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# BUREAU OF INDIAN STANDARDS

## AGENDA

**THIRTEENTH MEETING OF ELECTROMAGNETIC COMPATIBILITY SECTIONAL COMMITTEE, LITD 09**

| दिनांक- समय/ DATE & TIME | स्थान/ VENUE |
|---|---|
| दिनांक DATE : 02 नवंबर/November<br>दिन DAY : गुरुवार/Thursday<br>समय TIME : 1100 h (11:00 AM) | मीमांसा कक्ष मानक भवन भारतीय मानक ब्यूरो 9, बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002<br>**White Room, Manak Bhavan, Bureau of Indian Standards 9, B.S.Z. Marg Delhi -110002** |
| **Chairman: Dr Subbarao Bandaru** | **Member Secretary: Shri Bipin Jambholkar** |

**NOTE : If you want to attend this meeting through Webex/online mode, please write to us.**

### ITEM 0 WELCOME

**0.1** Welcome

**0.2** Opening Remarks by the Chairman

### ITEM 1 FORMAL CONFIRMATION OF THE MINUTES OF LAST MEETING

**1.1** The minutes of the last meeting of LITD 09 is enclosed with the Agenda

**1.2** ***The Committee may formally confirm these minutes.***

### ITEM 2 REVIEW OF COMPOSITION OF SECTIONAL COMMITTEE LITD 09

**2.1** The composition of Electromagnetic Compatibility Sectional Committee, LITD 09 is given in ANNEX 1 (Pg 10-11).

**2.2** In last meeting of Electronics and IT Division Council, as per Instructions for the Effective Implementation of the Process Reforms Aimed at the Strengthening of the Standardization Ecosystem in the Country, all those organizations who has not attended last three meeting has been withdrawn from the Committee by Electronics and IT Division Council (LITDC).

**2.3** Hon'ble Members, your active engagement and dedication are pivotal to our collective mission to develop and enhance Indian Standards, and thus, we value your attention to the directives mentioned in the enclosed declaration at (Annex 2, Pg 12) . BIS deeply appreciate your commitment to the development of Indian Standards required for the betterment of Indian society. These guidelines are designed to enhance the effectiveness of our work and strengthen our collective impact. The mentioned responsibilities outlined in the directions given by DG, BIS are in concurrence with the guidelines provided by the Hon'ble Minister of CA, F & PD.

**2.4 BIS has received request for co-option from following organization.**

1. India Cellular & Electronics Association
2. Philips India Limited, Gurugram (Annex 3A &3B)
3. React laboratories (Annex 4A & 4B)
4. National Federation of Engineers for Electrical Safety (Annex 5)

***The Committee may note and review its composition.***

## ITEM 3 PRESENT POSITION OF WORK (POW) OF LITD 09

**3.1** The present position of work of LITD 09 is given in Annex 6 (Pg 13-17)

**3.2** In accordance with BIS procedure, Indian Standards which are in existence for more than 3 years are to be reviewed for reaffirmation/revision/withdrawal.

**3.2.1** This list of Indian standards whose base ISO/IEC standards have been revised/withdrawn are given below with details of latest Status of base International Standards. The list also contains few Indian Standards which are not due for review but their base International Standard(s) have been revised.

During review of existing standard, technical committee bring Indian Standards at par with the technological developments world over for providing timely inputs for updation of the Indian standards in line with the latest technological developments, international standards or association standards/technical regulations etc.

| Sl. No | Indian Standard Number & Title | Reaffir Mation date | Corresponding International Standard | Latest Position of International Standard | Remarks |
|---|---|---|---|---|---|
| 1. | IS 10052 (Part 1/Sec 1) : 2021 Radio Disturbance and Immunity Measuring Apparatus and Methods Specification Part 1 Radio Disturbance and Immunity Measuring Apparatus Section 1 Measuring apparatus (*Third Revision*) | New March 2021 | CISPR 16-1-1: 2019 | No Change | Standard may be reaffirmed |
| 2. | IS 12233 (Part 2) : 2021 Radio Interference Characterstics Of Overhead Power Lines And High Voltage Equipment Part 2 Methods Of Measurement And Procedure For Determining Limits (*First Revision*) | New March 2021 | CISPR/TR 18-2: 2017 | No Change | Standard may be reaffirmed |
| 3. | IS 13397 : 2018 Consideration of reference impedances and public supply network impedances for use in determining the disturbance characteristics of electrical equipment having a rated current less then 75 A per phase (*First Revision*) | March 2021 | IEC/TR 60725 : 2012 | No Change | Standard may be reaffirmed |
| 4. | IS 14700 (Part 4/Sec 2) : 2018 Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 2 electrostatic discharge immunity test (*Second Revision*) | March 2021 | IEC 61000 -4-2: 2008 | No Change | Standard may be reaffirmed |
| 5. | IS 14700(Part 4/Sec 4) : 2018 Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 4 electrical fast transient burst immunity test (*Second Revision)* | March 2021 | IEC 61000 -4-4: 2012 | No Change | Standard may be reaffirmed |
| 6. | IS 14700(Part 4/Sec 7) : 2017 Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 7 general guide on harmonic and inter harmonics measurements and instrumentation for power supply systems and equipment connected thereto (First Revision) | March 2021 | IEC 61000 -4-7: 2009 | No Change | Standard may be reaffirmed |

| | | | | | |
|---|---|---|---|---|---|
| 7. | IS 14700(Part 4/Sec 8) : 2018 Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 8 power frequency magnetic field immunity test (Second Revision) | March 2021 | IEC 61000-4-8: 2009 | No Change | Standard may be reaffirmed |
| 8. | IS 14700 (Part 4/Sec 11) : 2021 Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 11 voltage dips short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase | New March 2021 | IEC 61000-4-11: 2020 | Corr 1 : 2020 and Corr 2: 2022 has been issued | Standard may be reaffirmed |
| 9. | IS 14700(Part 4/Sec 34) : 2017 Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 34 voltage dips short interruptions and voltage variations immunity tests for current more than 16 A per phase | Dec 2020 | IEC 61000-4-34: 2009 | No Change | Standard may be reaffirmed |
| 10. | IS 16528 : 2017 Determination of RF field strength and SAR in the vicinity of Radio communication base stations for the purpose of evaluating human exposure | Dec 2020 | IEC 62232: 2011 | IEC 62232: 2022 **1.** Wide Circulation Document may be issued as per latest IEC 2. Standard may be reaffirmed | |
| 11 | IS/IEC 62226-1 : 2004 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 1 General | March 2021 | /IEC 62226-1 : 2004 | No Change | Standard may be reaffirmed |
| 12 | IS/IEC 62226-2-1 : 2004 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 2 exposure to magnetic fields Sec 1 2D models | March 2021 | IEC 62226-2-1 : 2004 | No Change | Standard may be reaffirmed |
| 13 | IS/IEC 62233 : 2005 Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure | March 2021 | IEC 62233 : 2005 | No Change | Standard may be reaffirmed |
| 14 | IS/IEC 62311 : 2019 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields 0 Hz - 300 GHz | New March 2021 | IEC 62311 : 2019 | No Change | Standard may be reaffirmed |
| 15 | IS 14700 (Part 1/Sec 1) : 2000 Electromagnetic compatibility EMC Part 1 general Sec 1 application and interpretation of fundamental definitions and terms | Not Due | IEC 61000-1-1 :1992 | IEC 61000-1-1: 2023 | Wide Circulation Document may be issued as per latest IEC |
| 16 | IS 14700(Part 4/Sec 6) : 2016 Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 6 immunity to conducted disturbances induced by radio - Frequency fields | Not Due | IEC 61000-4-6:2013 | IEC 61000-4-6:2023 | |
| 17 | IS 15040 : 2020 Radio Disturbance Characteristics for Protection of Receivers used on Board Vehicles Boats and Internal Combustion Engines Limits and Methods of Measurement *Second Revision* | Not Due | CISPR 25: 2016 | CISPR 25: 2021 | |

**3.3** The Committee may examine and decide whether to reaffirm/revise/withdraw or issue Amendment to the Standard

**3.4** In the last meeting, the committee noted that IEC/IEEE 62209-1528: 2020 cancels and replaces IEC 62209-1:2016, IEC 62209-2:2010, IEC 62209-2:2010/AMD1:2019 However in India, both IEC 62209-1 & 2 are referred in Telecommunication Engineering Centre (TEC), Min. of Communications notifications.

**3.4.1** On a query from member that whether they can test their product as per IEC/IEEE-1528 : 2020. It was informally informed that new standards cover the requirement of both previous standards with some

additional requirements. However, TEC is requested to clarify, whether IEC 62209-1:2016, IEC 62209-2:2010 has been replaced by IEC/IEEE-1528 : 2020.

## ITEM 4 INTERNATIONAL STANDARDIZATION ACTIVITIES

**4.1** Presently, LITD 09 acts as National Mirror Committee of IEC/ TC 77, IEC/ TC 77A, IEC/ TC 77B, IEC/ TC 77C, IEC/ TC 106, CISPR, CIS/A, CIS/B, CIS/D, CIS/F, CIS/H and CIS/I.

**4.2** India is a P-member on IEC/ TC 77, IEC/ TC 77A, IEC/ TC 77B, IEC/TC 106 and, CIS/B India is also O-member on IEC/TC 77C., CISPR, CIS/A, CIS/D, CIS/F, CIS/I and CIS/H.

**4.2.1** The Committee may review the Status (P/O) of above mentioned International Committees

**4.3** List of International Standards formulated by various IEC Committees along with their SCOPE are given in **Annex 7** (Separate Attachment) and also given in link below:

i) List of standards published by IEC/TC 77 Electromagnetic compatibility are given at following link:
https://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1265

ii) List of standards published by IEC/TC 77A EMC - Low frequency phenomena: http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1384

iii) List of standards published by IEC/TC 77B High frequency phenomena:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1385

iv) List of standards published by IEC/TC 77C High power transient phenomena:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1387

v) List of standards published by IEC/TC 106 Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1303

vi) List of standards published by CIS/A Radio-interference measurements and statistical methods:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1327

vii) List of standards published by CIS/B Interference relating to industrial, scientific and medical radio-frequency apparatus, to other (heavy) industrial equipment, to overhead power lines, to high voltage equipment and to electric traction:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1412

viii) List of standards published by CIS/D Electromagnetic disturbances related to electric/electronic equipment on vehicles and internal combustion engine powered devices:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1419

ix) List of standards published by CIS/F Interference relating to household appliances tools, lighting equipment and similar apparatus:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1424

x) List of standards published by CIS/H Limits for the protection of radio services:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1439

xi) List of standards published by CIS/I Electromagnetic compatibility of information technology equipment, multimedia equipment and receivers:
http://www.iec.ch/dyn/www/f?p=103:22:0::::FSP_ORG_ID:1444

**4.3.1** The Committee may examine and identify the International Standards to be adopted as Indian Standards.

**4.3.2** National Federation of Engineers for Electrical Safety requested that **IEC 61000-4-5 Electromagnetic compatibility (EMC) - Part 5-9: Installation and mitigation guidelines - Series may be adopted by BIS.**

**4.4** The list of working groups under IEC/TC 77, 106 and CISPR is given below:

| Sr | Title | Subcommittee/Working Groups | Expert |
|---|---|---|---|
| 1 | TC 77 Electromagnetic compatibility | WG 13 Generic EMC Standards - Maintenance of IEC 61000-2-5 | Dr. B Subba Rao |
| | | Joint Maintenance Teams JMT MU Measurement uncertainty linked to CIS/A | |

| Sr | Title | Subcommittee/Working Groups | Expert |
|---|---|---|---|
| 2 | IEC/SC 77A EMC - Low frequency phenomena | WG 1 Harmonics and other low-frequency disturbances | Dr. B Subba Rao |
| | | WG 2 Voltage fluctuations and other low-frequency disturbances | Dr. B Subba Rao |
| | | WG 6 Low frequency immunity tests | Dr. B Subba Rao |
| | | WG 8 Description of the electromagnetic environment associated with the disturbances present on electricity supply networks | Dr. B Subba Rao |
| | | WG 9 Power Quality measurement methods | Dr. B Subba Rao |
| | | Joint Working Groups 1) **TC 8/JWG 12** Requirements for measurements used to control DER and loads Managed by TC 8 2) **CISPR/CIS/H/JWG 6** Introduction of requirements in the frequency range 9 kHz – 150 kHz Managed by CIS/H | |

| Sr | Title | Subcommittee/Working Groups | Expert |
|---|---|---|---|
| 3 | SC 77B High frequency phenomena | WG 10 Radiated and conducted continuous phenomena immunity tests | Dr. B Subba Rao and |
| | | Joint Working Groups JTF REV Joint Task Force CISPR/A/SC77B on Reverberation chambers linked to CIS/A | Dr. B Subba Rao |
| | | JTF TEM Joint Task Force CISPR/A/SC77B on TEM Waveguides linked to CIS/A | Dr. B Subba Rao |

| Sr | Title | Subcommittee/Working Groups |
|---|---|---|
| 4 | SC 77C High power transient phenomena | PT 61000-5-6 IEC 61000-5-6 |

| Sr | Title | Subcommittee/Working Groups | Organization |
|---|---|---|---|
| 5 | TC 106 Methods for the assessment of electric, magnetic and electromagnetic fields associated | WG 8 Addressing methods for assessment of contact current related to human exposures to electric, magnetic and electromagnetic fields | Dr.S.K.Dubey<br>Ms Bhoomika Gaur<br>Bipin Jambholkar* |
| | | WG 9 Addressing methods for assessment of Wireless Power Transfer (WPT) related to human exposures to electric, magnetic and electromagnetic fields | Dr.S.K.Dubey<br>Shri Nitin Jain<br>Ms Bhoomika Gaur |
| | | JWG 11 Computational Methods to assess the power density in close proximity to the head and body linked to IEEE | Ms Bhoomika Gaur |

| | | | |
|---|---|---|---|
| | with human exposure | JWG 12 Measurement Methods to assess the power density in close proximity to the head and body linked to IEEE | Ms Bhoomika Gaur |
| | | JWG 13 Measurement Procedures to Determine the Specific Absorption Rate (SAR) linked to IEEE | Ms Bhoomika Gaur |
| | | JWG 63184 Human exposure to electric and magnetic fields from wireless power transfer systems linked to IEEE | |

| Sr | Title | Subcommittee/Working Groups | Organization |
|---|---|---|---|
| 5 | CIS/B Interference relating to industrial, scientific and medical radio-frequency apparatus, to other (heavy) industrial equipment, to overhead power lines, to high voltage equipment and to electric traction | WG 1 Industrial, scientific and medical (I.S.M.) radio frequency apparatus | |
| | | WG 2 Interference from overhead power lines, high-voltage equipment and electric traction | |
| | | WG 7 ISM equipment - Measurements in situ and measurements of large size/high power equipment | |

| | | | |
|---|---|---|---|
| 6 | CIS/F Interference relating to household appliances tools, lighting equipment and similar apparatus | WG 1 Household appliances incorporating electric motors and contact devices | |
| | | WG 2 Lighting equipment | - |

6.5.1 The Committee in its last meeting has decided that Organizations mentioned below will try to contribute in following Committees work/documents in which India is Observer member, so that Committee may consider upgrading Indian Status from O-Member to P-Member.

| Sr | Title | Subcommittee/Working Groups | Organization |
|---|---|---|---|
| 1 | CIS/A Radio-interference measurements and statistical methods | WG 1 EMC instrumentation specifications | DGAQA |
| | | WG 2 EMC measurement techniques, statistical methods and uncertainty | DGAQA |

| Sr | Title | Subcommittee/Working Groups | Organization |
|---|---|---|---|
| 2 | CIS/H Limits for the protection of radio services | WG 1 A survey of EMC product standards on emission | AAI |
| | | JWG 5 Use of medium-sized EUT volumes at alternative test sites SAC and FAR Managed by CIS/A | AAI |

| Sr | Title | Subcommittee/Working Groups | Organization |
|---|---|---|---|
| 3 | CIS/I Electromagnetic compatibility of information technology equipment, multimedia equipment and receivers | MT 7 Maintenance of CISPR 32 | BECIL,DGAQA |
| | | MT 8 Maintenance of CISPR 35 | BECIL,DGAQA,TEC |
| | | MT 9 Maintenance of CISPR 29 | BECIL,DGAQA |

**4.6.1** Telecommunication Engineering Centre, Radio division, is involved in preparation of National Standards related to EMF exposure, which directly correlates with the activities of IEC TC 106. They have informed, some of officers have been transferred and requested BIS to nominate following officials as experts in TC 106 - WG8, WG9, JWG11, JWG12, JWG13:

| S. No | NAME | DESIGNATION |
|---|---|---|
| 1 | AVINASH AGARWAL | DDG (RADIO), TEC |
| 2 | NEHA UPADHYAY | DIRECTOR (RADIO), TEC |
| 3 | BHOOMIKA GAUR | ADG (RADIO), TEC |
| 4 | ANSHUL KUMAR GUPTA | AD (RADIO), TEC |

**4.6.2** Shri Sumit Chopada has requested BIS to nominate him in following WGs of IEC, since Emerson Innovation Center are manufacturers of different product categories including Lighting fixtures (luminaires), Power Supply, UPS etc. wherein we are involved in EMI/EMC performance evaluation of these products. They believe their expertise would be helpful in developing the IEC and ultimately IS standards further.

i) CIS/F WG2: Lighting Equipment
ii) SC 77B MT12: Transient phenomena immunity tests
iii) SC 77B WG 10: Radiated and conducted continuous phenomena immunity tests
iv) SC 77A WG 6: Low frequency immunity tests

**4.6.3** In order to increase India's participation into these committees, the committee may nominate experts into these Working Groups.

**Item 5 Process Reforms in Standardization Activity of BIS**

(a) The Rolling Annual Action Plan for the year 2023-24.

(b) Annual calendar of Technical Committee meetings

(c) **BIS has issued Guidelines for Research & Development Projects for Formulation and Review of Standards. The Objectives of this Scheme are to (Annex 6):**

**i)** Support and commission R&D projects to generate knowledge, empirical data and insights that would help in formulating new standards and updating & upgrading the existing Indian standards;

**ii)** Expand the network of domain area experts to carryout R&D projects in the areas related to standardization and conformity assessment; and

(d) Enrich the research ecosystem in the educational institutions imparting technical and professional education.Closer examination of the New Work Item proposals received from ISO/IEC.

(e) The measures to ensure effective participation by the Indian experts at ISO/IEC levels

(f) National and International events to be participated.

(g) Scientific journals and periodicals to be subscribed.

(h) Creation of pool of experts.

***The committee may please note for necessary compliance and further actions.***

## ITEM 6 WTO-TBT ENQUIRY POINT

**6.1** World Trade Organization (WTO) is the International Organization dealing with global rules of trade between nations. The Technical Barriers to Trade Agreement (TBT) tries to ensure that Regulations, Standards, Conformity Assessment procedures do not create unnecessary obstacles to trade. Manufactures and exporters of each country need to know about the latest standards and technical regulations in their prospective markets. To help ensure that this information is made available conveniently, all WTO member Governments are required to establish National Enquiry Point. India is a signatory to the WTO TBT Agreement. Under this Agreement, India has to fulfill certain obligations such as establishing an enquiry point and transparency of its standards and its regulations. BIS functions as the enquiry point as nominated by Ministry of Commerce, the dealing Ministry with WTO.

**6.2** As the WTO TBT Enquiry Point, BIS answers all the reasonable enquiries pertaining to Technical Regulation, Standards and Conformity Assessments procedures addressed to it from the Enquiry Points of other countries. It also serves as the information centre within the country. Additionally, BIS also disseminates the TBT Notifications of other member bodies to the National Stakeholders.

**6.3** The awareness regarding TBT notifications is lacking among various stakeholders in India and as a result India is not sending its comments on draft notifications by other countries, which may be of trade interest to India. As signatory of WTO-TBT agreement, there is a greater need for us to be aware of the TBT notifications issued by different countries in order to protect our interest.

**6.4** BIS disseminates the TBT Notifications of other countries to the Indian Stakeholders with a view to seek their comments and taking up the same at appropriate forum. The stakeholders are expected to examine the notifications on the following aspects:

i) Are the notifications in accordance with International Standards?
ii) Are they stricter than the International Standards?
iii) Are they stricter than the International Standards then necessary to meet the legitimate objective of

- Protection of human health or safety
- Animal or Plant life or health
- Environment Protection

**6.5** The BIS technical committees have also been identified as stakeholders for the TBT Notifications and relevant notifications are being disseminated to them. The committee members should examine the TBT Notifications with a view to protect Indian trade interest.

**6.6** The e-mail address of BIS Enquiry Point is as follows:
BIS: **info@bis.org.in**
Website**:** **www.bis.org.in**

***The Committee may note.***

## ITEM 7 ELECTRONICS AND INFORMATION TECHNOLOGY GOODS (REQUIREMENTS FOR COMPULSORY REGISTRATION) ORDER, 2012

**7.1** Ministry of Information and Technology, Department of Electronics and IT(DeitY) has issued the Electronics and Information Technology Goods (Requirements for Compulsory Registration) Order, 2012, bringing into force a scheme for mandatory regime of registration

of identified ~~44~~ electronic products so that these products meet specified safety standards (Out of which 29 belongs LITD). According to this order, No person shall manufacture or store for sale and import of electronics goods which do not conform to the specified Indian standard and do not bear the self declaration- Conforming to IS on such goods after obtaining Registration from BIS. The detail information of the registration scheme is available on BIS website http://www.bis.org.in.

***The Committee may note.***

## ITEM 8 INFORMATION ON E-SALE OF STANDARDS BY BIS

**8.1** **Bureau of Indian Standards**, the National Standards Body of India has published more than 19000 Indian Standards which are available for sale. They are available on e-sale as under: Softcopy download from BIS sales portal http://www.standardsbis.in.

***The Committee may note.***

## ITEM 9 NATIONAL INSTITUTE FOR TRAINING IN STANDARDISATION (NITS)

**9.1** National Institute of Training for Standardization (NITS) has been set up by BIS with world class facilities to impart training on various aspects leading to standardization, quality and other management systems, consumer protection, public service delivery, etc. The training calendar for the current year is available on BIS web site http://www.bis.org.in. The organizations willing to depute their personnel for training may kindly go through the appropriate programme and get them registered to undergoing training.

***The Committee may note.***

## ITEM 10 DATE AND PLACE FOR THE NEXT MEETING

## ITEM 11 ANY OTHER BUSINESS

# ANNEX 1
# (Item 2.1)

## ELECTROMAGNETIC COMPATIBILITY SECTIONAL COMMITTEE LITD 09 COMPOSITION

| Sl. No. | Organization | Member | |
|---|---|---|---|
| 1 | **SAMEER** | | |
| | | Dr. B. Subbarao | **Chairman** |
| 2 | **Airport Authority Of India (AAI)** | | |
| | | Shri K. Soundararajan | Principal |
| | | Shri J B Singh | Alternate 1 |
| | | Shri Rahul Chaudhary | Alternate 2 |
| 3 | **All India Radio (AIR)** | | |
| | | Shri S K Srivastva | Principal |
| | | Shri A P Singh | Alternate |
| 4 | **Automotive Research Association of India (ARAI)** | | |
| | | Shri A.B. Mulay | Principal |
| | | Shri Nishit Shankar | Alternate |
| 5 | **Bharat Electronics Ltd. (BEL)** | | |
| | | Shri Ajay Khilnani | Principal |
| | | Shri G.Subba Rao | Alternate |
| 6 | **BNN Speag, Test and Calibration Laboratory Indian Pvt ltd,** | | |
| | | Shri Nitin Jain | Principal |
| | | Shri Nikhil Jain | Alternate |
| 7 | **Broadcast Engineering Consultants India Ltd (BECIL)** | | |
| | | Shri W.B.Prasad | Principal |
| | | Shri Padarabinda Das | Alternate |
| 8 | **Consumer Electronics and Appliance Mfrs.Association (CEAMA)** | | |
| | | Shri Srinivasu Moturi | Principal |
| | | Shri Anil Mehta | Alternate |
| | | Shri Saurabh Kumar Singh | 2nd Alternate |
| 9 | **National Physical Laboratory (NPL)** | | |
| | | Dr. S.K. Dubey | Principal |
| 10 | **Directorate General Doordarshan, Prasar Bharati (DD)** | | |
| | | Shri R A Warsi | Principal |
| | | Shri Shailesh Kumar Kanauje | Alternate |
| 11 | **Directorate General of Aeronautical Quality Assurance (DGAQA)** | | |
| | | Dr. Manoj Sharma | Principal |
| 12 | **Electronic Component Industries Association (ELCINA)** | | |
| | | Shri Rajoo Goel | Principal |
| | | Shri M. P. Dubey | Alternate |
| 13 | **Emerson Innovation Center – Pune** | | |
| | | Shri Sumit Chopada | Principal |
| | | Shri Ajay Patidar | Alternate |
| 14 | **Joint Communications & Electronic Staff** | | |
| | | Gp Capt Smriti Sharma | Principal |
| | | Wg. Cdr. S M Jalali | Alternate |

| | | | |
|---|---|---|---|
| 15 | **Ministry of Electronics & Information Technology (MeitY)** | | |
| | | Dr Bharat Kumar Yadav | Principal |
| 16 | **Samsung India Electronics Private Limited** | | |
| | | Shri Saurabh Nag | Principal |
| 17 | **Standardization Testing and Quality Certification (STQC)** | | |
| | | Shri Arminder Singh, ERTL (N) | Principal |
| | | Ms. Ratna Potdar ETDC-Pune | Alternate |
| | | Shri Nakul Agarwal, STQC-Hq | 2nd Alternate |
| 18 | **Telecommunication Engineering Centre (TEC), DOT** | | |
| | | Shri Avinash Agarwal | Principal |
| | | Ms Neha Upadhyay | Alternate |
| | | Ms Bhoomika Gaur | Alternate |
| | | Shri Anshul Kumar Gupta | Alternate |
| 19 | **Telecom Equipment Manufactures Assn. of India (TEMA)** | | |
| | | Shri Prof. N.K. Goyal | Principal |
| | | Ms Manisha Kumari | Alternate |
| 20 | **TUV Rheinland (India) Pvt Ltd** | | |
| | | Mr. M Abdul Rahman Siddiqui | Principal |
| | | Shri Raghavendra Kulkarni | Alternate |
| 21 | **Voluntary Orgn. in Interest of Consumer Education (VOICE)** | | |
| | | Shri H S Wadhwa | Principal |
| | | Shri K.C. Chaudhary | Alternate |
| 22 | **Wireless Planning and Coordination Wing** | | |
| | | Dr. P S M Tripath | Principal |

Request for Co-option

1. India Cellular & Electronics Association
2. Philips India Limited, Gurugram
3. React laboratories
4. National Federation of Engineers for Electrical Safety

## ANNEX 2

**Instructions for the Effective Implementation of the Process Reforms Aimed at the Strengthening of the Standardization Ecosystem in the Country**

1. Each of the members of a Technical Committee shall be required to sign a declaration concerning the duties and responsibilities of the member of a Technical Committee in the form prescribed by BIS.

2. It shall be mandatory for a member of the Technical Committee to record his comments in regard to a Preliminary Draft Standard. In case, a member feels that the subject the draft deals with is not related to his domain knowledge, he should have it mentioned in his comment.
3. Absence from two consecutive and less than 50 percent of the meetings of the TC held in a year shall invite termination of the membership except in special circumstances acknowledged in the writing by the Divisional Council on the basis of the recommendation of the TC to this effect.
4. Although the members are supposed to be aware of the requirement to attend TC meetings, it shall be incumbent upon the Member Secretary concerned to send a reminder to the member having been absent in a TC meeting that the failure to attend the next meeting may lead to the termination of his membership.
5. The quorum for the TC meeting shall be 10 or one third of the members, whichever is higher.

6. A person whose membership is terminated on the ground of absence from the meetings or not responding to the Preliminary Draft standard shall not be eligible to be reinducted as a member in any of the TCs of BIS for two years from the date of termination.

7. To assist the Search Committees in the Divisional Councils in finding out suitable persons to be inducted into the Technical Committees, a reference to this end shall be made by the Head of the Standardisation Department to the SCMD, which will advertise the requirement by writing to the academic institutions, industry, R&D Organisations, civil society groups, central or state government departments, as the case may be, or by inviting Expression of Interest through the print and social media.
8. An acknowledgement of the contributions made by a TC member in a year shall be issued by BIS in the format prescribed for the purpose.
9. BIS will also encourage the TC members to write books/reference materials on Indian Standards by providing financial or logistical support, as approved by the Committee constituted for this purpose.

10. BIS will also encourage the TC members to collaborate with the institutions BIS has MoU with, to organise workshops, seminars or guest lectures on Indian Standards.

11. Copy of the instructions shall be shared with the Divisional Council and Technical Committee Chairs and Members.

## ANNEX 6

**(Item 3.1)**

**LITD 9 ELECTROMAGNETIC COMPATIBILITY**

**SCOPE -** To prepare Indian Standards relating to:

a) Electromagnetic compatibility of electrical and/or electronic equipment, between themselves and with electrical power networks including Electromagnetic interference.

b) Measurement and calculation methods to assess human exposure to electric, magnetic and electromagnetic fields.

LIAISON WITH IEC COMMITTEES

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| IEC/TC 77 Electromagnetic Compatibility | (P-Member) |
| IEC/SC 77A Low Frequency Phenomena | (P-Member) |
| IEC/SC 77B High Frequency Phenomena | (P-Member) |
| IEC/SC 77C High Power Transient Phenomena | (O-Member) |
| IEC/TC 106 Methods for the assessment of Electric, Magnetic and Electromagnetic fields associated wih human exposure | (P-Member) |
| CISPR International Special Committee on Radio Interference | (O-Member in all CISPR, CIS-A, C, D, E, F, G, H and I.) |
| IEC CIS/B : Interference Relating To Industrial, Scientific And Medical Radio-Frequency Apparatus, To Other (Heavy) Industrial Equipment, To Overhead Power Lines, To High Voltage Equipment And To Electric Traction | (P-Member) |

| Sl. No. | IS No. | TITLE | Reaffirm M-Y |
|---|---|---|---|
| 1 | IS/CISPR TR 29 : 2020 | Television broadcast receivers and associated equipment Immunity characteristics Methods of objective picture assessment | New April 2022 |
| 2 | IS/CISPR 32 : 2015 | Electromagnetic Compatibility of Multimedia Equipment Emission Requirements | Nov, 2022 |
| 3 | IS/CISPR 35 : 2016 | Electromagnetic Compatibility of Multimedia Equipment Immunity Requirements | New Jun 2022 |
| 4 | IS 1885 (Part 85) : 2003 IEC 60050(161): 1990 | Electrotechnical vocabulary Part 85 electromagnetic compatibility | Jan, 2022 |
| 5 | IS 6873 (Part 1) : 2010 CISPR 12: 2007 | Limits and methods of measurements of radio disturbance characteristics Part 1 vehicles boats and internal combustion engines Third Revision | Jan, 2022 |
| 6 | IS 6873 (Part 2/Sec 1) : 2023 CISPR 14-1: 2020 | Limits and methods of measurements of radio disturbance characteristics Part 2 Electro Magnetic Compatibility EMC Requirements for Household Appliances Electric tools and similar apparatus Section 1 Emission | New |
| 7 | IS 6873 (Part 2/Sec 2) : 2023 CISPR 14-2: 2020 | Limits and Methods of Measurement of Radio Disturbance Characteristics Part 2 Electromagnetic Compatibility EMC Requirements for Household Appliances Electric Tools and Similar Apparatus Section 2 Emission Product family standard (*Forth Revision)* | New |
| 8 | IS 6873 (Part 4) : 2019 CISPR 11: 2016 | Limits and Methods of Measurement of Radio Disturbance Characteristics Part 4 Industrial Scientific and Medical Radio-Frequency Equipment (*Second Revision)* | Nov, 2022 |
| 9 | IS 6873 (Part 5) : 2019 CISPR 15: 2018 | Limits and Methods of Measurement of Radio Disturbance Characteristics Part 5 Electrical Lighting and Similar Equipment (*Third Revision)* | Nov, 2022 |
| 10 | IS 10052 (Part 1/Sec 1) : 2021 | | New |

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|---|---|---|---|
| | CISPR 16-1-1: 2019 | Radio Disturbance and Immunity Measuring Apparatus and Methods Specification Part 1 Radio Disturbance and Immunity Measuring Apparatus Section 1 Measuring apparatus (*Third Revision)* | March 2021 |
| 11 | IS 10052 (Part 1/Sec 3) : 2018<br>IEC/CISPR 16-1-3 : 2016 | Radio Disturbance and Immunity Measuring Apparatus and Methods Specification Part 1 Radio Disturbance and Immunity Measuring Apparatus Section 3 Ancillary equipment Disturbance power | July, 2021 |
| 12 | IS 10052 (Part 1/Sec 4) : 2023<br>CISPR 16-1-4 : 2020 | Radio disturbance and immunity measuring apparatus and methods - Specification Part 1 radio disturbance and immunity measuring apparatus Sec 4 antennas and test sites for radiated disturbance measurements | July, 2021 |
| 13 | IS 10052 (Part 1/Sec 5) : 2018<br>CISPR 16-1-5 : 2016 | Radio Disturbance and Immunity Measuring Apparatus and Methods Specification Part 1 Radio Disturbance and Immunity Measuring Apparatus Section 5 Antenna calibration sites and reference test sites for 5 MHz to 18 GHz | July, 2021 |
| 14 | IS 10052 (Part 1/Sec 6) : 2022<br>CISPR 16-1-6: 2014 | Specification for radio disturbance and immunity measuring apparatus and methods Part 1 Radio disturbance and immunity measuring apparatus Section 6 EMC antenna calibration | New Jan 2022 |
| 15 | IS 10052 (Part 2/Sec 1) : 2018<br>CISPR 16-2-1:2014 | Specification for radio disturbance and immunity measuring apparatus and methods Part 2 methods of measurement of disturbances and immunity Sec 1 conducted disturbance measurements *Second Revision* | July, 2021 |
| 16 | IS 10052 (Part 4/Sec 4) : 2018<br>CISPR TR 16-4-4 : 2017 | Radio disturbance and immunity measuring apparatus and methods - Specification Part 4 uncertainties statistics and limit modelling Sec 4 statistics of complaints and a model for the calculation of limits for the protection of radio services | July, 2021 |
| 17 | IS 12233 (Part 1) : 2018<br>CISPR 18-1 : 2017 | Radio interference characteristics of overhead power lines and high - Voltage equipment Part 1 description of phenomena | Sept, 2021 |
| 18 | IS 12233 (Part 2) : 2021<br>CISPR/TR 18-2: 2017 | Radio Interference Characterstics Of Overhead Power Lines And High Voltage Equipment Part 2 Methods Of Measurement And Procedure For Determining Limits (*First Revision)* | New March 2021 |
| 19 | IS 12233 (Part 3) : 2019<br>CISPR/TR 18-3: 2017 | Radio Interference Characteristics of Overhead Power Lines and High-Voltage Equipment Part 3 Code of Practice for Minimizing the Generation of Radio Noise (*Second Revision)* | July, 2021 |
| 20 | IS 13397 : 2018<br>IEC/TR 60725 : 2012 | Consideration of reference impedances and public supply network impedances for use in determining the disturbance characteristics of electrical equipment having a rated current less then 75 A per phase (*First Revision)* | Mar, 2021 |
| 21 | IS 14700 (Part 1/Sec 1) : 2000<br>IEC 61000-1-1: 1992 | Electromagnetic compatibility EMC Part 1 general Sec 1 application and interpretation of fundamental definitions and terms | Jan 2022 |

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|---|---|---|---|
| 22 | IS 14700 (Part 3/Sec 2) : 2020<br>IEC 61000-3-2: 2018 | Electromagnetic Compatibility EMC Part 3 Limits Section 2 Limits for harmonic current emissions equipment input current 16 A per phase Third Revision | Sep 2020 |
| 23 | IS 14700 (Part 3/Sec 3) : 2018<br>IEC 61000-3-3: 2013 | Electromagnetic compatibility EMC Part 3 limits section 3 limitation of voltage changes voltage fluctuations and flicker in public low-voltage supply system for equipment with rated current 16 a per phase and not subjected to conditional connection Second Revision | May 2021 |
| 24 | IS 14700 (Part 4/Sec 1) : 2019<br>IEC 61000-4-1: 2016 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 1 overview of the IEC 61000 - 4 series Second Revision | May 2022 |
| 25 | IS 14700 (Part 4/Sec 2) : 2018<br>IEC 61000-4-2 : 2008 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 2 electrostatic discharge immunity test Second Revision | Mar, 2021 |
| 26 | IS 14700(Part 4/Sec 3) : 2023<br>IEC 61000-4-3: 2020 | Electromagnetic Compatibility EMC Part 4 Testing and Measurement Techniques Section 24 Test methods for protective devices for HEMP conducted disturbance First Revision | |
| 27 | IS 14700(Part 4/Sec 4) : 2018<br>IEC 61000-4-4:2012 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 4 electrical fast transient burst immunity test Second Revision | Mar 2021 |
| 28 | IS 14700(Part 4/Sec 5) : 2019<br>IEC 61000-4-5: 2017 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 5 surge immunity test First Revision | May 2022 |
| 29 | IS 14700(Part 4/Sec 6) : 2016<br>IEC 61000-4-6:2013 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 6 immunity to conducted disturbances induced by radio - Frequency fields | April 2022 |
| 30 | IS 14700(Part 4/Sec 7) : 2017<br>IEC 61000-4-7:2009 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 7 general guide on harmonic and inter harmonics measurements and instrumentation for power supply systems and equipment connected thereto *First Revision* | Dec 2020 |
| 31 | IS 14700(Part 4/Sec 8) : 2018<br>IEC 61000-4-8:2009 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 8 power frequency magnetic field immunity test *Second Revision* | Mar 2021 |
| 32 | IS 14700(Part 4/Sec 9) : 2019<br>IEC 61000-4-9: 2016 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 9 impulse magnetic field immunity test *Second Revision* | May 2022 |
| 33 | IS 14700(Part 4/Sec 11) : 2021<br>IEC 61000-4-11: 2020 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 11 voltage dips short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase | New March 2021 |
| 34 | IS 14700(Part 4/Sec 12) : 2019<br>IEC 61000-4-12: 2017 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 12 ring wave immunity test *Second Revision* | May 2022 |

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| 35 | IS 14700(Part 4/Sec 13) : 2016 IEC 61000-4-13:2009 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 13 harmonics and inter harmonics including mains signaling at a c power port low frequency immunity test | Apr 2022 |
| 36 | IS 14700(Part 4/Sec 14) : 2018 IEC 61000-4-14: 2009 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 14 voltage fluctuation immunity test for equipment with input current not exceeding 16 A per phase | May, 2021 |
| 37 | IS 14700(Part 4/Sec 15) : 2018 IEC 61000-4-15:2010 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 15 flicker meter - Functional and design specifications *Second Revision* | May, 2021 |
| 38 | IS 14700(Part 4/Sec 16) : 2019 IEC 61000-4-16: 2015 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 16 test for immunity to conducted common mode disturbances in the frequency range 0 Hz to 150 kHz *Second Revision* | May, 2022 |
| 39 | IS 14700(Part 4/Sec 17) : 2018 ISO 61000-4-17 : 2009 | Electromagnetic Compatibility EMC Part 4 Testing Measurement Techniques Section 17 Ripple on d c input Power Port Immunity Test | May, 2021 |
| 40 | IS 14700(Part 4/Sec 24) : 2018 IEC 61000-4-24:2015 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 24 test methods for protective devices for HEMP conducted disturbance *First Revision* | July, 2021 |
| 41 | IS 14700(Part 4/Sec 25) : 2018 IEC 61000-4-25:2012 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 25 HEMP immunity test methods for equipment and systems | May, 2021 |
| 42 | IS 14700(Part 4/Sec 32) : 2018 IEC 61000-4-32: 2002 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 32 high - Altitude electromagnetic pulse HEMP simulator compendium | May, 2021 |
| 43 | IS 14700(Part 4/Sec 33) : 2018 IEC 61000-4-33 : 2005 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 33 measurement methods for high - Power transient parameters | June, 2021 |
| 44 | IS 14700(Part 4/Sec 34) : 2017 IEC 61000-4-34:2009 | Electromagnetic compatibility EMC Part 4 testing and measurement techniques Sec 34 voltage dips short interruptions and voltage variations immunity tests for current more than 16 A per phase | Dec, 2020 |
| 45 | IS 14700(Part 4/Sec 35) : 2018 IEC 61000-4-35 : 2009 | Electromagnetic Compatibility EMC Part 4 Testing Measurement Techniques Section 35 HPEM Simulator | May, 2021 |
| 46 | IS 14700 (Part 6/Sec 1):2019 IEC 61000-6-1: 2016 | Electromagnetic Compatibility EMC Part 6 Generic Standards Section 1 Immunity standard for residential commercial and light-industrial environments *First Revision* | July, 2022 |
| 47 | IS 14700 (Part 6/Sec 2) : 2019 IEC 61000-6-2: 2016 | Electromagnetic Compatibility EMC Part 6 Generic Standards Section 2 Immunity standard for industrial environments *First Revision* | July, 2022 |
| 48 | IS 14700 (Part 6/Sec 3) : 2023 IEC 61000-6-3:2020 | Electromagnetic Compatibility EMC - Part 6 Generic Standards - Sec 3 Emission Standards for Residential | May, 2021 |

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|---|---|---|---|
| | | Commercial and Light-Industrial Environments *First Revision* | |
| 49 | IS 15040 : 2020<br>CISPR 25: 2016 | Radio Disturbance Characteristics for Protection of Receivers used on Board Vehicles Boats and Internal Combustion Engines Limits and Methods of Measurement *Second Revision* | Nov, 2022 |
| 50 | IS 15874 : 2009<br>CISPR 28: 1997 | Industrial scientific and medical equipment ISM - Guidelines for emission levels within the bands designated by the ITU | Jan, 2022 |
| 51 | IS 16528 : 2017<br>IEC 62232: 2011 | Determination of RF field strength and SAR in the vicinity of Radio communication base stations for the purpose of evaluating human exposure | Dec, 2020 |
| 52 | IS/IEC 62209-1 : 2016 | 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 1 Devices Used Next to the Ear Frequency range of 300 MHz to 6 GHz First Revision | Dec, 2021 |
| 53 | IS/IEC 62209-2 : 2019 | Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices Human models instrumentation and procedures Part 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 First Revision | |
| 54 | IS/IEC 62209-3 : 2019 | 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 | |
| 55 | IS/IEC 62226-1: 2004 | 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 1 General | Mar, 2021 |
| 56 | IS/IEC 62226-2-1 : 2004 | 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 2 exposure to magnetic fields Sec 1 2D models | Mar, 2021 |
| 57 | IS/IEC 62226-3-1: 2016 | 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 Exposure to Electric Fields Section 1 Analytical and 2D numerical models | July, 2021 |
| 58 | IS/IEC 62233 : 2005 | Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure | Mar, 2021 |
| 59 | IS/IEC 62311 : 2019 | Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields 0 Hz - 300 GHz | New March 2021 |

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| 60 | IS/IEC 62369-1 : 2008 | Evaluation of human exposure to electromagnetic fields from short range devices SRDS in various applications over the frequency range 0 GHz to 300 GHz Part 1 fields produced by devices used for electronic article surveillance radio frequency identification and similar systems | Apr, 2021 |
| 61 | IS/IEC 62479 : 2010 | Assessment of the Compliance of Low-Power Electronic and Electrical Equipment with the Basic Restrictions Related to Human Exposure to Electromagnetic Fields 10 MHz to 300 GHz | July, 2021 |
| 62 | IS/IEC 62577 : 2009 | Evaluation of Human Exposure to Electromagnetic Fields from a Stand-Alone Broadcast Transmitter 30 MHz - 40 GHz | July, 2021 |

**ASPECT WISE REPORT**

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|---|---|
| Product | 13 |
| METHODS OF TEST | 37 |
| CODES OF PRACTICES | 7 |
| TERMINOLOGY | 1 |
| OTHERS | 4 |
| **TOTAL :** | **62** |

**** INDICATES STANDARDS UNDER REVISION*** ***** INDICATES STANDARDS TO BE REVISED***

***/ INDICATES DUAL NUMBER STANDARDS*** ***| INDICATES EQUIVALENT STANDARDS***