

IEEE ICES TC34

TC34 activities overview

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IEEE ICES TC34 at a glance

TC 34 - Computational and Measurement Standards for the assessment of Exposure generated by user devices approached to the body, IoT Devices, WPT

- Exposure in terms of → SAR, Power Density and fields from WPT, in the frequency range 3 kHz - 300 GHz
- Works developed in strict connection with IEC TC106 → dual logo standards
- 2 Subcommittees:
 - SC1: Experimental Techniques → protocols for the measurement for EMF exposure assessment
 - SC2: Numerical Standards → numerical techniques & numerical models for determining SAR and PD
- Currently 54 members; 19 fully involved in developing standards

IEEE ICES TC34 at a glance

SC1 - Measurement Standards

JWG12 - Measurement Methods to assess the power density in close proximity to the head and body

- IEC/IEEE 63195-1 – Measurement of Power Density (frequency range of 6 GHz to 300 GHz)
- IEC/IEEE 63195-3 - Measurement of Absorbed Power Density (Frequency Range of 6 GHz to 300 GHz)

JMT14 - Maintenance of IEC/IEEE 62209-1528

- IEC/IEEE 62209-1528 - Measurement of SAR (Frequency range of 4 MHz to 10 GHz)

JMT 62209-3 - Maintenance

- IEC 62209-3 - Measurement of SAR, Vector systems (Frequency range of 600 MHz to 6 GHz)

IEEE ICES TC34 at a glance

SC2 - Computational Standards

JWG11 - Computational Methods to assess the power density in close proximity to the head and body

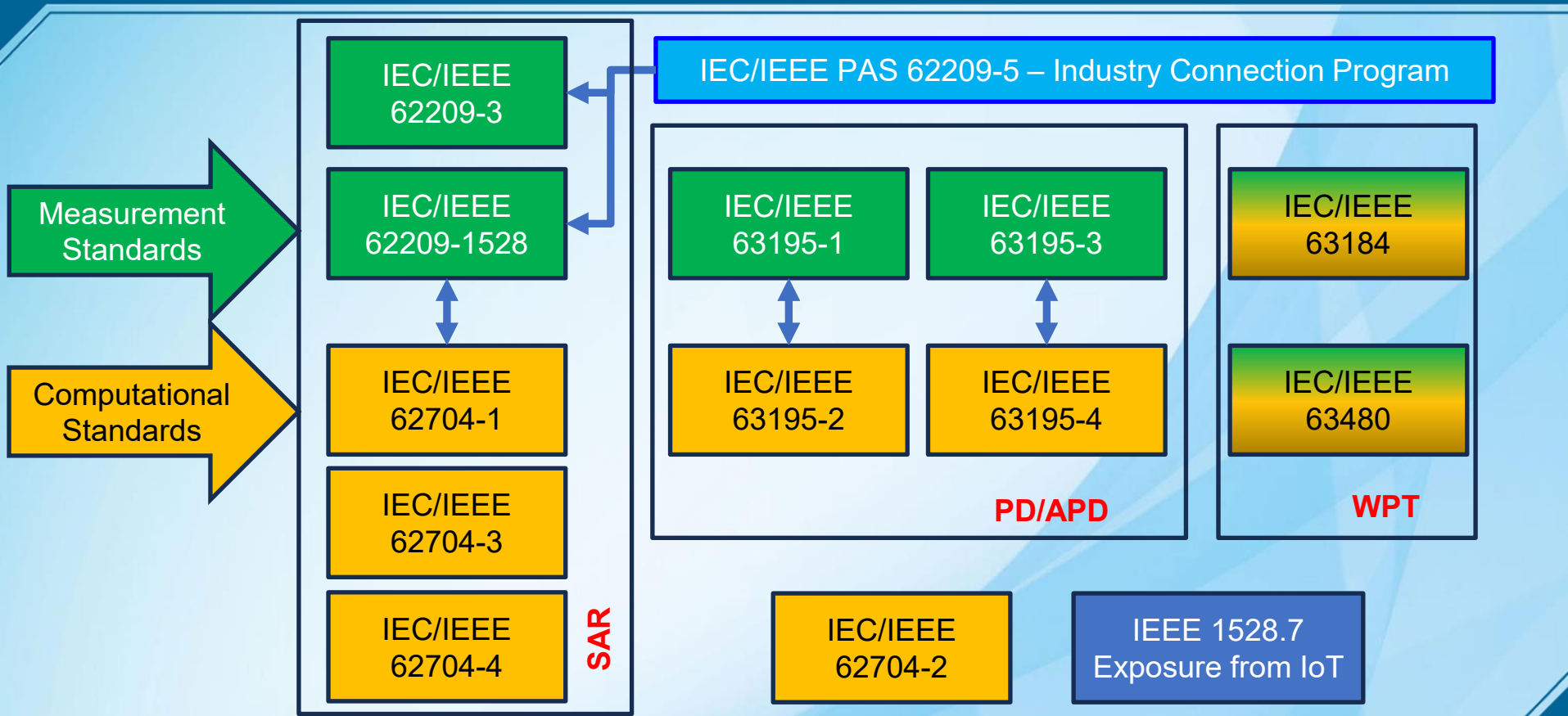
- IEC/IEEE 63195-2 – Computation of Power Density (frequency range of 6 GHz to 300 GHz)
- IEC/IEEE 63195-4 – Computation of Absorbed Power Density (frequency range of 6 GHz to 300 GHz)

JMT62704

- IEC/IEEE 62704-1 Computation of SAR by FDTD (frequency range of 30 MHz to 6 GHz)
- IEC/IEEE 62704-2 Computation of SAR by FDTD from vehicle mounted antennas (frequency range of 30 MHz to 6 GHz)
- IEC/IEEE 62704-3 Computation of SAR by FDTD from mobile phones (frequency range of 30 MHz to 6 GHz)
- IEC/IEEE 62704-4 Computation of SAR by Finite Element Method (frequency range of 30 MHz to 6 GHz)

JWG63184: IEC/IEEE 63184 – Measurement of Exposure from WPT systems (frequency range of 3 kHz to 30 MHz)

JWG63480: P63480 Computation and Measurements of EM from Radiative WPT Systems (frequency Range of 30 MHz to 300 GHz)



Thank you

Any Question?

References

- IEC/IEEE 63195-1 "Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) - Part 1: Measurement procedure"
- IEC/IEEE 63195-3 "IEEE/IEC International Standard - Assessment of Power Density of Human Exposure to Radio Frequency Fields from Wireless Devices in Close Proximity to the Head and Body (Frequency Range of 6 GHz to 300 GHz) Part 3: Measurement Procedures for Absorbed Power Density"
- IEC/IEEE 62209-1528:2020: "Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-worn wireless communication devices - Human models, instrumentation and procedures (Frequency range of 4 MHz to 10 GHz)"
- IEC/IEEE 62209-3: "Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 3: Vector measurement-based systems (Frequency range of 600 MHz to 6 GHz)"
- IEC/IEEE 63184 "Assessment methods of the human exposure to electric and magnetic fields from wireless power transfer systems – Models, instrumentation, measurement and computational methods and procedures (frequency range of 3 kHz to 30 MHz)"

- IEC/IEEE 63195-2 "Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) - Part 2: Computational procedure"
- IEC/IEEE 63195-4 "Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body /frequency range of 6 GHz to 300 GHz) - Part 4: Computational Procedure for Absorbed Power Density"
- IEC/IEEE 62704-1 "Determining the peak spatial-average specific absorption rate (SAR) in the human body from wireless communications devices, 30 MHz to 6 GHz - Part 1: General requirements for using the finite difference time-domain (FDTD) method for SAR calculations"
- IEC/IEEE 62704-2 "Determining the peak spatial-average specific absorption rate (SAR) in the human body from wireless communications devices, 30 MHz to 6 GHz - Part 2: Specific requirements for finite difference time domain (FDTD) modelling of exposure from vehicle mounted antennas"
- IEC/IEEE 62704-3 "Determining the peak spatial-average specific absorption rate (SAR) in the human body from wireless communications devices, 30 MHz to 6 GHz - Part 3: Specific requirements for using the finite difference time domain (FDTD) method for SAR calculations of mobile phones"

- IEC/IEEE 62704-4 "Determining the peak spatial-average specific absorption rate (SAR) in the human body from wireless communication devices, 30 MHz to 6 GHz - Part 4: General requirements for using the finite element method for SAR calculations"
- P63480 "Standard for Assessment of Human Exposure to Electromagnetic Fields from Radiative Wireless Power Transfer Systems: Measurement and Computational Methods (Frequency Range of 30 MHz to 300 GHz)"
- IEEE 1528.7-2020 "IEEE Guide for EMF Exposure Assessment of Internet of Things (IoT) Technologies and Devices"