



**Standards Advisory and
Coordination Committee
(SACCOM)**



July 28, 2000

Compilation of SACCom Representative Reports

<p>CISPR A</p> <p>Title: Radio Interference Measurements and Statistical Techniques</p> <p>Representative: Don Heirman</p>	<p><u>Current Activities:</u></p> <p>Definitions: CD=Committee Draft; CDV=CD for vote;FDIS=final draft international standard; CC=collectionof comments</p> <p>Emission antenna calibration; Program of work further outlined</p> <p>Amending emission antenna cross polarization and balance requirements; CD to be issued</p> <p>Use of resonant "H-field" loop antennas; CD to be issued</p> <p>Measurements and instrumentation above 1 GHz; more work proposed</p> <p>Devices for measuring emissions on signaling lines; CDV to be prepared</p> <p>USE of AMN as a voltage probe; project completed and in CISPR 16-1.</p> <p>Emission measurements in the presence of ambient signals; CDV issued</p> <p>Uniform arrangements for emission and immunity testing; CD to be issued</p> <p>Automated emission measurements; CD issued</p> <p>Accounting for measurement uncertainty when determining compliance with a limit; CDV to be issued</p> <p>Determining EMC product compliance uncertainty; two CDs issued</p> <p>Use of capacitive voltage probes; round-robin test in progress</p> <p>Use of absorbing clamps in the frequency range: 30-1000 MHz; CD to be prepared</p> <p>Spectrum analyzers for the frequency range: 1-18 GHz; round robin test in progress</p> <p>Average measurement receivers in the frequency range: 9 kHz-1000 MHz; published in CISPR 16-1</p> <p>Fully anechoic chambers site validation and test techniques; New CD to be issued</p> <p>Use of TEM devices for emission and immunity testing (Joint project with IEC TC77), IEC61000-4-20; ongoing activity</p> <p>Use of mode-stirred devices for emission and immunity texting (Joint project with IEC TC77), IEC61000-4-21; ongoing activity</p> <p>Use of partial ranges in applying the statistical 80/80 rule; work to be started.</p>
<p>CISPR B</p> <p>Title: "Industrial, Scientific, and Medical Radio Frequency</p>	<p><u>Current Activities - TC77:</u></p> <p>Held meetings in St. Petersburg, Russia, June, 2000</p> <p><u>New Work Items proposed/approved:</u></p> <p>Proposed relaxation of limits for microwave ovens and other</p>

<p>Apparatus” Representatives: Dan Hoolihan</p>	<p>magnetron driven equipment; proposed raising the limits to Class A levels. Still under discussion, Japan will resend as a Committee Draft for Voting.</p> <p>Emission limits on industrial electro-heating equipment were discussed especially with respect to 10 meter and 30 meter measurement distances. A new Committee Draft proposal will be circulated for comments.</p> <p>Group 1 and Group 2 products will be revised by a Working Group in CISPR B. Also, the use of an artificial hand for hand-held equipment will be considered via the Committee Draft route.</p> <p>A proposal by the USA to clarify the regulation of microwave powered ultraviolet irradiators between CISPR 11 and CISPR 15 was tabled until the release of the next version of CISPR 15.</p> <p><u>Standards/Revisions recently voted on:</u></p> <p>Requirements for arc welding equipment were voted on to be added to CISPR 11; the vote closed 17 July but results are not yet known. They will be included in Edition 4; if approved.</p>
<p>CISPR D Title: Ground Transportation EMC Representative: Kimball Williams</p>	<p><u>Current Activities</u></p> <p>Review CDV (Committee Draft for Voting) for CISPR 12 and the CD for CISPR 25</p> <p>The review of CISPR/D Scope is being developed by member entities</p> <p><u>New Work Items proposed/approved:</u></p> <p>CISPR/D/WG2/(Andersen-Nielsen) May 1999 paper submitted to coordinate with CISPR/A. Statistical evaluation nor NB RE</p> <p><u>Standards/Revisions recently voted on:</u></p> <p>CISPR 12 & CISPR 25</p> <p><u>Recently Published Standards:</u></p> <p>CISPR 21 (most recent version)</p> <p><u>Scheduled Future Projects:</u></p> <p>IEC TC 69 EV Charging Documents: The focus of this work is the testing of electrical vehicle (EV) charging systems. Current thinking within the USTAG is that a vehicle in charging mode becomes an “appliance” similar to a stove or toaster. Therefore, this subject should not be a subject for CISPR/D. There seem to be several possibilities for carrying this work forward under CISPR, but no clear directions are emerging as yet.</p>
<p>CISPR E Title: Interference relating to Radio Receivers Representative: Don Heirman</p>	<p><u>Current Activities:</u></p> <p>Amendment of CISPR 13 (Emission limits and measurement methods); resolution of ballot remarks concluded</p> <p>Amendment of CISPR 20 (Immunity limits and measurement methods); resolution of ballots remarks concluded</p> <p>To include in both documents above the methods of measurement and limits for radiation and immunity of broadcast receivers for digital signals and broadcast related multimedia equipment; WG2 on digital TV measurements continue</p>
<p>CISPR G Title: Interference relating to ITE Representative: Don Heirman</p>	<p><u>Current activities:</u></p> <p>Limits and measurements of emissions for “small” Class A and B equipment at 3 meter separation; CDV to be issued</p> <p>Amended definition of telecommunications/network port for making conducted emission measurements 150 kHz to 30 MHz; CDV to be issued</p>

	<p>New definition of ITE with a radio transmission and/or reception capability; ad hoc committee to discuss next steps</p> <p>Accommodating test instrumentation transients when stepping frequencies during continuous signal immunity testing; passed to TC77, SC77B for inclusion in IEC 61000-4-3 and 4-6</p> <p>Operation and applicability of equipment with multifunctional capability, e.g. multimedia equipment; ad hoc committee to discuss next steps</p> <p>Measurement and limits for emissions above 1 GHz (Limits between 1 and 2.7 GHz proposed); the FDIS on this topic failed. New work is underway to come up with new limits and measurement methods</p> <p>Emission measurements using ferrite tubes attached to cables leaving the test area from table top products; this passed and will now be added to the next amendment to CISPR 22.</p> <p>Liaison with TC 100 on cabled distribution systems for TV and sound signals (Part 12: EMC); No further work noted</p> <p>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; meeting with some opposition</p> <p>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.; CDV issued.</p> <p><u>New Work Item:</u></p> <p>Testing local area networks including coupling attenuation and specific cable layout; ad hoc committee to determine next steps</p>
<p>IEC TC 77 & CIGRE^(*)</p> <p>Title: "EMC Standards"</p> <p>Representatives: M. Ianoz</p>	<p><u>Current Activities - TC77:</u></p> <p>Development of basic and generic EMC standards, horizontal function by providing product committees with specific input related to EMC</p> <p><u>New Work Items proposed/approved:</u></p> <p>77C/76/NP, 77C/85/RVN -Approved - HEMP immunity for indoor equipment.</p> <p>77C/82/NP, 77C/86/RVN – Approved - Methods and means of measurements of high power transient parameters.</p> <p><u>Standards/Revisions recently voted on:</u></p> <p>77B/291/FDIS, Amendment to 61000-4-x Editorial revision of clause 9: Test results and test report. Closing date for comment or vote : 2000-08-15</p> <p>77B/293/FDIS, Amendment to 61000-4-4,-5,-8,-9,-10,-11,-12 Subclause 8.11: Climatic conditions. Closing date for comments or vote : 2000-08-15.</p> <p>77B/292/FDIS – Amendment to 61000-4-2 Closing date for comment vote : 2000-08-15</p> <p><u>Scheduled Future Projects:</u></p> <p>ACEC: decision of April meeting : set up of a procedure for reviewing the EMC aspects of product standards.</p> <p>77C: Potential new projects on High Power Electromagnetics :</p> <ul style="list-style-type: none"> ▪ Test techniques for high power electromagnetic effects ▪ Protection techniques from high power electromagnetic

	effects
<p>ISO TC22/SC3/WG3</p> <p>Title: Development of International Automotive EMC test standards as related to immunity</p> <p>Representative: Kin P. Moy</p>	<p><u>Current Activities:</u></p> <p>Development of automotive standards for:</p> <ul style="list-style-type: none"> ▪ Immunity to conducted transients (power and signal lines) - Components ▪ Immunity to Electrostatic discharge (ESD) - Components and Vehicle ▪ Immunity to radiated disturbance - Components and vehicle ▪ Emissions of conducted transients - Components <p><u>New Work Item:</u></p> <p>EMC issues related to:</p> <ul style="list-style-type: none"> ▪ Electrical Vehicle ▪ 42 Volt systems <p><u>Standards/Revisions recently voted on:</u></p> <p>ISO 10605 "ESD"</p> <p>ISO 11452 "Immunity to radiated disturbance - components" Part 1-6</p> <p>ISO 11451 "Immunity to radiated disturbance - vehicle" Part 1-4</p> <p>ISO 7637 "Immunity to conducted transients (power & signal lines) and Emissions of conducted transients (power lines) - Components" Part 1-3</p>
<p>US DoD</p> <p>Title: Development of EMC specs/stds for US DoD</p> <p>Representative: Brian Farmer</p>	<p><u>Current Activities:</u></p> <p>Military Instructions:</p> <ul style="list-style-type: none"> ▪ Nearing completion of revision of MIL-HDBK-237B, EMC Management. Revision C draft for comment expected to be released by the Joint Spectrum Center by the end of this FY. ▪ Anticipated release date for DoD Instruction 5000.1 and 5000.2 is now the July/August time frame and August/September time frame for 5000.2-R. The 5000 series covers all system acquisition and has extensive EMC and Spectrum Management requirements included. ▪ DoDD 4650.1, Spectrum Management instruction beginning revision process. ▪ DoDD 3222.3, DoD EMC Program rewrite nearly complete and draft ready for comment to be issued. <p>Military Standards:</p> <ul style="list-style-type: none"> ▪ The Defense/Industry E3 Standards Committee Guide (comparison of MIL-STD-461D and various commercial standards) is out for comment. Inputs were due back to the JSC at the end of June. ▪ There has been a proposal on e-mail for a revision to the CE 101 requirement of MIL-STD 461E to which the Air Force is developing a response. ▪ Because of all of the recent changes to the 5000 series documents, MIL-STD-464 (System Level EMC) needs to be updated.
<p>SAE AE-4</p> <p>Title:</p>	<p><u>Current Activities:</u></p>

<p>Aerospace Electromagnetic Environmental Effects (E³) Representative: Michael J. Oliver</p>	<ul style="list-style-type: none"> a) AIR1255 Spectrum Analyzers for EMI Measurements Total Revision 2001 Warner Schaefer b) ARP 1972 Recommended EMI Test Methods Total Revision 2001 Nigel Carter c) ARP 1705 Gasket Test Fixture Out for Comment 2000 Dave Inman d) ARP 5581 Approved by Committee 1999 Fred Heather <p><u>New Work Item Proposals:</u></p> <ul style="list-style-type: none"> a) The SAE AE4 web page and affiliated links for continued improvement. b) A documents to address volume resistivity and conductivity of RF gaskets c) It will be proposed to the ASTM D09.12.14 Electromagnetic Committee to bring the Slot Aperture Radiated Test method and two Transfer Impedance Test methods to the SAE group. d) Gennady Boronichev document "Ecological method for Evaluation of Technical Facility Immunity to Electromagnetic Phenomena" The document is ARP 5889 and is currently out for comment. e) AE4 history into an AIR document <p><u>Scheduled Future Projects</u></p> <ul style="list-style-type: none"> a) Keith Pieper with the development of a low cost practical test method for cables and connectors (aircraft harnesses). b) Ian Macdiarmid with a qualification / specification for issues associated with E3 modular avionics systems c) Gary Fenical with corrosion of electrically conductive elastomers d) Curtis White with test and limits for capacitor RF current capabilities vs. frequency.
<p>SAE EMI & EMR Technical Committee Title: Ground Transportation EMC Representative: Kimball Williams</p>	<p>Current Activities:</p> <p>Updtae documents rellevant to SAE J551 and J1113</p> <p>Re activation of IC EMC Chip Task Force to address new measurement techniques (J.Muccioli – Chair). Fellow of IEEE EMC-S Jim Muccioli (X2Y Attenuators) repted on the meeting that was held on May 16, 2000 which revitalized the work of the task force. Several major changes and additions to methods are in work. A meeting report will be forth coming from the secretary, Scott Lytle (Eaton). (A side discussion on company support for standards activites began as effort that Jim will carry forward in the form of an e-mail document for comment outlining the rational for standards suppoert). The CISPR/D USTAG Chairman Poul Andersen(Daimler-Chrisler) requested a summary of activity that can be presented at the CISPR meeting in June.</p> <p>Power Spectral Density (PSD) methods of measuring receiver responses to broadband interference. Arnie Nielsen (Visteon) provided reference copies of the parallel CISPR document: CISPR/D/WG2/(Andersen-Nielsen) May 1999 to the SAE formatted version has been provided to SAE for balloting as an Information Report.</p> <p>New Work Items Proposed/Approved:</p> <p>Research 8-12 GHz RADAR effects: The focus of this documents is new</p>

	<p>high power RADAR in the 8 to 12 GHz range which might have the potential for interference with vehicle electrical possibility of unintentional deployment of automotive air bags. The committee discussed possible responses and decided to send a formal invitation to Mr. Sages (who raised the initial question) to attend the next EMI committee meeting in Washington Dc to discuss this issue.</p> <p><u>Standards/Revisions ecently Voted on:</u></p> <p>J555-1, -3, -13, -15 approved for publication</p> <p>J1113-1, -3, -13, -24, -25 approved for publication</p> <p><u>Schdeuled Future Projects:</u></p> <p>Request for IC EMC TF Support on Data Bus Emissions: Jim Muccioli indicated familiarity with the request and had replied to the inquiry with a suggestion that the requesting group look up the relevant SAE documents and then get back in touch with the IC EMC Task Force</p> <p><u>Activities Requiring Technical Support of th EMC-S:</u></p> <p>LFMTF (Low Frequency Magnetics Task Force): From R. Kautz (Ford): IEEE SCC-28 has a Project Authorization Request (P1555) for "Standard for Maximum Levels of Human Exposure to Electromagnetic Fields, 0 to 3 kHz". Mr. Kautz will probably attend the SCC 28 SC3 meeting in Munich on June 10. Meanwhile, he is summarizing differences between existing ACGIH, IEEE ICNIRP, CENELEC and NRPB documents, and the others are reviewing the standards and available instrumentation.</p> <p><u>Additional Comments:</u></p> <p>The AEMCLRP (Automotive EMC Laboratory Recognition Programs) has trained assessors in May. Members are referred to the ACIL web site at: www.acil.org where documents will be posted when available</p>
<p>IEC TC 46/WG5</p> <p>Title: Screening Effectiveness of Cables</p> <p>Representative: John Kincaid</p>	<p><u>Current Activities:</u></p> <p>a) Transfer impedance test methods for cables and connectors.</p> <p>b) Screening effectiveness measurements of waveguides.</p> <p>c) Technical report: "Introduction to Electromagnetic Screening Measurements of Cables, Cable Assemblies and Connectors" (IEC 61917)</p> <p>d) Reverberation Chamber Test Method for Screening Attenuation.</p> <p><u>New Work Item Proposals:</u></p> <p>a) Proposal: Technical report: "Guide on Electromagnetic Screening Optimisation of Braided Coaxial Cables Outer Conductors and Screens"</p>
<p>ISO TC-20 SC14 WG1</p> <p>Title: Space Systems</p> <p>Representative: Noel B. Sargent</p>	<p><u>Current Activities:</u></p> <p>a) Document 14302: Space Systems, Electromagnetic Compatibility Requirements</p> <p>This document began as a New Work Item Proposal (NWIP) in 1994, and has been reviewed by the international space industry at several meetings both in Europe and the United States. At the present time, the Draft International Standard (DIS) of the document awaits the final French translation, at which time it will be formally distributed for vote.</p> <p>This systems-level document provides guidance and rationale</p>

toward achieving specification performance to ensure space systems EMC. The document references ISO 7137:1995, "Aircraft – Environmental conditions and test procedures for airborne equipment", as the equipment-level standard.

New Work Item Proposals:

a) Document 14Nxx – Equipment for EMC Test Methods

This document is a New Work Item Proposal (NWIP). The proposal would further standardize test methods at the equipment/box level. The proposal would establish 7 basic tests for critical parameters. The current plan is to submit the NWIP with electronic draft to the Secretariat for distribution and ballot, to vote on whether or not to proceed. The test method standard would not include limits.