P62704-4

Submitter Email: wolfgang.kainz@fda.hhs.gov
Type of Project: New IEEE Standard
PAR Request Date: 30-Sep-2011
PAR Approval Date: 07-Dec-2011
PAR Expiration Date: 31-Dec-2015
Status: PAR for a New IEEE Standard

1.1 Project Number: P62704-4
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for 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

3.1 Working Group: SAR evaluation - numerical techniques (SASB/SCC39/TC34_SC2)
Contact Information for Working Group Chair
  Name: Wolfgang Kainz
  Email Address: wolfgang.kainz@fda.hhs.gov
  Phone: 1.301.796.2484

Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE-SASB Coordinating Committees/SCC39 - International Committee on Electromagnetic Safety (SASB/SCC39)
Contact Information for Sponsor Chair
  Name: Ralf Bodemann
  Email Address: ralf.bodemann@siemens.com
  Phone: +498963640706

Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 12/2013
4.3 Projected Completion Date for Submittal to RevCom: 10/2014

5.1 Approximate number of people expected to be actively involved in the development of this project: 10
5.2 Scope: This standard describes the concepts, techniques, models, validation procedures, uncertainties and limitations of the Finite-Element Method when used for determining the spatial-peak specific absorption rate (SAR) in standardized anatomical models exposed to wireless communication devices, including vehicle-mounted antennas and personal wireless devices, such as hand-held mobile phones. Guidance on modeling such devices and benchmark data for simulation is provided; model contents, meshing and test positions of the anatomical models are defined. This document does not recommend specific SAR values since these are found in other documents, e.g., IEEE C95.1-2005 (IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.)

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: This document is developed in parallel with P62704-1, P62704-2 and P62704-3. P62704-1 describes general requirements for FDTD methods, P62704-2 describes specifics of modeling vehicle-mounted antennas with the FDTD method, and P62704-3 describes specifics of modeling mobile phones and personal wireless devices with the FDTD method. In the end, the standards have to be very similar, so a device cannot pass with one computational method and fail with the other.

5.4 Purpose: Document will not contain a purpose clause

5.5 Need for the Project: This project replaces P1528.4. This standard will fill the emerging need for computational techniques for determining the SAR associated with human exposure to wireless devices. Ultimately, these techniques should replace many complex and costly experimental techniques now being used. These techniques would also fulfill a need for a process useful at the design stage to ensure that certain wireless devices will meet existing rules and regulations.

5.6 Stakeholders for the Standard: Stakeholders include manufacturers of mobile phones and other wireless communication devices. The concepts, techniques, models, validation procedures, uncertainties and limitations of the Finite-Element Method (FEM) described in this standard will also be useful to manufacturers of medical devices using the FEM
method to ensure the safety and efficacy of their devices.

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**Intellectual Property**

**6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No  
**6.1.b. Is the Sponsor aware of possible registration activity related to this project?:** No

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**7.1 Are there other standards or projects with a similar scope?:** No  
**7.2 Joint Development**

- **Is it the intent to develop this document jointly with another organization?:** Yes  
  - **Organization:** International Electrotechnical Commission (IEC)  
  - **Technical Committee Name:** Methods for the assessment of electric, magnetic and em fields associated with human exposure  
  - **Technical Committee Number:** 106  
  - **Contact Name:** Dr. Thomas Fischer (Secretary)  
  - **Phone:** +49-9131-7-31291  
  - **Email:** thomas.fischer@siemens.com

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**8.1 Additional Explanatory Notes (Item Number and Explanation):** This standard is being developed as a dual logo IEC/IEEE standard and will not contain a purpose clause in accordance with IEC policy.

**5.3:**

- **P1528.1 (P62704-1):** Peak spatial average SAR in the human body from wireless communications devices, 30 MHz - 6 GHz: General requirements for using the FDTD method.  
- **P1528.2 (P62704-2):** Peak spatial average SAR in the human body from wireless communications devices, 30 MHz - 6 GHz: Specific requirements for FDTD modeling of vehicle mounted antenna configurations.  
- **P1528.3 (P62704-3):** Peak spatial-average SAR in the human body from wireless communications devices, 30 MHz - 6 GHz: Specific requirements for FDTD modeling mobile phones/personal wireless devices.