



**INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC SCHEME FOR
CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN
EXPLOSIVE ATMOSPHERES (IECEx SCHEME)**

To: Members of the IECEx Management Committee, ExMC

INTRODUCTION

This document contains the IECEx Presentation to the **2007 Petroleum and Chemical Industry Committee Conference of Europe (PCIC EU)**, presented by the IECEx Chairman Dr Uwe Klausmeyer and IECEx Secretary Chris Agius.

This presentation is submitted to members for their information.

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IECEx Secretariat

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<http://www.iecex.com>**



International IECEx Certification Scheme - 'IECEx 2007 Update of New Initiatives and Compliance Tools for the Oil and Gas Industry'

Mr Chris AGIUS - Secretary IECEx
International Electrotechnical Commission

Dr Uwe KLAUSMEYER – Chairman IECEx
PTB Germany



RISK

Risk is a Product of

Likelihood of an event occurring

AND

Consequences of that event occurring

Ex Equipment – Where ???



Ex Equipment – Where ???

Ex equipment is frequently found in these locations:

- Automotive refuelling stations or petrol stations
- Oil refineries, rigs and processing plants
- Chemical processing plants
- Printing industries, paper and textiles
- Hospital operating theatres
- Aircraft refuelling 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, especially aluminium dusts and particles.
- Oil and gas tankers, drilling ship and FPSO (Floating Production Storage and Off-Loading Vessels)

What is IECEx?

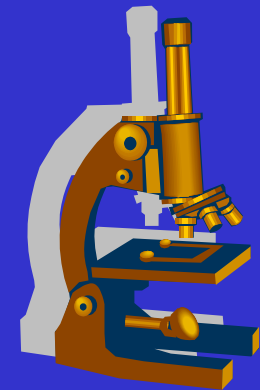
The single International IEC Scheme covering Certification to Standards that relate to Equipment for use in Explosive Atmospheres, to provide an Internationally accepted means of *demonstrating claimed compliance with International Standards*

IECEx is a “Conformity Assessment Tool” providing confidence that Products and Services covered by an IECEx Certificate meet specified requirements.

IECEX Core Assessment Areas

1. Ex Certification Bodies and Test Laboratories to gain acceptance as IECEx Bodies

- Compliance to ISO/IEC Guides + Standards (re Guide 65, 17025, IECEx rules, Technical Guidance Docs)
- Technical capability – facility, personnel
- Compliance with IECEx procedures



2. Products and Services to demonstrate compliance with IECEx Scheme requirements

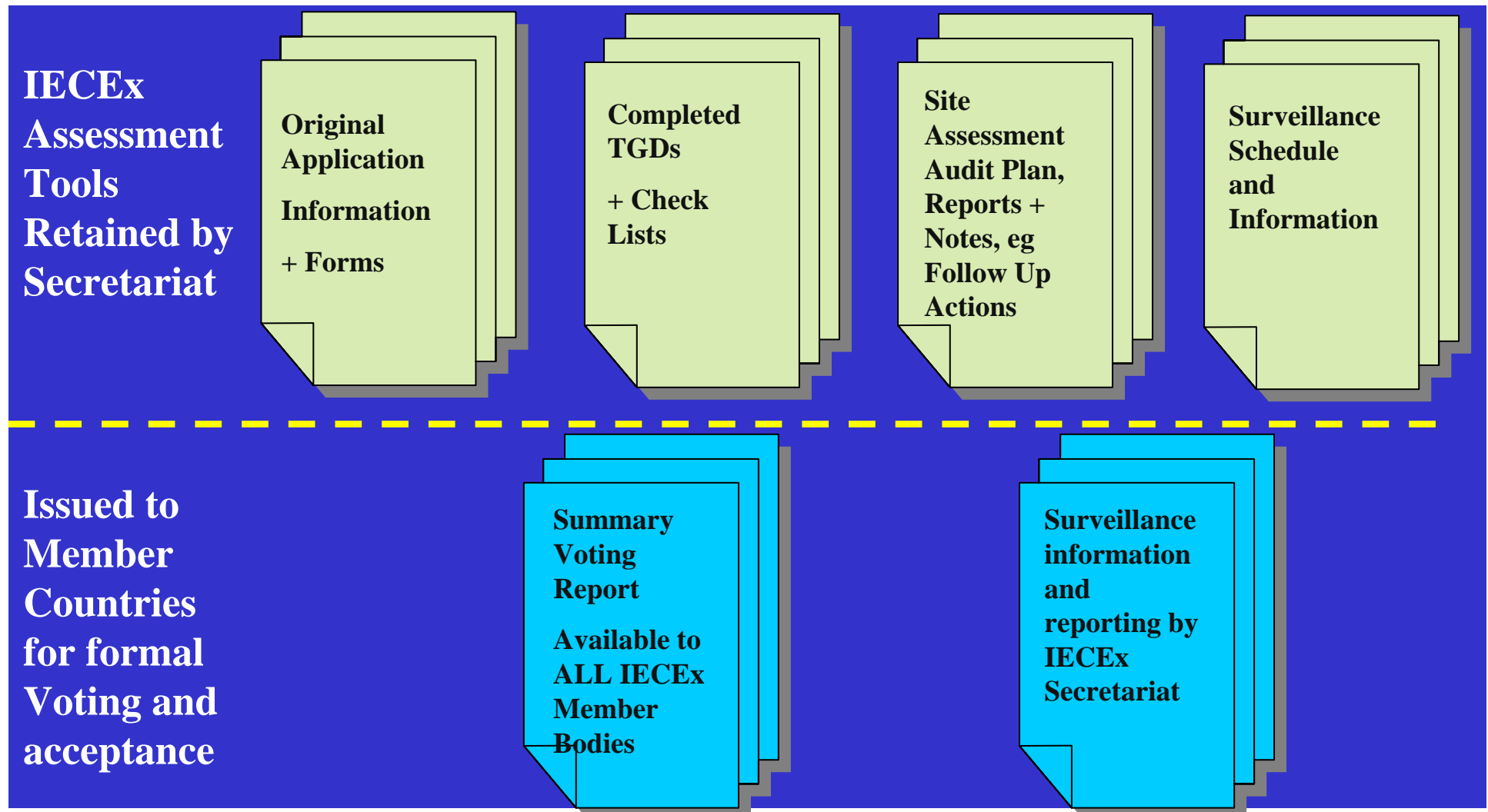
- IEC Standards
- IECEx Quality System requirements
- IECEx rules, including marking.



1. Assessment of IECEx Test Labs + Certifiers

- Credibility of ExCBs and ExTLs - The FOUNDATION of the IECEx Scheme
- EVERY Applicant ExCB and ExTL MUST undergo the IECEx Structured assessment program, based on the well established Peer Assessment principles
- IECEx maintains a suite of Assessment documentation procedures, check lists and forms, eg
 - IECEx OD 003: IECEx Assessment Manual (Initial, Surveillance + Re-assessment)
 - IECEx TGDs (Technical Guidance Documents) for each Ex technique
 - Site Assess. Reports, ISO/IEC Guide 65, 17025 Report forms
- Final acceptance by way of formal voting by ALL Member Countries
- Following acceptance, Annual Surveillance + 5 year FULL re-assessment.

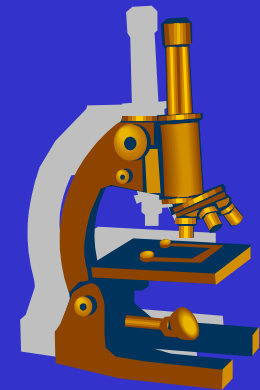
Summary of IECEx Assessment Tools + Records Assessment and Surveillance of ExCBs and ExTLs



IECEx Core Assessment Areas

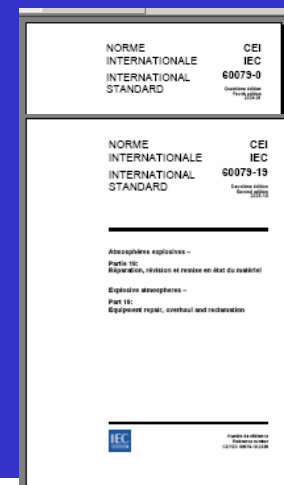
1. Ex Certification Bodies and Test Laboratories to gain acceptance as IECEx Bodies

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- Technical capability – facility, personnel
- Compliance with IECEx procedures

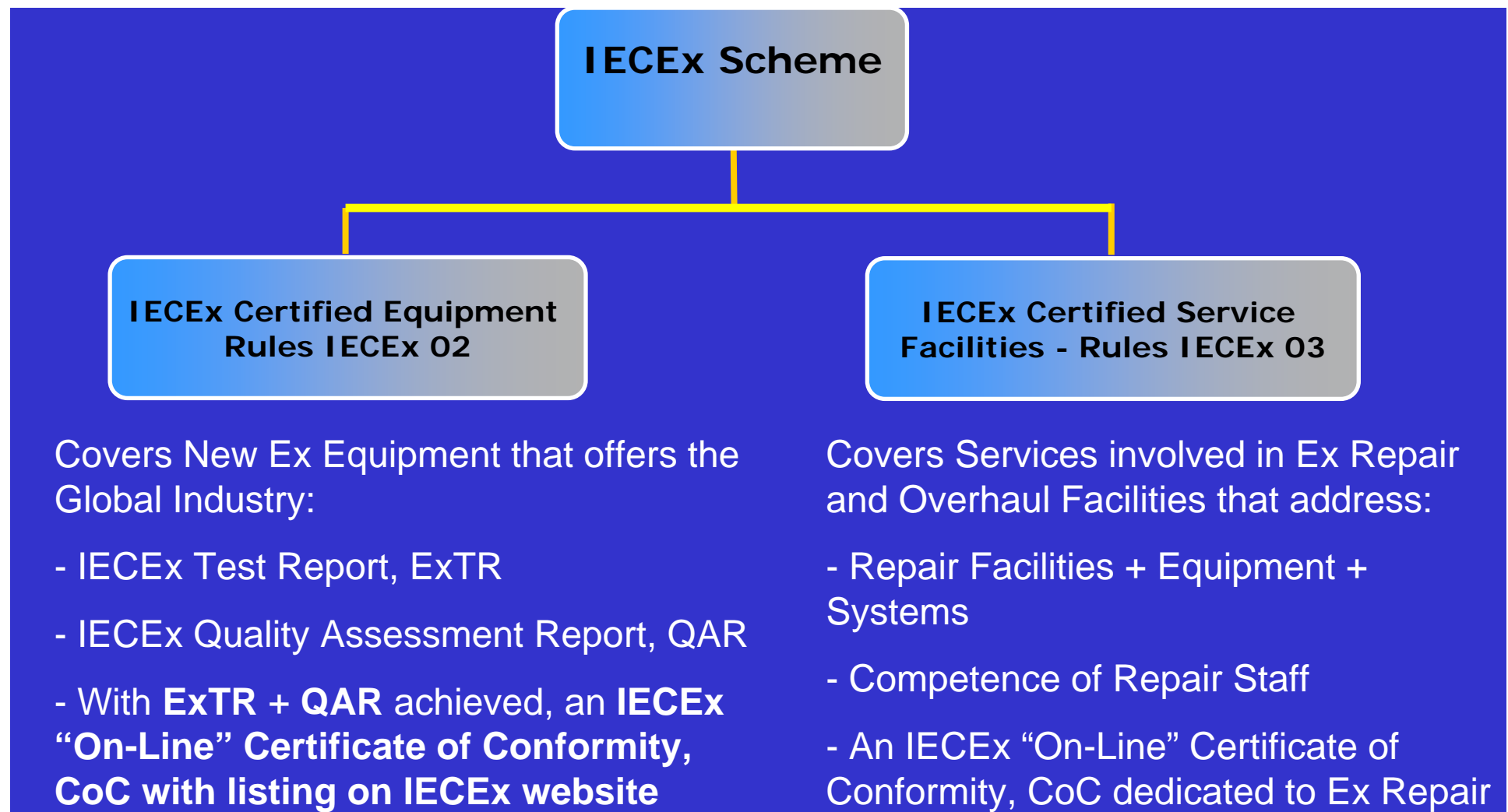


2. Products and Services to demonstrate compliance with IECEx Scheme requirements

- IEC Standards
- IECEx Quality System requirements
- IECEx rules, including marking.

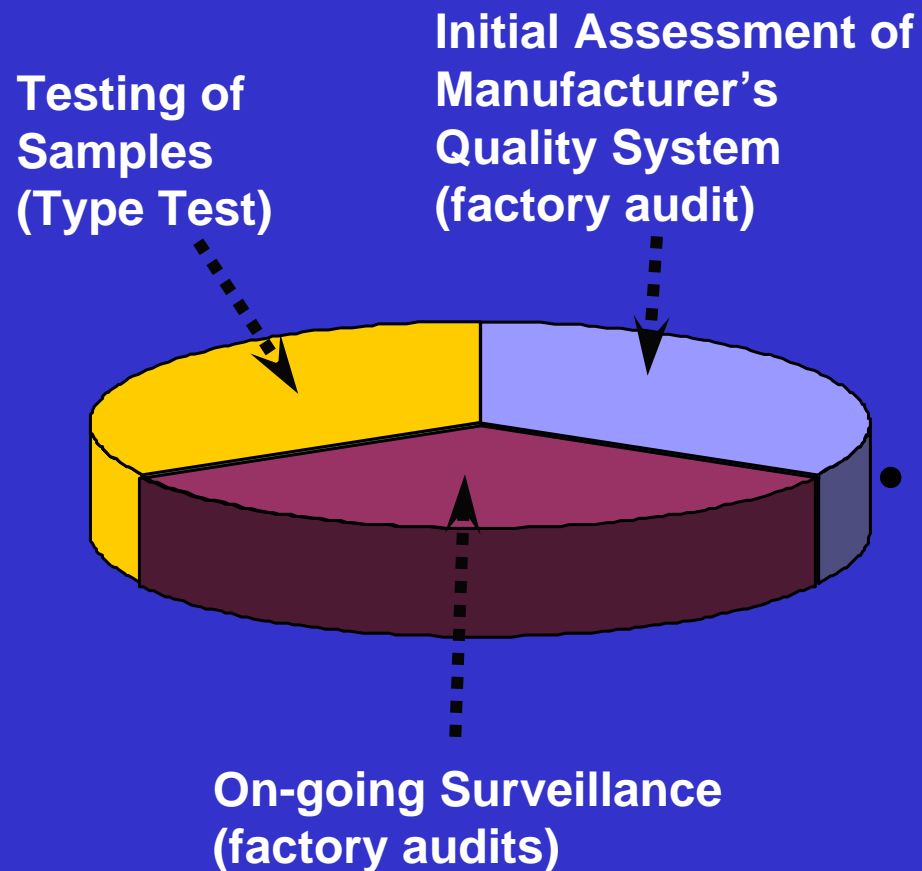


2. Assessment of Product + Services





Core Elements of IECEx Equipment Certification



Back Edit Quit Save New Print

IEC IECEx

**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

Certificate No.: **IECEx TSA 03.0000X** Issue No.: **0**

Status: ☐ Draft ☒ Current ☐ Suspended ☐ Cancelled

Date of issue: **2003-07-26** Page 1 of 4

Applicant Name: **SAMPLE CERTIFICATE**

Applicant Address: **132 Sample Street
SAMPLE TOWN NSW 2000**

Applicant Country: **Australia**

Electrical Apparatus: **Portable Radios**

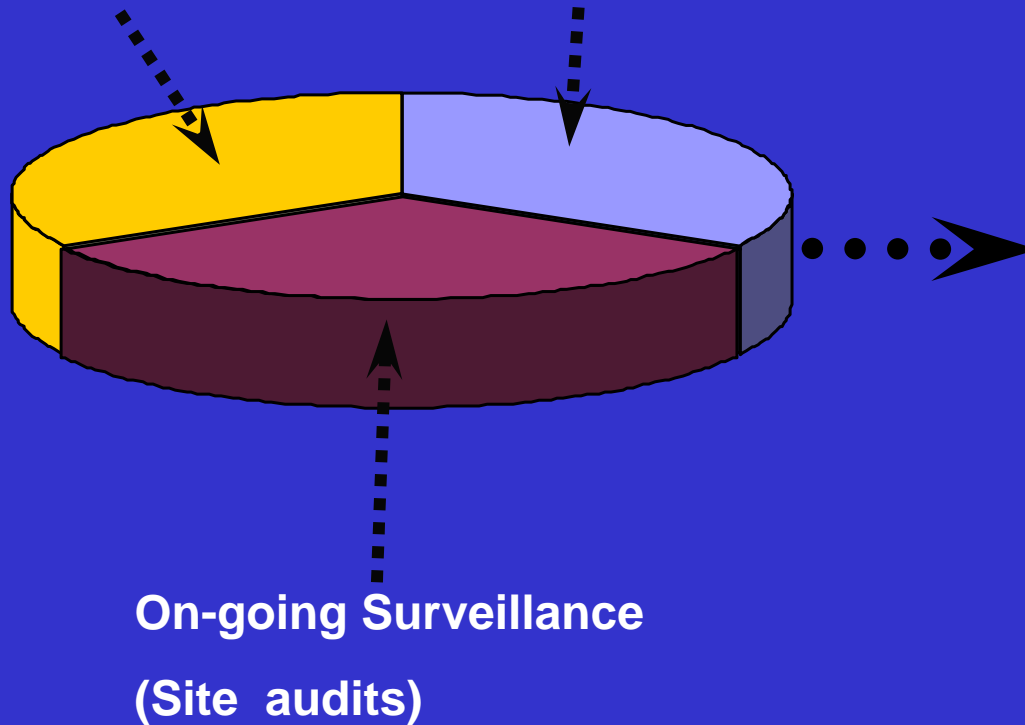
Optional accessory: **Nil**



Core Elements of IECEx Services Certification

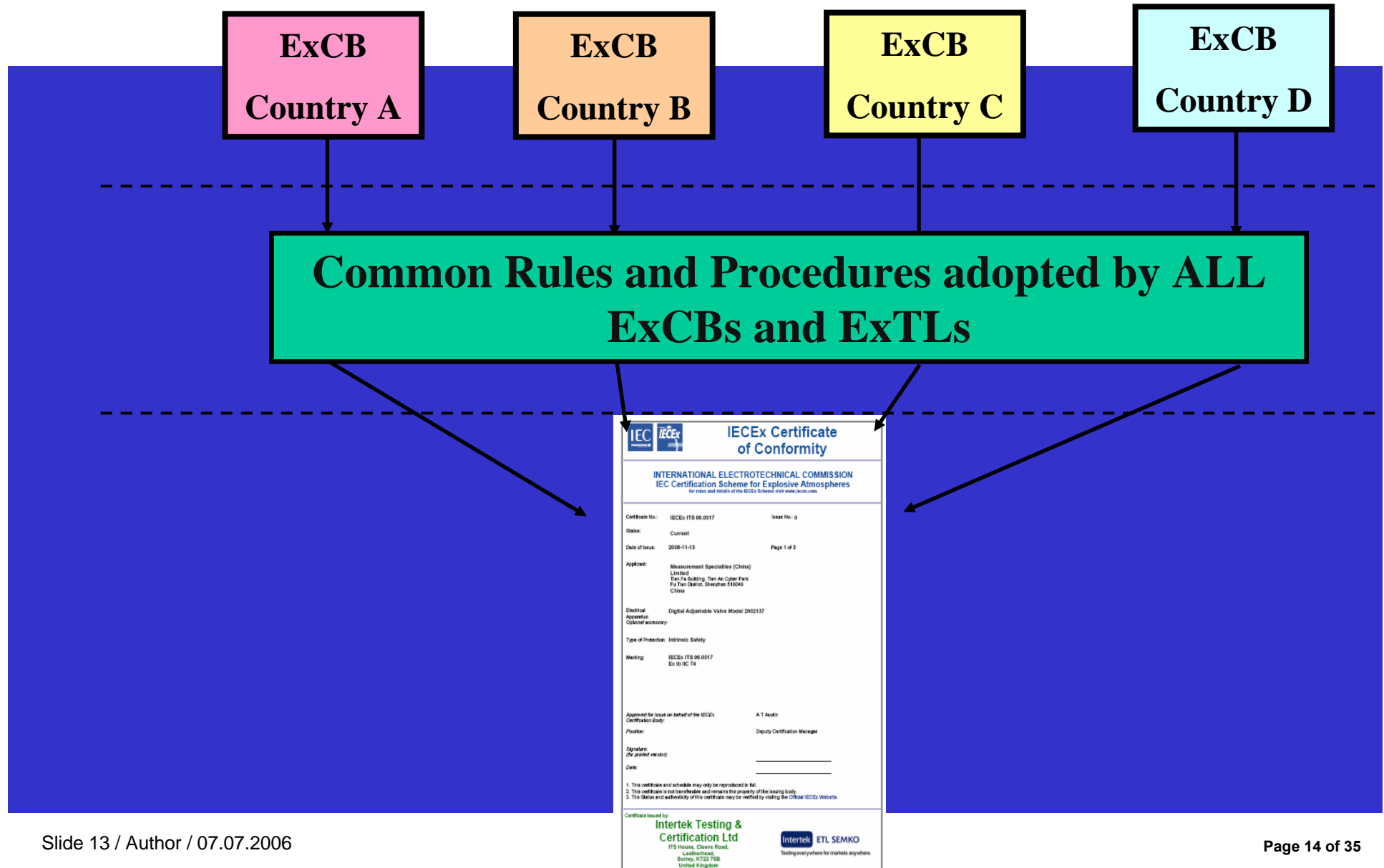
Assessment
of
Competency
of persons

Initial Assessment of
Repairer to IEC
60079-19 + IECEx
Quality System Req.



IEC		IECEx		IECEx Certified Service Facility	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>Guidelines and details of the IECEx Scheme visit www.iecex.com</small>					
Certificate No.	IECEx ULD 05.0001	Issue No:	0	Date of Issue:	2005-05-14
Status	Current				
Date of Original Issue	2005-05-14				
Applicant	IEC 123 Drive Lane Home Country				
Type of Service	Repair and Overhaul				
Reference Standard	IEC 60079-19				
Scope of Service	Repair and Overhaul of <input checked="" type="checkbox"/> and <input checked="" type="checkbox"/> Rotating Machines and their associated enclosures				
Locations covered By this Certificate	123 Drive Street Home Country	345 Drive Lane Anywhere Country	<input checked="" type="checkbox"/> (follow up to 6) Refer to Appendix		
Facility Audit Report:	0604-10001				
This certificate is issued as verification that the Service Facility and associated locations were assessed and found to comply with the IECEx Scheme requirements, including compliance with the IECEx quality system requirements, relating to the type and scope of service listed above. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx Q3 and Operational Documents as amended.					
Approved for issue on behalf of the IECEx Certification Body:	Person Certification Manager				
Signature: (for printed version)					
Date:					
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Issue and authenticity of this certificate may be verified by visiting the Official IECEx Website.					
Certificate issued by:	UL International DEMKO A/S 11 Q-Save 11.4 27.31.00000 Don mark				

The “IECEx Way” for Ex Certification



IECEX “On-Line” Certification System

- Original Master Controlled version of the IECEX Certificate sits on the IECEX Website
- Separate areas to cover both
 - IECEX Certified Equipment Program
 - IECEX Certified Service Facilities Program
- Also provides for the On-Line Registration of issued
 - IECEX Test Reports
 - IECEX Audit Reports
- Full Reports not shown on the website due to commercial in confidence information but Registration System provides declaration by the issuing IECEX Certifier that Reports exist and were issued according to the IECEX process

IEC IECEx		IECEX Certificate of Conformity	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>For rules and details of the IECEx Scheme visit www.iecex.com</small>			
Certificate No.:	IECEX BAS 06.0022	Issue No.:	1
Status:	Current		
Date of issue:	2006-10-27	Page 1 of 4	
Applicant:	<div style="background-color: black; width: 100px; height: 1.2em; margin-bottom: 2px;"></div> 77 Rippenden Lane Ostham Lancashire OL1 4EL United Kingdom		
Electrical Apparatus:	Type KFD2-GU-Ex1 Universal Trip Amplifier		
Optional accessory:			
Type of Protection:	Intrinsic Safety		
Marking:	IECEX BAS 06.0022 (Ex ia) IC (Ex ia) I -20°C ≤ Ta ≤ +60°C		
Approved for issue on behalf of the IECEx Certification Body:	R S Ghosh		
Position:	Managing Director		
Signature:	(for printed version)		
Date:			
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.			
Certificate issued by: Baseefa (2001) Ltd. Rockhead Business Park Staden Lane Buxton Derbyshire SK17 9RZ United Kingdom			

IEC IECEx		IECEX Certificate of Conformity	
Certificate No.:	IECEX BAS 06.0022		
Date of issue:	2006-04-24	Issue No.:	0
		Page 2 of 3	
Manufacturer:	<div style="background-color: black; width: 100px; height: 1.2em; margin-bottom: 2px;"></div> Lancashire OL1 4EL United Kingdom		
Manufacturing location(s):	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Konigsburger Allee 87 68307 Mannheim Germany </div> <div style="width: 45%;"> P + F Building 18 Ayer Rajah Crescent Singapore 139942 Singapore </div> </div>		
This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.			
STANDARDS: The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:			
IEC 60079-0 : 2000 Edition: 3.1		Electrical apparatus for explosive gas atmospheres - Part 0: General requirements	
IEC 60079-11 : 1999 Edition: 4		Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'T'	
This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.			
TEST & ASSESSMENT REPORTS: A sample(s) of the equipment tested has successfully met the examination and test requirements as recorded in			
Test Report: GB/BAS/EXTRO6.0022/00			
Quality Assessment Report: DE/PTB/QAR06.0007/00 DE/PTB/QAR06.0008/00			

http://domino.iec.ch - IECEx Test Report > ExTR - Microsoft Internet Explorer

Close

> ExTR:

ExTR Reference Number: (automatic numbering)	GB/BAS/ExTR06.0022/00
ExTR Free Reference Number:	GB/BAS/ExTR06.0022/00
Date of Issue:	2006-03-07
List of Standards Covered:	IEC 60079-0 (Ed.3.1); IEC 60079-1 (Ed.4)
Issuing ExTL:	BAS - Baseefa (2001) Ltd.
Endorsing ExCB:	Baseefa (2001) Ltd.
Country of Manufacture:	United Kingdom
Manufacturer:	[REDACTED] Ltd. Oldham Lancashire OL1 4EL
Ex Protection:	Intrinsic Safety
Ratings:	IECEX BAS 06.0022 [Ex ia] IIC [Ex ia] I -20°C ≤ Ta ≤ +60°C
Product:	
Model Reference:	
Comments:	

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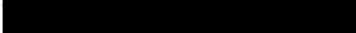
Done Internet

Registration of
Issued ExTR

http://domino.iec.ch - IECEx Quality Assessment Report: QARs - Microsoft Internet Explorer

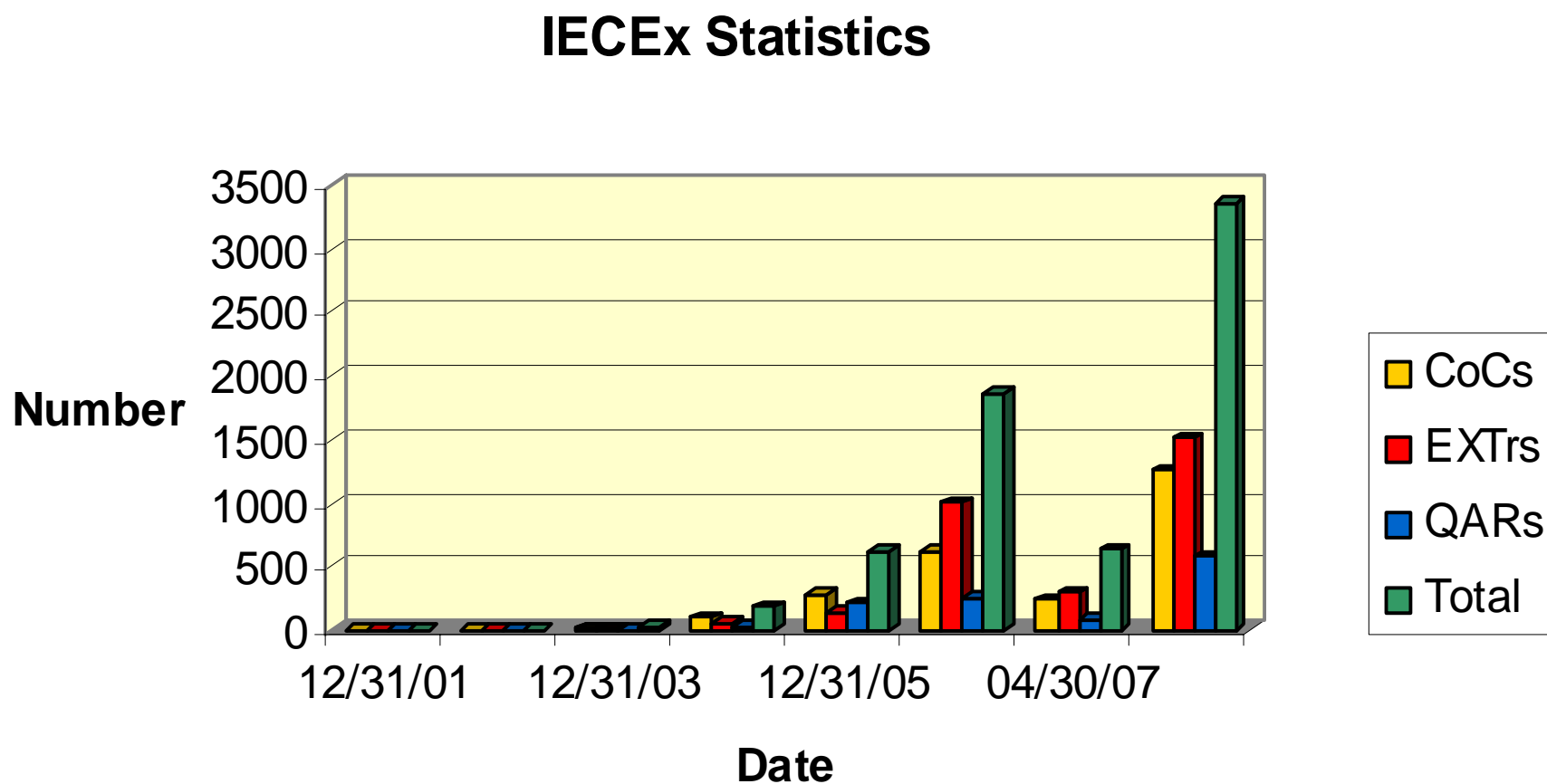
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> QAR:

QAR Reference Number (automatic numbering)	DE/PTB/QAR06.0007/00
QAR Free Reference Number	DE/PTB/QAR97.0008/02
Date of Issue (yyyy-mm-dd)	2006-03-16 
Audit Date (yyyy-mm-dd)	2005-02-22
Site(s) audited	 Königsberger Allee 87 68307 Mannheim Germany
Issuing ExCB	Physikalisch-Technische Bundesanstalt (PTB)
Manufacturer	 Königsberger Allee 87 68307 Mannheim
Country of Manufacture	Germany
Related IECEx Certificates	IECEx PTB 03.0003 IECEx PTB 05.0001 IECEx PTB 05.0002 X IECEx PTB 05.0010 X IECEx PTB 05.0011 IECEx PTB 05.0019 IECEx BAS 04.0014 IECEx BAS 04.0015 IECEx BAS 04.0016 IECEx BAS 05.0001 IECEx BAS 05.0004 IECEx BAS 05.0041 IECEx BAS 05.0078 IECEx BAS 06.0022

**Registration of
Issued QAR**

Issued IECEx Certificates, ExTRs, QARs



LATEST NEWS - IECEx Conformity Mark



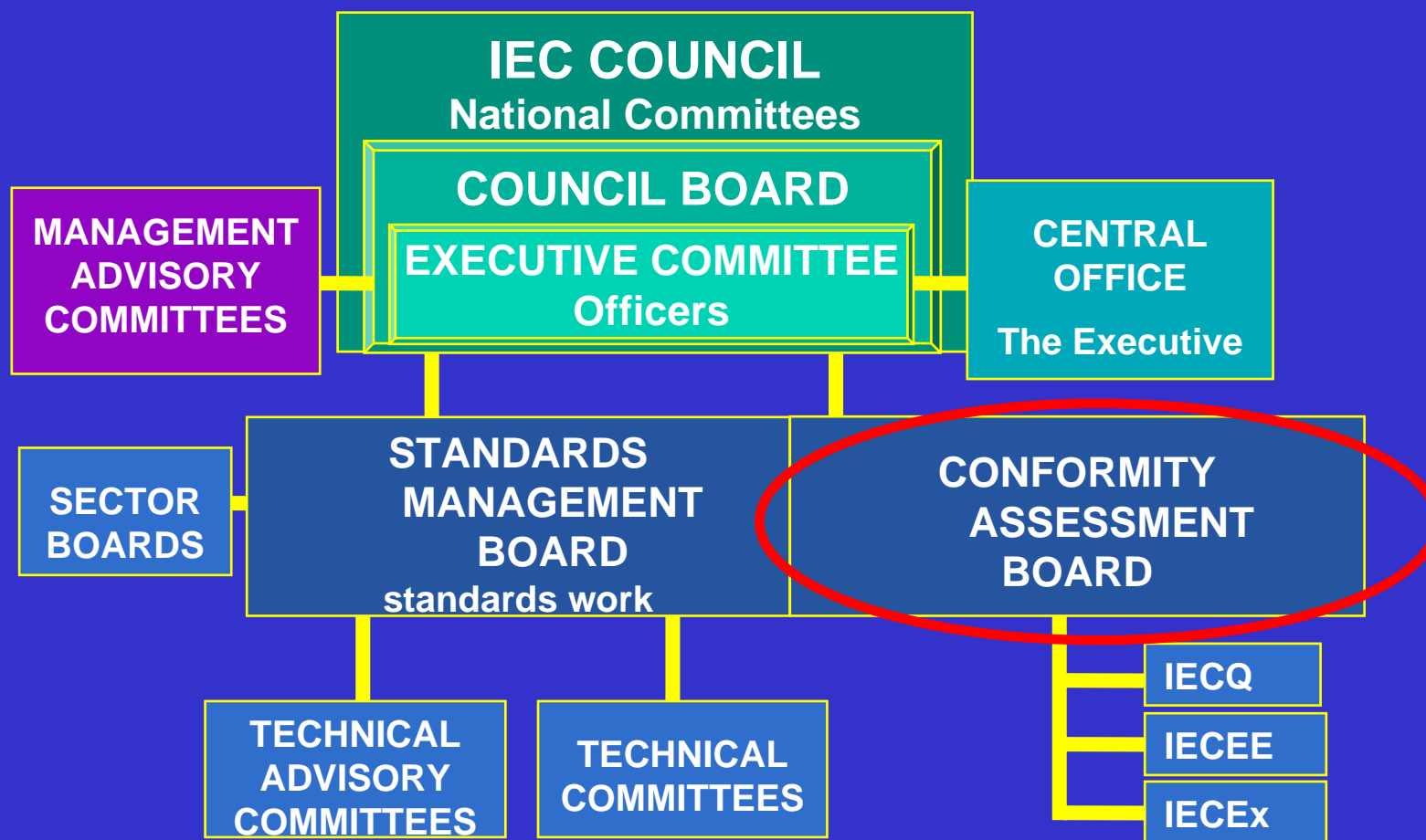
Draft Regulations presented for approval by CAB

Documentation in place for

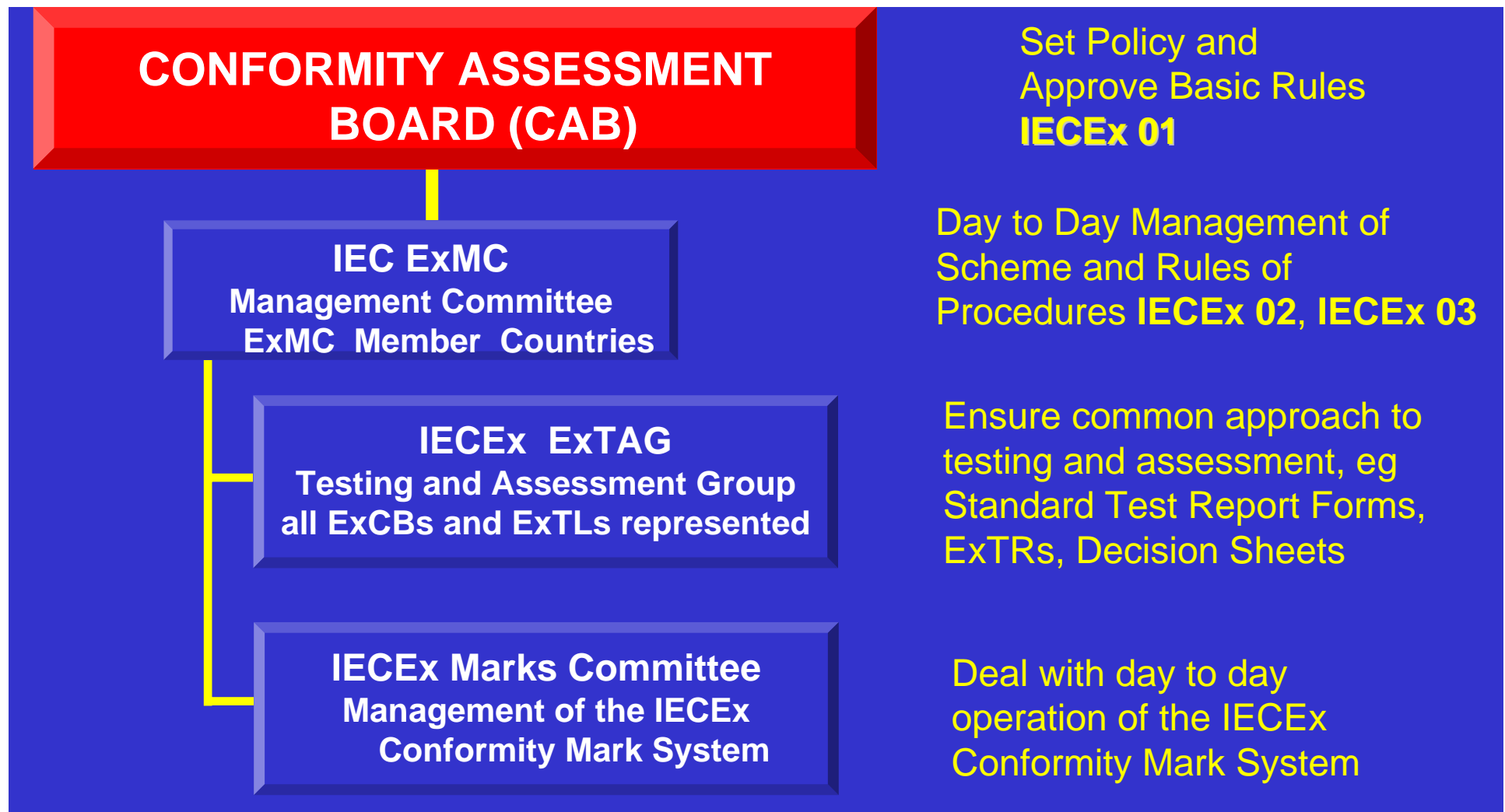
Rules for Licensing

Terms and Conditions

IEC Organigram



IECEX Management and Governance Structure



IECEx Scheme Managing Committee:- Experts from

Australia	Italy	Singapore
Canada	India	Slovenia
China	Japan	South Africa
Czech Republic	Korea, Republic of	Sweden
Denmark	Netherlands	Switzerland
Finland	Norway	United Kingdom
France	New Zealand	United States of America
Germany	Romania	Serbia & Montenegro
Hungary	Russian Federation	Others Planning to Join

2006 Annual IECEx Management Meeting



March 2007: 32 IECEx Certifiers ExCBs IECEx 02 - Certified Equipment Program

	<u>AUSTRALIA</u> *ITACS *SIMTARS *TestSafe		<u>GERMANY</u> *PTB *DEKRA/EXAM *TUV Nord *TUV Rheinland *TUV SÜD PS		<u>SLOVENIA</u> *SIQ
	<u>CANADA</u> *CSA International *QPS		<u>HUNGARY</u> BKI		<u>SWEDEN</u> *SP
	<u>CZECH Republic</u> *FTZU		<u>ITALY</u> *CESI		<u>SINGAPORE</u> *TÜV SÜD PSB
	<u>CHINA</u> *CQM		<u>KOREA</u> *KOSHA *KGS		<u>UNITED KINGDOM</u> *Baseefa *ITS *SIRA Cert
	<u>DENMARK</u> *UL Int./ DEMKO A/S		<u>NORWAY</u> *DNV *NEMKO		<u>UNITED STATES</u> *UL *FM
	<u>FINLAND</u> *VTT		<u>RUSSIA</u> NANIO-CCVE		<u>NETHERLANDS</u> *KEMA
	<u>FRANCE</u> *LCIE *INERIS				

Others under assessment

May 2007: IECEx Certifiers ExCBs
IECEX 03 - Certified Service Facilities (Repair) Program

New IECEx Program



AUSTRALIA :

***SIMTARS**



NETHERLANDS

***KEMA, Quality**



UNITED KINGDOM

***Baseefa**

***SIRA Cert**



NORWAY

***NEMKO (final stage)**

Others under assessment

IECEx Structure at National Level

National Member Body

Represents all Interests of the Country including Ex Users, manufacturers, Regulators. Vote on IECEx issues

Accepted
Certification
Body
(ExCB)

Accepted
Certification
Body
(ExCB)

Receive applications from manufacturers, Issue Certificates, endorse ExTRs, supervise ExTLs

Ex Testing
Laboratory
(ExTL)

Ex Testing
Laboratory
(ExTL)

Perform Testing and issue ExTR for endorsement by ExCB

Note: Can have more than 1 ExCB and ExTL per Country

Maintenance and Repair/Overhaul

- Ex equipment and installations are NOT set and forget installations.
- Maintenance schedules must be included in any installation dossier or manuals
- Do maintenance and repair processes follow Standards and Ex equipment manufacturer requirements?
- Are personnel conducting maintenance or repairs competent, in Ex techniques, certification systems as well as general engineering?
- Are adequate and required records maintained?
- Others, eg facilities, equipment etc

Users of the New IECEx Certified Services Program – Repair and Overhaul

Owners/Managers of Industrial Sites where Ex Equipment is used

- Confidence that after repair, Ex equipment continue to comply with original certification

Ex Equipment manufacturers

- to be confident that authorised Repairers meet IEC 60079-19 and IECEx requirements and are under surveillance by IECEx Bodies

Regulators

- to be confident safety is maintained by having Ex equipment repaired by a facility with
 - The right Tools/Machinery/Test & Measuring equipment
 - Sound Operational systems, including records
 - Competent Staff

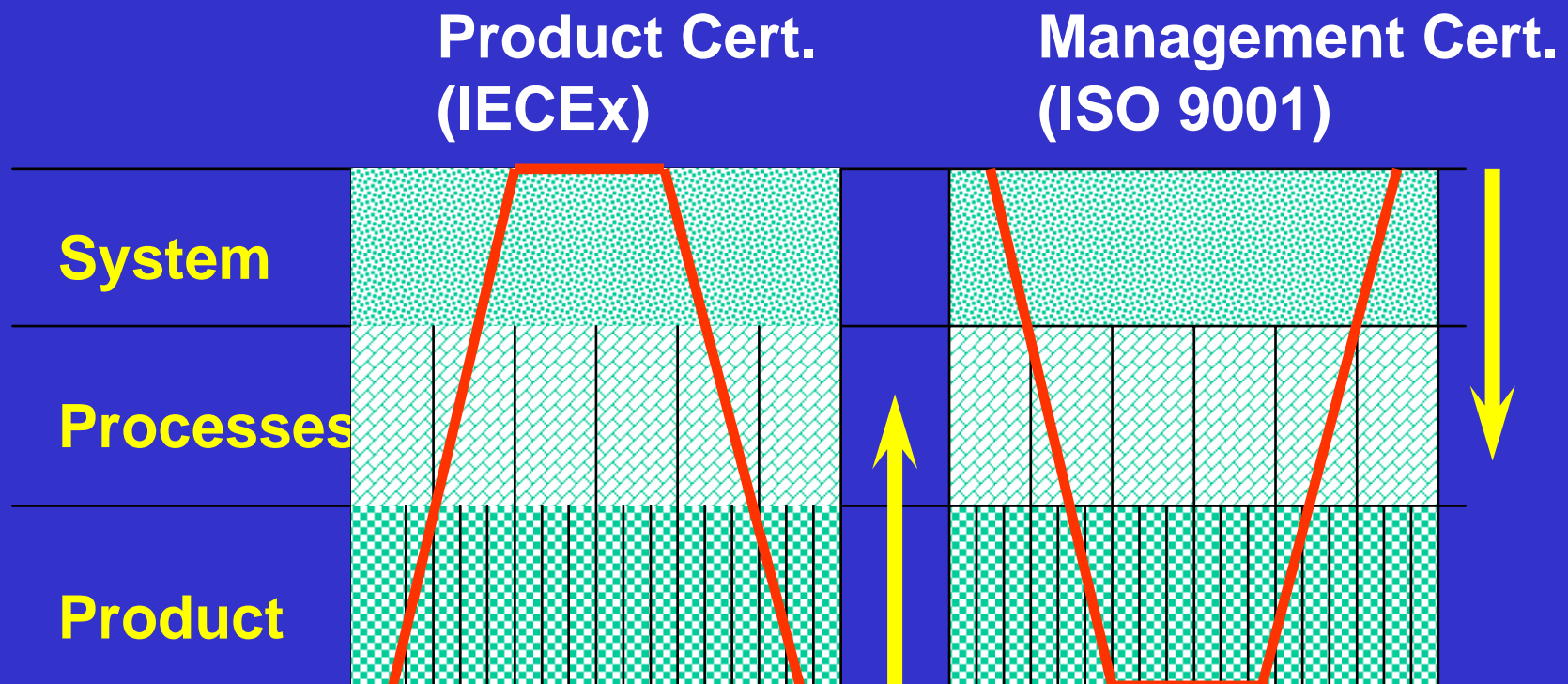
Ex Equipment Repairers

- to prove to their customers that they meet IEC 60079-19 and IECEx requirements.

Relationship with ISO 9001

- Although ISO 9001 does provide a heightened level of confidence in suppliers' overall quality, it does not provide specific Ex technical level quality assurance.
- **ISO 9001 Clause 0.1**, second para states: The quality management system requirements specified in this International Standard are complementary to requirements for products.
- ISO 9001 provides a solid foundation for a Quality management system as industries develop their own specific additional QMS requirements, eg
 - IECEx OD 005 – QMS extra requirements for Ex
 - ATEX EN 13980 – (alignment with IECEx OD 005)
- Use of ISO 9001 + IECEx Requirements Technical Requirements provide the complete conformity assessment structure.

ISO 9001 versus Product Cert. (Focus and level of depth)



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



IECEX Confidence



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx PTB 08.0088X Issue No.: 0

Status: Current

Date of Issue: 2006-12-27 Page 1 of 3

Applicant: VEGA Grieshaber KG
Am Hehenstein 113
77761 Reichelsheim
Germany

Electrical Apparatus: Ultrasonic Sensor VEGASON60 type series SNE-CIM-HM

Optional accessory:

Type of Protection: General Requirements, Intrinsic Safety

Marking: Ex ia IIC T8

Approved for issue on behalf of the IECEx Certification Body: Dr.-Ing. Ulrich Johannsmeyer
Position: Department Head "Intrinsic Safety and Safety of Systems"

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany

Ex Equipment

IECEX Certified Service Facility

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx ULD 05.0001 Issue No.: 0 Date of Issue: 2005-05-14

Status: Current

Date of Original Issue: 2005-05-14

Applicant: 123 Drive Street
Name: Country

Type of Service: Gp Repair and Overhaul

Reference Standard: IEC 60079-10

Scope of Service: Repair and Overhaul of Gp and Ex Rotating Machines and their associated enclosures

Locations covered by this Certificate: 123 Drive Street, Name, Country; 345 Drive Lane, Anywhere, Country

Facility Audit Report: DK04-10001

This certificate is issued as verification that the Service Facility and associated facilities were assessed and found to comply with the IECEx Scheme requirements, including compliance with the IECEx quality system requirements, relating to the type and scope of service listed above. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 03 and Operational Documents as amended.

Approved for issue on behalf of the IECEx Certification Body: Person: Certification Manager

Signature: (for printed version)

Date:

1. The certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
UL International DEMKO A/S
Vejlevej 6-1
DK-6000 Århus
Denmark

Ex Service Facilities

IECEX Certified Competent Person

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx ULD 05.0001 Issue No.: 0 Date of Issue: 2005-05-14

**UNDER DISCUSSION
WG 12 TO REPORT**

Approved for issue on behalf of the IECEx Certification Body: Person: Certification Manager

Signature: (for printed version)

Date:

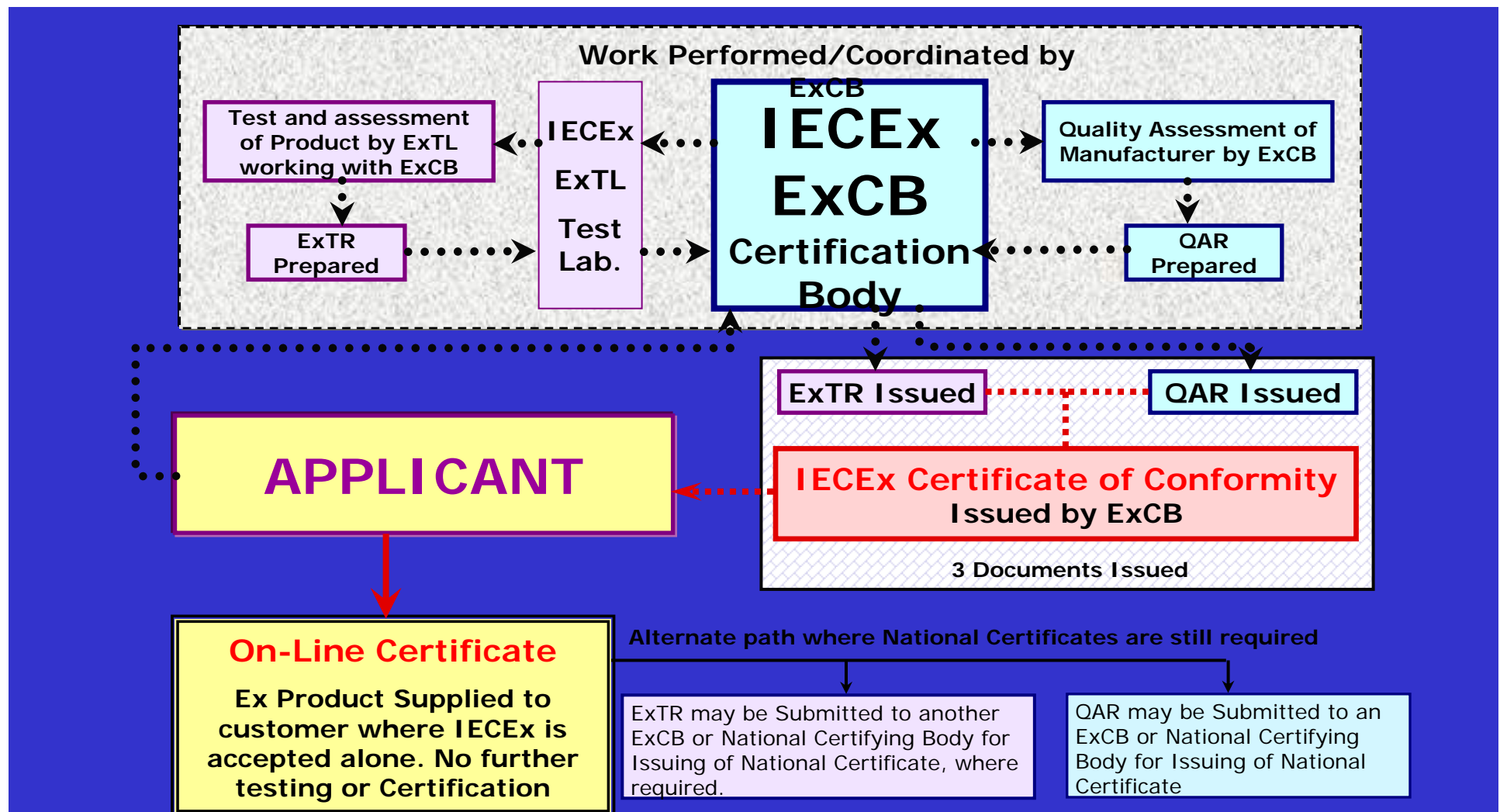
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Certificate issued by:
UL International DEMKO A/S
Vejlevej 6-1
DK-6000 Århus
Denmark

Underwriters Laboratories Inc.

Competent Persons

Overview + Options of IECEx



Conclusion

Further Information may be obtained from

www.iecex.com

QUESTIONS