

# IECEX International Conference 2012

## Introduction to the IECEx Certification System



*Mr Kerry McManama  
IECEX Chairman*

**IECEX 2012, Dubai,  
20+21 March 2012**



# IECEX Update – Presentation Outline

**1. Background**

**2. Service Offerings**

**3. Awareness**

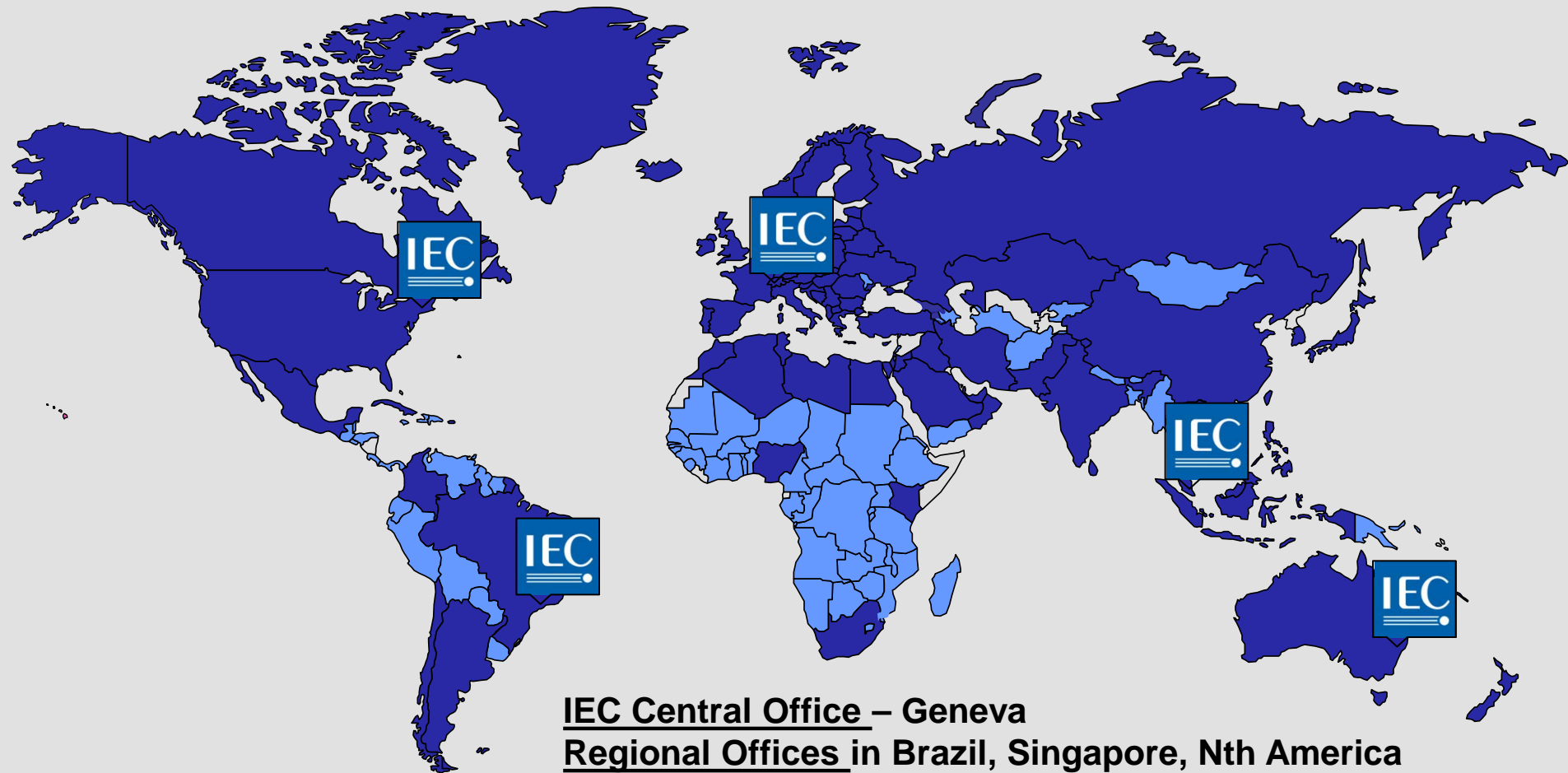
- **Founded in 1906 - Promote international co-operation on all questions of standardization and related matters in the fields of electrotechnology, including Conformity Assessment.**
- **The International Electrotechnical Commission current reach 163 Countries**



**81 Members**

**82 Affiliates**

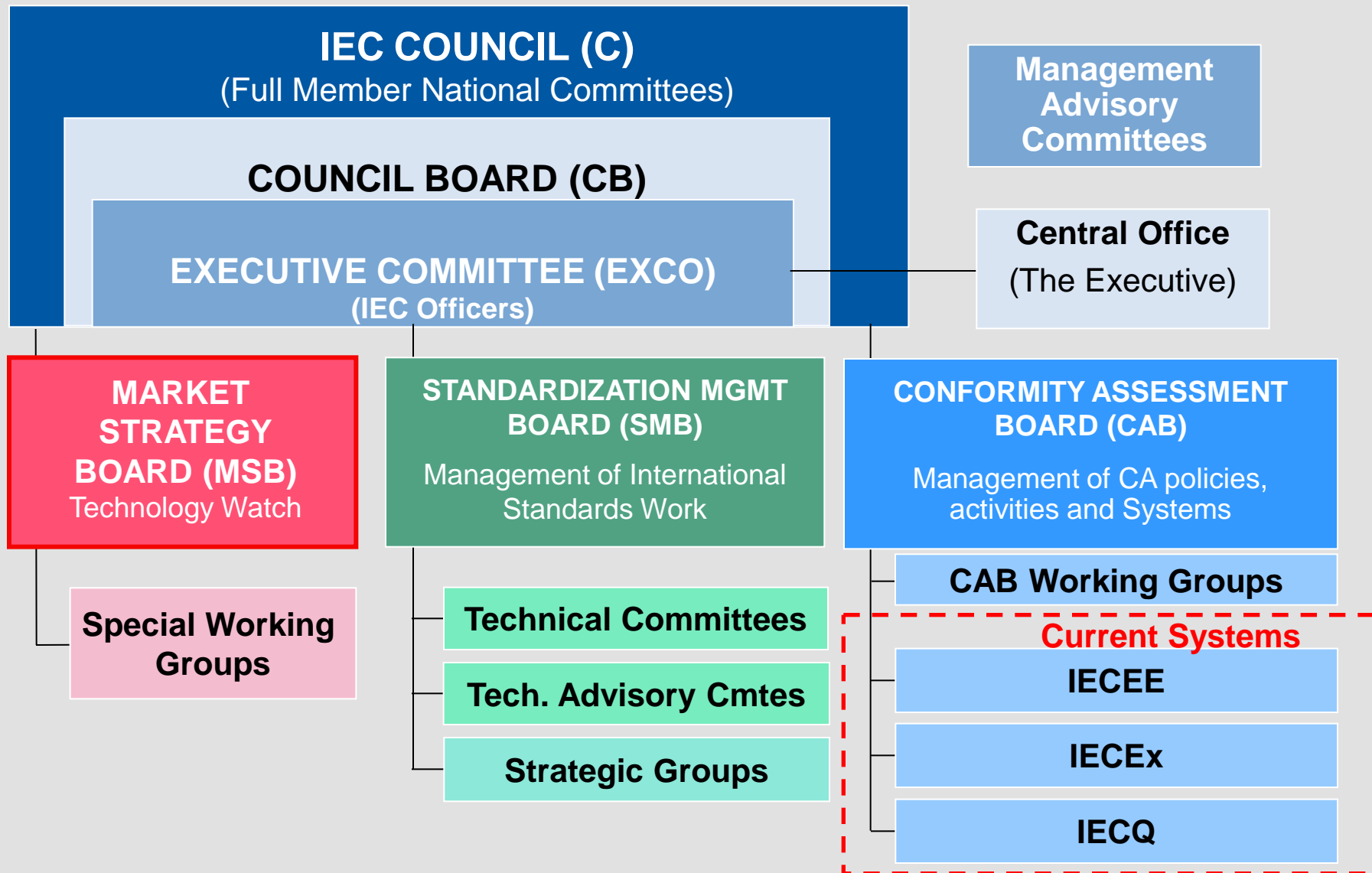
**(Offices in 5 Countries)**



**IEC Central Office – Geneva**

**Regional Offices in Brazil, Singapore, Nth America  
and Australia**

# IEC Structure





# Benefits of Conducting Conformity Assessment thru IEC

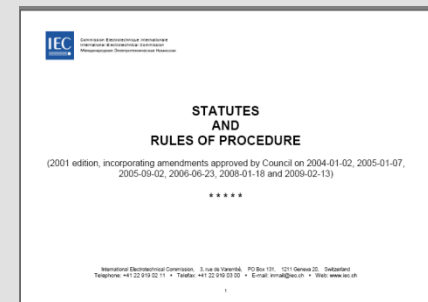
- **IEC Brand**
  - Global recognition - industry
  - International recognition (eg WTO + UN recognised)
  - IEC Reports and Certificates used Nationally
- **Open and Transparent Process**
  - Clear Rules
  - Transparency in process and results
- **Industry has a voice and provides direct input.**
- **Consistency in CA processes among participating Certification Bodies (CBs)**

- Removal of costly duplication of testing/Cert at local level + delays to accessing markets
- **Confidence** among Industry, Regulators + Stakeholders  
– Ex equipment + Systems, high capital cost
- **Confidence** among Bodies (Labs + Certifiers), level playing field for CBs and TLs to compete
- Portability of assessment results + certs
- Ex Services + Personnel Cert generally not covered elsewhere
- Instant access to information, including “On-Line” Certificates – instant checking.

## ■ Compliance with IEC Statutes + Rules

### IECEX DNA

- One single set of Rules and Operational Procedures for TLs + CBs
- ALL TLs and CBs undergo the same qualification process to join, use of peer assessment.
- Common Test and Quality Assessment Report and Certificate Format used by ALL TLs and CBs, but always maintaining CB Brand
- Use of Internet “On-Line” Systems for Certificates. [Equipment](#), [Services](#), [Personnel](#)



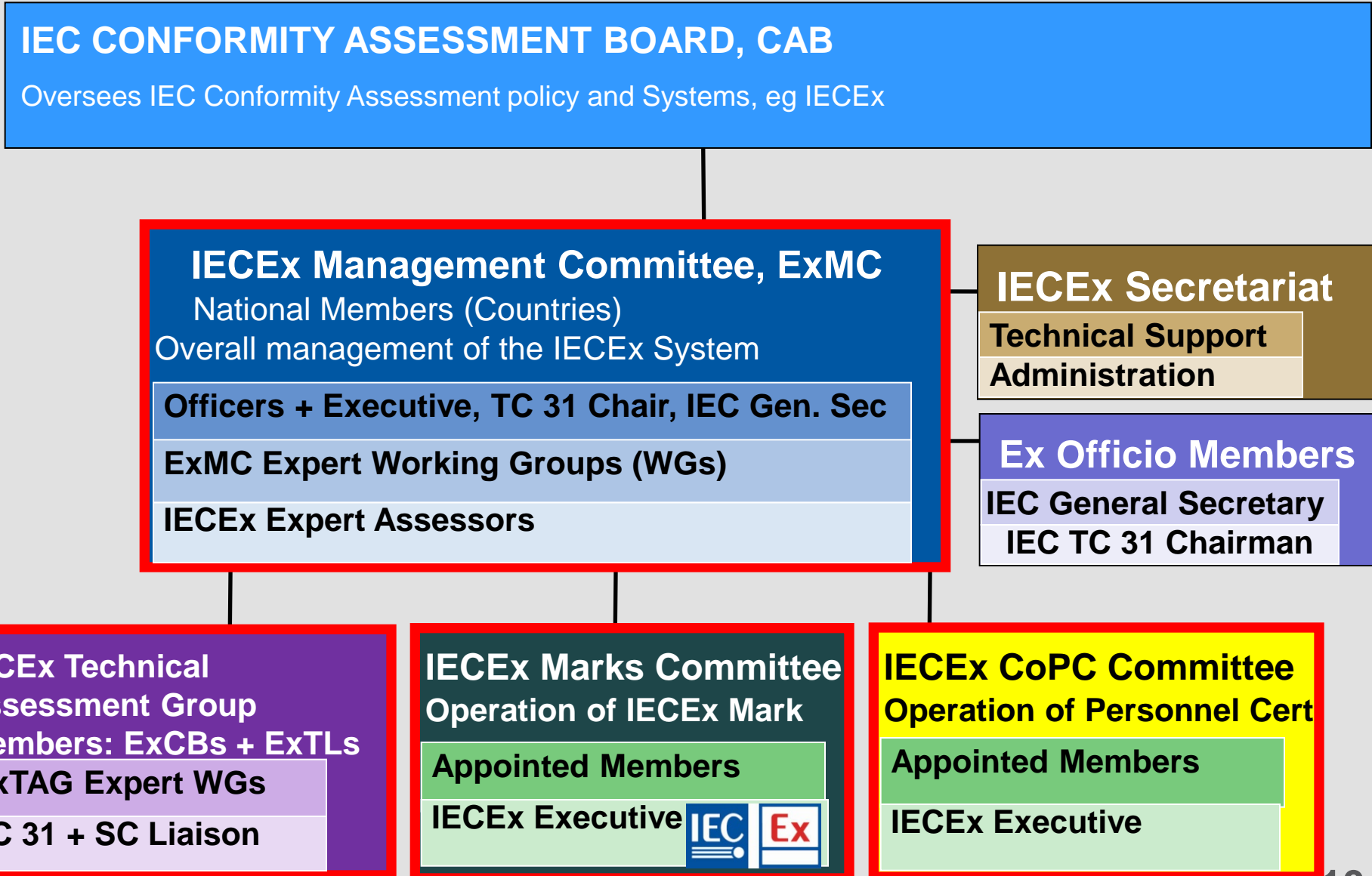


# Examples of Industries Covered

- Automotive refuelling stations or petrol stations
- Oil + gas extraction
- Oil refineries, rigs and processing plants
- Gas pipelines and distribution centres
- Chemical processing plants
- Printing industries, paper and textiles
- Hospital eg operating theatres
- Aircraft refuelling and hangars
- Surface coating industries
- Coal mining
- Sewerage treatment plants
- Grain handling and storage
- Woodworking areas
- Sugar refineries, storage , packaging + distribution
- Metal surface grinding, especially aluminium dusts and particles.
- Transportation
- Pharmaceuticals
- Food processing
- Furniture manufacturer
- Textiles - + Many others



# IECEX Structure





# Schemes within the IECEx System

**IECEX System**  
www.iecex.com

**IECEX Equipment Scheme**  
Certification of Ex Equipment + Systems

**IECEX Conformity Mark License Scheme**

**IECEX Services Scheme**  
Certification of Ex Service Providers, eg Repair and overhaul workshops

**IECEX Certified Persons Scheme (CoPC)**  
Competency to work in Ex field (New)

**Choice between:**

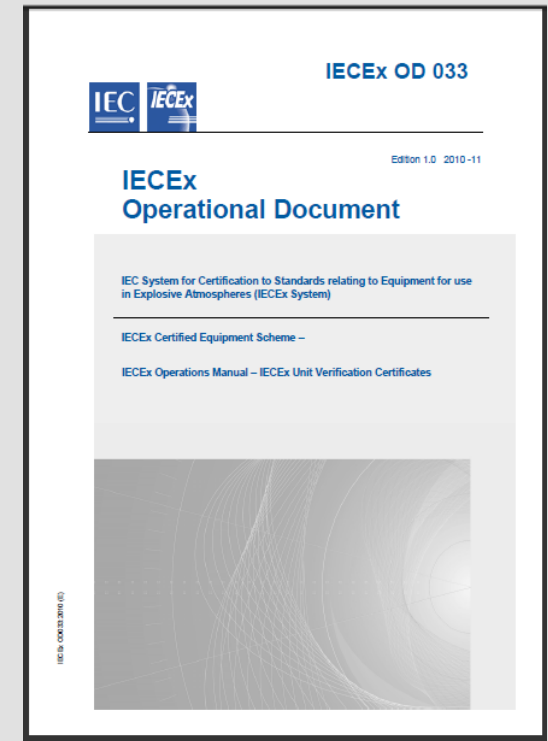
IECEX “Certificate of Conformity”

IECEX “Component Certificate”

IECEX “Unit Verification” Cert.



- **IECEX OD 033 – Operational Procedure**
- **Covers specific Items identified on the IECEx CoC (eg serial number)**
- **Full and Compliant ExTR(s) required**
- **Does not require Factory Inspection/audits**
- **Examples being specialised “One-Offs” or limited quantities**





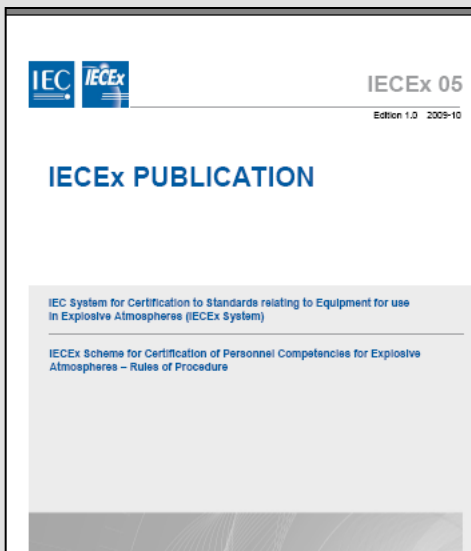
# IECEx Certified Service Facilities Scheme

## Key Features

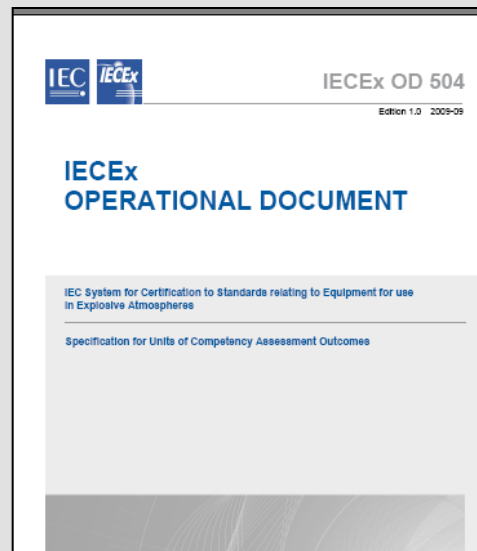
- **Assessment of Service organizations, ie – Repair and Overhaul**
- **An On-site audit conducted at the service facility – per IECEx03**
- **IECEx service facilities required to demonstrate compliance with stringent IECEx requirements including:**
  - **Operational procedures and repair techniques meet IECEx technical requirements encompassing IEC 60079-19**
  - **Possess and maintain in operating condition necessary facilities and equipment including test equipment and traceability of measurements**
  - **IECEx quality system requirements, based on ISO 9001**
  - **Competent personnel with current competencies related to Ex equipment standards and certification requirements**
  - **Others necessary for proper servicing of Ex equipment**

# IECEx Certified Persons Scheme - Key Features

- Same IEC TC 31 Standards already used by IECEx apply, 60079-10, -19, -14, -17
- Certifies a Person's Competence to be able to apply the Standards
- Manufacturers now interested



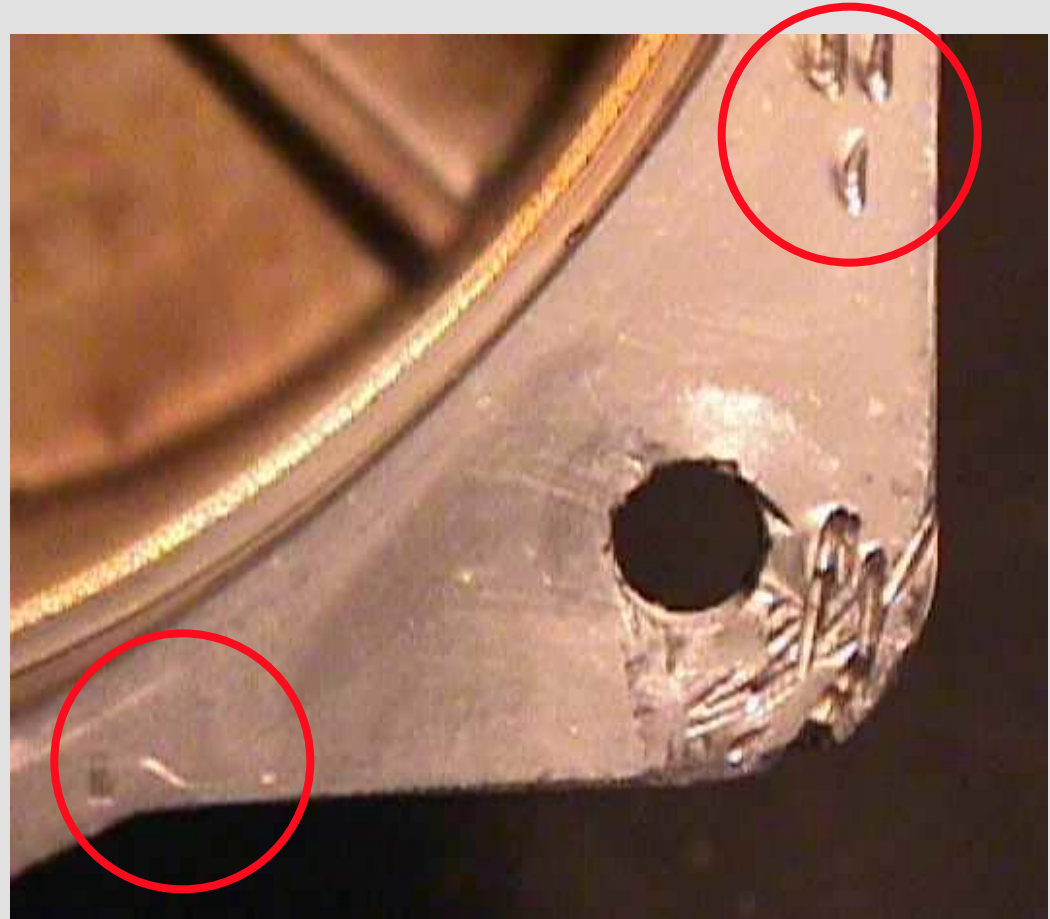
Scheme Rules



Operational Documents

<b>Unit Ex 001</b> – Basic principles of protection in explosive atmospheres
<b>Unit Ex 002</b> – Perform classification of hazardous areas
<b>Unit Ex 003</b> – Install explosion-protected equipment and wiring systems
<b>Unit Ex 004</b> – Maintain equipment in explosive atmospheres
<b>Unit Ex 005</b> – Overhaul and repair of explosion-protected equipment
<b>Unit Ex 006</b> – Test electrical installations
<b>Unit Ex 007</b> – Perform visual & close inspection
<b>Unit Ex 008</b> – Perform detailed inspection
<b>Unit Ex 009</b> – Design electrical installations
<b>Unit Ex 010</b> – Perform audit inspection of installations

# Examples of errors due to lack of competence



- Web site version is the MASTER
- Certificates issued by ALL ExCBs in the one place – *if not on IECEx website – then not issued !*
- Data Backed up by IEC Central Office, Geneva
- Certificate / Report Number automatically generated by system, *all Cert. Nos begin with “IECEX....”*
- Certificates + reports deleted only by Secretariat
- Editing only allowed during first 14 days after issue of the Certificate
- ExCBs only issue CoCs within their scope
- Supported by technical Secretariat





# IECEX On-Line Certificate System

Certificate of Conformity: IECEX ITS 07.0008X - Microsoft Internet Explorer

File Edit View Favorites Tools Help



Address http://iecex.iec.ch/iecex/iecexweb.nsf/ae7eea0d12561594c1256d0200448859/607c74650e91a0e2c1257928002f3a9c?OpenDocument

[IECEX CoC Home](#) > [Certified Equipment Scheme](#) > [Certificate of Conformity](#)

**important information !**



## IECEX Certificate of Conformity

### INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEX Scheme visit [www.iecex.com](http://www.iecex.com)

- ieccx.iec.ch:
  - Home / Search
  - Certified Service Facilities
  - Conformity Mark Licenses
  - Certified Persons
- View by:
  - "All ExCBs" Certificates
  - Certificate ref. number
  - IECEX Cert. Body (ExCB)
  - Applicant
  - Applicant Location
  - Manufacturer location
  - Country/Standards/ExCBs
  - Standard used
  - ExTRs
  - QARs
- Services:
  - Export to MS Excel
  - Operational Manual

Certificate No.: **IECEX ITS 07.0008X** issue No.: **2**

Status: **Current**

Date of Issue: **2011-12-21** Page 1 of 5

Applicant: **Joy Mining Machinery**  
Thorn Hill Industrial Park  
177 Thorn Hill Road  
Warrendale  
PA 15086  
**United States of America**

Electrical Apparatus: **Controller Enclosure 7LS1A / Type 5000033161**  
*Optional accessory:*

Certificate history:  
Issue No. 2 (2011-12-21)  
Issue No. 1 (2010-6-9)  
Issue No. 0 (2007-3-26)





QAR Reference Number \*: GB/SIR/QAR07.0007/02  
(automatic numbering)

Related QARs: [GB/SIR/QAR07.0007/00](#)  
[GB/SIR/QAR07.0007/01](#)

Status\*: Issued

QAR Free Reference Number\*: GB/SIR/QAR07.0007/00

Audit Date\*: 2011-06-27  
(yyyy-mm-dd)

Date of Issue\*: 2007-02-05  
(yyyy-mm-dd)

Details of change\*: Surveillance Audit

Valid until\*: 2012-08-01  
(yyyy-mm-dd)

Site(s) audited\*: Joy Mining Machinery  
Thorn Hill Industrial Park  
177 Thorn Hill Road  
Warrendale  
PA 15086  
USA

Issuing ExCB\*: SIR - SIRA Certification Service

Manufacturer\*: Joy Mining Machinery  
Thorn Hill Industrial Park  
177 Thorn Hill Road  
Warrendale  
PA 15086  
USA

Country of Manufacture\*: United States of America

Product information\*: see attachment

Protection concept\*: see below comment section

Related IECEX Certificates:  
(automatic linking)  
[IECEX SIR 10.0134X issue: 0 \[Current\]](#)  
[IECEX SIR 11.0077 issue: 0 \[Current\]](#)  
[IECEX ITA 08.0011X issue: 2 \[Current\]](#)  
[IECEX SIR 11.0114 issue: 0 \[Current\]](#)  
[IECEX ITA 11.0021X issue: 0 \[Current\]](#)

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http://iecex.iec.ch

IECEX Technical Report  
Fields marked with \*

EXTR:

ExTR Reference Number  
(automatic numbering)

Status\*

ExTR Free Reference  
Number\*

Date of Issue\*  
(yyyy-mm-dd)

Details of change\*

List of Standards Covered

Issuing ExTL\*

Endorsing ExCB\*

Manufacturer\*

Country of Manufacture\*

Ex Protection\*

Ratings

Internet

...oop

Internet  
www.internetcertification.com  
www.iec.ch  
www.iecex.com

## New United Nations Publication, March 2011 endorsing IEC TC 31 Standards + IECEx as “world’s best practice”.



**UNECE** United Nations Economic Commission for Europe

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Press Release

[Index]

**Helping smaller countries protect their populations from danger in explosive environments**  
New UNECE publication offers regulatory framework

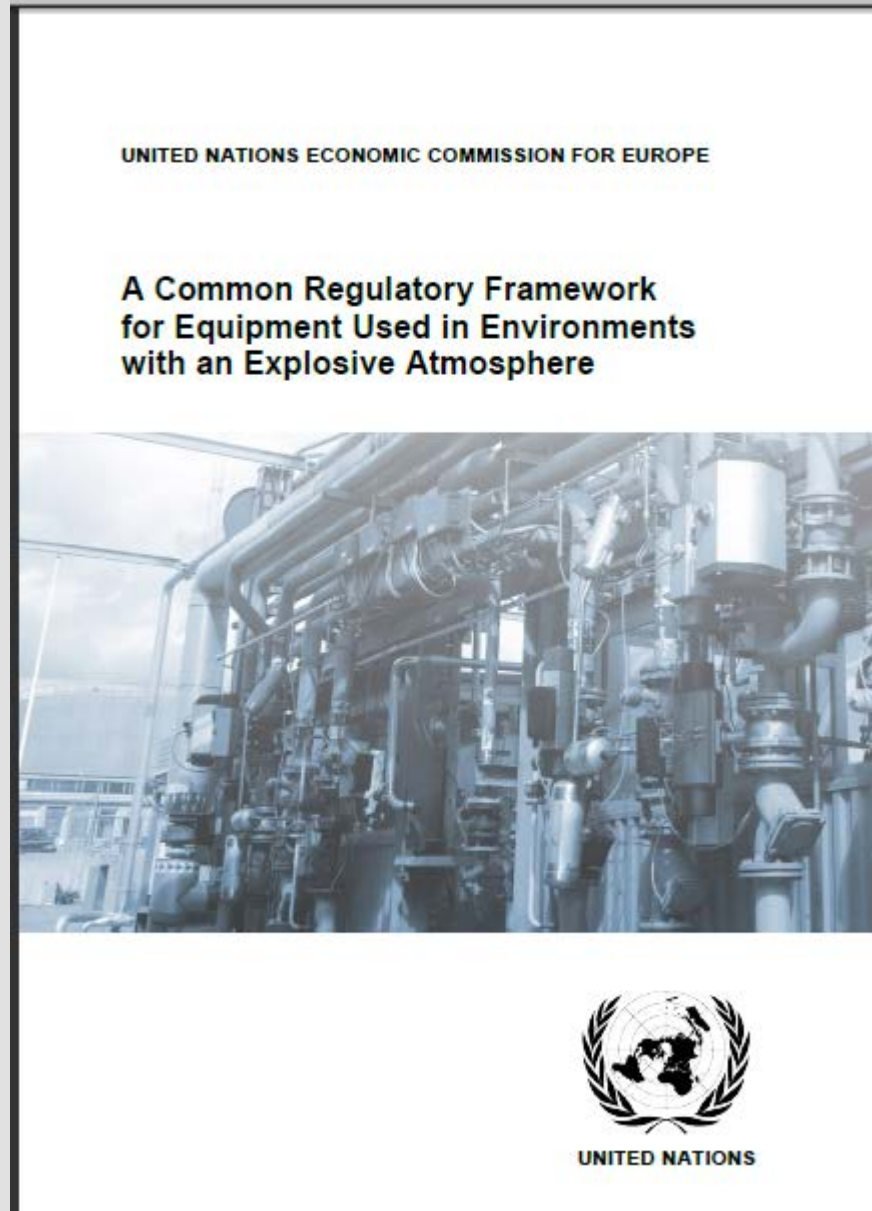
Geneva, 22 March 2011 --

The United Nations Economic Commission for Europe (UNECE) has just issued a publication that helps address the hazards in environments with a high risk of explosion such as mines, refineries, chemical plants and mills.

The booklet “*Common Regulatory Framework for Equipment Used in Environments with an Explosive Atmosphere*” can be used by countries that lack regulation in this sector as a blueprint for their legislation, and also for aligning existing national regulations with internationally harmonized best practice.



“Ex-equipment” for use in such hazardous environments needs to be specially designed, installed, maintained and repaired to eliminate potential sparks and open flames. This heterogeneous sector plays an important part in many areas of economic activity, and represents an important component of international trade.

This equipment therefore undergoes severe testing and certification, which is very costly. Because differing legislation often does not allow countries to accept the testing and certification done in another country, manufacturers generally must have devices re-tested and re-certified whenever they want to enter a new market. For some companies, this

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

**A Common Regulatory Framework for Equipment Used in Environments with an Explosive Atmosphere**

UNITED NATIONS

[Full Text](#)

[http://www.unece.org/press/pr2011/11trade\\_p03e.htm](http://www.unece.org/press/pr2011/11trade_p03e.htm)

essential health and safety requirements laid out in the legislation. Under this approach, equipment that complies with the provisions of the standards is “deemed to comply” with the requirements specified in the regulations.

## 2 Purpose of the Sectoral Initiative on Equipment Used in Environments with an Explosive Atmosphere

7. The purpose of the Sectoral Initiative on Equipment Used in Environments with an Explosive Atmosphere is to promote the convergence of national technical regulations currently in place in this sector towards a shared framework. This will reduce barriers to trade for this equipment, as well as costs. It will also increase the safety of the installations and the well-being of personnel working in the sector, as well as that of the communities living near the installations.

## 3 Scope statement of the Common Regulatory Objectives contained in this document

8. The Common Regulatory Objectives (CROs) presented in this document have been drawn up in accordance with Recommendation L of the Working Party on Regulatory Cooperation and Standardization Policies (WP. 6) of the United Nations Economic Commission for Europe (ECE/TRADE/378 – UNECE Recommendations on Standardization Policies).
9. The purpose of the CROs is twofold. On the one hand, they can be used as a model to draw up legislative instruments in countries that do not currently have regulations in this sector. On the other hand, they can be used to align existing national regulation with an internationally harmonized best practice.

10. The CROs are drawn up with reference to international standards and conformity assessment procedures developed by IEC and ISO and to best practice in the assessment of conformity to such standards, within the IECEx.
11. The CROs address the requirements both for electrical and mechanical equipment being placed on the market (part one of the present document) and for the safe installation and use of the equipment in the workplace (part two of the present document).
12. Explosion protection in industry can be assured through a variety of legitimate means. The present document is based on one of them, namely, the "IEC Zone Concept, in

available in English. On request of the customer of the equipment, the manufacturer must provide a translation into a national language.

## **B. Definition of applicable conformity assessment procedures**

22. Compliance with this CROs shall be by use of an international certification scheme such as the IECEx for direct market acceptance of products carrying IECEx Certification. Alternatively, where national legislation does not allow for use of IECEx Certificates, national certification of compliance should be based on IECEx testing and assessments.

## **Common Regulatory Objectives – Part two**

### **Requirements for the safe use of the equipment**

23. All substances intended for use in a plant or facility characterized by an explosive atmosphere have to be classified concerning their safety characteristics by applying the

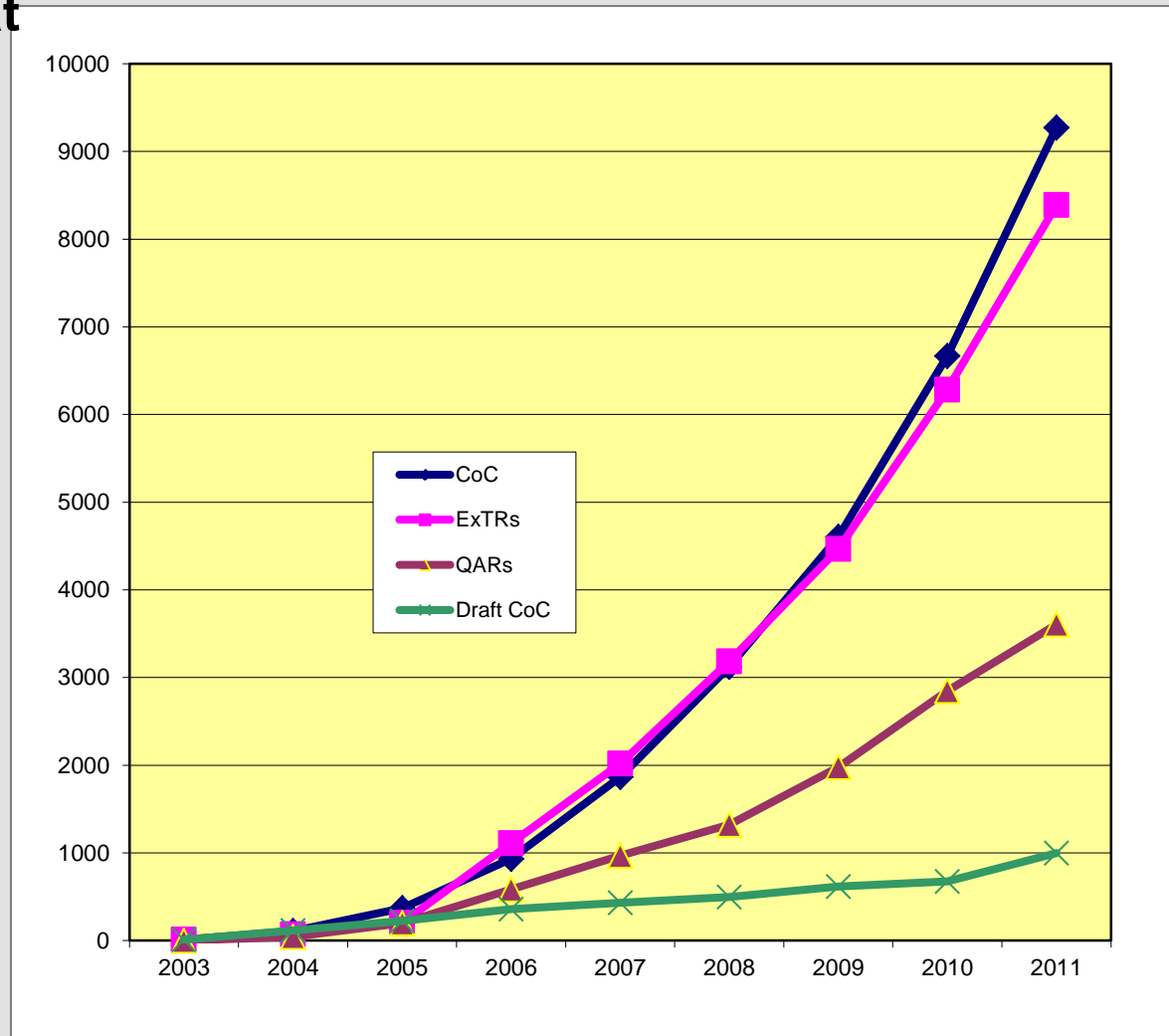
•21,000+ Certs & Reports at end 2011

•Growth in demand continues

•Note, certificates do not have a life, hence do not need to be renewed – new certificates are for new products

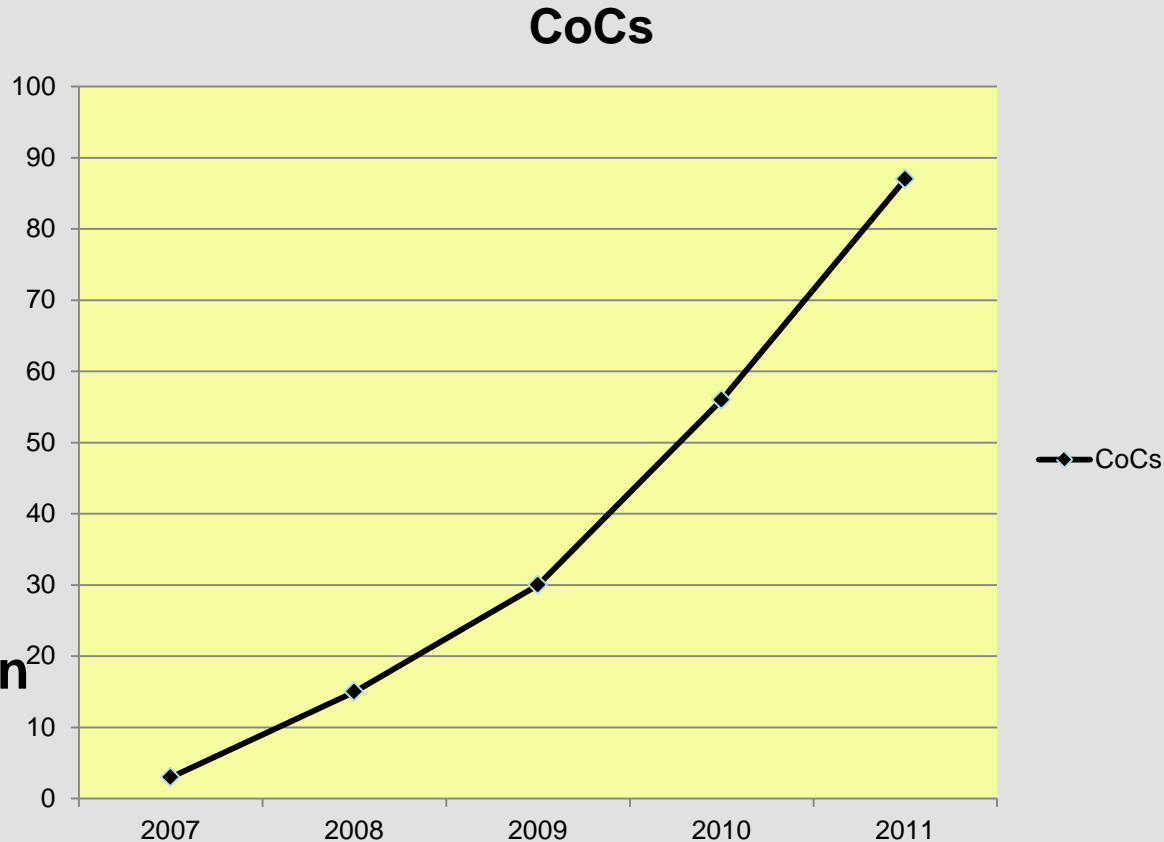
•New IEC and ISO “Non-electrical” Standards are emerging via SC 31M

•Used in conjunction with IECEx Conformity Mark





- Commenced 2007
- 87 Certs at end 2011
- 67% of all certs to date issued in 2011
- Note, 1 Certificate per Workshop.
- Certificates do not have an expiry date
- Repair workshops now moving into non electrical equipment



- Commenced 2010
- Demand from Oil+Gas Industry
- Credit Card size Photo ID Card Supplied with Certificate.
- On-Line Certificate with Photo for Identification
- Certificates have a 3 year life – recertification required

IECEX CoPC Certificates issued	
2010	6
2011	62
<u>2012 (@Feb)</u>	<u>28</u>
<b>Total</b>	<b>96</b>







## On-going IECEx Activities - Scheme level

- **IECEx Services Scheme to cover**
  - Installation Services
  - Inspection Services
  - Area Classification Services
- **Work on “Ex s” [Special Protection] due to new Standard under development within TC 31**
- **Preparation for coverage of “Non Electrical” Standards currently under preparation within IEC SC 31M**
- **Determination of Life on Component Certificates**
- **Business Development WG**
- **Promotion (eg IECEx/UN/ESMA [Dubai](#) Conference)**



## On-going IECEx Activities - Secretariat

- Secretariat Located in Sydney, AU – Mr. Chris Agius
- Combination of Technical + Administrative
  - Servicing the Executive, IECEx Committees + their WGs
    - Management Committee (ExMC)
    - Ex Testing and Assessment Group (ExTAG)
    - IECEx Marks Committee (ExMarkCo)
    - IECEx Certified Persons Committee (ExPCC) *NEW*
  - Deal with inquiries and applications from ExCBs/ExTLs
    - Manage Assessments of CBs and TLs, initial/surveill/re-ass
  - Maintain IECEx Website + support of On-Line CoC
  - Operate feedback/complaint/appeal process
  - Report to CAB + IEC General Secretary eg Finances
- Promotion (eg IECEx/UN/ESMA [Dubai](#) Conference)
- Policing Role – review of issued CoCs + Reports

## HazardEx

Conference & Exhibition

2012

**Ron Sinclair Chairing + IECEx experts participating**



**9<sup>th</sup> Petroleum and Chemical Industry Conference Europe  
Electrical and Instrumentation Applications**

June 19<sup>th</sup> - 21<sup>st</sup>, 2012  
Prague, Czech Republic

**Preliminary Program**



**Joint Paper by  
IECEX/UNECE**

**PR-36 IECEx System – Evolution and role of the United Nations, UNECE**

An update of IECEx will be given including the status of Personnel competency certification. The role of UNECE and of the UN in standardization and the meaning of their recent “acknowledgement” of the IECEx will be presented.

**Chris Agius**  
IECEX, Australia

**Lorenza Jachia,**  
United Nations Economic  
Commission for Europe

**PR-37 Withdrawable Switchgear and MCCs – A Technology of the**

**Gen. Bell**



# IECEX – In Summary

International Electrotechnical Commission System for Certification to Standards Relating to Equipment for use in Explosive Atmospheres (IECEX System)

Information | Publications | Members' Area | Certificates & Lic. | Contact | Home



- Latest News:**
- ExTAG document: 'Significant changes between the ISO/IEC 80079-34 and OD 005-1'
  - PCIC 2012 Prague Conference
  - IECEX International Conference - Dubai, March 2012
  - New Edition of the IECEX Bulletin now available

[www.iecex.com](http://www.iecex.com)

**IECEX Certificate of Conformity**

INTERNATIONAL ELECTROTECHNICAL COMMISSION  
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx PTE 04.000001 Issue No.: 0

Issue Date: 09/01/2011

Applicant: HUSPA APRIE S.p.A. (Italy) and HUSPA APRIE S.p.A. (Italy)

Type of Service: Repair and Overhaul

Scope of Service: Repair and Overhaul and the IECEx CoC

Location covered by this Certificate: 25, Tiam View Circle, #01-01, Singapore

Signature: [Signature]

Date: 09/01/2011

**IECEX CoC Certified Service Facility**

INTERNATIONAL ELECTROTECHNICAL COMMISSION  
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx CP 04.0001 Issue No.: 1

Issue Date: 2011-03-28

Applicant: Cycled Electronics 25 Tiam View Circle #01-01 Singapore

Type of Service: Repair and Overhaul

Scope of Service: Repair and Overhaul and the IECEx CoC

Location covered by this Certificate: 25, Tiam View Circle, #01-01, Singapore

Signature: [Signature]

Date: 2011-03-28

**IECEX Certificate Personnel Competence**

INTERNATIONAL ELECTROTECHNICAL COMMISSION  
IEC Certification System for Explosive Atmospheres

Certificate No.: IECEx CP 04.001.0002 Issue No.: 0

Issue Date: 2011-02-01

Applicant: Arpad Veres

Type of Service: Ex 001 - Basic principles

Scope of Service: Ex 001 - Basic principles

Location covered by this Certificate: [Address]

Signature: [Signature]

Date: 2011-02-01

Photo: [Portrait of Arpad Veres]

“On-Line” Certificates

**IECEX 05**

Edition 1.0 2009-10

**IECEX PUBLICATION**

Standard Procedures + Rules

IECEX Scheme for Certification of Personnel Competencies for Explosive Atmospheres – Rules of Procedure

**IECEX OD 504**

Edition 1.0 2009-09

**IECEX OPERATIONAL DOCUMENT**

Specification for Units of Competency Assessment

**IECEX TEST REPORT**  
IEC 60079-0  
Explosive atmospheres – Part 0:  
Equipment – General requirements

EXTR Reference No.: [Number]

EXTR Reference Number: [Number]

Compiled by + signature (ExTL): [Name] (enter signature here)

Reviewed by + signature (ExTL): [Name] (enter signature here)

Date of issue: [Date]

Ex Testing Laboratory (ExTL): [Name]

Applicant's name: [Name]

Address: [Address]

Standard: IEC 60079-0:2007, 6<sup>th</sup> Edition

Test Report Form Number: EXTR60079-0\_IC (revised 2010-08)

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Standard Reporting formats



Logo + Mark





## IECEX – Further information

- The IECEx website [www.iecex.com](http://www.iecex.com)
- IECEx Brochure, + Guides <http://www.iecex.com/guides.htm>
- The IECEx Officers (Executive) <http://www.iecex.com/officers.htm>
- IECEx 2011 Annual Meetings <http://www.iecex.com/split/>
- Contact any of the listed IECEx Approved Certifiers
  - Equipment Scheme <http://www.iecex.com/directory/bodies/bodies1.asp?id=5>
  - Services Scheme <http://www.iecex.com/directory/bodies/bodies2.asp?id=5>
  - Personnel Scheme <http://www.iecex.com/directory/bodies/bodies4.asp?id=5>
- Presentations from the IECEx 2010 Berlin meetings (**Highly Recommended**) <http://www.iecex.com/berlin/presentations.html>
- The IECEx Secretariat (responsible for day to day operational management of the IECEx)

Mr Chris AGIUS

IECEX Executive Secretary

E-mail: [chris.agius@iecex.com](mailto:chris.agius@iecex.com) or [info@iecex.com](mailto:info@iecex.com)

# IECEX International Conference 2012

## Thank You

