



February 4, 2003

## **Compilation of SACCom Representative Reports**

<p><b>CISPR A</b></p> <p>Title: Radio Interference Measurements and Statistical Techniques</p> <p>Representative: Don Heirman</p>	<p><u>Current Activities:</u></p> <ul style="list-style-type: none"> <li>Emission antenna calibration</li> <li>Amending emission antenna cross polarization and balance requirements</li> <li>Use of resonant "H-field" loop antennas</li> <li>Measurements and instrumentation above 1 GHz</li> <li>Devices for measuring emissions on signaling lines</li> <li>USE of AMN as a voltage probe</li> <li>Emission measurements in the resence of ambient signals</li> <li>Uniform arrangements for emission and immunity testing</li> <li>Automated emission measurements</li> <li>Accounting for measurement uncertainty when determining compliance with a limit</li> <li>Determining EMC product compliance uncertainty</li> <li>Use of capacitive voltage probes</li> <li>Use of absorbing clamps in the frequency range: 30-1000 MHz</li> <li>Spectrum analyzers for the frequency range: 1-18 GHz</li> <li>Average measurement receivers in the frequency range: 9 kHz-1000 MHz</li> <li>Fully anechoic chambers site validation and test techniques</li> <li>Use of TEM devices for emission and immunity testing (Joint project with IEC TC77)</li> <li>Use of mode-stirred devices for emission and immunity texting (Joint project with IEC TC77)</li> <li>Use of partial ranges in applying the statistical 80/80 rule</li> </ul> <p><i>(*) The next full CISPR meeting will be held in St. Petersburg (Russia) in June of 2000.</i></p>
<p><b>CISPR B</b></p> <p>Title: Interference from I.S.M.</p> <p>Representative: Daniel D. Hoolihan</p>	<p>A CISPR B Technical Advisory Group (TAG) meeting was held for the United States in early February. No major events were announced at the meeting.</p> <p>(*)</p>
<p><b>CISPR E</b></p> <p>Title: Interference relating to Radio Receivers</p> <p>Representative: Don Heirman</p>	<p><u>Current Activities:</u></p> <ul style="list-style-type: none"> <li>Amendment of CISPR 13 (Emission limits and measurement methods)</li> <li>Amendment of CISPR 20 (Immunity limits and measurement methods)</li> </ul> <p>To include in both documents above the methods of measurement and limits for radiation and immunity of broadcase receivers for digital</p>

	signals and broadcast related multimedia equipment. (*)
<b>CISPR G</b> Title: Interference relating to ITE Representative: Don Heirman	<u>Current activities:</u> Limits and measurements of emissions for “small” Class A and B equipment at 3 meter separation Amended definition of telecommunications/network port for making conducted emission measurements 150 kHz to 30 MHz New definition of ITE with a radio transmission and/or reception capability. Accommodating test instrumentation transients when stepping frequencies during continuous signal immunity testing Operation and applicability of equipment with multifunctional capability, e.g. multimedia equipment Measurement and limits for emissions above 1 GHz (Limits between 1 and 2.7 GHz proposed) Emission measurements using ferrite tubes attached to cables leaving the test area from table top products Liaison with TC 100 on cabled distribution systems for TV and sound signals (Part 12: EMC) Modification to measurement method on power supply networks supporting data transfer and telecommunications and telecommunication ports with more than two balanced pairs or to unbalanced cables connected Relaxation of conditions of immunity testing and criteria related to RF continuous conducted tests at telecom ports. Applicable to the following frequency ranges: frequencies below 30 MHz, 30 to 80 MHz and 80 to 1000 MHz. <u>New Work Item:</u> Testing local area networks including coupling attenuation and specific cable layout. (*)
<b>CISPR H</b> Title: “Limits for the protection of radio services” Representatives: Daniel D. Hoolihan Werner Schaefer	<u>Current activities:</u> An amendment to CISPR 10 under discussion to define the purpose and function of CISPR/H Emphasis placed on cooperation between CISPR/A and CISPR/H in regard to test instrumentation and test procedure parameters Cooperation between CISPR/H and CISPR product committees in determining limit values is under discussion. <u>New work item proposals:</u> Develop a database on the characteristics of radio services to be protected, with an initial priority of the frequency range above 1 GHz Develop a rationale for the setting of emission limits for the protection of radio services, with an initial priority on the frequency range above 1 GHz Make a survey of EMC product standards on emissions testing Maintain an archive of reasons provided by CISPR product committees in justification of product limits that exceed generic limits <u>Tasks for the near future:</u> Development and maintenance of a generic emission standards Development (and maintenance) of rationales for the setting of emission limits for the protection of radio communications Conduct a survey of EMC product standards on emissions.

<p><b>SAE AE 4</b></p> <p>Title: "Aerospace EMC"</p> <p>Representatives: Gary Fenical</p>	<p><u>Current Activities:</u> Aerospace recommended practices on: Radiated test methods for RF gaskets Transfer impedance of RF Gaskets HIRF Immunity test methods Others</p> <p><u>New Work Items proposals:</u> AE 4 history to be an aerospace information report</p> <p><u>Recently published Standards:</u> Insertions loss test methods for EMI powerline filters Corrosion control and electrical conductivity in enclosure design Control Plan/TCF Aerospace system electrical bonding and grounding for EMC EMI Measurement antennas, Standard calibration methods</p> <p><u>Additional Comments:</u> We would like a representative from the group to attend our next meeting in Wakefield, MA on 3 &amp; 4 May 2000.</p>
<p><b>ECMA TC-20</b></p> <p>Title: "EMC Committee in ECMA standards for ITE Industry"</p> <p>Representatives: H. R.(Bob) Hofmann</p>	<p><u>Current Activities:</u> The issue of powerline harmonics will be a major topic of discussion at the next meeting on March 29, 30, 31</p>
<p><b>ISO TC22/SC3/WG3</b></p> <p>Title: "Development of International Automotive EMC test standards (ISO)"</p> <p>Representatives: Kin P. Moy</p>	<p><u>Current Activities:</u> Development of automotive standards of: Immunity to conducted transients (power &amp; signal lines) - Components Immunity to Electrostatic discharge (ESD) - Components and Vehicle Immunity to radiated disturbance - components and vehicle Emissions of conducted transients - Components</p> <p><u>New Work Items proposals:</u> EMC of Higher voltage system (42 V) EMC of electric vehicle EM field probe calibration</p> <p><u>Standards recently voted on:</u> Revisions to: "Immunity to radiated disturbance" Revisions to: "Immunity to conducted transients"</p> <p><u>Recently published Standards:</u> ISO 10605: "ESD" ISO 11452: "Immunity to radiated disturbance - components" Part 1-6 ISO 11451: "Immunity to radiated disturbance - vehicle" Part 1-4 ISO 7637: "Immunity to conducted transients (power &amp; signal lines) and emissions of conducted transients (power lines) - Components" Part 1-3</p> <p><u>Tasks for the near future:</u></p>

	<p>Additional EMC test methods for radiated immunity: Triplate line and reverberation chamber</p> <p>EMC Test methods harmonization with SAE and IEC</p> <p>EMC of 42 V electrical system</p> <p>EMC of electric vehicle</p> <p><u>Additional Comments:</u></p> <p>This ISO working group works mainly on automotive EMC issues related to immunity. The automotive EMC issues related to emissions are the responsibility of IEC-CISPR working group.</p>
<p><b>IEC TC 77 &amp; CIGRE<sup>(*)</sup></b></p> <p>Title: "EMC Standards"</p> <p>Representatives: M. Ianoz</p>	<p><u>Current Activities - TC77:</u></p> <p>61000-1-2: "Methodology for the achievement of functional safety of electrical and electronic equipment with regard to electromagnetic phenomena"</p> <p>Document to be published as a Technical Specification and a Committee Draft for Vote (CDV) will be issued soon.</p> <p>61000-6-5: "Immunity for power stations and substation environment"</p> <p>Definition of a third environment due to its specificity. The document is at Committee Draft (CD) stage. Comments received have been discussed at the last meeting of the Working Group in December 99.</p> <p>CIGRE contribution to this last standard achieved by direct participation of members of the WG36.04 which have prepared the CIGRE Guide 124 "EMC in Power Plants and Substations"</p> <p><u>Current Activities - TC77A (Low Frequency Phenomena &lt; 9 kHz)</u></p> <p>Harmonics</p> <p>A revision of 61000-3-2 defining the harmonic limits for equipment with input current <math>\leq 16</math> A.</p> <p>Development or amendments for other standards pertain to:</p> <ul style="list-style-type: none"> <li>• voltage fluctuation (flicker)</li> <li>• immunity issues (for frequencies &lt; 9 kHz)</li> <li>• definition of environments specific for low or medium voltage systems</li> </ul> <p>Considerations for interharmonics requirements, which are not a normative part now, however, they may be required in future.</p> <p>CIGRE 36 WG05 is now collecting data in this domain.</p> <p><u>Current Activities - TC77B (High Frequency Phenomena &gt; 9 kHz)</u></p> <ol style="list-style-type: none"> <li>a) Existing standards 61000-4-4, 61000-4-5 and 61000-4-12, define tests related to development of the new environment to be defined in 61000-6-5 (see TC77).</li> <li>b) The -4-4 standard concerns with burst test. A CIGRE paper discussed the relevance of this test as defined today for the equipment in substations.</li> <li>c) The -4-5 standard concerns with surge immunity test mainly due to direct or indirect lightning effects. For this standard there is also a request for an amendment from TC81 "Lightning Protection" to be considered by SC 77B.</li> <li>d) The -4-12 standard concerns with oscillatory wave test for which an amendment aimed to increasing the oscillation frequency up to 10/50 MHz is being studied by SC77B.</li> </ol> <p><u>Current Activities - TC77C (High power transient phenomena)</u></p>

This subcommittee has extended its scope and its new title from its former scope which was restricted to HEMP in civil equipment. At present this subcommittee is continuing the development of the last standards on HEMP. The extended scope means that any kind of transient phenomena and in particular those taking place in power plants and substations, to possibly be defined by the new generic standard 61000-6-5, can be considered by this subcommittee and eventually specific impulse tests could be developed, if necessary.

(\*) CIGRE SC36: Conférence Internationale des Grands Réseaux Electriques (Power Network Organization), Study Committee 36 "EMC in Power Networks".