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BUREAU OF INDIAN STANDARDS

AGENDA

TENTH MEETING OF ELECTROMAGNETIC COMPATIBILITY SECTIONAL COMMITTEE, LITD 09

DATE & TIME **DATE : 11th August 2021** **DAY : Wednesday** **TIME : 1430h (02:30 PM)**	**VENUE** **Meeting Link (WEBEX):** **https://bisindia.webex.com/bisindia/j.php?MTID=mac5940a05704e2cba** **Meeting number : 170 790 3820** **Password : LTD9**
Chairman: Dr Subbarao Bandaru	**Member Secretary: Shri Bipin Jambholkar**

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 were circulated vide BISDG letter No.LITD 09/A-2.9 dated 23rd December 2020. No Comments were received on MOM.

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 11-12).

2.2 BIS has received request for co-option from following organization. (Organization request and brief are enclosed in Annex 2-pg 13 to 14)

a) Shri Akhilesh Sidapara- In Personal Capacity (In last meeting, his request was rejected)

b) Ms Manjeeri Gopal - In Personal Capacity

c) Shri Rajender Saini - In Personal Capacity

d) Ms. Mayuri Simaria Jain - In Personal Capacity

e) Prof. Ranjit Singh Momi

The Committee may note and review its composition.

ITEM 3 DRAFT INDIAN STANDARDS FOR FINALIZATION

3.1 The following Draft Standards were sent for comments under wide Circulation for Comments.

Sl No.	Document No. IS Number Equivalent Standard	Ref. No and date	Title & ICS No.	Remarks
1	Doc. No. : LITD 09 (17072) IS 10052 (Part 1/Sec 6) CISPR 16-1-6: 2014	LITD 09/ T- 77, Dt 26th Mar 21	**Specification for radio disturbance and immunity measuring apparatus and methods** Part 1 Radio disturbance and immunity measuring apparatus Section 6 EMC antenna calibration ICS 33.100.10; 33.100.20	**No Comment received**
2	Doc. No. : LITD 09 (17073) IS/CISPR TR 29: 2020	LITD 09/ T- 78, Dt 26th Mar 21	**Television broadcast receivers and associated equipment – Immunity characteristics – Methods of objective picture assessment** ICS 33.100.20	
3	Doc. No. : LITD 09 (17074) IS/IEC/IEEE 62209-1528: 2020	LITD 09/ T- 79, Dt 26th Mar 21	**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 1528 Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz) ICS 17.220.20	

The Committee may consider to finalize the above mentioned wide circulation documents for printing as Indian Standards.

ITEM 4 PRESENT POSITION OF WORK (POW) OF LITD 09

4.1 The present position of work of LITD 09 is given in Annex 3 (Pg 15-20)

The Committee may note and review the POW.

ITEM 5 REVIEW OF PUBLISHED INDIAN STANDARDS

5.1 In accordance with BIS procedure, Indian Standards which are in existence for more than 3 years are to be reviewed for reaffirmation/revision/withdrawal. Latest status of such standards along with the status of the ISO/IEC standards, on which these are based. This list of Indian standards whose base ISO/IEC standards have been revised/withdrawn are given below with details of Status of base International Standards.

Sl. No	IS. No. & Title	Date of Last Reaffirmation	Corresponding International Standard	Latest Position of International Standard	Remarks
1	IS 6873 (Part 2/Sec 1) :2019---Limits and methods of measurements of radio disturbance characteristics Part 2 Electromagnetic Compatibility (EMC) - Requirements for household appliances electric tools and similar apparatus Sec 1 Emission (fourth revision)	Not Due	CISPR 14-1 : 2016	CISPR 14-1 : 2020	WC may be issued as per latest Standard
2	IS 6873(Part 2/Sec 2) :2019 Limits and methods of measurements of radio disturbance characteristics Part 2 Electromagnetic Compatibility (EMC) - Requirements for household appliances electric tools and similar apparatus Sec 2 Emission - Product Family Standard (Fourth revision)	Not Due	CISPR 14-2 : 2015	CISPR 14-2 : 2020	WC may be issued as per latest Standard
3	IS 10052 (Part 1/Sec 3) :2018 Radio disturbance and immunity Measuring apparatus and methods Specification Part 1 Radio disturbance and immunity measuring apparatus Section 3 Ancillary equipment - Disturbance power	Jul 2018	CISPR 16-1-3 : 2016	No Change	Standard may reaffirmed
4	IS 10052(Part 1/Sec 4) :2018 Radio disturbance and immunity Measuring apparatus and methods Specification Part 1 Radio disturbance and immunity measuring apparatus Section 4 Antennas and test sites for radiated disturbance measurements	Jul 2018	CISPR 16-1-4 : 2017	CISPR 16-1-4 : 2020	WC may be issued as per latest Std and in the meantime Std may reaffirmed
5	IS 10052(Part 1/Sec 5) :2018 Radio disturbance and immunity Measuring apparatus and methods Specification Part 1 Radio disturbance and immunity measuring apparatus Section 4 Antennas calibration sites and reference test sites for 5 MHz to 18 GHz	Jul 2018	CISPR 16-1-5 : 2016	No Change	Standard may reaffirmed
6	IS 10052(Part 2/Sec 1) :2018 Specification for radio disturbances and immunity measuring apparatus and methods: Part 2 Methods of measurement of disturbances and immunity Section 1Conducted distribution (Second revision)	Jul 2018	CISPR 16-2-1 :2014	No Change	Standard may reaffirmed
7	IS 10052(Part 4/Sec 4) :2018 Radio disturbance and immunity Measuring apparatus and methods Specification Part 4 Uncertainties, statistics and limit modeling Section 4 Statistics of complains and a model for the calculation of limits for the protection of radio services	Jul 2018	CISPR/TR 16-4-4 (2017	Amd 2 (2020) has been issued	Amd need to be study in detail. Standard may reaffirmed
8	IS 12233(Part 1): 2018 Radio interference characteristics of overhead power lines and high voltage equipment - Part 1 Description of phenomena	Sep 2018	CISPR 18-1: 2017	No Change	Standard may reaffirmed
9	IS 12233(Part 3):2019 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)	Jul 2018	CISPR 18-3: 2017	No Change	Standard may reaffirmed

10	IS 14700(Part 4/Sec 3): 2018 Electromagnetic compatibility (EMC) Part 4 Testing & measurement techniques Sec 3 Radiated, radio frequency, electromagnetic field immunity test (First Revision)	Not Due	/ IEC 61000-4-3 (2010)	IEC 61000-4-3 (2020)	WC may be issued as per latest Standard
11	IS 14700(Part 4/Sec 14): 2018 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 2018	IEC 61000-4-14: 2009	No Change	Standard may reaffirmed
12	IS 14700(Part 4/Sec 17): 2018 Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 17 Ripple on d.c. input power port immunity test	May 2018	IEC 61000-4-17 : 2009	No Change	Standard may reaffirmed
13	IS 14700(Part 4/Sec 24):2018 Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 24 Test method for protective devices for HEMP conducted disturbance(First Revision)	Jul 2018	IEC 61000-4-24 : 2015	No Change	Standard may reaffirmed
14	IS 14700(Part 4/Sec 25):2018 Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques Sec 25HEMP immunity test methods for equipment and systems.	May 2018	IEC 61000-4-25 : 2012	Amd 2 (2019) has been issued	Amd need to be study in detail. Standard may reaffirmed
15	IS 14700(Part 4/Sec 32):2018 Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 32 High-Altitude Electromagnetic pulse HEMP Simulator Compendium	May 2018	IEC 61000-4-32 : 2002	No Change	Standard may reaffirmed
16	IS 14700(Part 4/Sec 33):2018 Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 33 Measurement method for high power transient parameters	Jun 2018	IEC 61000-4-33: 2005	No Change	Standard may reaffirmed
17	IS 14700(Part 4/Sec 35):2018 Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 35 HPEM simulator compedium	May 2018	IEC 61000-4-35:2009	No Change	Standard may reaffirmed
18	IS 14700(Part 6/Sec 3):2018 Electromagnetic compatibility (EMC) Part 6 Generic standards Section 3: Emission standards for residential, commercial and light industrial environment (First Revision)	May 2018	IEC 61000-6-3: 2006	IEC 61000-6-3: 2020	WC may be issued as per latest Std and in the meantime Std may reaffirmed
19	IS/IEC 62209-1 : 2016 Human exposure to radio freq. fields from hand-held and body-mounted wireless comm. devices- Human models, inst. and procedures-Part 1 Procedure to determine the specific absorption rate(SAR)for hand-held devices used in close proximity to the ear(freq. ran	Dec 2018	IEC 62209-1: 2016	IEC has withdrawn the Std and replaced by IEC 62209-1528: 2020	
20	IS 62226(Part 3/Sec 1):2018 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	Jul 2018	IEC 62226-3-1 : 2016	No Change	Standard may reaffirmed

21	IS 62369(Part 1):2009 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 id	Apr 2018	IEC 62369-1: 2009	No Change	Standard may reaffirmed
22	IS 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)	Jul 2018	IEC 62479 : 2010	No Change	Standard may reaffirmed
23	IS 62577:2009 Evaluation of human exposure to electromagnetic fields from a stand-alone broadcast transmitter (30 MHz - 40 GHz)	Jul 2018	IEC 62577 : 2009	No Change	Standard may reaffirmed

The Committee may examine and decide to revise/reaffirm or withdraw above mentioned Indian standards

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ITEM 6 INTERNATIONAL STANDARDIZATION ACTIVITIES

6.1 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.

6.2 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.

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

6.3 List of International Standards formulated by various IEC Committees along with their SCOPE are given in Annex 4 (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

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

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

Sr No	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

Sr	Title	Subcommittee/Working Groups	Expert
2	IEC/TC 77A EMC - Low frequency phenomena	WG 1 Harmonics and other low-frequency disturbances	Dr. B Subba Rao Shri Sulekh Chand Shri Ashutosh Pandey, Ms. Neha Upadhyay,
		WG 2 Voltage fluctuations and other low-frequency disturbances	Dr. B Subba Rao Shri Ravindra Kumar Shri Ashutosh Pandey, Ms. Neha Upadhyay

		WG 6 Low frequency immunity tests	Dr. B Subba Rao Ms. Neha Upadhyay, Shri Manish Kumar Singh,
		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

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 Shri Ravindra Kumar Ms. Neha Upadhyay, Shri Manish Kumar Singh,
		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
		JTF FAR Joint Task Force between CISPR/A and SC77B on Fully anechoic rooms (FARs) Managed by CIS/A	Shri G.Subba Rao

Sr	Title	Subcommittee/Working Groups	Organization
4	TC 106 Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure	WG 8 Addressing methods for assessment of contact current related to human exposures to electric, magnetic and electromagnetic fields	Shri Ashutosh Pandey, Shri Harshit Modi, Dr.S.K.Dubey
		WG 9 Addressing methods for assessment of Wireless Power Transfer (WPT) related to human exposures to electric, magnetic and electromagnetic fields	Ms. Neha Upadhyay, Shri Harshit Modi, Dr.S.K.Dubey

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	Shri Ashutosh Pandey, Shri Manish Kumar Singh, Shri Ravindra Kumar
		WG 2 Interference from overhead power lines, high-voltage equipment and electric traction	

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/F Interference relating to household appliances tools, lighting equipment and similar apparatus	WG 1 Household appliances incorporating electric motors and contact devices	ERTL (N)
		WG 2 Lighting equipment	-

Sr	Title	Subcommittee/Working Groups	Organization
3	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
4	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

6.5.2 Other Committees of IEC/CISPR in the ambit of LITD 09 work:

Sr	Title	Subcommittee/Working Groups
1	SC 77C High power transient phenomena	PT 61000-5-10 Guide to the Application of HEMP and IEMI Publications
		MT 61000-2-10 Electromagnetic compatibility (EMC) - Part 2-10: Environment-Description of the HEMP environment - Conducted disturbance
		MT 61000-4-25 Electromagnetic compatibility (EMC) - Part 4-25: Testing and measurement techniques - HEMP immunity test methods for equipment and systems
		MT 61000-4-36 Electromagnetic compatibility (EMC) - Part 4-36: Testing and measurement techniques - IEMI immunity test methods for equipment and systems

Sr	Title	Subcommittee/Working Groups
2	CIS/D Electromagnetic disturbances related to electric/electronic equipment on vehicles and internal combustion engine powered devices	WG 1Protection of receivers used in buildings, along the roadside, or in outdoor areas
		WG 2 Protection of on-board and adjacent vehicle receivers
		Joint Working Groups JWG A-SITE-VAL Joint Task Force between CISPR/D and CISPR/A - Chamber validation methods

Sr	Title	Subcommittee/Working Groups
3	CIS/S Steering Committee	WG 2 Definitions

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

ITEM 7 WTO-TBT ENQUIRY POINT

7.1 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.

7.2 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.

7.3 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.

7.4 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

7.5 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.

7.6 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 8 ELECTRONICS AND INFORMATION TECHNOLOGY GOODS (REQUIREMENTS FOR COMPULSORY REGISTRATION) ORDER, 2012

8.1 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 9 INFORMATION ON E-SALE OF STANDARDS BY BIS

9.1 **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 10 NATIONAL INSTITUTE FOR TRAINING IN STANDARDISATION (NITS)

10.1 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 11 DATE AND PLACE FOR THE NEXT MEETING

ITEM 12 ANY OTHER BUSINESS

ANNEX 1
(Item 2.1)

ELECTROMAGNETIC COMPATIBILITY

SECTIONAL COMMITTEE LITD 09 COMPOSITION

Sl. No.	Organization	Member		Attendance			
				18-01-19	17-02-20	16-12-20	
1	**SAMEER**	Dr. B. Subbarao	**Chairman**	**Y**	**Y**	**Y**	**3/3**
2	**Airport Authority Of India (AAI)**	Shri Anurag Sharma	Principal	**Y**	**Y**	**Y**	**3/3**
		Shri J B Singh	Alternate				
3	**All India Radio (AIR)**	Shri R.K Saini	Principal	**Y®**	**N**	**N**	**1/3**
		Shri B.K Oberoi	Alternate				
4	**Automotive Research Association of India (ARAI)**	Shri A.A. Deshpande	Principal	**N**	**N**	**N**	**0/3**
		Shri A.B. Mulay	Alternate				
5	**Broadcast Engineering Consultants India Ltd (BECIL)**	Shri W.B.Prasad	Principal	**N**	**N**	**N**	**0/3**
		Mr. Mazar Umer	Alternate				
		Shri Khuswinder Singh Bhatia	2nd Alternate				
6	**Bharat Electronics Ltd. (BEL)**	Shri Ajay Khilnani	Principal	**Y**	**N**	**N**	**1/3**
		Shri G.Subba Rao	Alternate				
7	**BNN Speag, Test and Calibration Laboratory Indian Pvt ltd,**	Shri Nitin Jain	Principal	**Y**	**Y**	**Y**	**3/3**
		Shri Nikhil Jain	Alternate				
8	**Central Electricity Authority (CEA)**	Shri Naresh Kumar	Principal	**N**	**N**	**N**	**0/3**
		Shri Lokesh kumar Meena	Alternate				
9	**Consumer Electronics and Appliance Mfrs.Association (CEAMA)**	Shri Srinivasu Moturi	Principal	**Y**	**N**	**Y**	**2/3**
		Shri Anil Mehta	Alternate				
		Mr. Rajaram Dere	2nd Alternate				
10	**Cellular Operators Association of India (COAI)**	Ms Sugandha Berry	Principal	**Y**	**N**	**N**	**1/3**
		Shri Rohit Singh	Altenate				
11	**Directorate of Coordination, Police Wireless (DCPW)**	Shri Amarjeet Singh		**Y**	**N**	**Y**	**2/3**
12	**Directorate General Doordarshan, Prasar Bharati (DD)**	Shri D P Singh	Principal	**N**	**N**	**N**	**0/3**
		Shri Rajesh Meena	Alternate				
13	**Dte. General of Aeronautical Quality Assurance (DGAQA)**	Shri Manoj Sharma	Principal	**Y**	**Y**	**N**	**2/3**

14	**Electronics Corporation of India Ltd. (ECIL)** Shri A Bhaskar Rao Principal Shri S. Subba Rao Alternate		**Y®**	**Y®**	**N**	**2/3**
15	**Electronic Component Industries Association (ELCINA)** Shri Rajoo Goel Principal		**N**	**N**	**Y**	**1/3**
16	**Electronics Regional Test Lab. (North)** Shri Sulekh Chand Principal		**Y**	**Y**	**Y**	**3/3**
17	**Joint Communications & Electronic Staff** Col. Rajnish Sethi Principal Gp Capt JR Kelkar Alternate		**N**	**Y**	**N**	**1/3**
18	**Ministry of Electronics & Information Technology (MeitY)** Dr Bharat Kumar Yadav Principal		**N**	**N**	**N**	**0/3**
19	**National Physical Laboratory (NPL)** Dr. S.K. Dubey Principal		**Y**	**N**	**N**	**1/3**
20	**In Personal Capacity** Shri I. S. Mehla Principal		**Y**	**Y**	**N**	**2/3**
21	**Telecommunication Engineering Centre (TEC), DOT** Shri Asutosh Pandey Principal Shri P.S. Jadon Alternate Ms Neha Upadhyay 2nd Alt.		**Y**	**Y**	**N**	**2/3**
22	**Telecom Equipment Manufactures Assn. of India (TEMA)** Shri Prof. N.K. Goyal Principal Ms Manisha Kumari Alternate		**Y**	**N**	**Y**	**2/3**
23	**TUV Rheinland (India) Pvt Ltd** Shri Ravindra Kumar Principal Shri Rajesh Gupta Alternate		**Y**	**Y**	**N**	**2/3**
23	**Voluntary Orgn. in Interest of Consumer Education (VOICE)** Shri H S Wadhwa Principal Shri K.C. Chaudhary Alternate		**Y**	**Y**	**Y**	**3/3**
24	**Wireless Planning and Coordination Wing** Shri Gulab Chand Principal Shri Ashim Dutta Alternate		**N**	**N**	**N**	**0/3**
25	**Samsung India Electronics Private Limited** Shri Saurabh Nag Principal		**-**	**-**	**Y**	**1/1**

ANNEX 2
(Item 2.2)
REQUEST FOR CO-OPTION IN THE COMMITTEE

A) Shri Akhilesh Sidapara- In Personal Capacity
Earlier was working in ERDA. Presently in TATA

EMI/EMC Test engineer
- Maintain laboratory general requirements and documentations as per IEC/ISO 17025.
- Manage laboratory routine as per NABL and ISO guideline.
- EMI/EMC test of Electrical and Electronics products in-house and on-site as per IEC, IS, CISPR and MIL standard

B) Ms Manjeeri Gopal - In Personal Capacity
Head- Product Regulatory Compliance-
Hewlett Packard Enterprise India Pvt Ltd

Head the Product Regulatory Affairs for HPE India. With over 14 years of experience in Product regulatory compliance and public policy, I engage with government departments, industry associations on good regulatory practices and conformity assessment practices. I have hands-on experience in IT certification requirements specific to India and have knowledge of most of the standards for IT & Telecom equipment eg IEC 60950, IEC 62368, IS 1293, IS13252, IS694, CISPR 32, etc.

C) Shri Rajender Saini - In Personal Capacity
Regulatory Affairs Manager
DELL
16 years of diverse experience in new product development, testing & Regulatory Compliance in IT equipments, Telecom and wireless products, low voltage switchgear products, wiring accessories products and conventional, LED & wireless internet based lighting IoT products.

d) Ms. Mayuri Simaria Jain - In Personal Capacity
Technical Regulations Standards Engineer.
Currently working as Worldwide Technical Regulation Program Manager, with Indian Government authorities like, BIS (Bureau of Indian Standard), with MEITY (Ministry of Electronics and Information Technology), along with TEC (Telecommunication Engineering Center, WPC (Wireless Planning Coordination) and DoT (Department of Telecommunication) for all IT equipment's o Responsible for all HP products, Knowledge on IEC60065, IEC 60950, IEC 62368, IS 1293, IS13252, IS616, IS694, etc. EMI/EMC

e) Prof. Ranjit Singh Momi

Director Principal

Shaheed Udham Singh College of Technology, Kapurthala, Punjab, India

Area of Research

-Design and Simulation of Triple Band Meandered Monopole Antenna incorporating Defected Ground Structure with Finite Element Method.

-Design and Simulation of Wearable and Implantable Patch Antennas for Biomedical Telemetry

Area of Interest

Antenna & Wave Propagation, Mobile Communication, Analog Electronics & Computer Networks.

ANNEX 3

(Item 4.1)

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

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 Number/ DOC Number	Title	Date
STANDARDS PUBLISHED			
1	IS 1885 (Part 85):2003 / IEC60050-161 (1990)	Electrotechnical vocabulary - Electromagnetic compatibility	Jan 2019
2	IS 6873 (Part 1):2010 / CISPR 12(2007)	Limits and methods of measurements of radio disturbances characteristics: Part 1 Vehicles, boats and internal combustion engine (Third Revision)	Jan 2019
3*	IS 6873 (Part 2/Sec 1):2019 / CISPR 14-1 (2016)	Limits and methods of measurements of radio disturbance characteristics Part 2 Electromagnetic Compatibility (EMC) - Requirements for household appliances electric tools and similar apparatus Sec 1 Emission (fourth revision)	Jul 2019
4*	IS 6873(Part 2/Sec 2):2019 / CISPR 14-2 (2015)	Limits and methods of measurements of radio disturbance characteristics Part 2 Electromagnetic Compatibility (EMC) - Requirements for household appliances electric tools and similar apparatus Sec 2 Emission - Product Family Standard (Fourth revision)	May 2019
5	IS 6873(Part 4):2019 / CISPR 11(2016)	Limits and methods of measurements of Radio disturbance characteristics Part 4 Industrial, scientific and medical (ISM) radio frequency equipment [first revision]	Dec 2019
6	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)	Dec 2019
7**	IS 10052 (Part 1/Sec 1):*2021* / 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)	May 2019

8*	IS 10052 (Part 1/Sec 3):2018 / 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	Jul 2018
9*	IS 10052(Part 1/Sec 4):2018 / CISPR 16-1-4 (2017)	Radio disturbance and immunity Measuring apparatus and methods Specification Part 1 Radio disturbance and immunity measuring apparatus Section 4 Antennas and test sites for radiated disturbance measurements	Jul 2018
10*	IS 10052(Part 1/Sec 5):2018 / CISPR 16-1-5 (2016)	Radio disturbance and immunity Measuring apparatus and methods Specification Part 1 Radio disturbance and immunity measuring apparatus Section 4 Antennas calibration sites and reference test sites for 5 MHz to 18 GHz	Jul 2018
11*	IS 10052(Part 2/Sec 1):2018 / CISPR 16-2-1(2014)	Specification for radio disturbances and immunity measuring apparatus and methods: Part 2 Methods of measurement of disturbances and immunity Section 1Conducted distribution (Second revision)	Jul 2018
12*	IS 10052(Part 4/Sec 4):2018 / CISPR/TR 16-4-4 (2017)	Radio disturbance and immunity Measuring apparatus and methods Specification Part 4 Uncertainties, statistics and limit modeling Section4 Statistics of complains and a model for the calculation of limits for the protection of radio services	Jul 2018
13*	IS 12233(Part 1):2018 / CISPR 18-1(2017)	Radio interference characteristics of overhead power lines and high voltage equipment - Part 1 Description of phenomena	Sep 2018
14	IS 12233(Part 2):*2021* / CISPR 18-2(*2017*)	Electromagnetic interference characterstics of overhead power lines and high voltage equipment: Part 2 Methods of measurement and procedure for determining limits(First Revision)	Dec 2020
15*	IS 12233(Part 3):2019 / CISPR 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) ICS : 33.100.01	May 2018
16	IS 12743:1989 / IEC 60816: 1984	Guide on methods of measurement of short duration transients on low voltage power and signal lines	Jan 2019
17	IS 13397: 2018 / IEC/TR 60725-2012	Considerations on reference impedances and public supply network impedances for use in determining the disturbance charcteristics of electrical equipment having a rated current < 75 A per phase (First Revision)	Mar 2021
18	IS 14700(Part 1/Sec 1):2000 / IEC 61000-1-1 (1992)	Electromegnetic compatibility (EMC) Part 1: General section:1 Application and interpretation of fundamental definitions and terms	Jan 2019
19	IS 14700(Part 3/Sec 2):2020 / IEC 61000-3-2(2018)	Electromagnetic compatibility Part 3 Limits Sec 2 Limits for harmonic current emmissions (equipment input current =< 16A per phase) (Second Revision)	Mar 2021
20	IS 14700(Part 3/Sec 3):2018 / IEC 61000-3-3 (2013)	Electromegnetic compatibility (EMC) Part 3: Limits Sec-3 Limitations of voltage changes, Voltage flctuations and flicker in low voltage supply systems for equipment with rated current =<16A phase and	Mar 2021

		not subject to conditional connection (Second Revision)	
21	IS 14700(Part 4/Sec 1):2019 / IEC 61000-4-1(2016)	Electromagnetic compatibility (EMC) Part 4 Testing and measurement techniques Section 1: Overview of the IEC 61000-4 series(Secound Revision)	May 2019
22	IS 14700(Part 4/Sec 2):2018 / IEC 61000-4-2(2008)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 2: Electrostatic discharge immunity test (Second Revision)	Mar 2021
23*	IS 14700(Part 4/Sec 3):2018 / IEC 61000-4-3(2010)	Electromagnetic compatibility (EMC) Part 4: Testing & measurement techniques Sec 3 Radiated, radio frequency, electromagnetic field immunity test (First Revision)	Sep 2020
24	IS 14700(Part 4/Sec 4):2018 / 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
25	IS 14700(Part 4/Sec 5):2019 / IEC 61000-4-5(2017)	Electromagnetic compatibility (EMC) Part 4 Testing and measurement techniques - Sec 5 Electrical fast transient/burst immunity test (First Revision)	May 2019
26	IS 14700(Part 4/Sec 6):2016 / 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	Apr 2019
27	IS 14700(Part 4/Sec 7):2017 / IEC 61000-4-7(2009)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 7- General guide on harmonic and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto(First Revision)	Dec 2020
28	IS 14700(Part 4/Sec 8):2018 / IEC 61000-4-8(2009)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 8:Power frequency magnetic field immunity test (Second Revision)	Mar 2021
29	IS 14700(Part 4/Sec 9):2019 / IEC 61000-4-9(2016)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 9:Impulse magnetic field immunity test (Second Revision)	May 2019
30	IS 14700(Part 4/Sec 11):*2021* / IEC 61000-4-11(*2020*)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 11: Voltage dips, short interruptions and voltage variations immunity test	May 2017
31	IS 14700(Part 4/Sec 12):2019 / IEC 61000-4-12(2017)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 12: Ring wave immunity test (Second Revision)	May 2019
32	IS 14700(Part 4/Sec 13):2016 / IEC 61000-4-13(2009)	Testing and measurement techniques - Harmonics and interharmonics including mains signaling at a.c. power port, low frequency immunity tests	Apr 2019

33	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 2018
35	IS 14700(Part 4/Sec 15):2018 / IEC 61000-4-15(2010)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 15:Flickermeter functional and design specification (Second Revision)	Mar 2018
36	IS 14700(Part 4/Sec 16):2019 / IEC 61000-4-16(2015)	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques Section 16: Test for immunity to be conducted, Common mode disturbances in the frequency range 0Hz to 150 kHz (Second Revision)	May 2019
37	IS 14700(Part 4/Sec 17):2018 / IEC 61000-4-17:2009	Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 17 Ripple on d.c. input power port immunity test	May 2018
38	IS 14700(Part 4/Sec 24):2018 / IEC 61000-4-24:2015	Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 24 Test method for protective devices for HEMP conducted disturbance(First Revision)	Jul 2018
39	IS 14700(Part 4/Sec 25):2018 / IEC 61000-4-25:2012	Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 25HEMP immunity test methods for equipment and systems.	May 2018
40	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 2018
41	IS 14700(Part 4/Sec 33):2018 / IEC 61000-4-33:2005	Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 33 Measurement method for high power transient parameters	Jun 2018
42	IS 14700(Part 4/Sec 34):2017 / IEC 61000-4-34(2009)	EMC - Part 4-34:Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with mains current more than16A/phase	Dec 2020
43	IS 14700(Part 4/Sec 35):2018 / IEC 61000-4-35:2009	Electromagnetic Compatibility (EMC) - Part 4 Testing and measurement techniques: Sec 35 HPEM simulator compedium	May 2018
44	IS 14700(Part 6/Sec 1):2019 / IEC 61000-6-1(2016)	Electromagnetic compatibility (EMC)-Part 6 Generic standards Sec 1 Immunity standard for residential. Commercial and light-industrial environments(first Revision)	Jul 2019
45	IS 14700(Part 6/Sec 2):2019 / IEC 61000-6-2(2016)	Electromagnetic compatibility (EMC)-Part 6 Generic standards Sec 2 Immunity for industrial environments (first Revision)	Jul 2019
46	IS 14700(Part 6/Sec 3):2018 / IEC 61000-6-3(2006)	Electromagnetic compatibility (EMC) Part 6: Generic standards Section 3: Emission standards for residential, commercial and light industrial environment(First Revision)	May 2018

47	IS 15040:2019 / CISPR 25 (2016)	Radio disturbance characteristics for the protection of receivers used on board vehicles, boats, and on devices - Limits and methods of measurement (First revision)	Dec 2019
48	IS 15874:2009 / CISPR 28(1997)	Industrial scientific and medical equipment (ISM)- Guidelines for emission levels within the bands designated by the ITU	Jan 2019
49	IS 16528:2017 / IEC 62232(2011)	Determination of RF field strength and SAR in the vicinity of radio communication base station for the purposed of evaluating human exposure	Dec 2020
50	IS 62209(Part 1):2005 / IEC 62209-1(2005)	Human exposure to radio freq. fields from hand-held and body-mounted wireless comm. devices- Human models, inst. and procedures-Part 1 Procedure to determine the specific absorption rate(SAR)for hand-held devices used in close proximity to the ear(freq. ran	Dec 2018
51	IS 62209(Part 2):*2019* / IEC 62209-2(*2019*)	Human exposure to radio freq. fields from hand-held and body-mounted wireless comm. devices- Human models, instrumentation and procedures : Part 2 Procedure to determine the SAR for wireless communication devices used in close proximity to the human body	Dec 2020
52	IS 62209(Part 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)	
53	IS 62226(Part 1):2004 / IEC 62226-1(2004)	Exposure to electric or magnetic fields in the low and intermediate frequency range - Methods for calculating current density and internal electric field induced in the human body - Part 1 General	Feb 2021
54	IS 62226(Part 2/Sec 1):2004 / IEC 62226-2-1(2004)	Exposure to electric or magnetic fields in the low and intermediate frequency range - Methods for calculating current density and internal electric field induced in the human body - Part 2 Exposure to magnetic fields - Sec 1 2D Models	Mar 2021
55	IS 62226(Part 3/Sec 1):*2016* / 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	Jul 2018
56	IS 62233:2005 / IEC 62233 (2005)	Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure	Mar 2021
57	IS 62311:*2018* / IEC62311(2018)	Assessment of electronic and electrical equipmentrelated to human exposure restrictions for electromagnetic fields (0Hz -300 GHz)	June 2018
58	IS 62369(Part 1):2009 / IEC 62369-1:2009	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 id	Apr 2018
59	IS 62479:2010 / 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)	Jul 2018

60	IS 62577:2009 / IEC 62577 (2009)	Evaluation of human exposure to electromagnetic fields from a stand-alone broadcast transmitter (30 MHz - 40 GHz)	Jul 2018
61	IS CISPR(Part 32):2015 / CISPR 32:2015	Electromagnetic compatibility of multimedia Equipment Emission Requirements	May 2019
62	*IS CISPR(Part 35):2016* / CISPR 32:2016	Electromagnetic compatibility of multimedia Equipment Immunity Requirements	

ASPECT WISE REPORT

Product	12
METHODS OF TEST	37
CODES OF PRACTICES	7
TERMINOLOGY	1
OTHERS	5
TOTAL :	**62**

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

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