



INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

Introduction to IEC and its processes and procedures to develop IEC International Standards



Damien LEE

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IEC Asia-Pacific Regional Centre



- **What is the IEC?**
- **About IEC Asia-Pacific Regional Centre**
- **Development of IEC International Standards**

- **What is the IEC?**
 - **Mission**
 - **Members**
 - **Types of Participation**
 - **Conformity assessment systems**

- Founded in 1906 to promote international co-operation on all questions of standardization and related matters in the field of electrotechnology





Mission statement

IEC's mission is to be globally recognized as the provider of standards and conformity assessment-related services needed to facilitate trade in the fields of electricity, electronics and associated technologies.



- **Encourage national adoption of international standards**
- **Stimulate world trade and business by ensuring technical and market relevance of its products**
- **Make results applicable and available for voluntary adoption world wide**
- **Set the framework for Conformity Assessment in global markets**



IEC Membership (as of 2010-05)

81



ALBANIA (AM)	FINLAND	LATVIA (AM)	RUSSIAN FEDERATION
ALGERIA	FRANCE	LIBYA	SAUDI ARABIA
ARGENTINA	GEORGIA (AM)	LITHUANIA (AM)	SERBIA
AUSTRALIA	GERMANY	LUXEMBURG	SINGAPORE
AUSTRIA	GREECE	MALAYSIA	SLOVAKIA
BAHRAIN (AM)	HUNGARY	MALTA (AM)	SLOVENIA
BELARUS	ICELAND (AM)	MEXICO	SOUTH AFRICA
BELGIUM	INDIA	MONTENEGRO (AM)	SPAIN
BOSNIA-HERZEGOVINA (AM)	INDONESIA	NETHERLANDS	SRI LANKA (AM)
BRAZIL	IRAN	NEW ZEALAND	SWEDEN
BULGARIA	IRAQ	NIGERIA (AM)	SWITZERLAND
CANADA	IRELAND	NORWAY	THAILAND
CHILE	ISRAEL	OMAN	THE FYR of MACEDONIA (AM)
CHINA	ITALY	PAKISTAN	TUNISIA (AM)
COLOMBIA (AM)	JAPAN	PHILIPPINES	TURKEY
CROATIA	JORDAN (AM)	POLAND	UKRAINE
CUBA (AM)	KAZAKHSTAN (AM)	PORTUGAL	UAE
CYPRUS (AM)	KENYA (AM)	QATAR	UK
CZECH REP.	KOREA, REP. OF	ROMANIA	USA
DPR KOREA (AM)			VIETNAM (AM)
DENMARK			
EGYPT			
ESTONIA (AM)			



Types of participation

- IEC is a voluntary association of National Committees that fully represent electrotechnical interests in their countries:
 - **Governmental agencies, industries, testing laboratories, academia, consumer groups, etc.**
- Membership: one member per country
 - **Members: 59**
 - **Associate members: 22**
- Affiliate Country programme (not membership)
 - **81 countries (as of 2010-05)**



Rights of IEC participants

Full Members	Associate Members	Affiliates
May submit votes on <u>all</u> TC/SC and Council documents via electronic voting system	May submit votes/ comments on documents of <u>4</u> selected TC/SCs via electronic voting system	May not vote
May submit comments on all TC/SC and Council documents	May submit comments only on TC/SC documents but not on Council documents	May submit comments on the documents of <u>10</u> selected TC/SCs by e-mail
Fully participate in international standardization activities	Limited participation of countries with limited resources	A type of participation, not a membership

- Best experience of industry, researchers, consumers and regulators
- Over 10 000 experts from companies, laboratories, academia and government
- Safety, performance, interoperability, environment



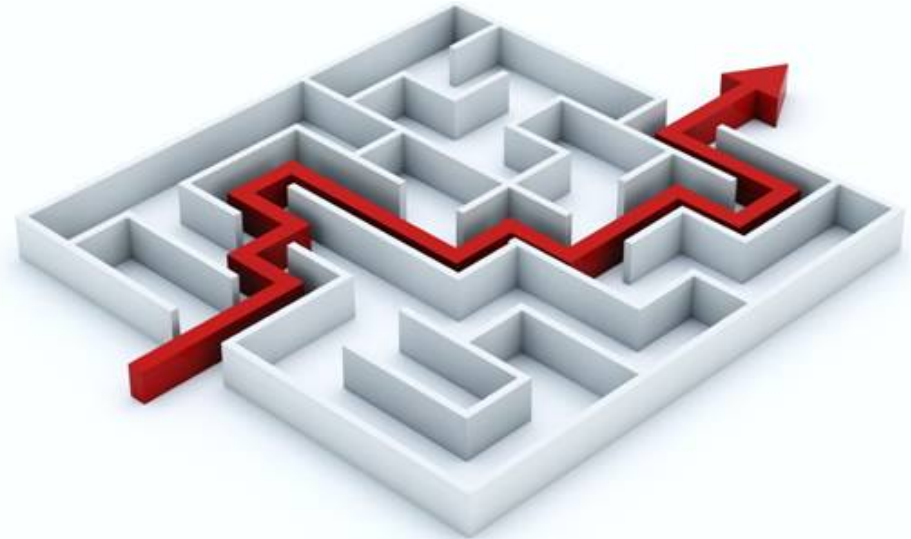
...the foundation for trade and innovation.

- **Basis for conformity assessment**
- **Promote safety & consumer confidence**
- **Stimulate economic growth & development**



...promote technology transfer.

- Reduce costs for standards development
- Benefit from existing know-how
- Give products a better chance to succeed
- Technology trends



...provides a competitive edge.

- Is a product what it appears to be?
- Does a system function the way it should?
- What about:
 - Safety?
 - Performance?
 - Reliability?



...through conformity assessment.



Three conformity assessment systems

IECEE



**System of Conformity
Assessment Schemes for
Electrotechnical Equipment
and Components**

IECEX



**System for Certification to
Standards Relating to
Equipment for Use in
Explosive Atmospheres**

IECQ



**Quality Assessment System
for Electronic Components**



The Need for Standards

- **Globalization is a reality. Trade is global**
- **Facilitate interoperability (Products and Systems)**
- **Improve Safety**
- **Improve Efficiency**
- **Protect the Environment**
- **Standards used as basis for Regulations**

- **One test, one certification, one mark**
- **Remove delays and costs of multiple testing and approval:**
 - **Products get to market more quickly and expense reduced**
 - **Trade barriers caused by different certification criteria in various countries reduced**
 - **New markets opened up**
- **Help to ensure a fair global trading system in accordance with WTO.**



What's the Pay Off for Industry?

- Influence the developments and content of IEC Standards
- Early warning of developing markets, establish customer contacts
- Improve product safety and quality
- Rationalization and cost reduction in design and manufacturing.

- **International Standards are best source for governments for**
 - **Legislation/regulation**
 - **Issuing tenders**
- **Recognized source for WTO compliance**
 - **Contributes to fulfilling World Trade Organization's Agreement on Technical Barriers to Trades**
- **Standards provide detailed technical interpretation of the law.**



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Introduction to IEC-APRC



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IEC Asia-Pacific Regional Centre



- **About IEC-APRC**
 - **Mission**
 - **Activities**
 - **Staff and Contact**



IEC-APRC mission

- **Promote awareness of IEC in the region**
- **Increase use of IEC International Standards**
- **Enhance participation of all countries in the region in the Commission's work**
- **All of the above will be achieved by improved communications with businesses, industries and governments in the region**

- **Technical**
 - Support to 57 TCs/SCs (from 6 TCs/SCs in 2006)
- **Promotional**
 - Visits by Officers
 - Information Sessions and Training Activities
 - Participation in Regional Groups/Events
 - Venue for WG meetings



Country dialogues/visits by Officers

- **General IEC awareness session involving IEC Officers**
- **May tie in with training activities and technical information sessions**
- **Based on theme decided by IEC and the hosting country**
 - **Past sessions included visits to Malaysia, Singapore, Thailand, Vietnam etc.**

- Enhance participation
- Directives and procedures for experts as well as new TC/SC Officers
- IT tools
- Increase use of IEC International Standards and Conformity Assessment Systems





Staff strength

- **Officer-in-Charge**
- **2 Technical Officers**
- **1 Technical Editor**
- **2 Administrative Assistants**



Contact in the Asia-Pacific region

- Your resource in the region for the region:

Dennis Chew

Officer-in-Charge

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INTERNATIONAL
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Development of IEC International Standards



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- **Development of IEC International Standards**
 - Directives
 - Standardization process and technical work
 - Deliverables
 - Stages in standards development
 - Meetings
 - Availability of IEC publications



- **Part 1**: Procedures for the technical work
- **Part 2**: Rules for the structure and drafting of International Standards
- **IEC Supplement**: Procedures specific to IEC



ISO/IEC Directives, Part 1

- **Organizational structure and responsibilities for the technical work**
- **Development of International Standards and other deliverables**
- **Meetings**
- **Appeals**

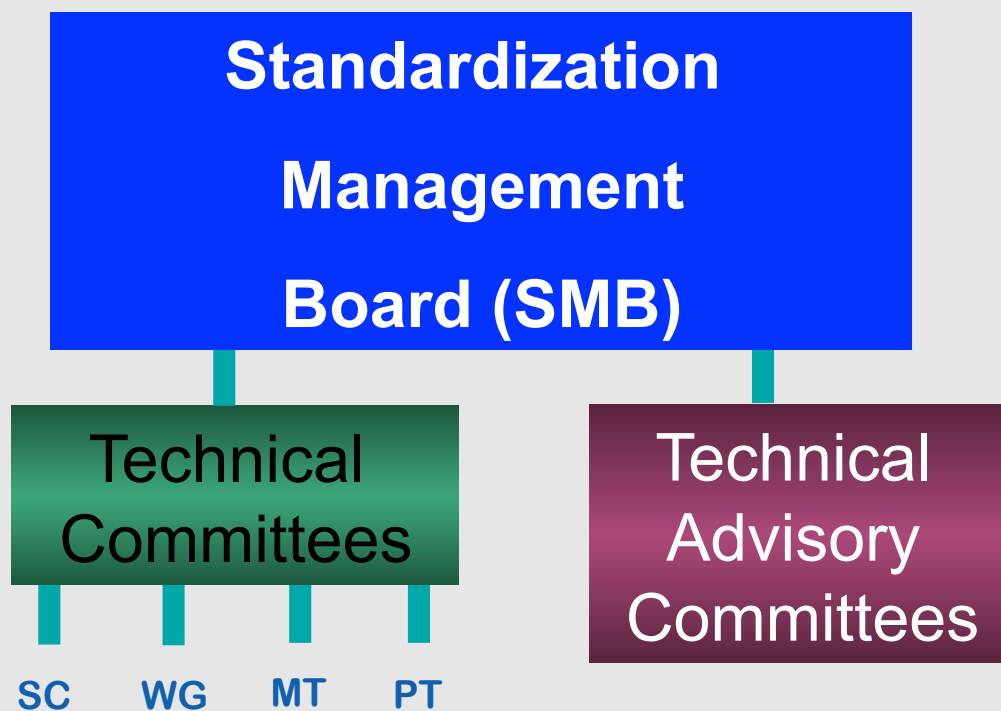
- **General principles**
- **Structure**
- **Drafting**
- **Preparation and presentation of documents**
 - Principles of drafting
 - Basic reference works
 - Numbering of divisions
 - Drafting of terms and definitions
 - Title of documents
 - Patent rights
 - Internationally standardized items
 - Verbal forms
 - Quantities and units

- **Maintenance of IEC publications**
- **“In some countries” clauses**
- **Interpretation sheets**
- **Forms**
- **Reporting**
- **Preparation of French versions of documents**

Standardization process in IEC

- is based on **consensus**
- is entirely **transparent**
- is open to **all national committees** for participation

- **Strategic plan**
 - Each TC shall prepare strategic business plan for its own specific field of activity; formally agreed upon and included in its report for review and approval by the SMB on regular basis
 - Project undertaken only if proposal accepted in accordance with the relevant procedures
- **Project stages**
- **Project description and acceptance**
- **Programme of work**
- **Target dates**
- **Project management – secretariat’s responsibility**
- **Project leader**
- **Progress control – periodic progress report by SC/WG/PT**



- **International Standards (IS)**
- **Technical Specifications (TS)**
- **Technical Reports (TR)**
- **Publicly Available Specifications (PAS)**
- **Guides**

- A document, established by **consensus** and approved by the IEC, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context

>2/3 vote in favour by P-members

<1/4 vote against from all members

- similar to an IS in that it is normative in nature,
- developed according to consensus procedures
- is published when required support for an IS cannot be obtained, or when the subject is still under technical development, or when there is a future - but no immediate - possibility of an IS.

2/3 vote in favour by P-member countries

- Informative document
- Data of a different kind
 - Scientific supporting material
 - Data collection
 - Results of surveys
 - State of the art
 - Supplementary information or explanation

Majority vote of P-member countries

- A technical specification not fulfilling the requirements for a standard, but made available to the public and established in an organization operating under given procedures or developed within a TC/SC
- Submission may be proposed by A- or D-liaisons (liaisons at WG/PT level)
- Published after verification and checking that no conflict with existing IS by the committee concerned and consensus of:

Majority vote of P-member countries

- **Not prepared by TC/SCs**
- **Usually developed by Advisory Committees**
- **Material of an advisory nature to TC/SCs (Non-normative publication)**
- **Refer Annex A of ISO/IEC Directives, Part 1, 2009**



Stages in standards development

PWI	Preliminary stage
NP	Proposal stage
WD	Preparatory stage
CD	Committee stage
CDV	Enquiry stage
FDIS	Approval stage
IS	Publication stage.

- **Elaborate market need for a standard**
- **Preliminary technical study.**
- **Develop outline or draft for NP**
- **May introduce into work programmes by a simple majority vote of P-members**

- **Proposal submitted for 3-months ballot to P-members of TC/SC concerned**
- **Requirement**
 - **Majority of P-members voting support addition**
 - **For TC/SCs with ≤ 16 P-members, 4 must nominate expert to participate in work**
 - **For TC/SCs with > 16 P-members, 5 must nominate expert to participate in work**
- **Experts constitute project team with project leader nominated by proposer**
- **Work plan with target dates.**

- **Draft documents developed by project team / working group**
- **Project teams work independently**
- **Encourage use of electronic tools**
 - **E-mail**
 - **Collaboration tools (allowing to exchange documents and comments)**

- **Draft distributed to National Committees for comments**
- **2, 3 or 4 months as agreed by TC/SC**
- **Stage at which substantive technical comments to be made.**

- **Draft submitted for 5 months ballot to National Committees**
- **Last stage at which comments can be submitted**
- **Approved if**
 - **2/3 majority of P-members voting approve**
 - **less than 25% of all votes submitted are negative.**



Approval stage (FDIS)

- **Formal approval ballot for 2 months**
- **No comments allowed with positive vote**
- **Approved if**
 - **2/3 majority of P-members voting approve**
 - **less than 25% of all votes submitted are negative.**

- **Within 1.5 months, the IEC CO shall**
 - **Correct any errors indicated by the secretariat of the TC/SC**
 - **Print and distribute the International Standard**

- **Maintenance of standards**
- **Modifications**
 - **Technical corrigenda**
 - **Amendments**
 - **Avoid proliferation of modifications –
not more than two separate documents**

- **Lists all items being developed by a TC/SC**
- **Updated by Central Office as each document is received from TC/SC secretary and processed by CO**
- **Updated and corrected by TC/SC at each TC/SC meeting.**

- **TC/SC establishes target dates for each project for**
 - **Completion of the first working draft**
 - **Circulation of the first committee draft**
 - **Circulation of the enquiry draft**
 - **Circulation of the final draft International Standard**
 - **Publication of the International Standard.**

- **Participants at TC/SC meetings are representatives of National Committee**
- **One vote per P-member**
 - **No votes from O-members or liaisons.**



TC/SC secretary at meetings

- **Record decisions**
- **Update programme of work**
- **Report to SMB**
- **Update of SBP (Strategic Business Plan)**
- **Provide justification of target date extensions.**

- Automatic cancellation of all work items in progress > 5 years without reaching approval stage
- Decisions on all projects where target dates not respected (> 4 months past target date)
- Warnings on projects between 3 and 4 years
- Review SMB Report.



Availability of IEC publications

- **IEC library server – electronic files in PDF format**
 - **Distribution and sale by National Committee**
 - **For purpose of national adoption**
- **Watermark collection – PDF files with watermark**
 - **Reference library collection by National Committee**
- **Revisable format – Word**
 - **For national adoption purposes only**



Availability of IEC publications

- **Standards in database format**
 - **Some are accessible either free of charge, or via subscriptions which can be purchased through the IEC National Committees, National Committee-appointed Sales Outlets, or directly from the IEC Web Store.**
- **IEC Webstore**
 - **Direct end-user sales in both electronic and paper versions**



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Thank you for your attention.

