard
RVD	Result of Voting on an FDIS



The Challenges:

- **Protecting Digital Radio & TV**
- **Accommodate more interfering sources**
- **Account for changing Interference environment**
- **Covering wider frequency ranges (i.e. above 1 GHz) while keeping the measuring procedures, time, and cost reasonable**
 - **Conditional testing clauses**

- **Meets once a year (last October in Osaka)**
- **National committees representatives decide on CISPR matters**
- **Decisions apply to all CISPR work including all levels and committees**
- **Report sent to the IEC (International Electrotechnical Commission) Standardization Management Board (SMB)**

- Noted Guide 107 (**Guide to the drafting of electromagnetic compatibility publications**)
- Noted Guide 108 (**Application of horizontal standards**)--points to Guide 107 for EMC
- Reviewed CISPR publications since last year
- Identified CISPR Guide on IEC web site to help product committee use of CISPR standards
- Received liaison reports:
 - **ITU-R (e.g. interest in PLT)**
 - **ITU-R broadcasting power to devices**

- **CISPR organization**
 - Placing operation of CISPR from CISPR 10 to ISO/IEC Directives
 - Unique status of CISPR now in Annex K of ISO/IEC supplement to Directives
 - Items not needing to be in Annex K moved to CISPR web site on IEC server
 - “I” member status confirmed
 - Such members have the right to comment on CD/CDV but no voting rights
 - Strong CISPR NC decision to remain a special committee

Multiple Test Methods

- Reference Test Method
 - Issue: **Stating preferred test method when multiple test methods for the same compliance test in the same product standard**
 - Subcommittees determining impact
- Plenary Decision
 - *“Where a standard gives options for testing particular requirements with a choice of test methods, compliance can be shown against any of the test methods using the appropriate limit. In any situation where it is necessary to re-test the equipment, the test method originally chosen should be used in order to guarantee consistency of the results.”*
 - SMB received had no issue and no follow up requested
- Still can have one test method cited in standard

- **Further technical discussions**
 - **Measurement Uncertainty**
 - **NC agreement for a JTF with TC77**
 - **Basic documentation in Pub 16-4-1 and 16-4-2**
 - **Presented status of JTFs with TC77**
 - **Use of single letters for terms**
- **Other business**
 - **CISPR-wide editing committee established**
 - **Described EMC Zone and urged use**
 - **Next plenary in Lyon, France end of September 2009**

- Presented subsequent to the Plenary at the Japanese NC request
 - Agenda
 - Multimedia Emissions
 - Multimedia Immunity
 - Reference Test Methods
 - Power Line Telecommunications
 - More details next slides

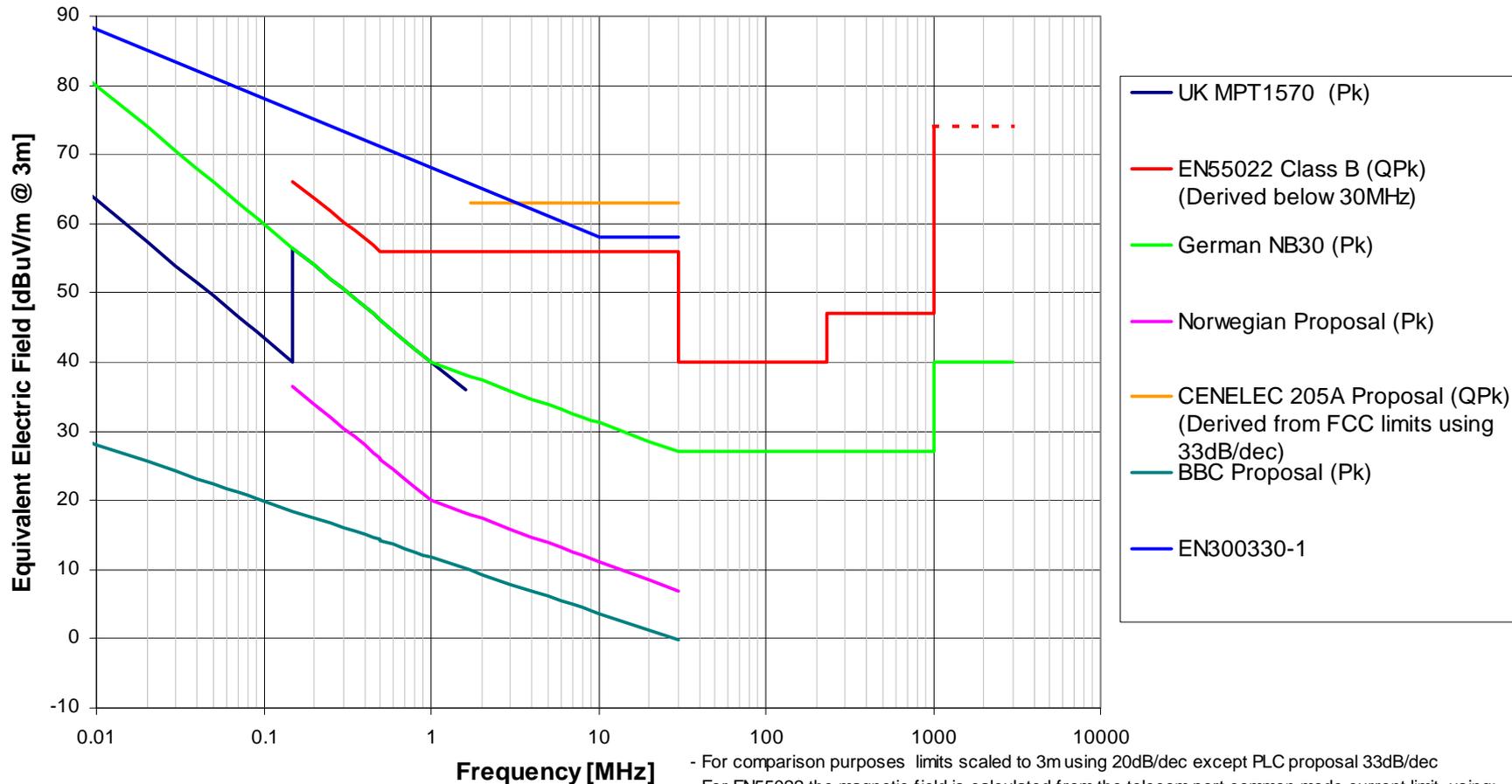
- **Regulators**
 - **FCC** (access BPL), **BERR** (Business and Enterprise Regulation Department in UK), etc.
- **Wireline Operators**
 - **Broadband and powerline**
 - **BT** (British Telecom) , **EDF** (French Electricity) daughter company, **US service providers**, etc.
- **Equipment Manufacturers**
- **Broadcasters**
 - **NPR** (US), **EBU** (European), **BBC** (UK) , etc.
- **Standards Bodies**

- **Key task- protection of radio services which is the stated goal of the CISPR Power line telecom (PLT) team**
- **Process aspects**
 - **Wanted field strength**
 - **Protection Ratio**
 - **Probability factors**
 - **Emissions limit**

- The standard shall be
 - Technology Independent
 - **Based on equivalent probability of interference**
 - Timely
 - Democratically agreed
 - Useable



Initial Proposals (Aug 2003) Network radiation (taken from JWG)



- For comparison purposes limits scaled to 3m using 20dB/dec except PLC proposal 33dB/dec
- For EN55022 the magnetic field is calculated from the telecom port common mode current limit using:
 $H = I / 2 \cdot \pi \cdot r$ where $r = 3m$
- H-field limits converted to E-field using the far field correction of 51.5 dB

- **PLT PT Progress to date**
 - 3 Committee Drafts (CDs) issued so far
 - Based on PLT desire (36dB LCL, Telecoms limits)
 - **No support**
 - Based on PT Compromise (24dB LCL, Mains limits)
 - **Limited support**
 - Based on other Option (6dB LCL, Mains limits+ 18dB relaxation)
 - **Absolutely no support**
 - ISN not realisable, AMN LCL is 50dB
 - Homing in on compromise
 - **Chance for success ??**

- **Options considered**
 - Continuation of existing
 - OATS, Strip-line, etc.
 - New best practice
 - FAR
 - Combination
 - Choice of options
 - Correlation issue with using GTEM (GigaHertz Transverse EM), RVC (Reverberation)
 - Multiple test methods
 - **Manufacturer selects or**
 - **Standard presents best method**

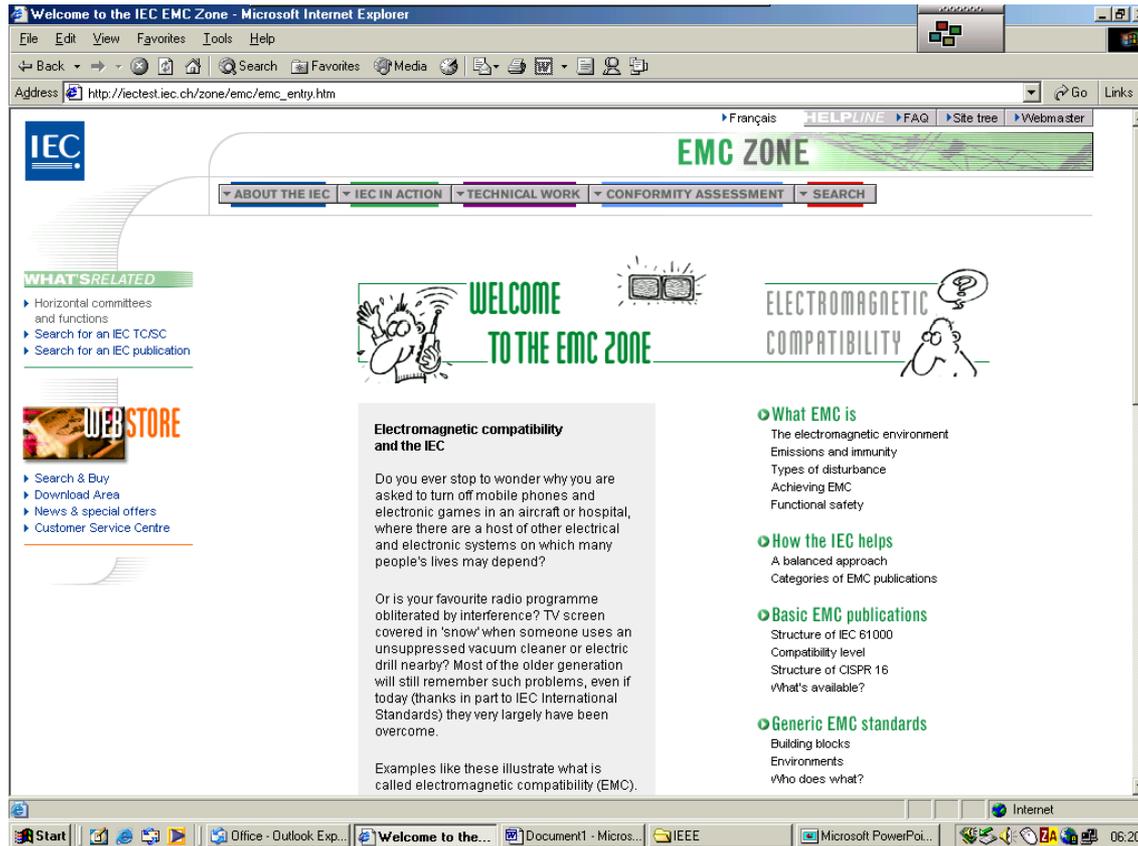
- Emission requirements are not a big issue
- Based on CISPR 22

but.....

- Some old arguments re-surfacing in WG
 - Extent of manufacturer's freedom
 - Conducted emission requirements
 - Applicability of mains harmonics
 - Class A/Class B delineation

- **Best case CISPR 32 timeline**
 - 3rd CD by end October 2008--delayed
 - CDV Mar 2009 ??
 - FDIS early 2010
 - Publication mid 2010
 - **More likely, new standard published by end 2011**
- Immunity (CISPR 35) requirements likely to be 1 year to 18 months later

Want to know more?



www.iec.ch/emc/zone/



INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

THANK YOU Questions?

d.heirman@ieee.org

