IECEx Scheme features, fees and report on audit of issued certificates

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Secretary IECEx
Introduction to IECEx

- What is IECEx + Why ?
- IECEx Features??
- Ex Certification the “IECEx Way”
- IECEx Financing + Fees
- Secretariat Review of IECEx CoCs
- Where to; What is the future??
What is IECEx?

The IECEx Scheme is the IEC, International Conformity Assessment Scheme covering Certification to Standards relating to Equipment for use in Explosive Atmospheres.
IECEx 01: 2005 – Basic Rules

2 Object
Taking into account the object of the International Electrotechnical Commission (IEC) as given in Article 2 of the Statutes, the particular object of the IECEx Scheme, operated under the authority of the IEC in conformity with the Statutes, is to provide a global framework for independent assessment and certification of equipment and services associated with explosive atmospheres.
IECEx 01: 2005 – Basic Rules

3 Field of application

The IECEx Scheme is applicable to such Standards and types of protection and services referred to in clause 2 as approved by its Ex Management Committee (ExMC) and notified to the IEC Conformity Assessment Board (CAB).
IECEx Scheme - Services

IECEx Scheme
Basic Rules IECEx 01

IECEx Certified Equipment
Rules IECEx 02

IECEx Certified Service Facilities
Rules IECEx 03 (in draft)

Other Future Service Offerings
Types of Industries

- Automotive refueling stations or petrol stations
- Oil refineries, rigs and processing plants
- Chemical processing plants
- Printing industries, paper and textiles
- Hospital operating theatres
- Aircraft refueling and hangars
- Surface coating industries
- Underground coal mines
- Sewerage treatment plants
- Gas pipelines and distribution centres
- Grain handling and storage
- Woodworking areas
- Sugar refineries
- Metal surface grinding,
IECEx Features??
The IECEx Product !!!!
What does IECEx offer the Market??????

Confidence

- End Users
- Regulators
- Manufacturers
- Test + Cert. Bodies
Confidence in

- Products listed on the Certificate do comply with the Standards listed on the Certificate
- Traceability of Compliance by way of “Objective Evidence” to support claimed compliance, i.e., completed ExTRs + QARs
- Capabilities, Competence and Facilities of ExTLs + ExCBs
- Thoroughness of Assessments on both ExTLs and ExCBs as well as Manufacturers holding an IECEx CoC
- ExCB audits of Manufacturers
- The supporting Management Structure behind the IECEx Scheme
- Integrity of all involved in IECEx

Sole aim “The facilitation of International Trade in Ex Products, Systems and Services while preserving an acceptable level of safety”
What do you See ????
Core Elements of IECEx Certification

- Testing of Samples (Type Test)
- Initial Assessment of Manufacturer’s Quality System (factory audit)
- On-going Surveillance (factory audits)

Confidence via Type 5 Cert System
Core Elements (1 of 3) of IECEx Certification

Testing of Sample(s)

Conduct Testing to IEC Standard(s)

Compile & issue an ExTR (ATR)

Provisions for use of previous testing
Core Elements (2 of 3) of IECEx Certification

Initial Factory Audit

Document Review and on-site factory audit of manufacturer, by ExCB

Provision for previously conducted audits
Core Elements (3 of 3) of IECEx Certification

Surveillance
Factory audit

Review Documentation or other Changes ?????

ExCB, IECEx CoC issuer, ensures On-site factory audit is conducted. Other ExCBs may perform

Provision for coordination
Question:
What does an ExCB Certify when issuing an IECEx CoC?

Answer:
The manufacturer’s capability to consistently produce the product/equipment, listed on the certificate to be in compliance with the standards also listed on the Certificate.

IECEEx 02: 2003 Clause 5.1 Extract:
“The certificate will attest that the equipment’s design conforms to the relevant IEC standards and that the manufacturer is manufacturing the product under a quality system and associated quality plan(s), meeting the requirements of this Scheme and under the surveillance of an ExCB”.
Ex Certification the “IECEEx Way”
IECEx Scheme – Basic Principles

- IECEx Scheme – alignment with relevant ISO/IEC Conformity Assessment Standards and Guides, eg Guide 65, 67, 17025, etc
- At all times, Only System No 5 Certificates are issued, (i.e Issuing of Certificates MUST require Design validation, Initial Factory Audits + On-Going Surveillance
- Single Certification Process applies to all Ex products under Certification, including Zone 2 products
- Industry input into the development and management of IECEx, eg IECEx Technical Guidance Documents (TGDs) introduced by EEMUA, UK Users Association
- Acknowledgement of the high regulatory nature of the Ex field
IECEx Scheme Documentation Hierarchy

IECEx Basic Rules

Rules of Procedure

“How to” Manual

Procedures

Forms

IECEx 01
Basic Rules

IECEx 02
Rules of Procedure –
Ex Equipment Certification
(Procedural Rules)

OPERATIONAL PROCEDURE
OD 003 (former ExMC/100/CD)
(The How to Manual……)

SUPPORTING OPERATIONAL + TECHNICAL
DOCUMENTS, eg
Technical Guidance Documents, TGDs

STANDARDISED FORMS, examples:
OD 006 – Site assessment Report
OD 007 – Guide 65 Checklist and report form
OD 018 - 17025 OD Checklist and report form

Documentation for
Acceptance of ExTL and
ExCBs
Does IECEx allow ExCBs and ExTLs to decide on their own IECEx Procedures???

ExCB Country A

ExCB Country B

ExCB Country C

ExCB Country D

Own Test/Ass Procedures

Own Test/Ass Procedures

Own Test/Ass Procedures

Own Test/Ass Procedures

No
The IECEx Way for Ex Certification

ExCB
Country A

ExCB
Country B

ExCB
Country C

ExCB
Country D

Common Rules and Procedures adopted by ALL ExCBs and ExTLs

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for Ex equipment

Certificate No.: 03CBSA1-002
Mark: A
Issue: 1

Applicant: Baseefa (2001) Ltd.
Address:

IECEx Marking:

Exproof

Date:

Baseefa (2001) Ltd.
IECEx Financing + Fees
IECEx Finances

- Self Funded to cover costs
- Operates on a cost recovery basis, not set out to generate profits
- IECEx Management appoint an IECEx Treasurer to oversee ALL matters of Finance for the Scheme
- IECEx accounts are subject to Swiss Law regarding reporting and annual auditing
- With the Secretariat located in Australia, the Australian based Secretariat also subject to AU Laws and auditing of expenditure
- IECEx is in a sound financial position.

Significant points
- Shrinking of Voluntary resources – Major Scheme Issue
- IECEx intends to replace reliance on annual dues with User Pay
- Scheme Integrity and growth require resourcing
- Published Schedule of Fees
IECEx Finances

- Significant points
  - Shrinking of Voluntary resources – Major Scheme Issue
  - IECEx intends to replace reliance on annual dues with User Pay
  - Scheme Integrity and growth require resourcing
  - Published Schedule of Fees
  - Certificate Fees 15 Feb 05 to June 05 Report
Secretariat Review of IECEx CoCs
Criteria for IECEx Secretariat Review of Issued Certificates:

- Standards nominated on CoC by ExCB correspond with Ex Techniques, CoC covering Ex d shows IEC 60079-1 and NOT 60079-11
- Where conditions “X” is selected, that actual conditions are specified
- Actual manufacturer location(s) is specified and NOT Post Office Box
- There is a clear description to identify what is actually Certified – eg Just to record “Flameproof Box” as the certified products is NOT enough
- ExTR and File references are given
- An overall check to see if the CoC “Makes Sense”, eg editorial errors
- **Does NOT replace checking by ExCBs** as part of their internal processes, re ISO/IEC Guide 65 – See OD 009
  - Step 9 – ExTR Review
  - Step 18 – QAR Review
  - Step 21 – Certification Process Review
  - Step 24 – CoC Review
IECEx CoC Review

Why do Review

- Confidence in CoC and supporting testing/assessment and audits
- Small editorial errors send bad signals to the market
- Confidence by the Market in the IECEx “Checks and Balances”
## IECEx CoC Review

### Log of CoCs Reviewed

<table>
<thead>
<tr>
<th>Certification Body</th>
<th>Number of CoC’s checked</th>
<th>Certification Body</th>
<th>Number of CoC’s checked</th>
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<tr>
<td>BAS</td>
<td>49</td>
<td>LCI</td>
<td>37</td>
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<td>NEM</td>
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<tr>
<td>KGS</td>
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<td><strong>Total</strong></td>
<td><strong>277</strong></td>
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IECEx CoC Review - Findings

Negative Observations

- Manufacturer’s location (site audited) was not always clearly shown as a street or site address.
- Annex attached to CoCs do not always contain a reference to the CoC number.
- The equipment description not always clear.
- Component Certificates Issued without the symbol “U”.
- In two cases the Standard reference was to the incorrect Standard number (60079-15 used for Ex e).
- Some minor spelling mistakes and other editorial omissions.
IECEx CoC Review - Findings

Positive Observations

- ExTRs and Files were clearly referenced
- ALL ExCBs responded both in both a very timely manner and positive sense, providing full cooperation to the Secretariat.
- Knowledge of process and OD 009 and supporting ODs by ExCBs – significant increase over the past 12 months.
- Industry and Regulators are most impressed with the checks noting that the checks and balances in IECEx do not occur in any other National or Regional Scheme.
<table>
<thead>
<tr>
<th>Document Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Ex/CD020V1</td>
<td>Guidance for the Sampling of Group I Ex d Motors for Testing as Representative of a Range for Certification Purposes</td>
</tr>
<tr>
<td>Ex/CD018V1</td>
<td>IECEx Participation and Scheme Fees</td>
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<tr>
<td>Ex/CD018V1</td>
<td>Report on ISO/IEC 17025</td>
</tr>
<tr>
<td>Ex/CD017V2</td>
<td>Drawing and Documentation Guidance for IEC Ex Certification</td>
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<tr>
<td>Ex/CD012V1</td>
<td>ExTAG Guide for Application of Uncertainty of Measurement to conformity for laboratory tests carried out under the IECEx Scheme</td>
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<tr>
<td>Ex/CD011.1V1</td>
<td>Guidance on Use of the IECEx Internet based &quot;On-Line&quot; Certificate of Conformity System Part 1: General Information</td>
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<td>Ex/CD011.2V2</td>
<td>Guidance on Use of the IECEx Internet based &quot;On-Line&quot; Certificate of Conformity System Part 2: Creating IECEx Certificates of Conformity CoCs</td>
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<td>Ex/CD010V1</td>
<td>Operational Decision &quot;Guidance for the Preparation of IECEx Test Reports (ExTRs) by IECEx Certification Bodies (ExCBs) and the Processing of ExTRs by Receiving ExCBs&quot;</td>
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<td>Ex/CD009V1</td>
<td>IECEx Operations Manual - Procedures for the Issuing of IECEx Certificates of Conformity, IECEx Test Reports and IECEx Quality Assessment Reports</td>
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<td>Ex/CD008V1</td>
<td>Reciprocal arrangements covering exchange of information and meeting participation between ExNB and IECEx</td>
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<tr>
<td>Ex/CD007V2</td>
<td>IECEx ACP Assessment Checklist for ISO/IEC Guide 65</td>
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<tr>
<td>Ex/CD006V1</td>
<td>Site Assessment Report for Assessment of IECEx Candidate and Accepted Certification Bodies (ACBs) and Ex Testing Laboratories (ExTLs)</td>
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<tr>
<td>Ex/CD005V2</td>
<td>IECEx QUALITY SYSTEM REQUIREMENTS FOR MANUFACTURERS</td>
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<tr>
<td>Ex/CD003V1</td>
<td>IECEx Assessment Procedures</td>
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<td>Ex/CD001V21</td>
<td>Operational document No Ex/OD001/Version 21 Participating Countries, Accepted Ex Certification Bodies (ExCBs) and Accepted Ex Test Laboratories and Candidate ExCBs and ExTLs</td>
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<tr>
<td>Ex/CD001V20</td>
<td>Operational document No Ex/OD001/Version 20 Participating Countries, Accepted Ex Certification Bodies (ExCBs) and Accepted Ex Test Laboratories and Candidate ExCBs and ExTLs</td>
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</table>
In Draft Form:-

IECEEx - Certified Service Facilities Program

OD013  Draft procedures for assessing and certifying Ex Repair workshops

OD014  Draft Quality system requirements for Ex Repair Workshops

OD015  Draft Technical requirements, revision of IEC 60079-19

OD016  Draft Assessment procedures for acceptance of ExCBs
ISO 9001 QMS Different to Product Cert.
(Focus and level of depth)

Product Cert. (IECEx)  Management Cert. (ISO 9001)

System
Processes
Product

IEC Standards
Where to; What is the future??
IECEx Today

- 25 Members of the IECEx Management (Countries)
- Others expressing interest

**Ex Equipment Certification Program**

- 22 ExCBs (approved) from 14 Countries
- 4 more ExCBs (approved) by end of this week
- 424 CoCs Issued + 326 in Draft form

**Ex Certified Service Facilities Program (coming)**

- Ex Repair and Overhaul
- New Countries have an interest as Users of Ex equipment
IECEx Operational Documents

TODAY – 424 Issued Ex Equipment CoCs

IECEx Certificates - Issued + In-Draft Sep 05

Date

Aug-03 Nov-03 Feb-04 May-04 Aug-04 Nov-04 Feb-05 May-05 Aug-05

Number of CoCs

0 50 100 150 200 250 300 350 400 450

Issued
In-Draft
Elements to ensure safe use of Ex equipment

Technical Compliance

Elements of the Ex Field

- Elec Product Manufacture
- Elec Product Repair
- Mech Product Manufacture
- Mech Product Repair
- Installation
- Inspection
- Area Classification
- Personnel Competency
What does IECEx Cover to date?

Covered by IECEx

- Elec Product Manufacture

Not Currently Covered by IECEx (87.5%)

- Elec Product Repair
- Mech Product Repair
- Installation
- Mech Prod Man
- Area Classification
- Inspection
Energy Challenges

Over 80 million barrels of oil. Close to 300 billion cubic feet of natural gas. Every day. That’s what it takes to keep the world running. And experts predict that as the world grows it will require about 50% more energy in 2030 than today.

Billions of times every day — at the flip of a switch, turn of a key or push of a button — energy is instantly delivered. Creating movement, generating commerce, and making countless products not only available, but safer, stronger, and more efficient than at any time in history.
IECEX Continual strive to be the Global Centre of Excellence in the Ex Field

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