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Host

- ***Sign up sheet***

- ***Year 2019 Officers :***
  - **Chair – Caroline Chan (Interim)**
  - **Vice Chair – *Vacant***
  - **Secretary – Len Goldschmidt**
  - **Treasurer – Caroline Chan**
  - **Web Master – Joe Nghiem**
  - **Photographer – Jerry Ramie**

We are also on facebook.com/ieeescvemc

- ***Officers Wanted***

  - ***Chair***
  - ***Vice Chair/Social media***

- ***Mini Symposium: Oct 3rd***
  - ***20+ Exhibitors***
  - ***>80 attendees***
- ***Multiple Speakers (including Jim Drewniak on Power Integrity***
  - ***Mark Montrose***
  - ***Shi Shuang (Waymo SIPI/EMC)***
  - ***+TBD***
- ***Class for a fee BUT Exhibit Hall+Reception= free***

- **Company openings?**
- **Looking for a job?**

Check out www.scvemc.org -> job posting

- IEEE EMC SCV members who would like to get their membership elevated to Senior Member can contact Caroline Chan . We can help you find Senior member references.

- A collection of videos consisting of a variety of lectures and instructional tutorials that the IEEE EMC society has sponsored over the years are now available for free to EMC Society member and a small fee to others.

  https://ieeetv.ieee.org/ondemand/emc

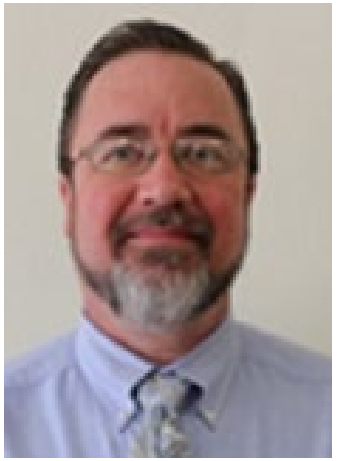
- The EMC SCV Chapter is looking for candidates
  - Chair/Vice chair:
    - Organize AdCom as needed, ensure to communicate with the host about upcoming meetings.
    - Look for speakers for the year of 2019 (allowed 3 out of town speakers, look into Distinguished lecturer from EMC-S)
    - Organize Mini Symposium, identify venues, answer questions from the vendors and attendees regarding logistics
    - Enter the meetings in advance in vtools so that they are searchable for visitors not on the mailing list
    - Present to Section the Chapter Status
    - Conduct monthly meetings
    - Post on Social Media (Facebook and Linkedin)
  - Treasurer:
    - Balance the checkbook
    - Provide a yearly budget
    - Fill in financial statements as required by Section at the end of year

- The IEEE EMC SCV Chapter is looking for candidates
  - Secretary:
    - Document Adcom meetings
    - Send monthly communication to mailing list
    - Update meetings in Vtools L31
  - Institution/Marketing:
    - Emails company for chapter sponsorship and Mini Symposium Exhibitors
    - Provide benefits from the sponsorship and presence at the Mini Symposium
    - Acquire the artwork of companies logo
  - Webmaster:
    - Update upcoming speaker info
    - Create Mini Symposium Registration page
    - Maintain www.scvemc.org

Title : Navigating Compliance in the BRIC Marketplace

Abstract: The consumer markets in Brazil, Russia, India and China (BRIC) now are responsible for a sizable portion of the profits for most global companies. Working against this prize is a formidable maze of culture, laws, and overlapping regulations, causing confusion with the regulatory requirements. If you are entering the BRIC marketplace with your electrical and electronic products, you need to know how to obtain the required approvals for EMC, telecom, and product safety. Whether your product is for telecom, wireless, ITE, consumer electronics, or household appliances, you will face distinct and unique obstacles. Distance, language, unfamiliar culture, and developing market conditions can make this a difficult and expensive procedure for the uninformed. Come to this presentation so you can gain insight into the processes, and learn sources of info and allies to help you navigate a safe path to compliance.

Speaker Biography:



Mark Maynard has worked in Compliance Engineering for 30 years

His specialties include international certifications forEMC/EMI, Telecom/Wireless/IoT, Product Safety, Environmental Design, & Quality Management Systems.

He is an IEEE Senior Member, & Immediate Past-President of the Product Safety Engineering Society Board of Governors, & also an EMC+SIPI Symposium Committee Member & Volunteer for 5 years from 2014 to 2018.

Email: mmaynard@ieee.org

Navigating Product Compliance in the BRIC Marketplace

BRIC: Brazil, Russia, India, & China

Mark W. Maynard

Credit where credit is due:

All maps, flag artwork, and country demographic information are courtesy of the US Central Intelligence Agency (CIA) & obtained from their "The World Factbook" website, located at this URL, *unless otherwise noted*:

- www.cia.gov/library/publications/resources/the-world-factbook/index.html

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IA Product Compliance Vocabulary

- **Local Representative** (or **Local Rep**) – An in-country agent, authorized via a Registered Letter of Authorization, to serve as an official for an importing manufacturing company

- **GDP-PPP** – The **Gross Domestic Product** on a **Purchasing Power Parity** basis, which is found by dividing the GDP by population for each country, and is a rough measure for the economic output per capita, used in economic and marketing analysis

- **Population** – The World Population Ranking for each country, where the 1st is the most populous (China at 1,384,688,986), and the 238th is the least populated (Pitcairn Islands at 54)

BRIC Product Compliance

Brazil, Russia, India & China

Mark Maynard
mmaynard@ieee.org

BRIC Agenda

Agenda:

- BRIC Introduction
- Brazil Product Compliance Overview
- Russia Product Compliance Overview
- India Product Compliance Overview
- China Product Compliance Overview
- Summary and Recommendations

BRIC Introduction

Brazil, Russia, India, & China

QUICk BRIC Facts:

- The four countries of Brazil, Russia, India, and China are referred to by the acronym "**BRIC**"
- These four are popular global market countries for electronic and high-technology products, and have a combined population of over three billion persons
- Each of these four has their own unique regulatory compliance agencies and standards
  - Each one requiring specialized knowledge and awareness of local business practices to successful compliance certification projects

BRIC Introduction

Brazil, Russia, India, & China

Today's Goal:

To provide a BRIC Product Compliance presentation that provides an overview of the requirements for these four countries, including

- Product testing and submittal requirements
- Practical recommendations for a successful product certification project in each nation

Brazil

GDP-PPP rank: 8th
Pop. Rank: 5th
Mobile Cellular: 5th
Internet Users: 4th

ANATEL

INMETRO

Brazil Compliance

- ANATEL – National Telecommunication Agency
- Established in 1997 as the second regulatory authority in Brazil
- Promotes development of Brazil's telecommunication infrastructure by exercising standardization, homologation and surveillance.

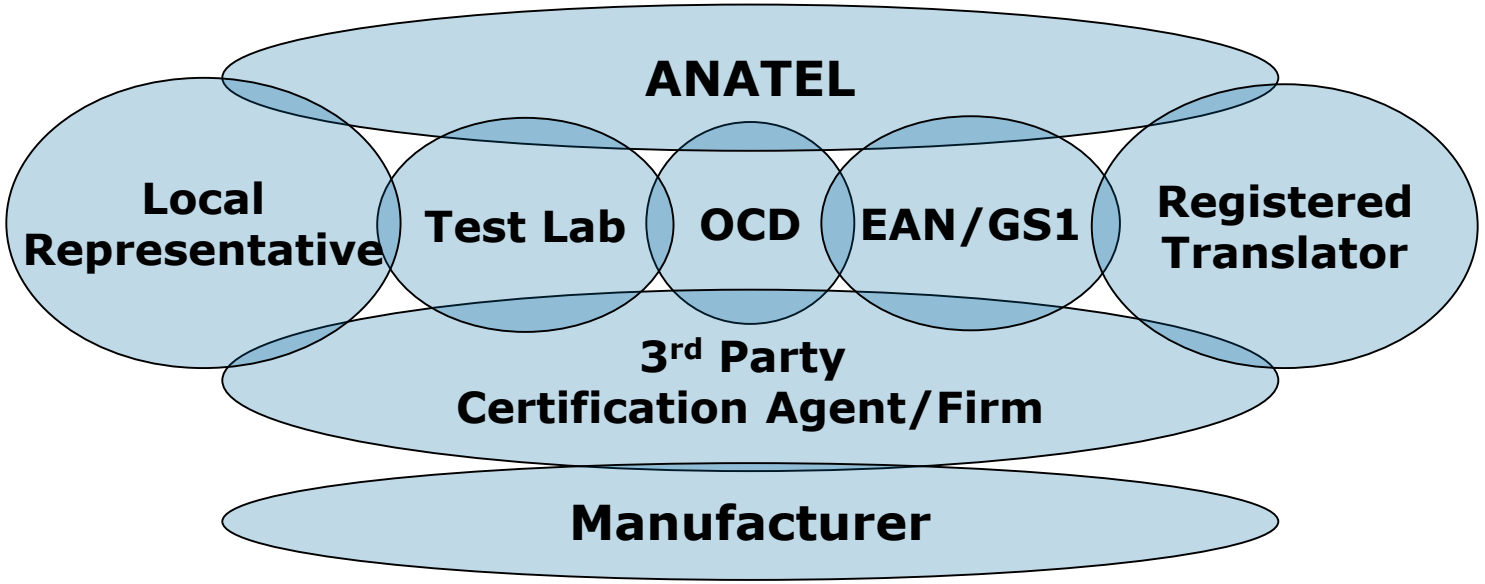
- INMETRO – National Institute of Metrology, Standardization and Industrial Quality
- Established in 1973 to develop and implement the certification system in Brazil
- Responsible for the accreditation of certification bodies and laboratories

Brazil Compliance

Portuguese-language website: www.anatel.gov.br

ANATEL: The National Telecom Authority

- To obtain ANATEL certification, you must use a Brazilian OCD ("Designated Certification Body") accredited by ANATEL
- Product certification testing must be performed by an INMETRO laboratory that is accredited by SBAC



Brazil Compliance

Two Types of Certificates needed for product approvals:

ANATEL Homologation Certificate
- Issued by ANATEL
- No expiration date
- Issued to the local representative

OCD Technical Certificate
- Issued by OCD
- May have expiration date depending on product
- Typically issued to the manufacturer (owner of design)

Brazil Compliance

ANATEL Equipment Categories:

Category I: Terminal equipment intended for use by the general public for purposes of accessing telecommunications service; requires product testing & evaluation of factory quality system

- e.g. **AC/DC adapters used with cellphones, cordless phones, wired phones, fax-modem** machine, etc.

Category II: Equipment not covered by the definition of Category I products and that make use of the frequency spectrum for the transmission of signals; requires product testing

- e.g. **antennas, amplifiers, transceivers, RF devices (Wi-Fi, BT, RFID)**, etc.

Category III: Equipment not contained in the definitions of Category I and II and that will have interoperability with telecommunication network; requires product testing

- e.g. **cables (coaxial, hybrid, fiber optic), multiplexers, data network equipment (switches, hubs)**, etc.

Brazil Compliance

Required Document List from Manufacturer

Technical Specification/Brochure
Block Diagram
Schematic
Internal photos
External photos
Regulatory Label
User Manual in Portuguese
Compliance Insert or Regulatory Sheet in Portuguese
Factory ISO 9001:2008 certificate with registered Portuguese translation
Local Representative Authorization Letter
Test setup instructions
Samples

Required Document List from Local Representative

Warranty Form
EAN code
CNPJ (Brazil Tax ID)
EAN Letter (GS1 Brazil) in Portuguese
Social Contract

Brazil Compliance

Typical Test Sample Requirements for ANATEL

Test Standard	Type	Sample Required
Resolution 442	EMC	1 regular sample
Resolution 529	Safety	1 regular sample
Resolution 506	RF	1 RF conducted sample
Tecnologia GSM	RF	1 RF conducted sample
Tecnologia WCDMA/HSDPA	RF	reuse above GSM sample
Resolution 533	SAR	1 regular sample
Resolution 481	Lithium Battery	54 samples of battery pack

Brazil Compliance

ANATEL Product label must contain:

ANATEL homologation number

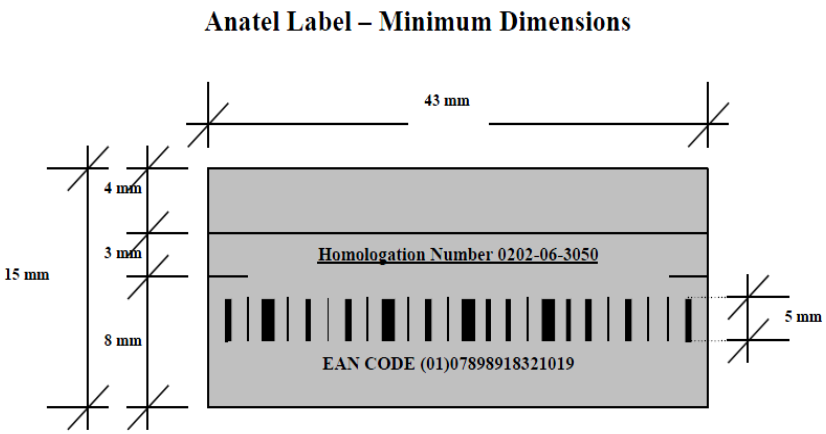
ANATEL logo

EAN bar code

Trademark

Model Number

Compliance Warning statements



Barcode notes:

- EAN bar code must meet GS1-128 standard
- ANATEL homologation number breakdown
  - HHHH: number of ANATEL approval
  - AA: last 2 digits of year approved
  - FFFF: identification of local representative

Brazil Compliance

In-country testing is required in renewals if:

- Product changes
- EMC test failure in original homologation
- Product safety requirements are applicable (per Resolution 529)
- Regulations change

Documents for renewal*

- Product samples are required if testing is applicable
- Internal and external photos
- Declaration letter from manufacturer confirming no modifications occurred since original homologation

*Note: The OCD technical certificate will be renewed, but the homologation certificate will remain the same

Brazil Compliance

The Brazilian National Institute of Metrology, Quality and Technology is INMETRO

- INMETRO is the authority for standardization, metrology and product inspection in Brazil; established in 1973
- You will need INMETRO approvals for your electronic and electrical products you want to sell into the Brazil market

INMETRO is Responsible for:

- Developing and implementing product certification system programs
- Maintaining national standards
- Developing conformity assessment programs
- Main Accreditation Body for certification bodies and laboratories.

Brazil Compliance

The INMETRO homepage is at www.inmetro.gov.br

- The language is Brazilian Portuguese
- This website has all the available publications, notifications, and technical information

INMETRO English homepage URL:
www.inmetro.gov.br/english

- Only provides access to the subset of selected information that has been translated to English
- Mainly administrative data, not technical information

Brazil Compliance

INMETRO Mandatory Certification List (80 products)

- Medical Equipment
- Hazardous location equipment
- Electrical cords and cables
- Protective devices (circuit breakers and ballasts)
- Switches, plugs and sockets
- Voltage stabilizer
- 70+ more product categories

INMETRO Voluntary Certification List (87 products)

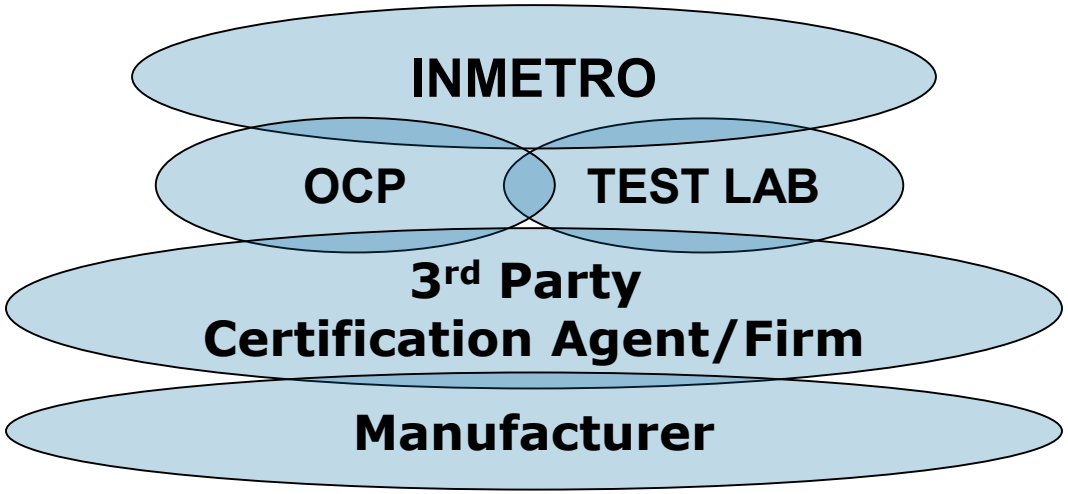
- Household appliances
- Luminaries and its components
- Electrical appliances
- Consumer electronics
- IT equipment
- Photovoltaic equipment and systems
- 80+ more product categories

Brazil Compliance

INMETRO Product Certification Schemes

- **Model 1:** Type Test is the simplest; test takes place only once, proving conformity at a given moment
- **Model 2:** Type Test and Sample Verification from market
- **Model 3:** Type Test and Sample Verification from factory
- **Model 4:** Type Test and Sample Verifications from both market and factory
- **Model 5:** Type Test, Factory Inspections, Verification of Factory Quality System, and Sample Verifications from both market and factory
- **Model 6:** Evaluation and Approval of Factory Quality System; Evaluates the capacity of a factory to manufacture a product according to a determined specification, but does not evaluate the conformity of final product
- **Model 7:** Lot Test; random product samples from a batch are Tested
- **Model 8:** 100% Test; each individual item is Tested to Verify its Conformity with a determined specification

Brazil Compliance



In order to obtain INMETRO product certification, it is necessary to interface with a Brazilian certification body or OCP (Product Certification Body) accredited by INMETRO

50+ INMETRO Accredited OCPs:
http://www.inmetro.gov.br/organismos/consulta.asp

During certification, product testing must be performed by a laboratory from RBLE (Brazilian network of testing laboratories) which are accredited by INMETRO

300+ RBLE Authorized Test Labs:
http://www.inmetro.gov.br/laboratorios/rble/

Brazil Compliance

Required INMETRO Marking

Identification of Certification or Accreditation Type

"XXX" is for Type of Accreditation Code (e.g. OCP)

"0000" is for the OCP Accredited Number

Brazil Compliance

Summary & Recommendations

- **Expect frequent new/updated regulatory requirements**
  - Especially for new wireless & telecom technologies
- **Ensure your Brazil OCD, Test Lab, and Local Representative are Accredited/Certified**
  - Finding knowledgeable & experienced partners is crucial to success for legal/customs/business practices
- **Occasional political and social instability can presents challenges**
  - and a bit of a Sticky Wicket from time to time
- **Evaluate risks vs. rewards**
  - Investigate proposed market countries for your products
- **Join industry affinity groups**
  - Like IEEE & TCBC

Russia

GDP-PPP rank: 6th
Pop. Rank: 9th
Mobile Cellular: 6th
Internet Users: 6th

Ministry of Telecom and Mass Communications of the Russian Federation


СИСТЕМА СЕРТИФИКАЦИИ В ОБЛАСТИ СВЯЗИ
СЕРТИФИКАТ СООТВЕТСТВИЯ

ISPCE 2019 SAN JOSE, CALIFORNIA, USA
IEEE SYMPOSIUM ON PRODUCT COMPLIANCE ENGINEERING
MAY 6-8, 2019

IEEE PSES Product Safety Engineering Society

Russia Compliance

Russia and the Eurasian Economic Commission (EEC) & Eurasian Economic Union (EEU)

Sort of like
- EEC ~ EC
- EEU ~ EU
- EAC ~ CE

- EEU "CU-TR" EMC and Product Safety certifications are accepted by the 5 EEU countries of Russia, Belarus, Kazakhstan, Armenia, and Kyrgyzstan
- Russia is a Founding Member of the EEU, which initiated on January 1, 2010

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

- The EAC product marking, which denotes the conformity of products in the Eurasian Economic Union, was introduced In August of 2013
- **EAC** is an acronym for "**EurAsian Conformity**"
- The EAC product marking signifies that the equipment has undergone all of the required testing and conformity assessment procedures, and has met the requirements of all applicable CU Customs Union Technical Regulations, and are manufactured according to these regulations

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

CU-TR Certification is Necessary, because:

- Companies/Manufacturers/Importers exporting their products to Russia must have all CU-TR certifications and approvals complete and documented prior to being shipped to Russia
  - If not, products will be stopped and seized at Russian Customs
    - And likely never returned
    - And possible fines and/or other sanctions
- If your products are certified and receive a CU-TR approval, then there should be no issues or problems with customs or your import documents

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

CU-TR Product Categories

- Information Technology Equipment (ITE)
- Audio/Video (AV) Equipment
- Household Appliances
- Wireless and Wired Telecommunication Equipment
- Scientific Instrumentation & Measurement Equipment
- Medical Equipment

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

There are two types of conformity assessment procedures

- **Certificate of Conformity (CoC)**
- **Declaration of Conformity (DoC)**

Products requiring CoC are listed in the applicable CU Technical Regulations

- However, the manufacturer can choose to obtain the CU CoC instead of a CU DoC
- The qualifications for CoC applicants are listed in the relevant Technical Regulations
- For a DoC, the applicant must be a local entity registered at the territory of an EEU Member Country.

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

- For products that successfully pass the CU EAC conformity assessment procedure, a CU EAC Certificate is issued
- All Certificates and Declarations are officially registered by the Certification Bodies in their official registry for each EEU member country
- The length of certificate validity is listed on the EAC certificate, set from 1 to 5 years
- Series manufacturing certificates have a mandatory annual surveillance procedure
  - Performed by sample test or factory inspection
- Products complying with all applicable CU Technical Regulations shall have the required EAC label marking

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

Some Common Standards

Customs Union Technical Regulations

- **CU-TR 004/2011** (~LVD) "On the safety of low-voltage equipment" approved by the CU Commission on 16.08.2011, Decree № 768
  - I on February 15, 2013
- **CU-TR 020/2011** "(~EMC-D) "On the electromagnetic compatibility of technical devices" approved by the CU Commission on 09.12.2011, Decree № 879
  - Started in force on February 15, 2013

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

CU-TR Required Submittal Documents

Documents typical for most international approvals:

1) CU-TR Application letter
2) Instruction Manual/User Guide in Russian language
3) EMC test report – must be provided for equipment with potential to cause Electromagnetic Interference (EMI)
4) CB-Test Reports with CB certificate
5) Ergonomics test report and certificate (if applicable to product category)
6) EAC Label artwork drawing, which also shows the location on the product
7) Copy of ISO Quality Management System Certificate for factory or factories producing the certified product
8) CU-TR Authorized Factory Inspection report

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

Include CU-TR Certificate with Shipments, along with Telecom/Wireless Certs!

- It is important to include copies of the CU-TR Certificate with the products when shipping into the EEU countries, just as previous GOST certs were
- This is a mandatory requirement for clearing customs

Always Include

+

Russia Compliance: CU-TR Scheme

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

CU-TR Factory Inspection Report

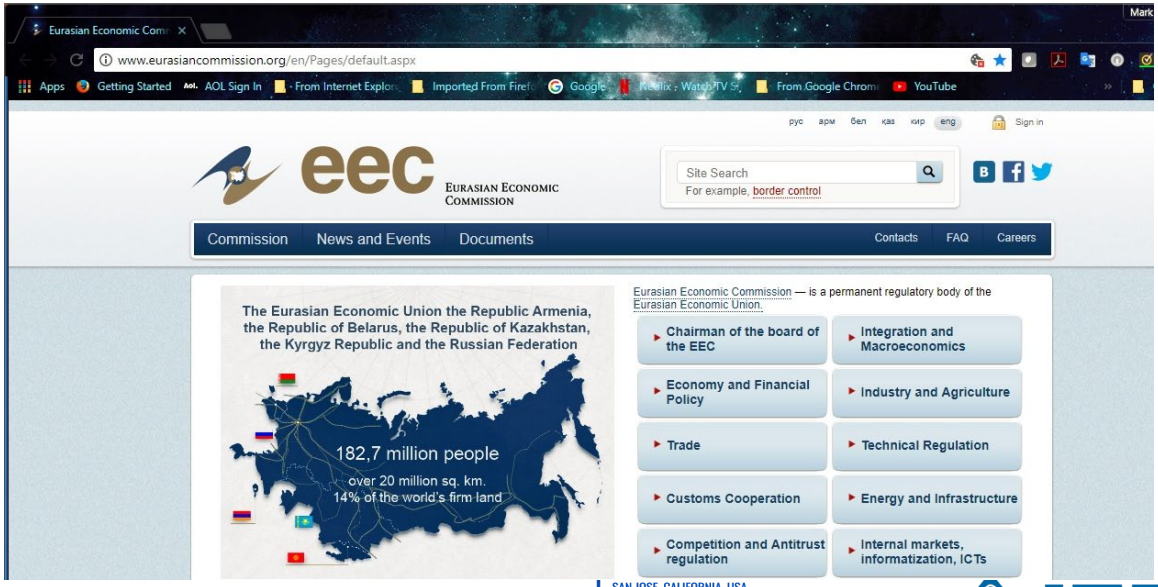
- The CU-TR Factory Inspection and Report must be performed by a CU-TR Authorized Factory Inspector!
  - Just providing the ISO QMS Certificate will not satisfy this requirement

Russia Compliance

Customs Union (CU) Technical Regulations (TR) & the CU-TR Product Compliance Scheme

Eurasian Economic Commission (EEC)

- Much more information about the Eurasian Economic Union (EEU) is available on the English-language version of the European Economic Commission (EEC) official website: www.eurasiancommission.org/en



Russia Compliance: CU-TR Scheme

Hygienic/Sanitary Certificate

- The Hygienic Certification also called the ***Sanitary Expert Report Certificate***
- The hygienic certificate confirms **conformity of products and services to the sanitary norms** and **strict observance of the established rules**
  - In the process of manufacture, storage, transportation and the sale of products and services
- **This certification covers RF/SAR electronics, and other health-impacting phenomenon**
  - EEU requirements were established in Decree N° 299, issued by the Customs Union Commission on May 28, 2010

Russia Compliance: CU-TR Scheme

Hygienic/Sanitary Certificate

Sanitary Expert Report and State Registration of the EEU

- This Decree validates the single list of products which divides products into 3 groups:
  1) Products requiring the Sanitary Expert Report & Certificate
  2) Products subject to the Sanitary Control in the form of State Registration
  3) Control-free products (exempt from regulations)

Russia Compliance: CU-TR Scheme

Telecom/Wireless

- **CU-TR certification scheme for telecom & wireless has been in development for over 6 years, but is still not complete**
  - Industry estimate is implementation in ~ 2020 (maybe)
    - Each EEU member country still requires telecom/wireless approvals, but eventually telecom will be included in the CU-TR scheme
- **All 5 EEU countries currently each have their own telecom agency, where certifications must still be obtained**
  - This includes EEC founding member Russia
    - Russia is the most complicated (still)

Russia Compliance: Telecom/Wireless

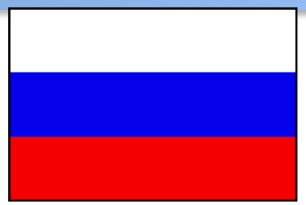
National Telecom Authority of Russia:

- **Ministry of Telecom & Mass Communications**
  - **MTMC**

Ministry of Telecom and Mass Communications of the Russian Federation

- English-language website:
  - https://digital.gov.ru/en
- Russian-language website:
  - https://digital.gov.ru/ru

Russia Compliance: Telecom/Wireless



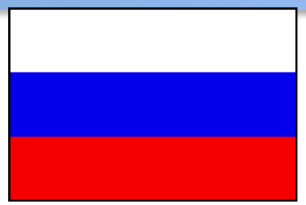
Syvaz Certificate

- **Syvaz Certification applies to Telecommunications Equipment**
- All technical means of the integrated communications networks (both shared and corporate) are subject to mandatory certification
  - Article 16 of the Russian Federation Law "On Communications"

СИСТЕМА СЕРТИФИКАЦИИ В ОБЛАСТИ СВЯЗИ

СЕРТИФИКАТ СООТВЕТСТВИЯ

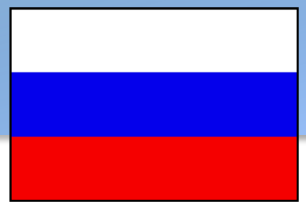
Russia Compliance: Telecom/Wireless



Gossvyaznadzor Permit

- Radio equipment sellers must obtain an additional permit from GKRCh to use the radio spectrum and specific equipment on a specific frequency band in a specific area of Russia prior to the certification process.
  - Gossvyaznadzor - The Russian Federation State Telecommunications Control
  - GKRCh - Gossvyaznadzor of the State Commission on Radio Frequencies

Russia Compliance



Summary & Recommendations

- **Be Flexible & Research Your Markets**
  - Make sure your products make sense for the Russian marketplace
    - e.g. Evaluate countries by GDP (PPP), tech infrastructure, hi-tech industries
- **Check the official EEC and Russian Telecom/Wireless Agency websites often**
- Learn about new product compliance requirements, updates, and other regulatory changes
- **Join industry affinity groups** to learn from other's experience
  - IEEE Societies, i.e. EMC, Product Safety Engineering
  - Linked In product compliance groups, e.g. Wireless Certification Professionals

India

TELECOMMUNICATION ENGINEERING CENTRE
दूरसंचार अभियांत्रिक केन्द्र
MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY
संचार एवं सूचना प्रोधोगिकी मंत्रालय
DEPARTMENT OF TELECOMMUNICATIONS
दूरसंचार विभाग
GOVERNMENT OF INDIA
भारत सरकार
ISO 9001:2008

GDP-PPP rank: 3rd
Pop. Rank: 2nd
Mobile Cellular: 2nd
Internet Users: 2nd

दूरसंचार विभाग
DEPARTMENT OF
TELECOMMUNICATIONS
सत्यमेव जयते

Government of India
Ministry of Communications & Information Technology

मानक: पथप्रदर्शक:

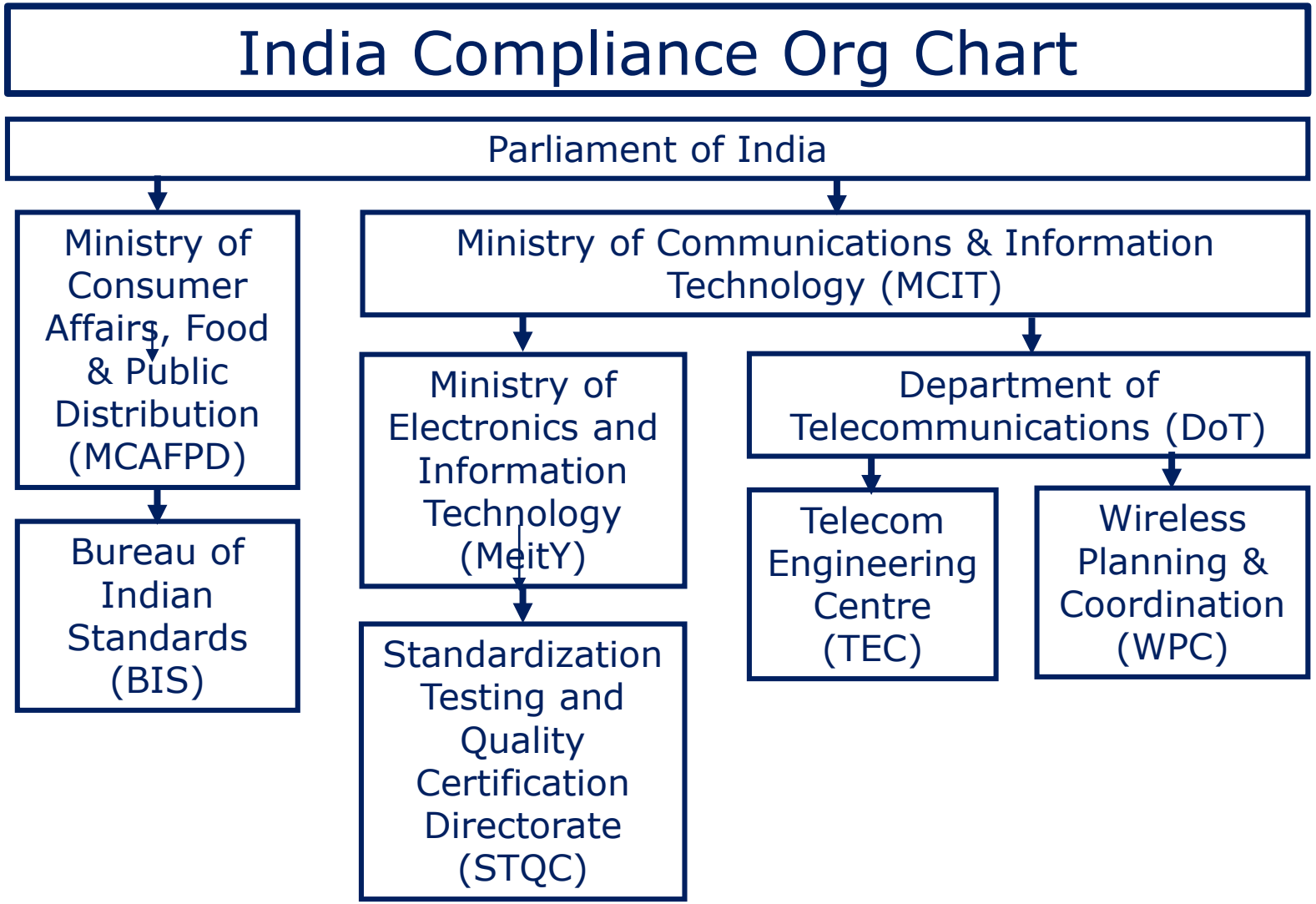
ISPCE 2019 SAN JOSE, CALIFORNIA, USA
IEEE SYMPOSIUM ON PRODUCT COMPLIANCE ENGINEERING
MAY 6-8, 2019

IEEE PSES Product Safety Engineering Society

India Compliance Agenda

- India Introduction
- India Compliance Organization
  - Department of Telecommunications (DOT)
    - Wireless Planning & Coordination (WPC)
    - Telecom Engineering Center (TEC)
  - Ministry of Electronics and Information Technology (MeitY)
    - Standardization Testing and Quality Certification Directorate (STQC)
  - Bureau of Indian Standards (BIS)
- India Compliance Summary

India Compliance Org Chart



India Compliance: MCIT

Ministry of Communications & Information Technology (MCIT)

India Compliance: DOT - WPC

Department of Telecommunications (DOT)

Wireless Planning & Coordination (WPC)

India Compliance: DOT - WPC

Wireless Planning & Coordination (WPC)

- National Radio Regulatory Authority
- Created in 1952
- Responsible for Frequency Spectrum Management
- Exercises the statutory functions of the Central Government and issues licenses to establish, maintain and operate wireless stations

WPC is divided into three major sections:

1) Licensing and Regulation (LR)
2) New Technology Group (NTG)
3) Standing Advisory Committee on Radio Frequency Allocation (SACFA)

India Compliance: DOT - WPC

Wireless Planning & Coordination (WPC)

- In India, radio frequencies for wireless communications are defined between 3 kHz and 3000 GHz
- WPC does not regulate outside of these frequencies

सत्यमेव जयते
Wireless Planning & Coordination (WPC)

There are WPC two certification schemes:

1. License
   a. Network License (35 types)
   b. Non-Network License (9 types)
2. Equipment Type Approval (ETA)

India Compliance: DOT - WPC

Wireless Planning & Coordination (WPC)

Non-Network License to operate (9 types):

1) Aero mobile Station
2) Dealer Possession License (DPL)
3) Non-Dealer Possession License (NDPL)
4) Demonstration
5) Import
6) Maritime Mobile Station
7) Operator's License For GMDSS
8) Operator's License For COP
9) Operator's License For Amateurs

India Compliance: DOT - WPC

Wireless Planning & Coordination (WPC)

Types of Licenses

- **Import License** – license to import. It is a clearance letter issued by WPC to clear customs importation of wireless equipment
- **Dealer Possession License (DPL)** – license to sell. All distributors/dealers of wireless equipment are required to have this license
- **Non-Dealer Possession License (NDPL) or End User License** - license to use/operate wireless devices for each and every end-user
    - An End-User License may be seen as an exclusive ownership of a particular frequency band for a specified period (usually 2 years) bestowed on the licensee
    - WPC charges a license fee depending on band and application

सत्यमेव जयते
Wireless Planning & Coordination (WPC)

India Compliance: DOT - WPC

Wireless Planning & Coordination (WPC)

Required submittal documents:

- Technical specification/Datasheet
- Product User Guide
- CE RED DoC and reports
- Local Representative Agreement Letter

GOVERNMENT OF INDIA
MINISTRY OF COMMUNICATIONS
DEPARTMENT OF TELECOMMUNICATIONS
WESTERN REGIONAL LICENCE OFFICE
Gorai Road, Borivali (W), Mumbai- 400 091.

ETA CERTIFICATE NO : 2315/2012/WRLO

(THIS IS NOT IMPORT LICENSE)

1	Name of Applicant	Name of Applicant
2	Equipment	Equipment
3	Model No	Model No
4	Manufactured by	Name of Manufacturer
5	Frequency Range (in MHz)	865.2 – 866.8 MHz
6	Max. Output Power	4.45 dBm
7	Type of Modulation	ASK
8	Remarks if any	-

- Typical approval lead time are from 3 to 4 weeks, & there is no labeling requirement

The WPC ETA cert has no expiration date, as long as the product remains unchanged

सत्यमेव जयते
Wireless Planning & Coordination (WPC)

India Compliance: DOT - TEC

Telecom Engineering Center (TEC)

TEC functions:

- A technical body representing the interest of Department of Telecom, Government of India
- Specification of common standards with regard to Telecom network equipment, services and interoperability
- Generic Requirements (GRs)
- Interface Requirements (IRs)
- Issuing:
  - Interface Approvals
  - Certificate of Approvals
  - Service Approvals
  - Type Approvals

India Compliance: DOT - TEC

Telecom Engineering Center (cont.)

- Formulation of Standards and Fundamental Technical Plans
- Interact with multilateral agencies such as APT, ETSI and ITU for standardization
- Develop expertise to imbibe the latest technologies and results of R&D
- Provide technical support to DOT and technical advice to TRAI & TDSAT
- Coordinate with C-DOT on the technological developments in the Telecom Sector for policy planning by DOT

India Compliance: DOT - TEC

Telecom Engineering Center (TEC)

TEC issues the following certificates:

- Mandatory Testing & Certification – Essential Approval (ER)
- Connectivity/Interoperability – Interface Approval (IR)
- Equipment – Type Approval (GR)
- Technology – Technology Approval


GOVERNMENT OF INDIA
TELECOMMUNICATION ENGINEERING CENTRE
(Department of Telecommunications)
Khurshid Lal Bhawan, Janpath, New Delhi-110001

INTERFACE APPROVAL CERTIFICATE

No. : TEC/WR/I/PST-01/01/032.MAR.12 Date: 05th March, 2012

This is to certify that the product described below conforms to the TEC specification (IR) number indicated below and is approved for interconnection to the Indian telecom network. This certificate is issued subject to the terms and conditions stipulated overleaf.

PRODUCT — MODEL No. — Converge Pro 880TA

MANUFACTURER — (SOFTWARE VER. IF ANY) — 3.0.6.15

TEC SPECIFICATION NO.(IR No.)

ISSUED TO (TRADER) — VALID UP TO — 17th August,2014

REMARKS — Facilities and features other than the specified one in IR have not been checked and certified.

Cont.-2

There are four types of technical requirements:
Generic Requirements (GR)
Interface Requirements (IR)
Service Requirements (SR)
Standards Documents (SD)

TELECOMMUNICATION ENGINEERING CENTRE
दूरसंचार अभियांत्रिक केन्द्र
MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY
संचार एवं सूचना प्रोद्योगिकी मंत्रालय
DEPARTMENT OF TELECOMMUNICATIONS
दूरसंचार विभाग
GOVERNMENT OF INDIA
भारत सरकार
ISO 9001:2008

India Compliance: DOT - TEC

Telecom Engineering Center (TEC)

Interface Approval

- Interface Approvals are issued against Interface Requirement (IR) standards
- Interface Approvals are intended for products to be sold into the general market for public use, and to be connected to the public network services
- Product examples are modems, Fax, ISDN terminals, etc.

India Compliance: DOT - TEC

Telecom Engineering Center

Type Approval

- Type approvals are issued based on the Generic Requirements (GR)
- Type Approvals are intended for products that will be procured by the DOT or India's former government carriers
- Product examples are cellular towers, cables, exchange switch, and other types of telecom central office equipment not intended for end users
- Type Approval not only requires in-country telecom testing, but may also require environmental and field testing
- Infrastructure Assessment of the applicant's test and repair facilities in India are also a requirement

India Compliance: DOT - TEC

Telecom Engineering Center

Technology Approval

- Technology Approval is issued under the Generic Requirement (GR) category
- Technology Approvals are granted to R&D organization for the development of equipment in order to transfer the technology to other manufacturers
- The testing of the equipment is done by the specialized Core Group at TEC (HQ) in association with RTEC

India Compliance: DOT - TEC

Telecom Engineering Center

Required Submittal Docs, Samples & Labels:

1) EMC report by current EMC standard
    - e.g. TEC/EMI/TEL-001 latest version
2) Safety Report
3) Schematic
4) Bill of Materials (BOM)
5) User Guide or User Manual
6) Local Rep Authorization Letter
7) Technical Specification and/or Datasheet
8) Product Test Samples - 2 Required

India Compliance: DOT - TEC

Telecom Engineering Center

Required TEC Submittal Docs, Samples & Labels (cont.)

9) Required Product Markings

- The equipment offered for sale shall be clearly marked/affixed with the following:
  - Trade Name, Model, Serial Number, Manufacturer/Dist. Name, & Interface Approval Certificate (IAC) Number

10) There are no restrictions on font, size, or color

11)Typical Lead Time: 8 weeks

India Compliance: DOT - TEC

Telecom Engineering Center

Specific Absorption Rate (SAR) Radio Frequency (RF) Testing for Mobile Handsets

- India has adopted some of the most stringent norms for mobile handsets from the FCC requirements
- Only mobile handsets with revised SAR values of 1.6 W/kg or less are permitted to be manufactured or imported in India
- SAR Market Surveillance for Mobile Handsets made & sold in India, or imported from outlands
- The manufacturers must provide a self-DoC of the handset SAR value

India Compliance: DOT - TEC

Telecom Engineering Center

Specific Absorption Rate (SAR) RF Testing for Mobile Handsets (cont.)

SAR Values Must be Easy to Obtain

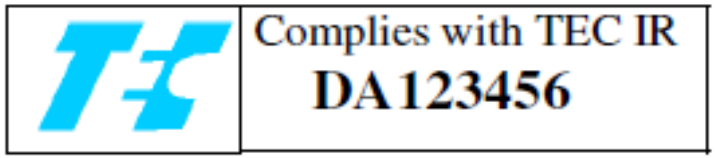
- SAR value information must be displayed on the mobile handsets as with IMEI
  - International Mobile Equipment Identity
- The information on SAR values must be available to consumers where sold
- The SAR information must be available on the manufacturer's web site & also in user manual
- The list of SAR values of different mobile phones will be placed by TEC on the DoT/TEC website

India Compliance: DOT - TEC

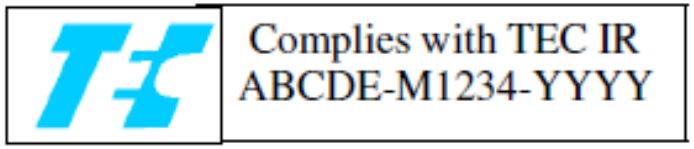
TEC Labelling Requirements

Importers and dealers shall ensure that equipment offered for sale/use in India is clearly marked or affixed with the following markings, indicating TEC product approval:

- Product trade name, model and serial number
- OEM's/importer's/dealer's name



GPA Scheme Label



IAP & EQR Scheme Label

India Compliance: DOT - TEC

Telecom Engineering Center

- TEC implemented a new Mandatory Testing and Certification of Telecom Equipment (MTCTE) in 2018
- All telecom equipment being manufactured in India, or imported from abroad, or manufactured in India for installation in National TTE Networks have mandatory testing and certification requirements
  - Reference TEC Essential Requirements (ER)
  - Per Government of India Gazette notification dated September 5, 2017

India Compliance:

Ministry of Electronics and Information Technology (MeitY)

Ministry of Consumer Affairs, Food & Public Distribution (MCAFPD)

India Compliance: BIS

Bureau of Indian Standards (BIS)

BIS has operated a Product Certification Scheme with ISI Standard mark since inception

- Voluntary
- Mandatory - ISI Scheme and CRS

The ISI scheme is a more rigorous process involving factory inspections and QMS, covering various Electrical, Mechanical, Chemical, Engineering products

In 2012 the MietY Government agency of India decided to launch a new way of certification scheme called the **Compulsory Registration Scheme (CRS)** under BIS Act, for ITE and Electronics Products, with additional products added over the years since

India Compliance: BIS

Steps for BIS CRS Registration

- Applicants must apply online for Registration Grant
- Test reports submitted with application must be issued from BIS recognized test labs (under CRS)
- All foreign applicants that don't have an office in India have to appoint an Authorized Indian Representative (AIR), per BIS guidelines
- Complete the "Form VI" online application form
- Hard copies of application must be submitted within 15 days of the original online application submission
  - In case of non-receipt of hard copies of application within fifteen days of online submission, the application will be treated as closed

India Compliance: BIS

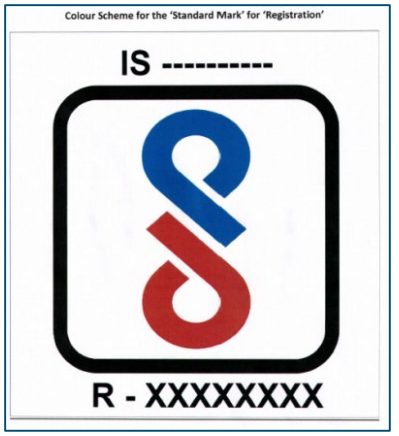
Steps for BIS CRS Registration (cont.)

- BIS will scrutinize and review the applications.
- The applicant will be responsible for any Grant of Registration delays, if the application is incomplete and/or applicant is slow in responding to BIS agency questions
- Once the BIS agency questions are satisfactorily answered, with a submitted affidavit, CRS Registration is granted by BIS
- The grant of Registration letter must be uploaded on the applicant's portal

India Compliance: BIS

CRS Registration Scheme Labeling

Products covered under the scope of this new registration scheme must have this label:



- Must be on both the product & packaging
- Must be in a prominent location
- Must be either screen printed, embossed, or engraved, for both product and package labels
- **Products cannot be cleared at customs without this mark**
  - For label specs refer to the latest version of BIS Circular CMD 3/8:1/6975

India Compliance Resources

Department of Telecommunications (DOT)

- www.dot.gov.in

Wireless Planning & Coordination (WPC)

- www.wpc.dot.gov.in

Telecommunication Engineering Center (TEC)

- www.tec.gov.in

Ministry of Electronics and Information Technology (MeitY)

- http://meity.gov.in

Standardisation Testing and Quality Certification Directorate (STQC)

- www.stqc.gov.in

Ministry of Consumer Affairs, Food & Public Distribution

- http://fcamin.nic.in

Bureau of Indian Standards (BIS)

- www.bis.gov.in

India Compliance
Summary & Recommendations

Study the requirements for your products

- Keep updated on changes and new categories, which are released irregularly and sometimes without coordination with other India compliance agencies
  - Typically there's not a lot of cooperation between the different ministries and agencies
- Find an experienced in-country logistics partner for customs clearance of shipments
- New TEC regulations are geared towards setting up a one window certification process for all Telecom and Wireless products

China

中华人民共和国工业和信息化部
Ministry of Industry and Information Technology of the People's Republic of China

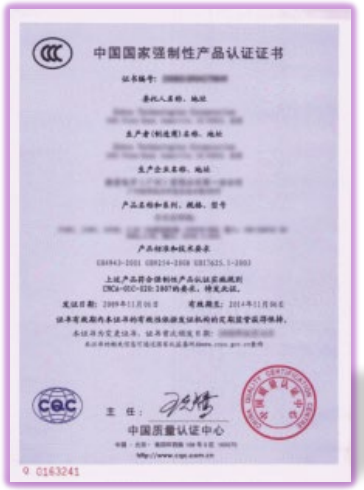
GDP-PPP rank: 1st
Pop. Rank: 1st
Mobile Cellular: 1st
Internet Users: 1st

进网许可
12-5716-021929
InterJak 200/v.35
47P9N2C444PA4A1

ISPCE 2019 SAN JOSE, CALIFORNIA, USA
IEEE SYMPOSIUM ON PRODUCT COMPLIANCE ENGINEERING
MAY 6-8, 2019

IEEE PSES Product Safety Engineering Society

China Compliance for Electronics



CCC

CQC

SRRC

NAL

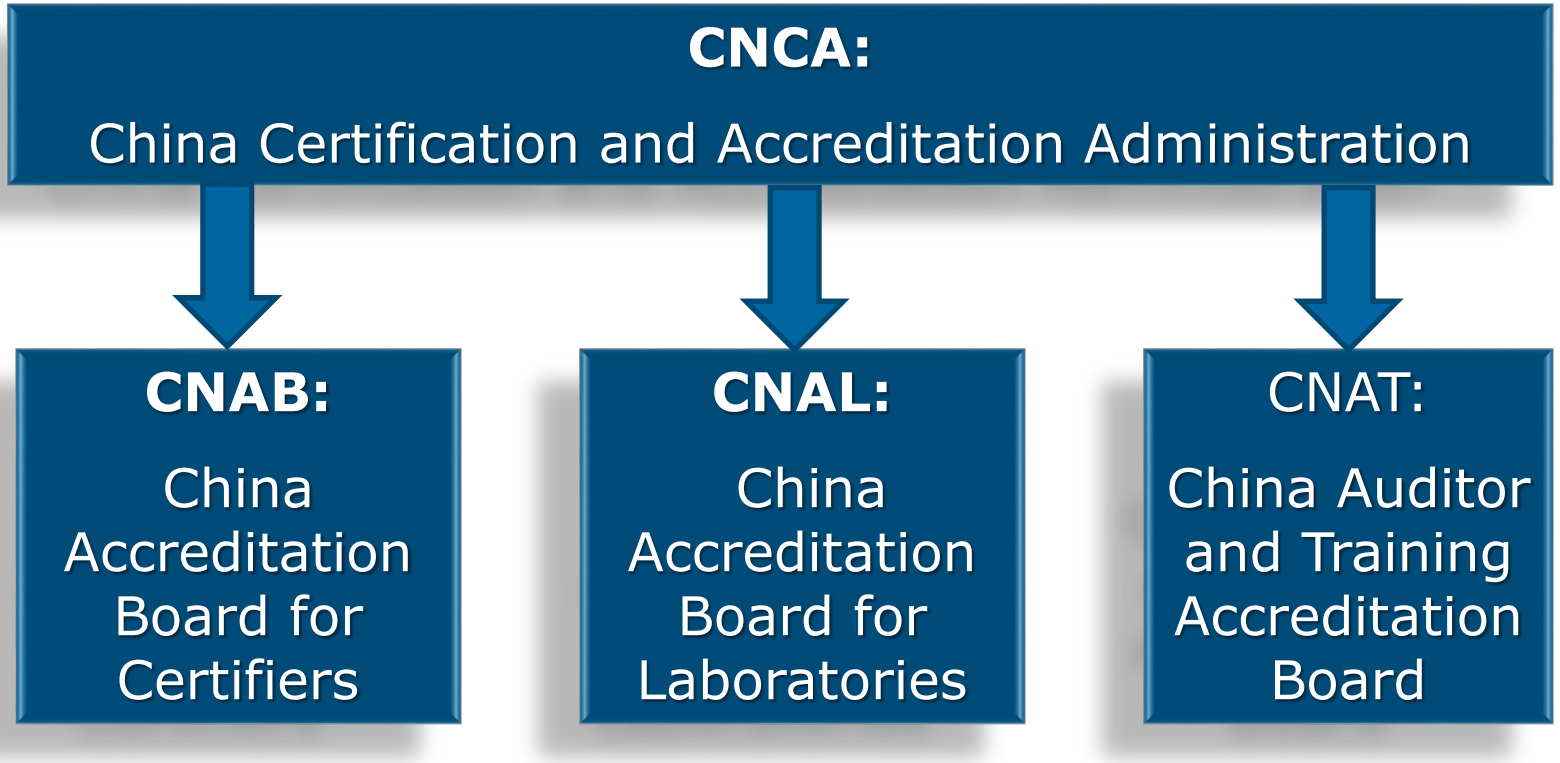
MPE

China Compliance: CNCA → CCC

China Compulsory Certification – CCC

- China's EMC and Product Safety Approval Schemes
- China Certification and Accreditation Administration (CNCA) is the China government agency

China Compliance: CNCA → CCC



China Compliance: CCC

HS codes for products requiring CCC Mark

Category	Name of the product category	No of products
1	*Electric Wires and Cables*	5
2	*Connecters such as Plugs and Sockets for Household and Industry Appliance*	6
3	*Low-voltage Circuit Switches and Protective Devices*	9
4	*Small-Power Motor*	1
5	*Electric Tools*	16
6	*Electric welding machines*	15
7	*Household and Similar Electrical Appliances*	18
8	*Audio & Video products*	16
9	*Information Technology Equipment*	12
10	*Lighting Electrical Appliances*	2
11	*Motor Vehicle Products*	4
12	*Tire Products*	2
13	*Safety Windows for Car and Buildings*	4
14	*Rubber Products*	1
15	*Equipment for Crop Protection Purpose*	3
16	*Telecommunication Terminal Equipment*	9
17	*Medical Equipment*	12
18	*Fire fighting Products*	3
19	*Intruder Alarm Systems for Security Purpose*	1
20	Wireless Local Area Networks	40
21	Decoration materials for Construction Industry e.g. Wallpaper	2
22	Chemistries Product for Carpentry	1

China Compliance: CCC - EMC

Critical Component List for EMC

- List of major components affecting EMC performance
  - Main PCB board,
  - Switch Power
  - Video Cable Signal
  - Video-Amplifier Board
  - Power Supply
  - Antenna
  - Motor
  - Power Cable with Magnetic band (ferrites)
  - Filtering Element for Power Supply
  - Telecom Interface Circuit
  - Display
  - Case
  - RF component and RF transmission-related software
  - Suspension Component for electromagnetic interface, control board

China Compliance: Product Safety

Critical Component List for Safety

- Symbol Number (位号)
- Part Number (部件号)
- Component Name (名称)
- Type (型号) : Model Number
- Material/Specification (规格/材料) – Component Specification (e.g. voltage, current)
- Trademark (商标)
- Factory (生产厂)
- Standards (认证标准)

China Compliance: Product Safety

China is a CB Scheme member, and accepts CB Test Reports that cover the China-mandated deviations

- If the CB report does not cover China deviations (and a China deviation is applicable), additional safety testing will be performed in accordance with Chinese standards

There are four different CB scheme

- TMP (Tested at Manufacturer Premises)
- WMT (Witness Manufacturer Testing)
- SMT (S Manufacturer Testing)
- RMT (Recognized Manufacturer Testing)

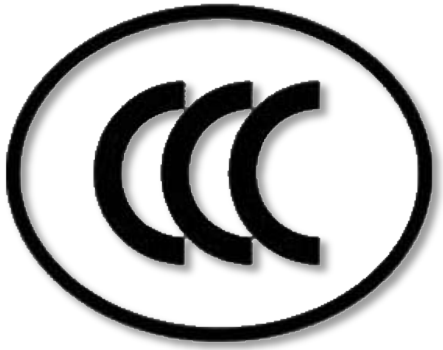
CQC only accepts reports from the two CB schemes TMP and WMT

- **NOTE: The other two schemes, SMT and RMT, are not accepted by CCC**

China Compliance: CCC Labelling

Manufacturers can now print the CCC Mark logo without permission from CNCA, and label certification is no longer required

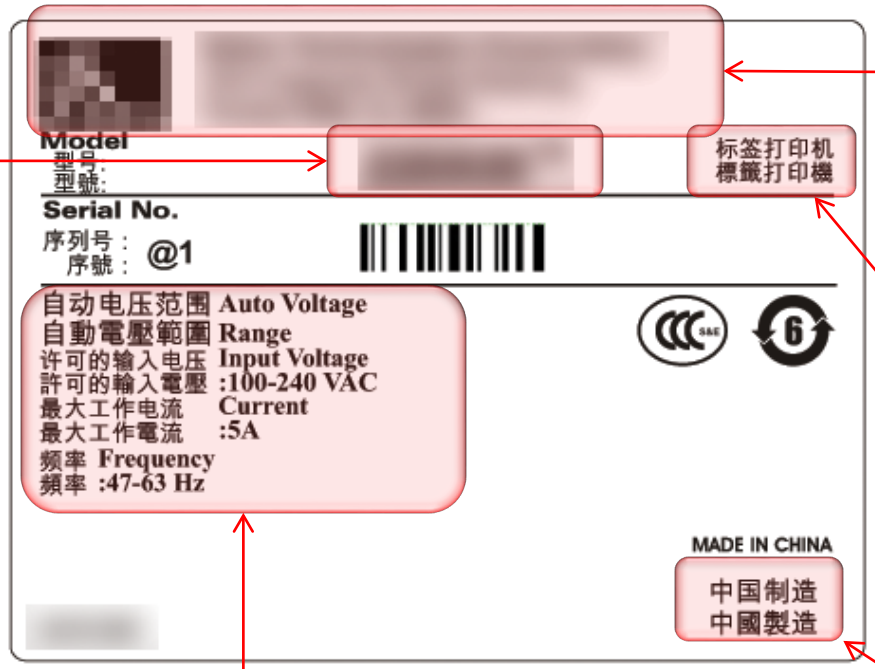
- Just make sure to use the official CCC label artwork



CCC Mark

China Compliance: CCC Labelling

All required text must be in Simplified Chinese characters



Model Number

Company Name

Product Name In Chinese

Country of Origin In Chinese

Product Specifications and Ratings

China Compliance:

CNCA, CCC, & CQC Websites

CNCA Website Homepage (in Chinese):
http://english.cnca.gov.cn

CNCA CCC Regulations webpage (in English):
www.cnca.gov.cn/cnca/cncatest/20040420/column/227.htm

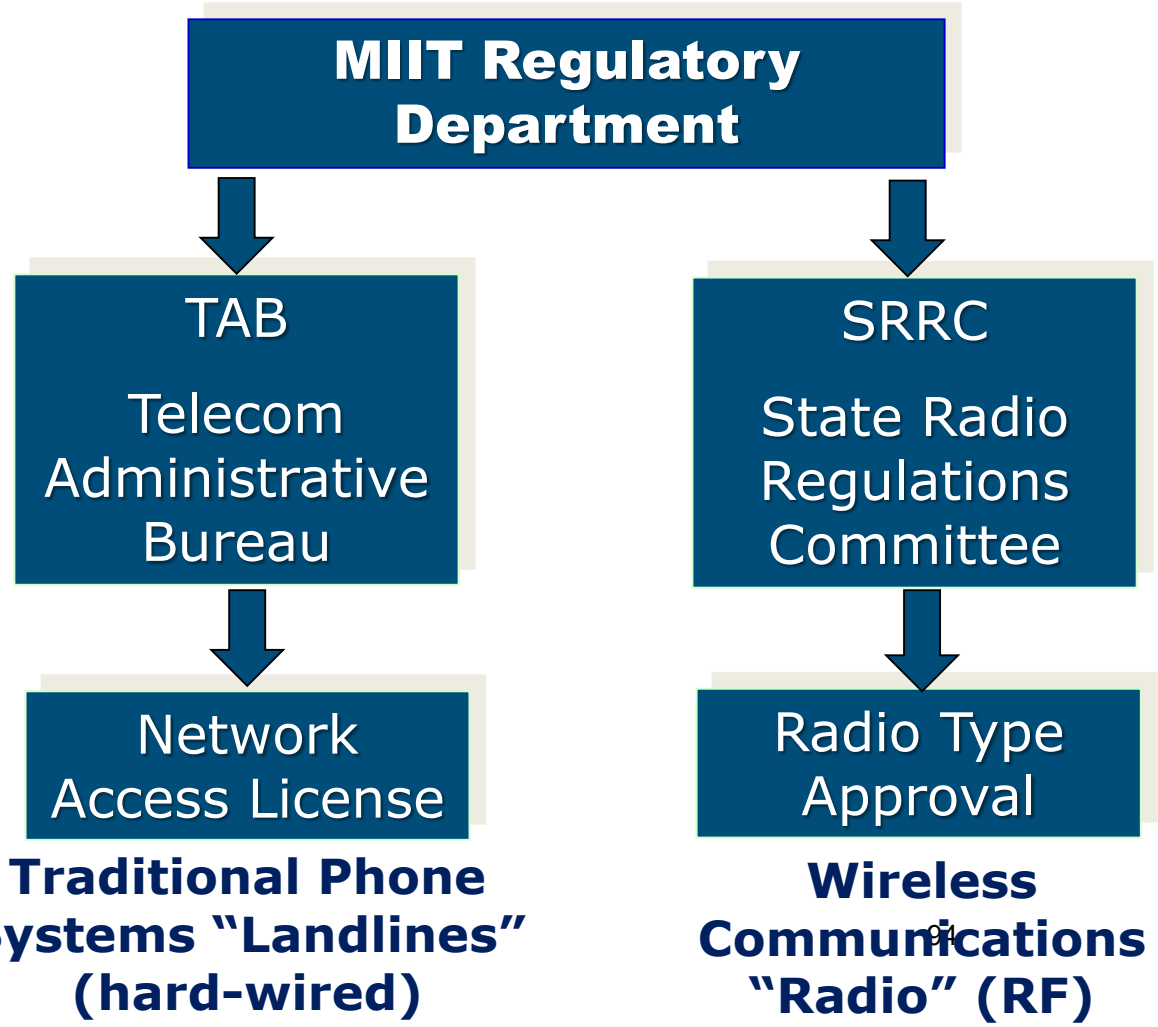
CQC Website (in English):
www.cqc.com.cn/www/english

China Compliance: MIIT

Ministry of Industry & Information Technology (MIIT)

- Telecommunications Agency & Spectrum Authority of China
- The People's Republic of China (PRC) Government **Ministry of Industry & Information Technology** was established in March 2008
- It is the PRC state agency responsible for regulation and development of the postal service, Internet, wireless, broadcasting, communications, production of electronic and information goods, software industry and the promotion of the national knowledge economy

China Compliance: MIIT



China Compliance: NAL

The Network Access License is a requirement for marketing telecom equipment in China

- The main intent is to ensure network compatibility between equipment and the network itself
- The license (NAL) is issued by the Telecom Administration Bureau
- Applications are processed by the TAB Telecom Equipment Certification Center
- **Any products used in public telecom networks are subject to mandatory NAL testing and approval**

China Compliance: NAL

NAL Certification is a mandatory requirement for 3 categories of devices

- Telecom Terminal Equipment
- Wireless Telecommunication Devices
- Network Communication Telecom Devices

The purpose of the NAL Licensing scheme:

- Strengthen control of network access for telecom equipment
- Ensure the smooth operation of telecom networks
- Implement government related policies
- Safeguard the interests of both the government and the customer

China Compliance: NAL

Some basic requirements for NAL applications:

- The applicant must be a registered domestic company, with a registered business scope that shows relevance to the specific products
- The NAL certificate must list both the applicant and the manufacturer
- The manufacturer must have the appropriate ISO Quality Management System certification
- There is no factory inspection required for NAL
- There are no annual license fees for the NAL license

China Compliance: NAL

The NAL Certification Process involves type testing, licensing, and purchase of the license code:

1. Samples sent to selected lab for testing
2. Lab complete testing, then issues report to client
3. Client or agent prepares and submits all documents to TAB for verification
4. TAB reviews documents and grants the Certificate (i.e. the Network Access License or NAL)
5. The applicant then applies to MIIT for purchase of the license code stickers

China Compliance: NAL

Testing & documentation requirements

- Testing must be performed at a MIIT designated lab:
- Testing labs must be accredited for the specific scope(s) of the submitted product
- Product Safety: GB4943:2001 CB report and certificate are accepted for ITE
- NAL can recognize CCC safety test report

NAL Label Example:

China Compliance: NAL

Submittal Fun Facts:

- The submittal process averages 60 days
- After approval, TAB will issue an Network Access Identifier (NAI) with the certification number for each approved product
- NAL approvals are valid for 3 years
- MIIT has maintains a product catalog of NAL approvals
- NAL Approval is not always checked at customs, but it is required for the importer to present when bidding on governmental projects (or projects invested by State-owned companies)
- If a NAL certificate is to be renewed, the process should start 90 days prior
- TAB is responsible for market surveillance under the NAL approval scheme

China Compliance: MIIT & NAL

MIIT & NAL Online Resources

English language website:

- http://english.gov.cn
  - (has only limited information)

Chinese language websites:

- China NAL Official Website:
  - www.tenaa.com.cn
- China MIIT Official Website:
  - www.miit.gov.cn

Google Translate (Chinese to English)

China Compliance: SRRC

SRRC Radio definition:

- Radio transmission equipment is defined as all types of equipment for radio communication, navigation, location, direction-finding, radar, remote control, telemetry, broadcasting and television that transmit radio wave
  - But not including industrial, scientific and medical (ISM) equipment, electric transport system, high-voltage power line and other electrical appliances that radiate electromagnetic wave


无线电发射设备
Radio Transmission Equipment
型号核准证
Type Approval Certificate
根据《中华人民共和国无线电管理
In accordance with the provisions on the Radio
条例》，经审查，下列无线电发射设备
Regulations of the People's Republic of China , the following
符合中华人民共和国无线电管理规定和
radio transmission equipment , after examination , conforms
技术标准，其核准代码为：
to the provisions with its CMII ID:
有效期：五年
Validity
Year Month Date

China Compliance: SRRC

SRRC Requirements for Import:

- For any radio transmission equipment exported to China, the foreign business involved should possess a "**Radio Transmission Equipment Type Approval Certificate**"
- This product approval certificate is issued by the **Office of State Radio Regulatory Commission** of the People's Republic of China (referred to as the "SRRC Office") and the SRRC ID should be permanently marked on the equipment

China Compliance: SRRC

SRRC – Radio Type Approval (RTA)

Category I:	Category II:	Category III:
Wireless Base Station	Microwave Com Eq	Short Range Devices

Submitted Material

- The importers of foreign equipment are required to provide copies of supporting documents showing SRRC approvals (test report or certificate)
- The Ministry of Industry and Information Technology requires issuance of the final equipment type approval "test report" covering the original submitted equipment, issued only by a MIIT recognized testing organizations
- Detailed internal and external photos are required

China Compliance: SRRC

SRRC Website (English language):

www.srrc.org.cn/en/

SRRC Website (Chinese language):

www.srrc.org.cn

SRRC Certificate Search Webpage (Chinese):

www.srrc.org.cn/WP_Search.aspx

Google Translate (Chinese to English)

https://translate.google.com/#view=home&op=translate&sl=zh-CN&tl=en

China Compliance
Summary & Recommendations

China is now an WTO open global market

- However, manufacturers must be prepared to face **a tough mix of culture, laws, and regulations**
  - Which you are expected to learn and practice
- **Expect frequent new/updated regulatory requirements**
  - Especially for new wireless/telecom technologies
  - Finding knowledgeable & experienced partners are crucial for legal & business success
- **Occasional trade issues can presents challenges**
  - e.g. Current US/China Trade issues

BRIC Product Compliance
Summary & Recommendations

- **Expect frequent new/updated regulatory requirements**
  - Especially for new wireless & telecom technologies
  - Changing regulatory systems in some countries
  - Finding knowledgeable & experienced partners are crucial to success for legal/customs/business practices
- **Occasional political and social instability can presents challenges** (i.e. like Venezuela currently)
- **Evaluate risks vs. rewards; investigate proposed market countries**
- **Join industry affinity groups like IEEE, TCBC, ITU, etc.**

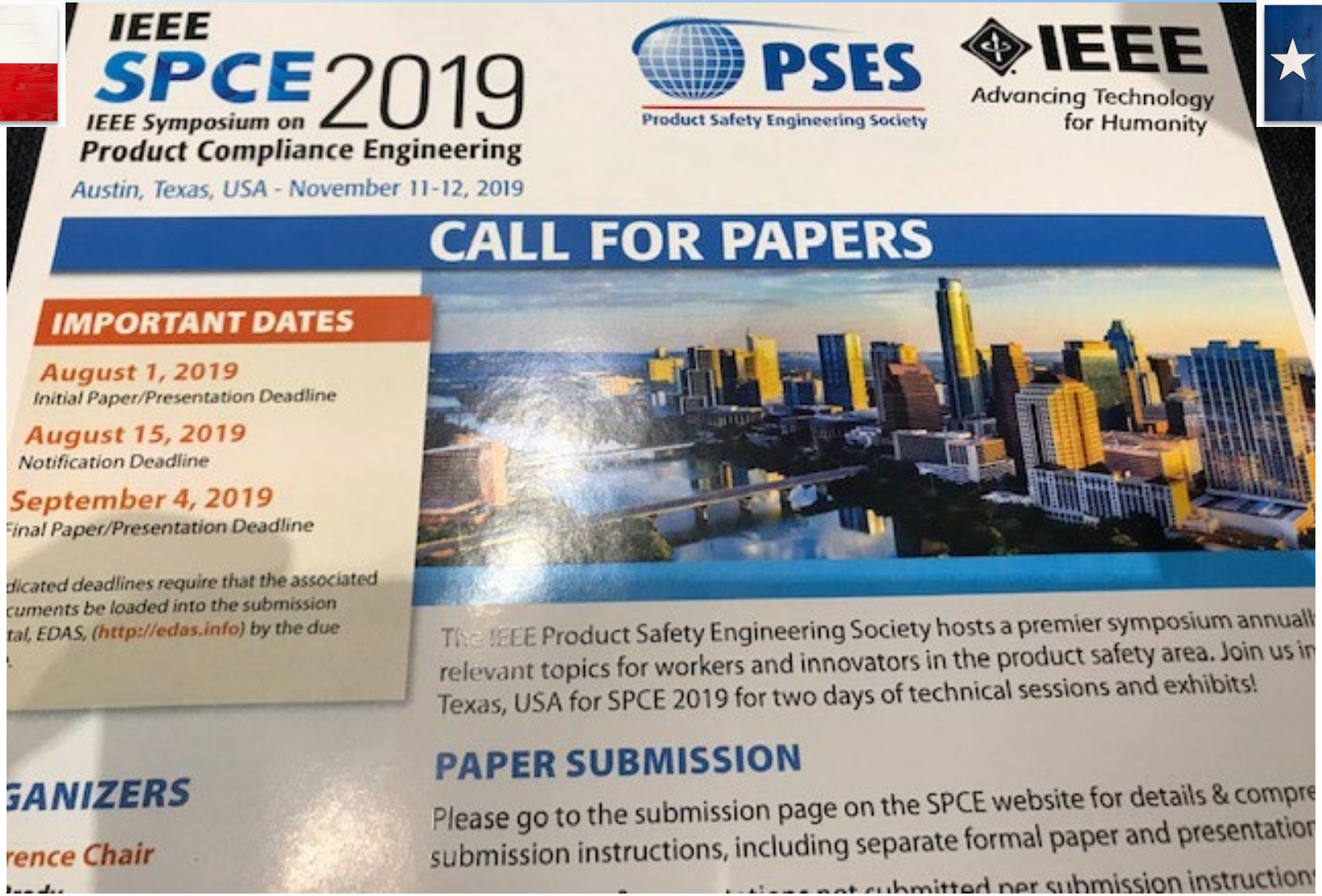
Questions?

More International Approval questions?

- Please contact Mark Maynard for any other at
  - email: mmaynard@ieee.org
  - via Linked In: www.linkedin.com/in/markwmaynard

Going to metro Austin TX area this year in Central Texas?

- Please attend a local IEEE CenTex Section chapter meeting while you're here!
- Make new contacts & friends!
  - You'll be able to tell your friends about your cool Austin buddies!
    - We're hip too, but in a more Cowpunk hi-tech "Howday, Y'all" kind of way
      - Plus an endless supply of iced tea, queso, salsa, and chips!
- For more info go to the IEEE Central Texas (CenTex) Section home page at click here



Austin Texas ISPCE - Nov. 11-12, 2019

ISPCE 2019 SAN JOSE, CALIFORNIA, USA
IEEE SYMPOSIUM ON PRODUCT COMPLIANCE ENGINEERING
MAY 6-8, 2019

IEEE PSES Product Safety Engineering Society

IEEE Symposium on Product Compliance Engineering (ISPCE) Regional Event will be in Austin, Texas in Nov. 11-12, 2019

- Look for Austin ISPCE 2019 updates!
  - For more info, go to the IEEE Product Safety Engineering Society (PSES) homepage at Click_Here
  - Or contact Mark Maynard at
    - email: mmaynard@ieee.org
    - Linked In profile: www.linkedin.com/in/markwmaynard

ISPCE 2019 SAN JOSE, CALIFORNIA, USA IEEE SYMPOSIUM ON PRODUCT COMPLIANCE ENGINEERING MAY 6-8, 2019

IEEE PSES Product Safety Engineering Society