



## ***Standards and Advisory Coordination Committee (SACCom) Representative Report***



Date of Report: 4 May 2016      Name of Representative: R. C. Petersen

Representative's Position: Past Chairman IEC TC106

Represented Technical Entity: IEC TC106

Technical Entity Scope/Function: Assessment of Human Exposure to Electric, Magnetic and Electromagnetic Fields, 0-300 GHz.

Current Activities of Entity:

Maintenance Team 1: Revise IEC 62209-1 (Procedure to Measure the Specific Absorption Rate (SAR) for Hand-Held Mobile Telephones in the Frequency Range of 300 MHz to 3 GHz”), and IEC 62209-2 [Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)] and unify the standards. Part 1 FDIS has been circulated for comment.

Project Team 62209-3: Human exposure to radio frequency fields from hand-held and body-mounted wireless communications devices – Human models, instrumentation, and procedures – Part 3: Vector probe systems (frequency range of 100 MHz to 6 GHz). Estimated 1CD publication date: mid-year.

Maintenance Team 2: Split IEC 61786-1 into two separate horizontal standards:

IEC 61786-1, “Measurement of DC magnetic, AC magnetic, and AC electric fields from 1 Hz to 100 kHz with regard to exposure of human beings – Part 1: (Requirements for measuring instruments,” published December 2013;

IEC 61786-2, “Measurement of DC magnetic, AC magnetic, and AC electric fields from 1 Hz to 100 kHz with regard to exposure of human beings – Part 2: Basic standard for measurement,” published December 2014.

(Part 1—describes measurement instrumentation and calibration methods; Part 2—provides guidance for measurement.)

MT3—Maintenance of IEC 62232: Determination of RF field strength and SAR in the vicinity of radio-communication base stations for the purpose of evaluating human exposure – 1<sup>st</sup> Maintenance cycle. New technologies and assessment methods included in revision, intent is to simplify. Forecast publication date:

Nov. 2016. CCDV target date: May 2016.

IEC/IEEE P62704-1: Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices, 30 MHz - 6 GHz: General Requirements for using the Finite-Difference Time-Domain (FDTD) Method for SAR Calculations. (IEC/IEEE jointly developed standards project.) Forecast publication date: February 2017.

IEC/IEEE P62704-2: Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices: Specific Requirements for Finite Difference Time Domain (FDTD) Modeling of Exposure from Vehicle Mounted Antennas. (IEC/IEEE jointly developed standards project.) CDV circulated 11 December 2015. Forecast publication date: January 2016.

IEC/IEEE P62704-3: Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices, 30 MHz - 6 GHz: Specific Requirements for using the Finite-Difference Time-Domain (FDTD) Method for SAR Calculations of Mobile Phones. (IEC/IEEE jointly developed standards project. Forecast publication date: August 2017.

IEC/IEEE P62704-4: Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices, 30 MHz – 6 GHz: General Requirements for Using the Finite-Element Method (FEM) for SAR Calculations and Specific Requirements for Modeling Vehicle-Mounted Antennas and Personal Wireless Devices. (IEC/IEEE jointly developed standards project.) (1CD expected August 2015—balloting expected to begin November 2016.)

IEC P62764-1: Procedures for the Measurement of Field Levels Generated by Electronic and Electrical Equipment in the Automotive Environment with Respect to Human Exposure. (2CD expected July 2015 – target publication date: June 2016.)

New Work Items  
proposed/approved:

IEC 62226-3-1: Exposure to electric or magnetic fields in the low and intermediate frequency range – Methods for calculating the current density and internal electric field induced in the human body – Part 3-1: Exposure to electric fields – Analytical and 2D numerical models. (MT 62226-3-1.)

IEC 62233: Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure. (MT 62233.) 1CD of revision expected 30 November 2015 – not yet circulated.

Standards <sup>1</sup> /Revisions recently voted on <sup>2</sup> :	<u>IEC/IEEE 62704-1</u> and <u>IEC/IEEE 62704-2</u> are in IEEE sponsor ballot. Comments received were addressed and CDVs for IEEE recirculation ballot and IEC ballot are in preparation for 2016 distribution. Target dates for balloting on <u>IEC/IEEE 62704-3</u> and <u>IEC 62704-4</u> – June 2016.
Recently published Standards <sup>1</sup> :	<p><u>IEC 61786-2 (2014) Ed. 1.0</u>: Measurement of DC magnetic, AC magnetic and AC electric fields from 1 Hz to 100 kHz with regard to exposure of human beings - Part 1: Requirements for measuring instruments.</p> <p><u>IEC 62110-2009/Cor 1 (2015)</u>: Electric and magnetic field levels generated by AC power systems – measurement procedures with regard to public exposures.</p>
Scheduled Future Projects:	<p>Established Ad-hoc Group-6 (Guide to the drafting of EMF assessment publications). Request liaisons with ITU and IEEE. Draft guide “Compliance with electromagnetic exposure – Guide to the drafting of compliance testing publications” (similar to ACEC Guide 7) is being prepared for consideration of adoption by ACEC rather than ACOS because of similarities to EMC compliance standards. The goal is to achieve harmony across standards that address measurement/computation of human exposure with respect to safety limits. The Guide will be maintained by TC106.</p> <p>Explore combining IEC P62209-1 and -3 as a single document; seek approval as a dual-logo project to replace IEEE 1528-2013; publish as a dual-logo IEC/IEEE standard and withdraw IEEE 1528-2013.</p>
Activities requiring technical support of the EMC-S:	None at this time
Activities requiring financial support of SACCom or EMC-S:	None at this time
Next meetings:	<p>28 – 30 Sept. 2015, Hangzhou China (in conjunction with CISPR Meetings), October 2016. Date for TC106 meetings: 31 October – 4 November. (Plenary: 4 November.)</p> <p>31 October TBD.</p>
Additional Comments:	In response to a question to the IEC Standardization Board (SMB) from IEC TC 64 (Electrical Installations and protection from electric shock) regarding the establishment of limit values by IEC TC and SCs, TC106 recommends to the SMB that IEC TCs and SCs should abstain from establishing limit values (e.g., for electric shock and

---

<sup>1</sup> If Standards were harmonized with other organizations, e.g. IEC-CENELEC, please advise)

<sup>2</sup> Please provide results of vote. If disapproved, please advise major reasons, if known

induced and contact current).

EN 50527-1 Procedure for the assessment of the exposure to electromagnetic fields of workers bearing active implantable medical devices – Part 1: General.

This standard was offered to TC106 for inclusion in its program of work. The standard relates to EMC, e. g., possible interference of electromagnetic fields with active implants. A New Work Item Proposal (NWIP) was circulated—17/21 P-members approved but only 2 P-members provided the names of experts to participate. Therefore the NWIP was rejected.

Two new working groups are being formed:

WG8: Assessing methods for the assessment of contact current related to human exposure to electric, magnetic and electromagnetic fields.

WG9: Assessing methods for the assessment of wireless power transfer related to human exposure to electric, magnetic and electromagnetic fields.