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IEC IECEx

UNITED NATIONS
ECONOMIC COMMISSION FOR EUROPE

International Electrotechnical Commission System
for Certification to Standards Relating to Equipment
for Use in Explosive Atmospheres (IECEx System)

An Overview about the IECEx System

IECEx 2018
International Conference
Split, Croatia
23rd April 2018

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UNITED NATIONS
ECONOMIC COMMISSION FOR EUROPE

INTRODUCING

Prof. Dr. Thorsten Arnhold

Chairman IECEx & VP
Strategy & Technology

R. STAHL AG

STAHL

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IECEx – building safe bridges for global business

International Ex - business in the old times

International Ex - business in the present

International Ex - business in the future

IEC Family 164 countries – Global reach

82 Members **82 Affiliates**

The two pillars of the IEC building

IEC

Standard – Generation and Maintenance

Assessment Conformity to relevant Standards

IEC Structure for conformity assessment

Conformity Assessment Board (CAB)

- IECEE
- IECEx
- IECQ
- IECRE

The IECEx vision remains unchanged since London 1996

Rules of procedure IECEx 02 Paragraph 5.6:
The final objective of the IECEx – Certified Equipment Scheme is worldwide acceptance of one standard, one certificate and one mark.

IECEx: Per July 2016 – 33 Member Countries

Australia
Brazil
Canada
China
Croatia
Czech Republic
Denmark
Finland
France
Germany
Hungary
India
Israel
Italy
Japan
Republic of Korea
Malaysia
Netherlands
Norway
New Zealand
Poland
Romania
Russia
Singapore
Slovenia
South Africa
Spain
Sweden
Switzerland
Turkey
United Arab Emirates
United Kingdom
United States of America

IECEx Management Commitee

„Parliament of IECEx“ administers the operation & reports to IEC CAB (2015 Christchurch New Zealand)

Important elements of the IECEx system

Ex Testing Laboratory (ExTL):
Directly or indirectly linked to a ExCB
Carries out Type test
Issues Test reports

Ex Certification Body (ExCB):
Issues IECEx – Certificates
Issues Quality Assessment Reports
Endorses IECEx Test Reports

IECEx – Assessor
Assessment of Ex CBs
Assessment of Ex TLs
Basis is ISO/IEC 17065
(former ISO/IEC Guide 65)

IECEx homepage: www.iecex.com

Equipment Scheme				
OD 203	140501	Equipment	N	Guidance on the definition of 'manufacturer' in relation to trade agents' and 'local assemblers'
OD 035	090729	Equipment	Y	A procedure to generate, discuss, report and publish ExTAG Decision Sheets
OD 034	090326	Equipment	N	Operational Document - Guidance on the preparation of IECEx Equipment Certificates and Reports covering more than one identifiable item of equipment
OD 033	101116	Equipment	N	IECEx Operations Manual – IECEx Unit Verification Certificates
OD 026	140205	Equipment	N	Guidelines for the qualification of Lead Auditor and Auditors, in accordance with the IECEx System.
OD 025	140205	Equipment	N	Guidelines on the Management of Assessment and Surveillance programs for the assessment of Manufacturer's Quality System, in accordance with the IECEx Scheme.
OD 024	120530	Equipment	N	IECEx Rules of Procedure covering testing, or witnessing testing at a manufacturer's or user's facility
OD 021		Equipment	Y	Guidance document for the Assessment of IS equipment and Systems
OD 020		Equipment	N	Guidance for the Sampling of Group I Ex d Motors for Testing as Representative of a Range for Certification Purposes
OD 018	130801	Equipment	N	Harmonised CHECK LIST FOR TESTING AND CALIBRATION LABORATORIES ISO/IEC 17025
OD017	120510	Equipment	N	Drawing and documentation Guidance for IEC Ex Certification – for use by Manufacturers and ExTLS
OD 012		Equipment	N	ExTAG Guide for Application of Uncertainty of Measurement to conformity for laboratory tests carried out under the IECEx System OD 012
OD 011-2	100729	Equipment	N	Guidance on Use of the IECEx Internet based "On-Line" Certificate of Conformity System Part 2: Creating IECEx Equipment Certificates of Conformity CoCs
OD 011-2 Special addendum	101122	Equipment	N	Special addendum to IECEx Operational Document OD 011-2
OD 010-2	120817	Equipment	Y	Operational Document - Guidance for the development, compilation, issuing and receipt of ExTRs Part 2: Procedures and guidance
OD 010-1	140912	Equipment	Y	Operational Document - Guidance for the development, compilation, issuing and receipt of ExTRs Part 1: Development and posting of blank IECEx Test Report (ExTR) Documents

IECEx consists of four schemes:

IECEx Equipment Scheme
Certification of Ex Equipment

IECEx Conformity Mark License Scheme

IECEx Services Scheme
Certification of Ex Service Providers, eg Repair and overhaul workshops + Install.

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

IECEx Certified Equipment Scheme

Type Test => ExTR

IECEx Equipment Scheme
Certification of Ex Equipment + Systems

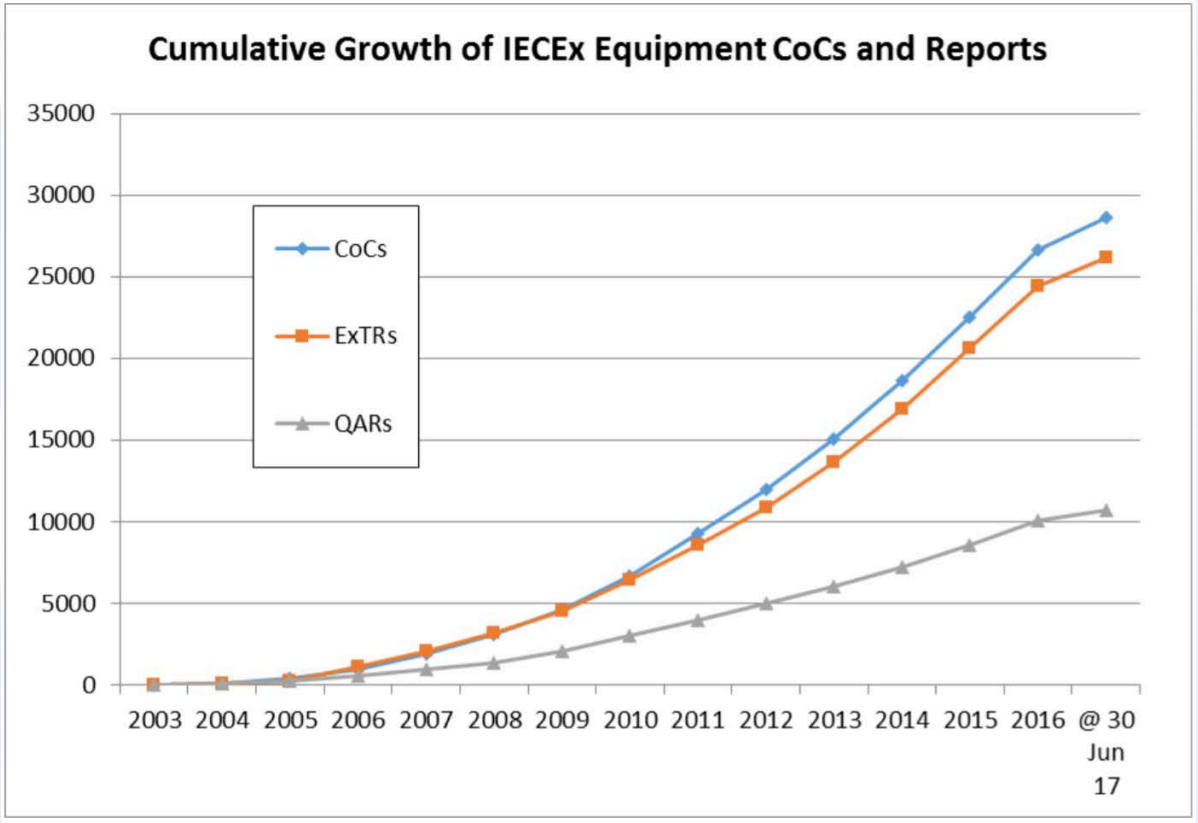
Site assessment of the Manufacturers QM – System => QAR

IECEx "Certificate of Conformity"

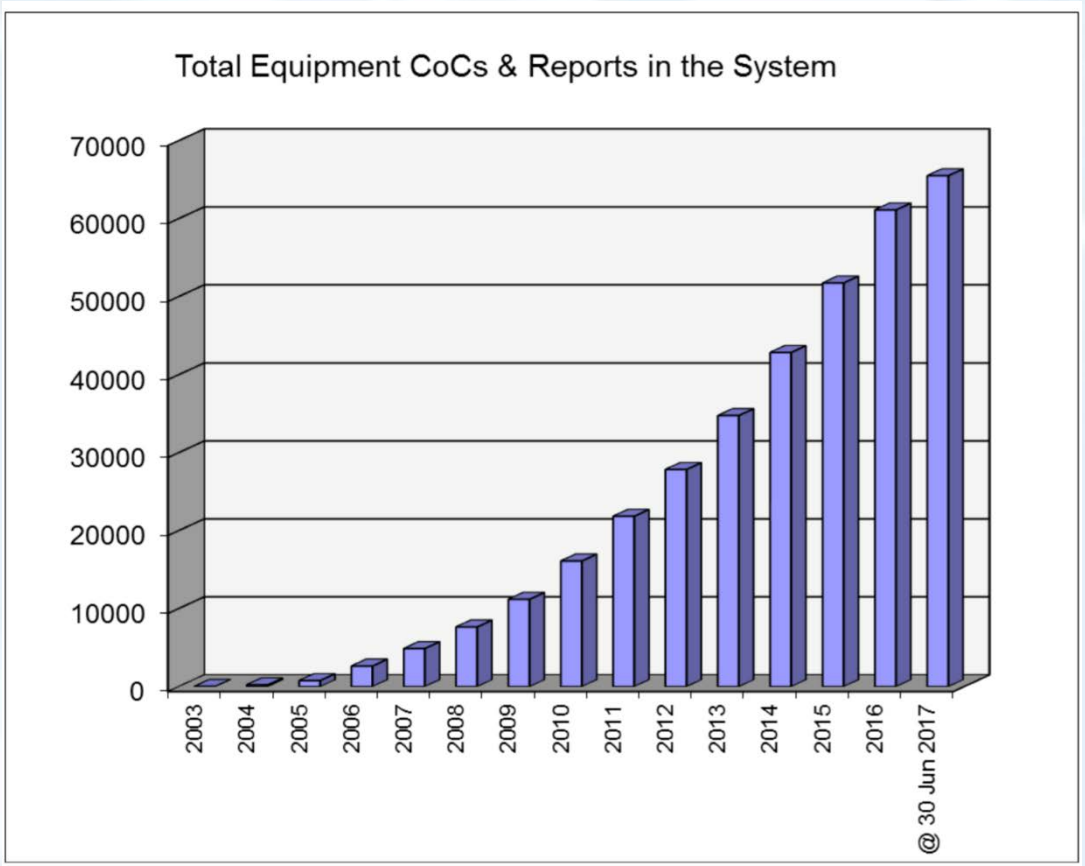
IECEx "Component Certificate"

IECEx "Unit Certificate"

IECEx Certified Equipment Scheme Certificates & Test Reports

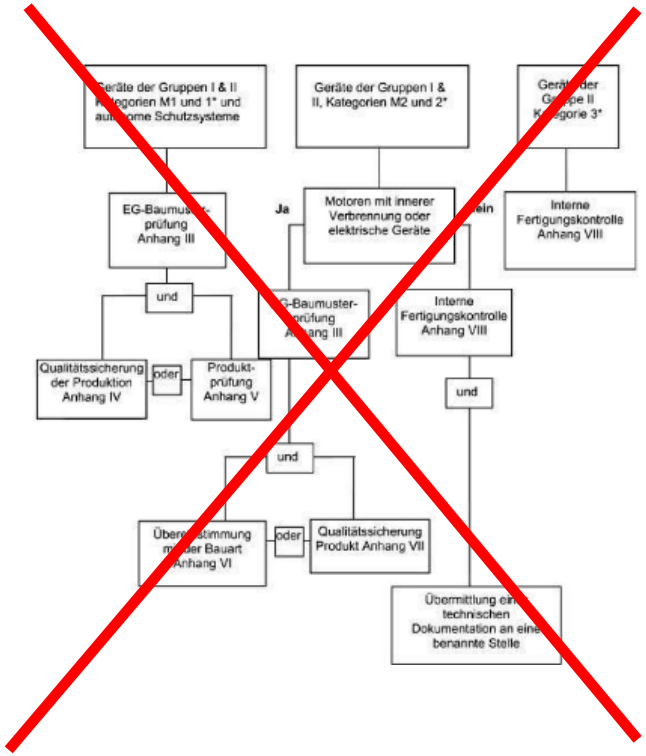


IECEx Certified Equipment Scheme Certificates & Test Reports



The „fast track“ procedure

New: IECEx conformity assessment for Non-electrical equipment



IECEx Equipment Scheme

Ignition risk analysis

Typprüfung => ExTR

IECEx Equipment Scheme
Zertifizierung der Ex Geräte + Systeme

Site assessment of the Manufacturers QM – System => QAR

IECEx "Certificate of Conformity"

IECEx "Component Certificate"

IECEx "Unit Certificate"

For all EPL (a,b and c) there is an obligation to type tests/ ignition source analysis and site assessments of the QM systems carried out by IECEx CBs and TLs

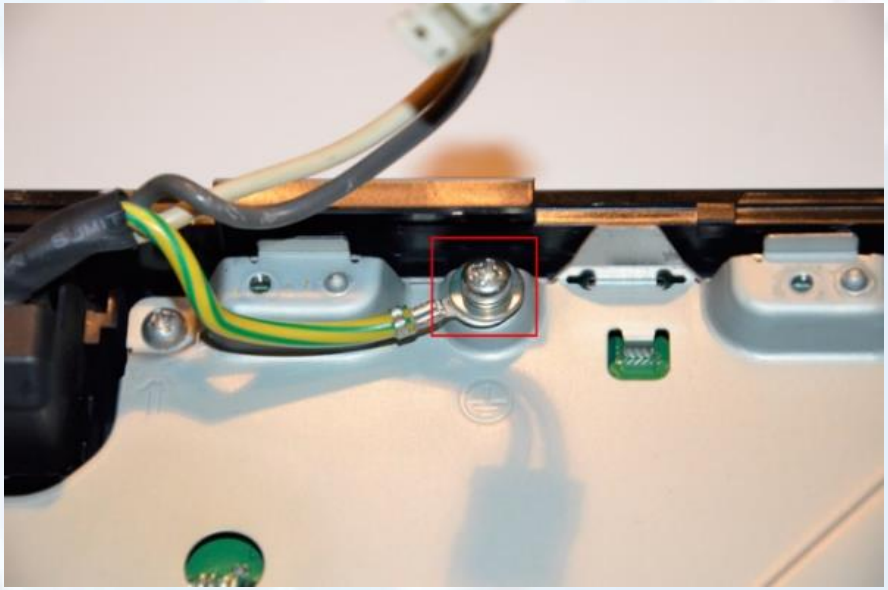
Draft OD 280: Guide to certification of non – electrical equipment

If applicable and necessary type tests are conducted by the IECEx - Test Labs

Risk analysis is evaluated by teams consisting of experts from the manufacturers and IECEx - Certification Bodies and Test Labs

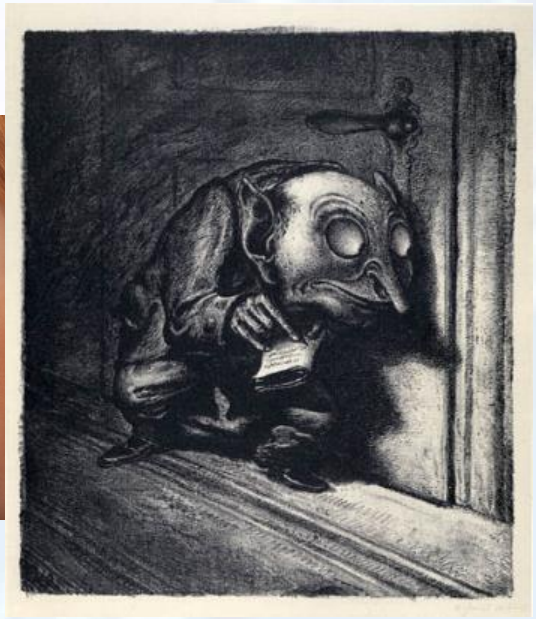
Draft OD 005-3-Part 3: Supplementary requirements for non-electrical…

- ISO/IEC 80079 – 34: Explosive atmospheres-Part 34: Application of quality systems for equipment manufacturers is the basis document
- Additional requirements for the Quality Assurance during the manufacturing process of non – electrical components critical for the explosion protection of the equipment



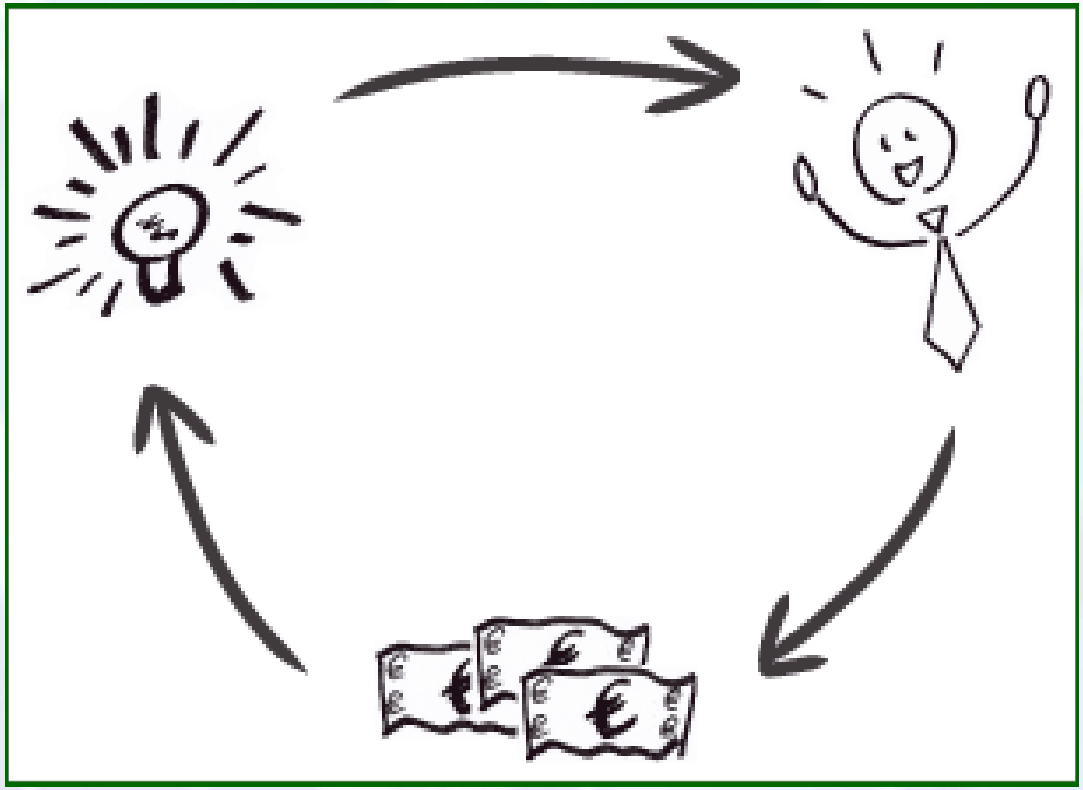
Outlook

ISO/IEC 800079 – 36 and -37 are published...



…international customers and regulators get the message soon

Consultants and Certification Bodiesrecognise the new business opportunities



Advertisement by the manufacturers

IECEx consists of four schemes:

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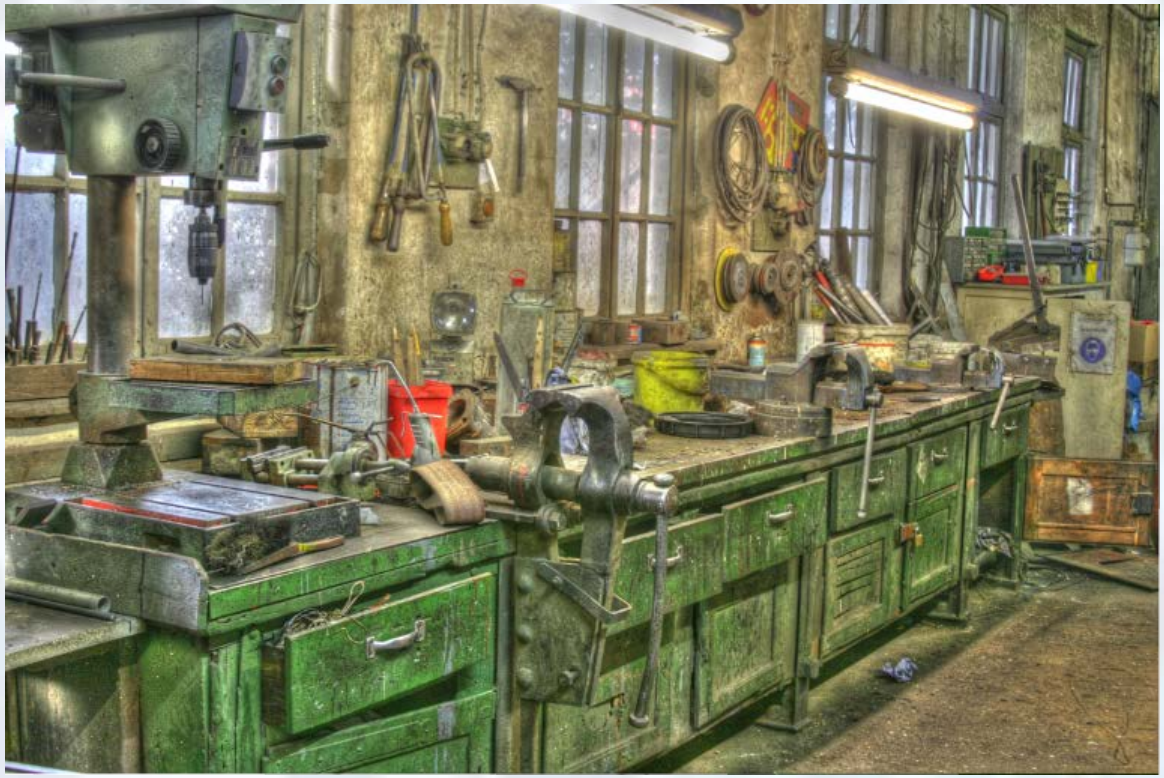
IECEx Services Scheme
Certification of Ex Service Providers, eg Repair and overhaul workshops + Install.

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

IECEx Service Facility Scheme

Basic standard: IEC 60079-19 Repair & Overhaul



Basic question: Does the repair workshop fulfils the requirement of this standard?

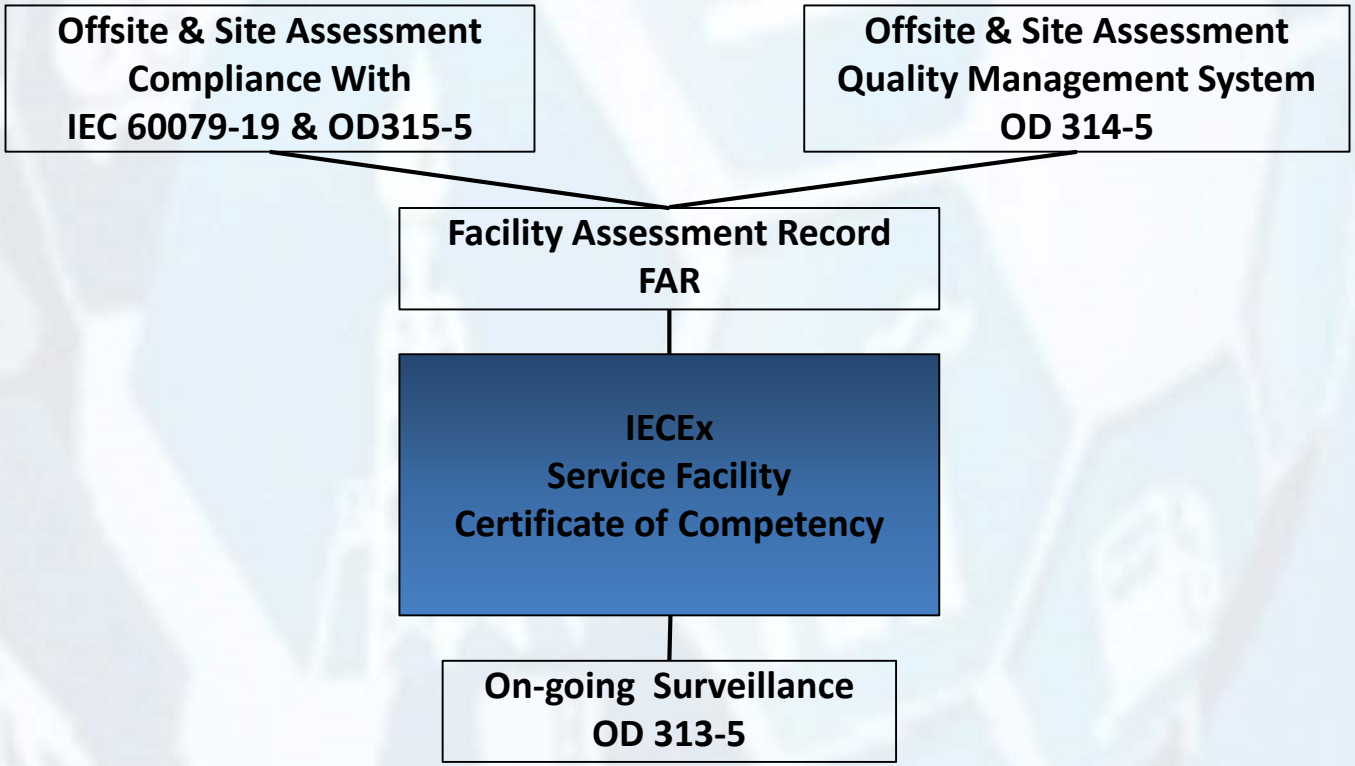
IEC 60079 – 19 requires that the repair facility….

…operates a QM-system

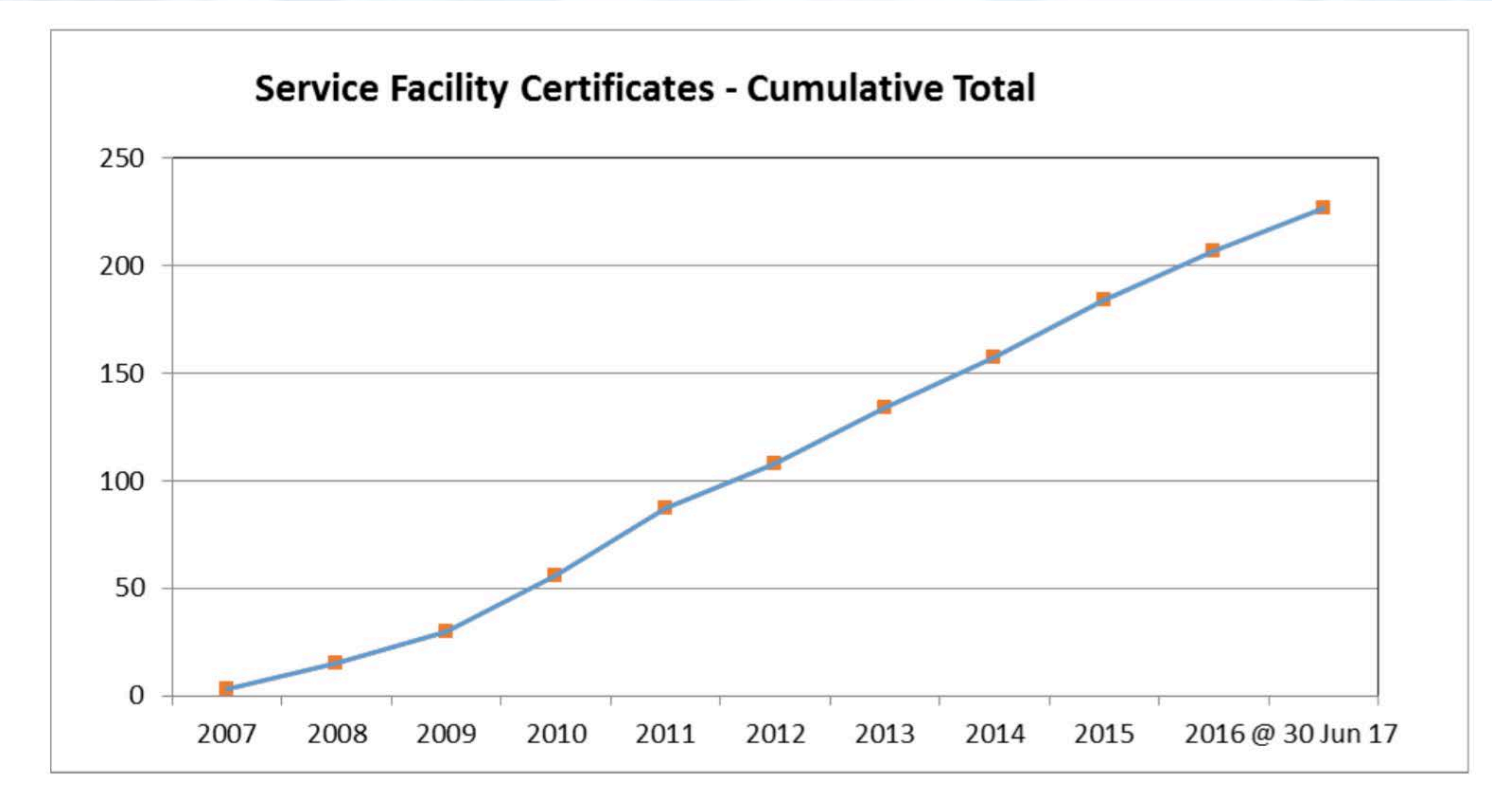
…appoints a responsible person

…has adequate repair and overhaul facilities

Certification procedure for IECEx repair facilities



IECEx Service Facility Scheme



IECEx Service Facility Scheme – next steps

Equipment Selection

Installation & Initial Inspection

Inspection & Maintenance

IECEx consists of four schemes:

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

Lack of Competence in hazardous areas: some examples

Lack of Competence in hazardous areas: the consequences

What is competence?

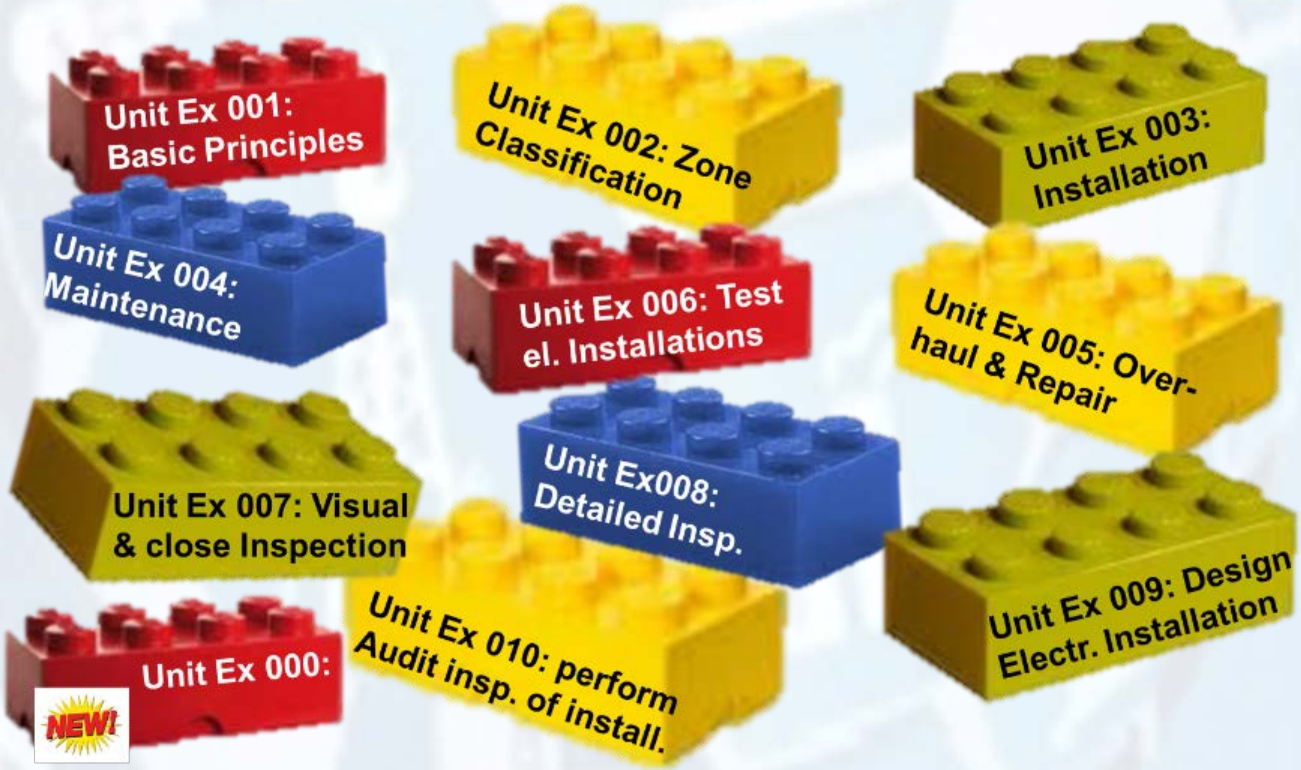
Knowledge

=

Acquired skills

Tasks duties and responsibilities

Ex Units of competence



Certification Process

Appropriate Mix of Competences to be certified

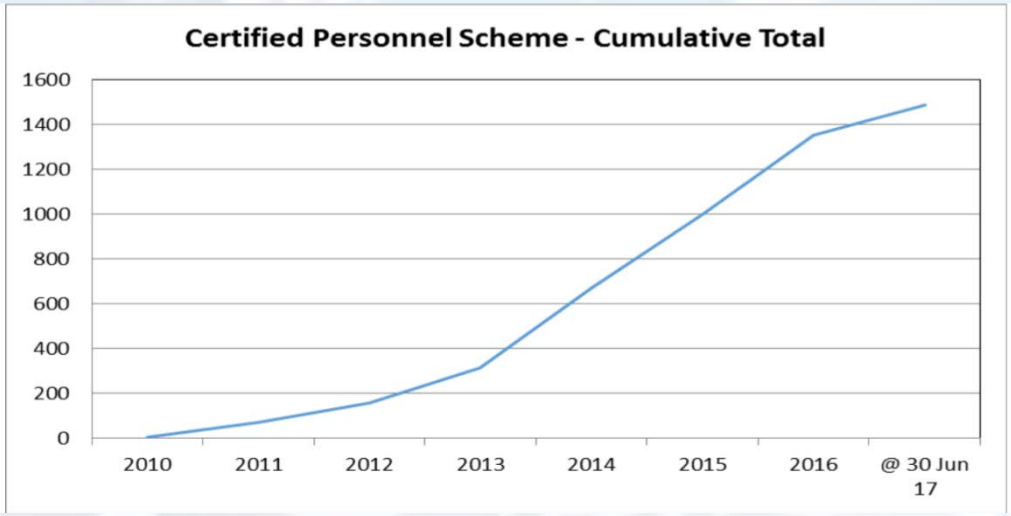
Ex CB examines:

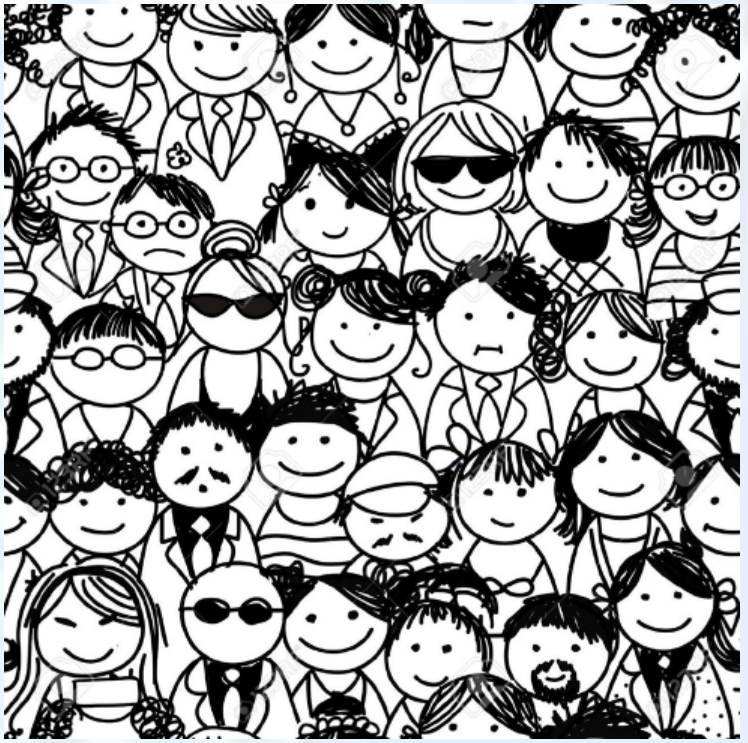
- Knowledge
- Skills
- Experience

Surveillance – Re Assessment

Combination of written & practical examination

IECEx Certified Personal Scheme





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International Electrotechnical Commission

International Certification System for Electrical Equipment for use in Explosive Environments

CERTIFICATE OF RECOGNITION

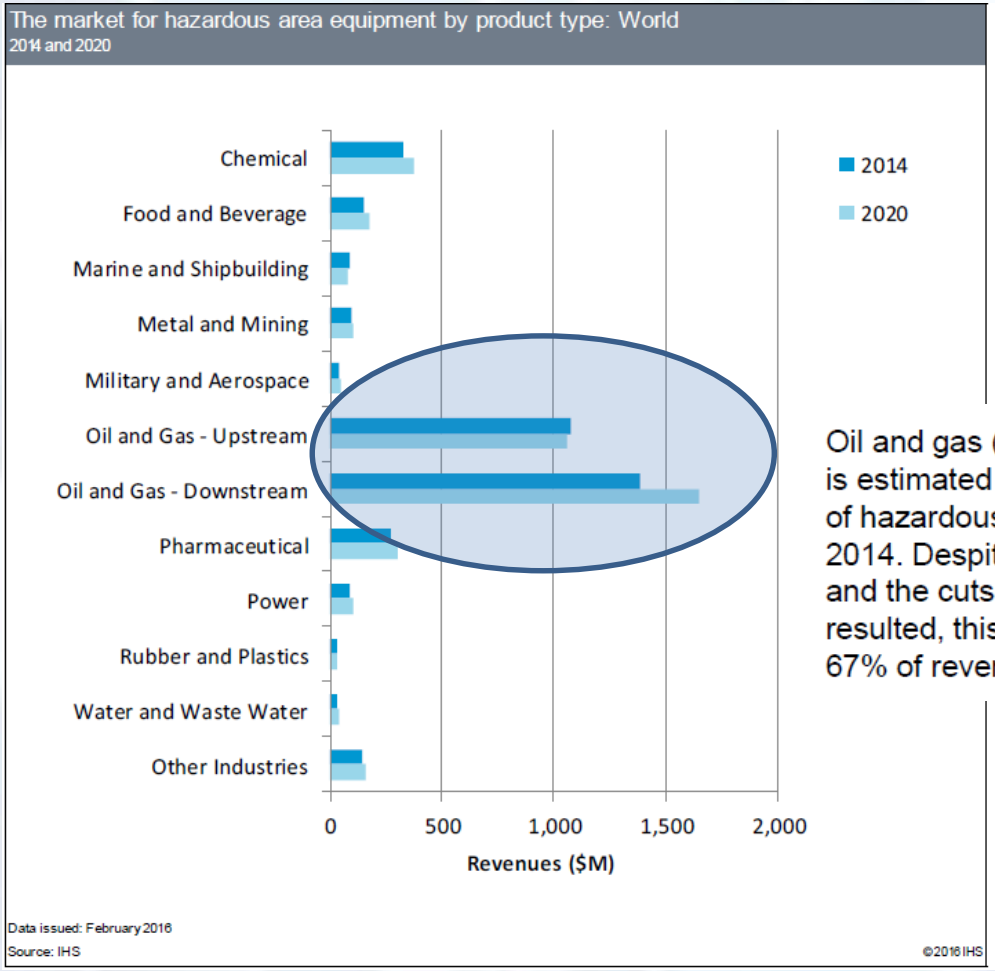
IECEx Recognised Training Provider Program

This is to confirm that

R. STAHL Schaltgeräte GmbH

has been recognised in accordance with IECEx System Rules and IECEx OD 521 Procedures

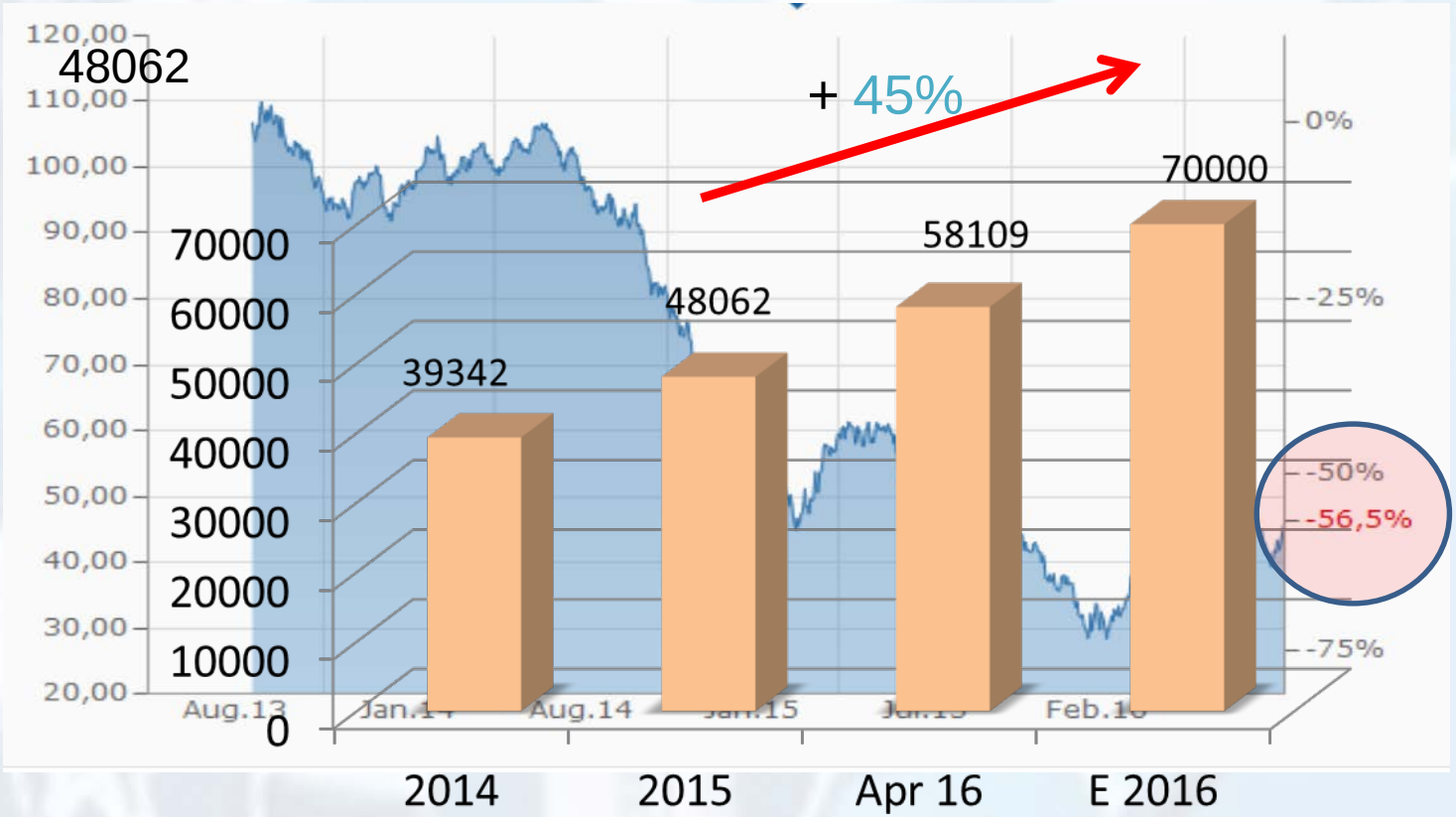
Chris Agius
Executive Secretary IECEx
September 2015



Oil and gas (up-stream and down-stream) is estimated to have accounted for 66.4% of hazardous area equipment revenues in 2014. Despite the rapid fall in oil prices and the cuts in capital expenditure that resulted, this is forecast to still account for 67% of revenues by 2020.

IECEx Certificates & Test Reports

Absolut von 2014 - 2016



Thank you

Prof. Dr. Thorsten Arnhold

Chairman IECEx & VP
Strategy & Technology

R. STAHL AG

Thorsten.Arnhold@stahl.de

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