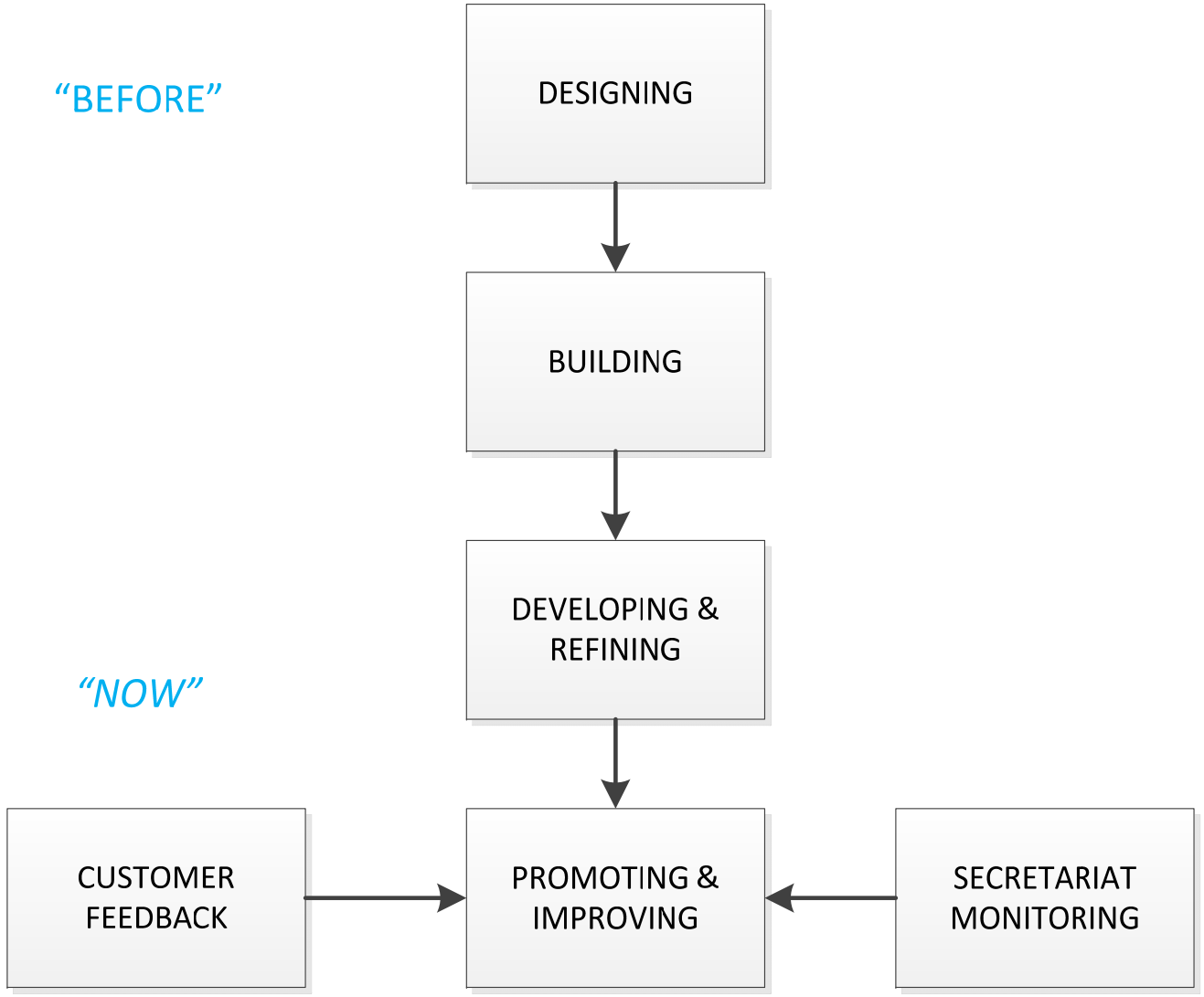
IECEx System Update

Mark Amos
IECEx Secretartiat

IECEx ExTAG Training
5th September 2016

What have we been doing ….



Did you know that …. ?

1. the ‘public’ (as a wide range of users) highly value and rely on IECEx Certificates and supporting documents for many and varied purposes

2. the ‘public’ read IECEx Rules, ODs, Guides and know when they have been updated / revised (… your personnel and procedures ?)

3. the ‘public’ understand the purpose of QARs, ExTRs, FARs and PCARs and do access and read these

4. There is increasing demand for PDF copies of Certificates etc. as hard copy (the concept of uncontrolled copy NOT well understood)

5. the ‘public’ Regularly contact the Secretariat with POSITIVE feedback and suggestions (they do this because they care !!!)

Secretariat Question

The MOST IMPORTANT consideration when preparing and issuing an IECEx Certificate is ?

1. ease of preparation by ExCB staff

2. quickest response to ExCB client

3. most models / variations on a Certificate

4. provision of clear and complete information for users to validate equipment as compliant, install and operate correctly, etc etc to satisfy a wide range of needs

Secretariat Observation

EQUIPMENT(continued):

Equipment protection methods / temperature code / Tambient

DVC60x0xx, DVC6200xx, DVC6005x: Ex ia IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); Ex d IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); Ex nC IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); IP66 (HART COMMUNICATION PROTOCOL)

DVC60x0xx, DVC6200xx, DVC6005x: Ex ia IIC T4 (Ta ≤ 80°C) / T5 (Ta ≤ 77°C) / T6 (Ta ≤ 62°C); Ex d IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); Ex nC IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); IP66 (FIELDBUS / FISCO / PROFIBUS COMMUNICATION PROTOCOL)

DVC6205: Ex d IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); Ex nC IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); IP66

DVC6205F, DVC6205P: Ex ia IIC T4 (Ta ≤ 80°C) / T5 (Ta ≤ 77°C) / T6 (Ta ≤ 62°C); Ex d IIC T5 (Ta ≤ 80° C) / T6 (Ta ≤ 75°C); Ex nC IIC T5 (Ta ≤ 80°C) / T6 (Ta ≤ 75°C); IP66

DVC60x5: Ex ia IIC T4 (Ta ≤ 125°C) / T5 (Ta ≤ 95°C) / T6 (Ta ≤ 80°C); Ex d IIC T4 (Ta ≤ 125°C) / T5 (Ta ≤ 95°C) / T6 (Ta ≤ 80°C); Ex nA IIC T4 (Ta ≤ 125°C) / T5 (Ta ≤ 95°C) / T6 (Ta ≤ 80°C); IP66

DVC6215: Ex ia IIC T4 (Ta ≤ 125°C) / T5 (Ta ≤ 95°C) / T6 (Ta ≤ 80°C); Ex d IIC T4 (Ta ≤ 125°C) / T5 (Ta ≤ 95°C) / T6 (Ta ≤ 80°C); Ex nA IIC T4 (Ta ≤ 125°C) / T5 (Ta ≤ 95°C) / T6 (Ta ≤ 80°C); IP66

Electrical parameters for protection type "d" and Type "n"

DVC60x0xx, DVC6200xx, DVC6005x, DVC6205x, DVC6215: 30V max, 20mA

DVC60x5: 10V max, 5mA

Electrical parameters for protection type "i"

DVC60x0, DVC60x0S, DVC6200, DVC6200S: Ui = 30V, Ii = 226 mA, Pi = 1.4W, Ci = 5 nF, Li = 0.55 mH

DVC60x0, DVC60x0S, DVC6200, DVC6200S (HW2): Loop Terminals: Ui = 30V, Ii = 130mA, Ci = 15nF, Li = 0.55mH, Pi = 1W; Output Terminals : Ui = 28V, Ii = 100mA, Ci = 15nF, Li = 0.5mH, Pi = 1WDVC60x0F, DVC60x0FS, DVC6200F, DVC6200FS, DVC6200P, DVC6200PS: Ui = 24V, Ii = 380 mA, Pi = 1.4W, Ci = 5 nF, Li = 0 mH; or Ui = 17.5V, Ii = 380 mA, Pi = 5.32W, Ci = 5 nF, Li = 0 mH

DVC6005: Ui = 30V, Ii = 226mA, Pi = 1.4W, Ci = 5nF, Li = 0.55mH; Uo = 9.6V, Io = 3.5mA, Po = 8.4mW, Co = 3.6uF, Lo = 100mH

DVC6005 (HW2): Loop Terminals: Ui = 30V, Ii = 130mA, Ci = 15nF, Li = 0.55mH, Pi = 1W; Output Terminals: Ui = 28V, Ii = 100mA, Ci = 15nF, Li = 0.5mH, Pi = 1W; Remote Sensor Terminals: Uo = 30V, Io = 21.2mA, Co = 55nF, Lo = 78mH, Po = 160mW

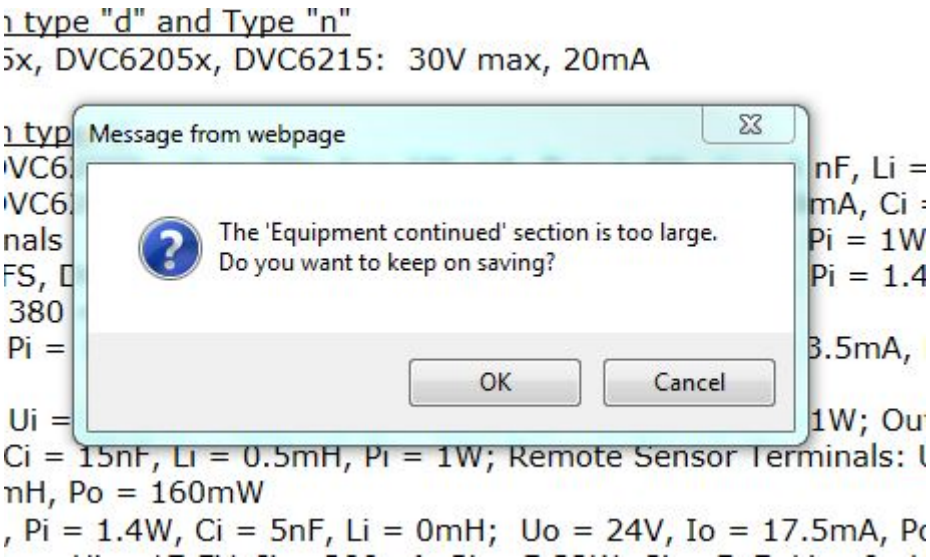
DVC6005F: Ui = 24V, Ii = 380mA, Pi = 1.4W, Ci = 5nF, Li = 0mH; Uo = 24V, Io = 17.5mA, Po = 105mW, Co = 121nF, Lo = 100mH; or Ui = 17.5V, Ii = 380mA, Pi = 5.32W, Ci = 5nF, Li = 0mH; Uo = 24V, Io = 17.5mA, Po = 105mW, Co = 121nF, Lo = 100mH

DVC60x5: Ui = 30V, Ii = 17.5mA, Pi = 105mW, Ci = 0uF, Li = 0mH

DVC6205 (HW2): Loop Terminals: Ui = 30V, Ii = 130mA, Ci = 15nF, Li = 0.55mH, Pi = 1W; Output Terminals: Ui = 28V, Ii = 100mA, Ci = 15nF, Li = 0.5mH, Pi = 1W; Remote Sensor Terminals: Uo = 30V, Io = 21.2mA, Co = 55nF, Lo = 78mH, Po = 160mW

DVC6205F, DVC6205P: Ui = 24V, Ii = 380mA, Pi = 1.4W, Ci = 5nF, Li = 0mH; Uo = 24V, Io = 44mA, Po = 0.33W, Co = 121nF, Lo = 30mH; or Ui = 17.5V, Ii = 380mA, Pi = 5.32W, Ci = 5nF, Li = 0mH; Uo = 17.5V, Io = 44mA, Po = 0.33W, Co = 121nF, Lo = 30mH

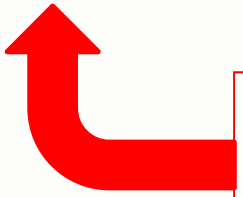
Secretariat Observation



Secretariat Observation

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

Earth Fault Lockout and Frozen Contact Protection Relay.



Annex does contain much more detailed Description BUT the Annex is not referenced from here

CONDITIONS OF CERTIFICATION: YES as shown below:

Please refer to Annex

Secretariat Monitoring

An audit of 567 x 'on-line' IECEx Equipment CoCs selected at random as representing a **~15% sample** of all those published in the second half of 2015 and 2016 YTD and audited showed

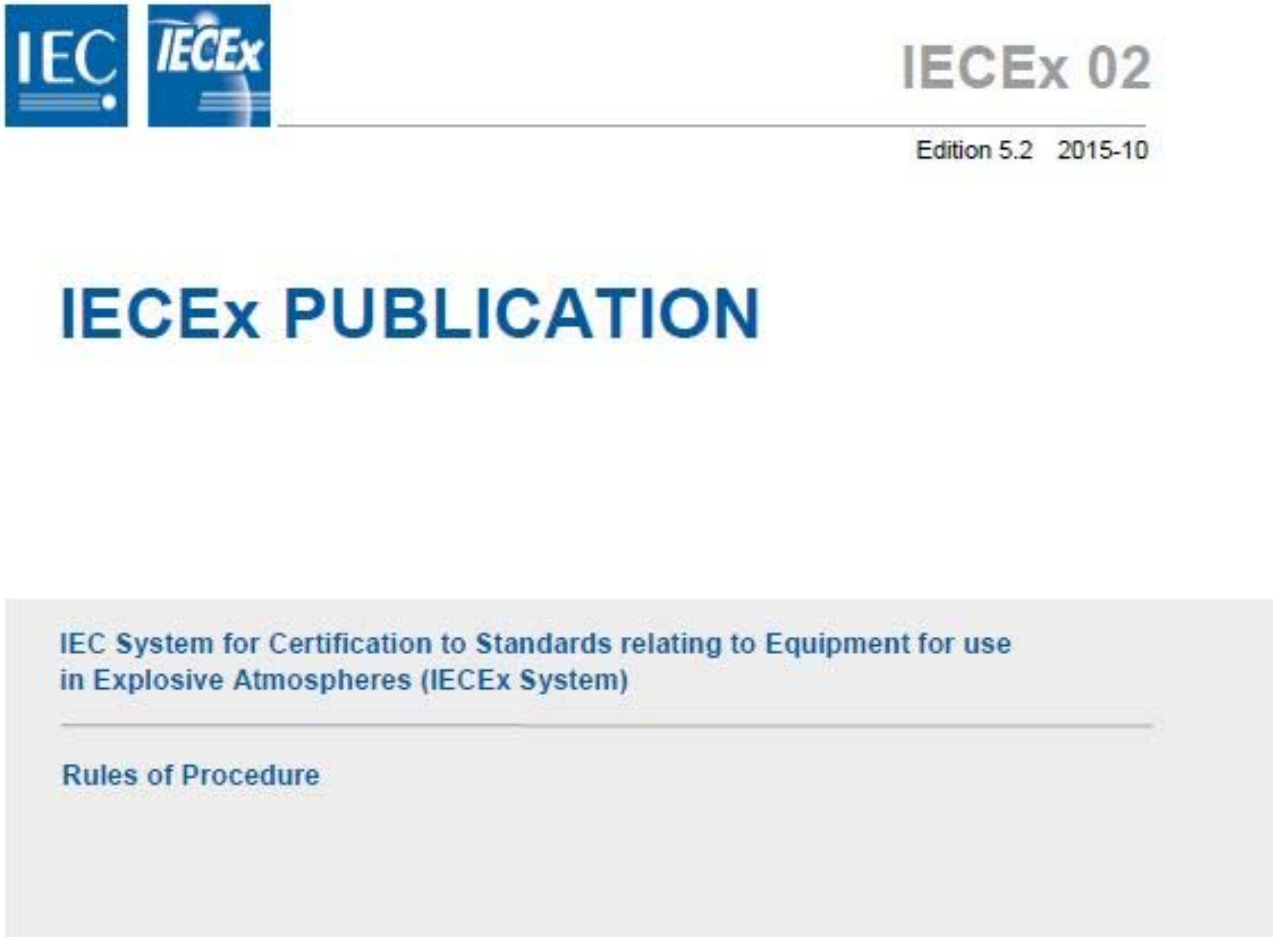
- IECEx Certified Equipment Certificates with zero issues = **537**
- IECEx Certified Equipment Certificates with one issue = **28**
- IECEx Certified Equipment Certificates with multiple issues = **2**
- IECEx Service Facility CoCs … 5 of 29 audited had an issue
- IECEx Personnel CoCs … 4 of 96 audited had an issue

Whilst this is an improvement on previous years there is scope for further improvement !

…..to assist improvement, TODAY = an opportunity for some feedback and information on:

- REMINDERS
- REVISIONS
- NEW TOOLS

Essential reading for ExCBs



IECEx 02

Edition 5.2 2015-10

IECEx PUBLICATION

IEC System for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEx System)

Rules of Procedure

Essential reading for ExCBs

Extracted from IECEx 02 …

8.1.3 Contents

The IECEx CoC shall contain at least the following information:

- Clear description of the Ex equipment
- Name and address of the manufacturer
- The Standard, edition and amendments, if any
- Reference to the supporting ExTR
- Reference to the supporting QAR, except for Unit Verification
- Ex marking requirements
- Name of the issuing ExCB
- Conditions of safe use, if any
- IS parameters for intrinsic safety, where relevant
- Reference to manufacturers' instructions
- Serial number or other unique identifier when issued for Unit Verification

Other essential reading for ExCBs

- ***Document ExTAG/245/INF***

  IECEx On-Line Website Update: ExCBs-QARs out of date and ExCBs-CoCs with QARs out of date.

- ***Document ExTAG/164/INF***

  Scheduling of Surveillance Assessments + Re-Assessments for the IECEx 02 Certified Equipment Scheme.

- ***Operational Document OD 009***

  IECEx Certified Equipment Scheme, Procedures for the Issuing of IECEx Certificates of Conformity, IECEx Test Reports and IECEx Quality Assessment Reports

- ***Operational Document OD 011 (Series)***

  Guidance on Use of the IECEx Internet based "On-Line" Certificate of Conformity System

- ***Operational Document OD 033***

  Unit Verification Certificates

Recent updates & revisions

IECEx 02 Ed 5.2	IEC System for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEx System) IECEx Certified Equipment Scheme covering equipment for use in explosive atmospheres – Rules of Procedure
IECEx 05 Ed 3.0	IEC System for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEx System) IECEx Scheme for Certification of Personnel Competence for Explosive Atmospheres – Rules of Procedure
OD 035 Ed 2.0	A procedure to generate, discuss, report and publish ExTAG Decision Sheets
OD 011-1 Ed 4.2	Guidance on Use of the IECEx Internet based “On-Line” Certificate of Conformity System, Part 1: General Information

IECEx OD 011 Series

➢*Operational Document OD 011 (Series)*

OD 011, Guidance on Use of the IECEx Internet based "On-Line" Certificate of Conformity System

- *Part 1: General Information*
- *Part 2: Creating IECEx Equipment Certificates of Conformity CoCs*
- *Part 3: Creating IECEx Service Facility Certificates of Conformity CoCs*
- *Part 4: Creating IECEx Conformity Mark Licenses*
- *Part 5: Creating Certificates of Personnel Competence CoPCs*

All revised and republished in January 2015 @ **http://www.iecex.com/operational.htm** to

1. Include updated images of IECEx Website and On-Line CoC System pages
2. Link content to new editions of IECEx Rules and other ODs
3. Provide clearer instruction through use of icons and notes
4. Clarify expected content of key data fields in 'on-line' CoCs, QARs, ExTRs, FARs and PCARs (particularly regarding dates of assessment and expiries)

IECEx On-Line Certificate System Assistance

REMINDER

IECEx Secretariat support always available for:

- adding “U” to draft Equipment CoCs
- editing of CoCs
- resetting CoCs to “Draft” to allow editorial corrections
- deletion of unwanted draft CoCs, ExTRs and QARs
- cancellation/Suspension of CoCs
- assistance with managing Out of Date QARs
- ‘remote’ training of new ExCB staff
- general enquiries

➢ ***Our Target for response = before end of your next working day***

IECEx Assistance

REMINDER

PLEASE assist us to help you and your clients by advising us of any changes to organisation name, address, accreditation status, key personnel (especially the main contact person for IECEx matters) etc etc BEFORE or ASAP AFTER the change

Refer IECEx 02, Clauses 11.1.2, 11.1.3 and 11.1.9

Reminder of Features introduced previously

REMINDER: *the need to manage Suspended Certificates …*

ACTION ITEM from the 2013 meeting of the IECEx Executive:

> *"… the Secretariat to conduct an annual review of suspended Certificates, remind ExCBs with suspended certificates that a review with the manufacturer is needed within 1 month, and to ask the ExCB to show cause why the Certificate(s) should not be cancelled. A failure to respond within 1 month will lead to an automatic cancellation."*

Current status = some ExCBs have publicly visible IECEx Certificates that have been SUSPENDED for over 6 years.

In the view of the Secretariat these should be investigated by the ExCB and EITHER up-issued after resolution of the reasons for suspension OR cancelled.

The Secretariat can provide a report of these Certificates and assist with cancellations on request.

Reminder of Features introduced previously

REMINDER: *following a request from ExCBs, the Secretariat arranged for two major features to be added to the IECEx On-line website to provide separate listings for the following:*

- ***A ExCB's Out of Date QARs***
- ***A ExCB's CoCs with Out of Date QARs***

Noting that

- Each ExCBs are only able to view their own lists.
- Guidance is provided in Document ExTAG/245/INF
- The "Out of Date" status of a QAR (and the CoC it supports) is publicly visible

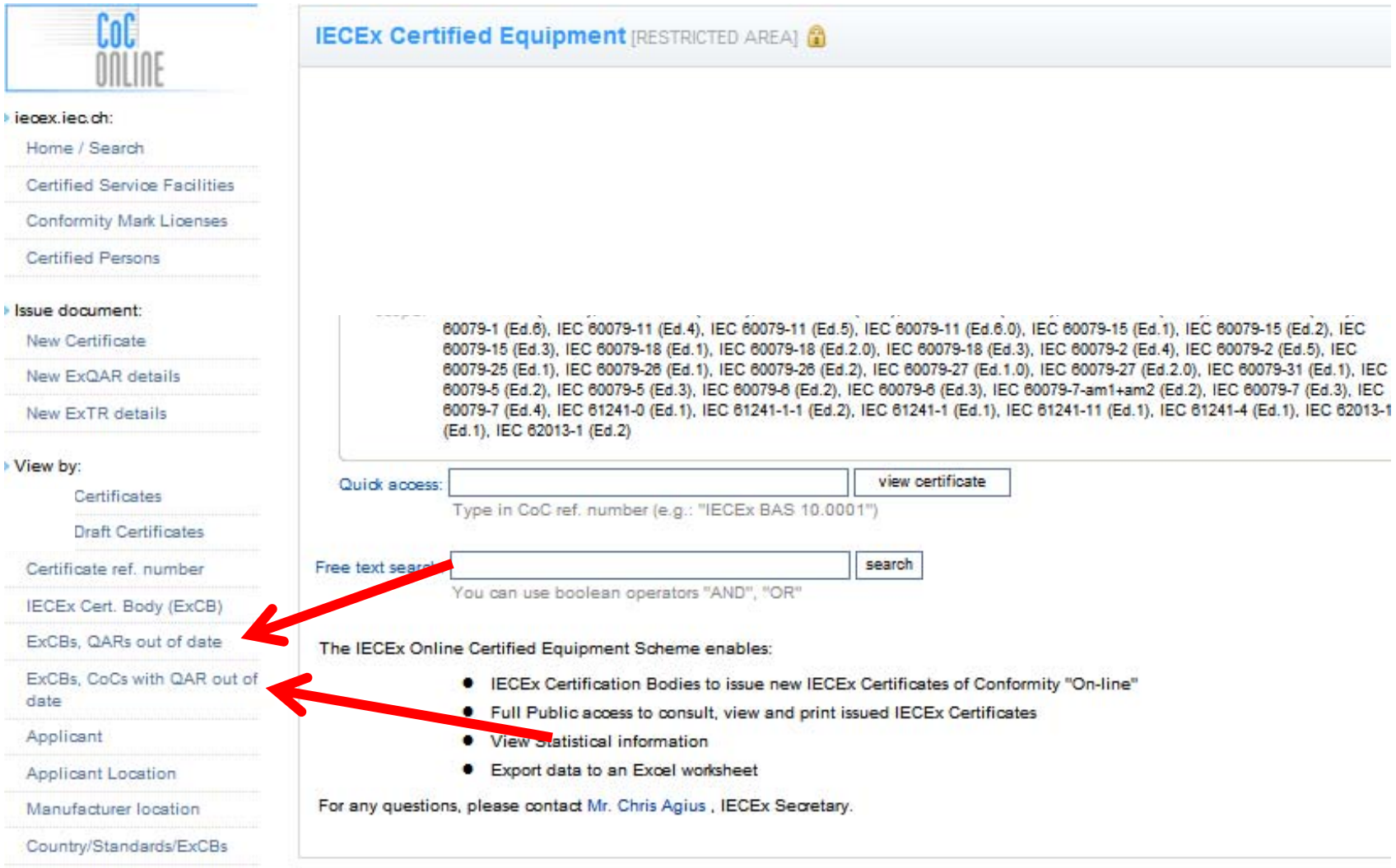
Out of Date QARs

- All ExCBs have been requested to review their list of out of date QARs and arrange for the surveillance audits of manufacturers (where these have not been done), as a priority and then update the on-line QARs

- Only the Secretariat and the ‘logged-in ExCB’ can view an ExCBs ‘lists’ of out of date QARs

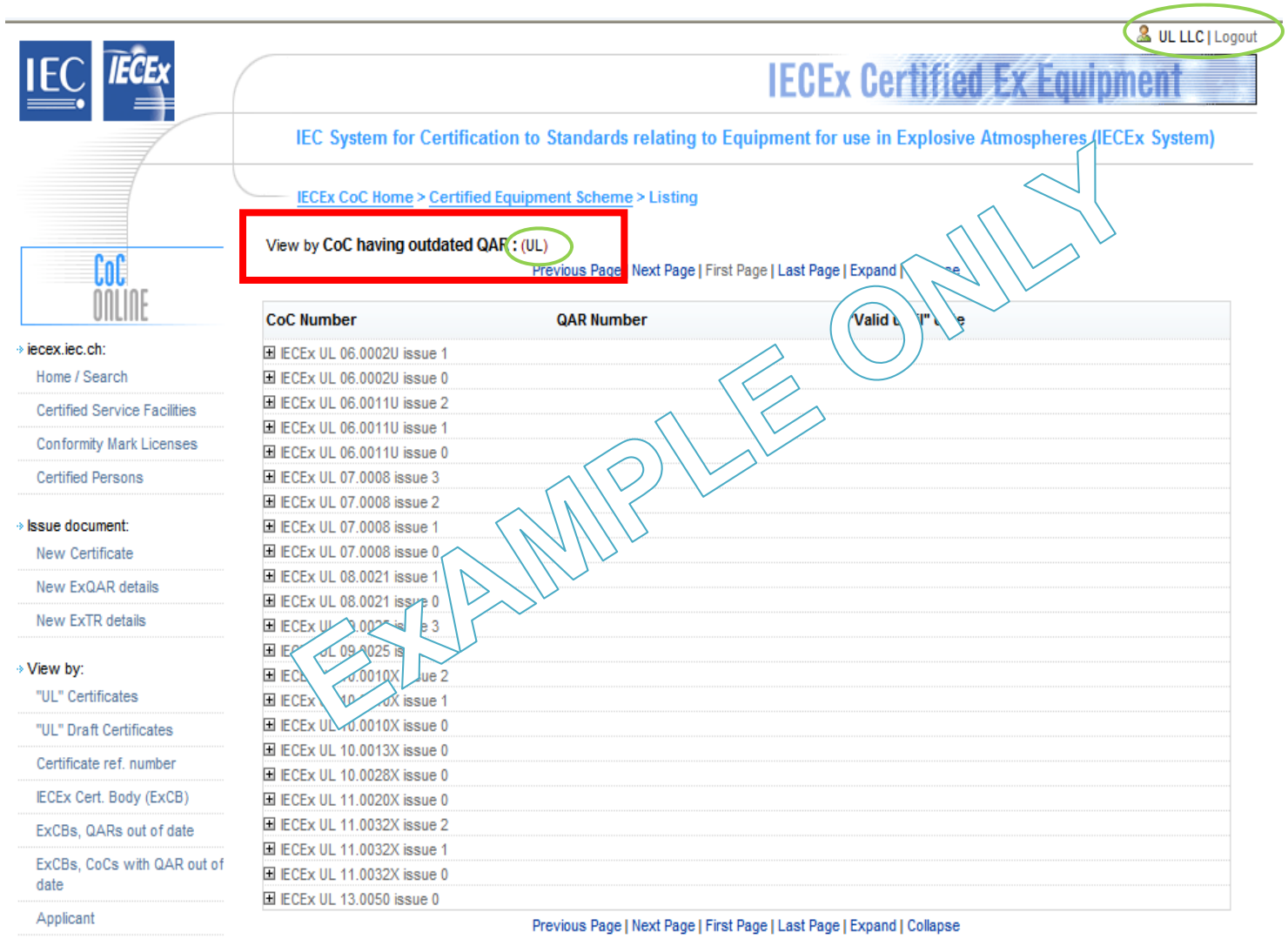
- When the QAR is updated and no longer out of date, it will be automatically removed from the “QAR, out of date” list

ExCB View - Out of Date QARs



ExCB view - QARs out of date by ExCB

ExCB view - CoCs with QARs out of date



Out of Date QARs

It is recognised that some QARs will never be updated. The reasons for this can include:

1. *The linked CoC has been cancelled.*

2. *Another ExCB has taken over the surveillance of the manufacturer.*

3. *The ExCB has raised another QAR to supersede the original QAR.*

In such cases ExCBs are requested to advise the IECEx Secretariat and if it can be shown that the QAR will never be updated and that all Current CoCs linked to the now out of date QAR have been updated and linked to a valid QAR, the Secretariat can remove the QAR from the ExCBs "QAR, out of date" list.

“User Friendliness” – NEW TOOLS

- improved search tools and capabilities for On-Line CoC System
- Certificate layout improvement – *some ideas*
- Decision Sheet vs Standard Index
- In addition to:
  - IECEx Mobile Device Apps V2.0
  - IECEx On-line System Training Videos

IECEx Public Search Tool

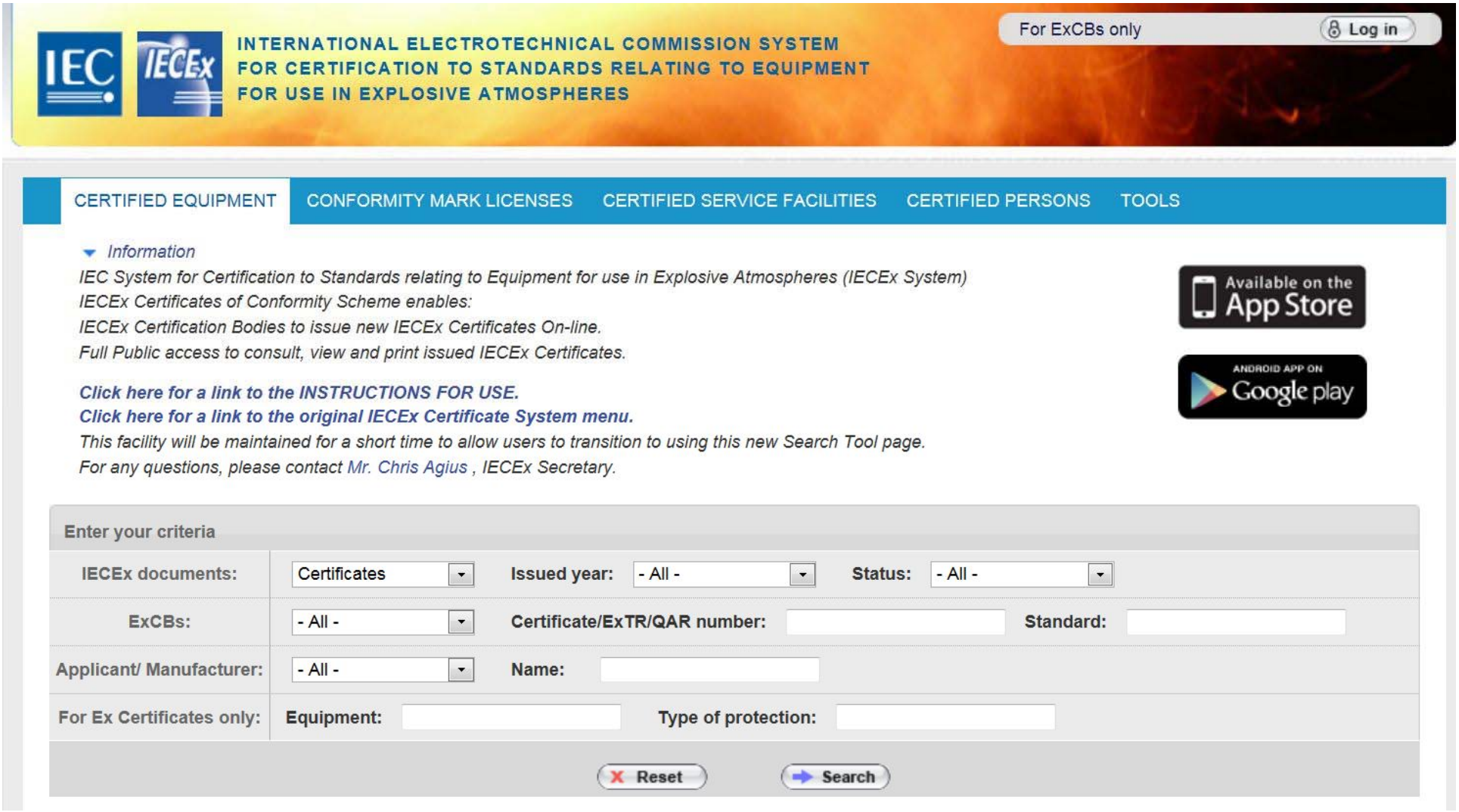
WHY

- Response to requests for ‘advanced search capability’ via multiple criteria (increasing use as “Buyers Guide”)
- Accommodate changes to and additions of web browsers
- Improved security of on-line Certificates and supporting documents
- Properly pagenated copies of Certificates with merged Annex as a single secured document (no need for Adobe Acrobat installation)

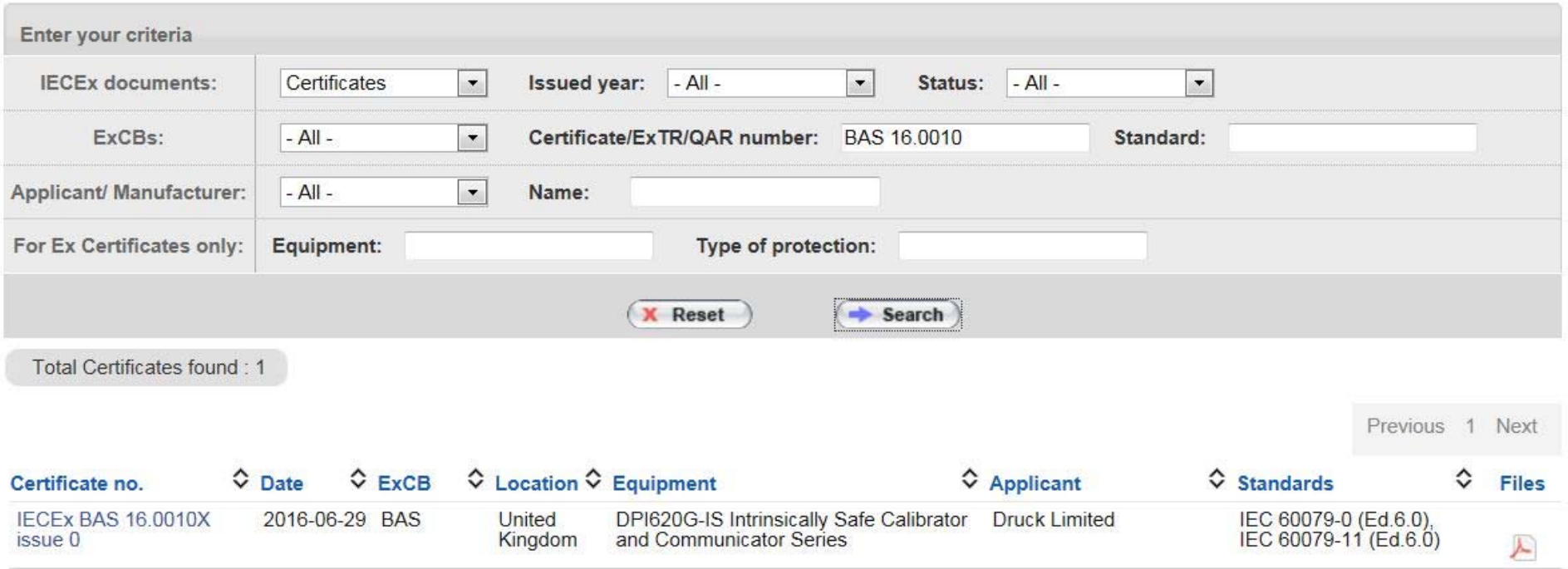
IMPACT on ExCB and ExTL Facilities and Tools

- ***NIL*** …. you still have access via login (refer emails and OD 011-2 update) to original system

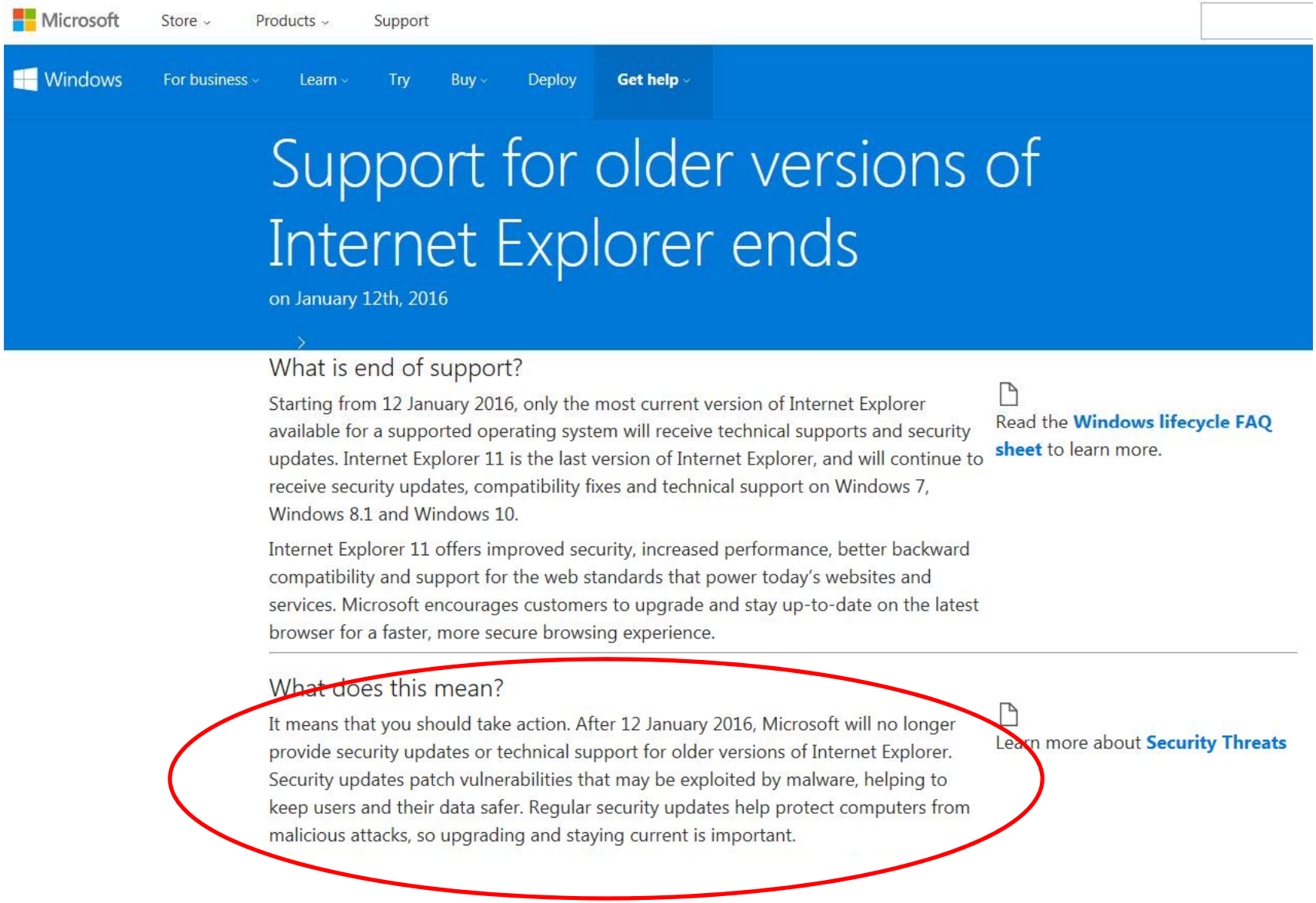
IECEx Public Search Tool



IECEx Public Search Tool



IECEx Public Search Tool



IECEx Public Search Tool

FEEDBACK

- Highlighted previously unknown uses, expectations and 'work arounds' from 'unknown users' of the original On-line System
- Highlighted language and interpretation issues
- Highlighted an 'aversion to change' culture *…"It's different and I don't like it …. No, I haven't tried to use it"*
- Highlighted some problems with current On-line Certificates content and preparation methods (eg. 'copy and paste in')
- Please attach Annexes as unsecured PDF files (refer OD 011-2, 1.2.23)

NEXT …

– Non-login access for non ExCB users …. To aid transition to new search tool for public users

– Further revision of OD 011-2 (as already linked from Public Search page)

IECEx Public Search Tool

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

[redacted] have been designed for hazardous environments according to IEC standards 60079.0, 60079.1 and 60079.7 for use in Group I, Zone 1 applications. They provide:

- <!--[if !supportLists]--> <!--[endif]-->All the necessary outputs for powering lighting and other associated equipment and optional means to isolate each output.
- <!--[if !supportLists]--> <!--[endif]-->Single or three phase power distribution via feed through connection of the incoming power.
- <!--[if !supportLists]--> <!--[endif]-->Single or Dual power input circuits for redundancy.
- <!--[if !supportLists]--> <!--[endif]-->Optional phase rotation and and/or circuit rotation of the output power distribution
- <!--[if !supportLists]--> <!--[endif]-->Change over relay for swap over from A > B circuit of the designated outputs in the event of power loss of circuit A.
- <!--[if !supportLists]--> <!--[endif]-->The maximum internal dimensions of the enclosure are 750mm X 500mm X 150mm
- <!--[if !supportLists]--> <!--[endif]-->The minimum internal dimensions of the enclosures are 210mm X 210mm X 85mm.
- <!--[if !supportLists]--> <!--[endif]-->The enclosures are made from 304 or 316 grade Stainless Steel.

Refer to the Annex for more details

IECEx PDF Validation Tool - PROPOSAL

History View - Proposal

Certificate No.:	IECEx DEK 14.0025X	issue No.:24
Status:	**Current**	
Date of Issue:	**2016-07-25**	Page 1 of 4
Applicant:	**Siemens AG** Östliche Rheinbrückenstraße 50 76187 Karlsruhe **Germany**	
Equipment:	**SIMATIC Network Components Type RAP.-W ..., Type LAP.-W ..., Type EAP.-W ..., Type 6GK. ..., Type W786 ... and Type WS-AP ...**	
Optional accessory:		
Type of Protection:	**Ex nA**	
Marking:	Ex nA IIC T6...T4 Gc	
Approved for issue on behalf of the IECEx Certification Body:	R. Schuller	

Certificate history:

Issue No. 26* (2016-8-11)
Issue No. 25 (2016-8-6)
Issue No. 24 (2016-7-25)
Issue No. 23 (2016-7-5)
Issue No. 22 (2016-6-27)
Issue No. 21 (2016-3-31)
Issue No. 20 (2016-2-18)
Issue No. 19 (2015-10-29)
Issue No. 18 (2015-10-7)
Issue No. 17 (2015-8-31)
Issue No. 16 (2015-8-7)
Issue No. 15 (2015-7-21)
Issue No. 14 (2015-7-3)
Issue No. 13 (2015-6-22)
Issue No. 12 (2015-5-19)
Issue No. 11 (2015-4-16)
Issue No. 10 (2015-3-18)
Issue No. 9 (2015-3-11)
Issue No. 8 (2015-2-12)
Issue No. 7 (2015-2-5)
Issue No. 6 (2015-2-4)
Issue No. 5 (2014-11-26)
Issue No. 4 (2014-11-13)
Issue No. 3 (2014-11-7)
Issue No. 2 (2014-10-9)
Issue No. 1 (2014-9-18)
Issue No. 0 (2014-8-9)

History View - Proposal

Certificate No.:	IECEx DEK 14.0025X	Issue No: 24	Certificate history:
			Issue No. 24 (2016-07-25)
Status:	**Current**	Page 1 of 4	Issue No. 23 (2016-07-05)
			Issue No. 22 (2016-06-27)
Date of Issue:	**2016-07-25**		Issue No. 21 (2016-03-31)
			Issue No. 20 (2016-02-18)
Applicant:	**Siemens AG**		Issue No. 19 (2015-10-29)
	Östliche Rheinbrückenstraße 50		Issue No. 18 (2015-10-07)
	76187 Karlsruhe		Issue No. 17 (2015-08-31)
	Germany		Issue No. 16 (2015-08-07)
			Issue No. 15 (2015-07-21)
Equipment:	**SIMATIC Network Components Type RAP.-W ..., Type LAP.-W …, Type EAP.-W ..., Type 6GK. …, Type W786 … and Type WS-AP ...**		Issue No. 14 (2015-07-03)

IECEx Decision Sheet vs Standard Index

IECEx ExTR and Decision Sheet Cross References			*Last updated on:*	5/08/2016
Standard and Version / Document / Topic	**Clauses of Standard**	**Decision Sheet**	**Key Words**	**ExTR #**
All IECEx base Standards	All as relevant	2014/001	Specification of plastic material in enclosure	
IEC 60034-5: *	8	2012/003	Dust	
IEC 60079-0: *	All	2015/011	Thermocouples	
IEC 60079-0: *	26.4.5	2012/003	Dust	
IEC 60079-0:2000	7.1.1 and 7.1.2(d)	2004/005	Elastomeric, O-rings	
IEC 60079-0:2004	23.2 and Table 7	2006/007	Cells, Lithium	
IEC 60079-0:2004	3.6	2013/004A	Ex compnent, bushing	
IEC 60079-0:2004	26.10.2	2012/011	Electrostatic charge, non-metallic enclosures, touch screen, fixed installation, "X" condition marking	
IEC 60079-0:2004	7.1.1 and 7.1.2(d)	2004/005	Elastomeric, O-rings	
IEC 60079-0:2004	26.15.1	2009/001B	Electrostatic charge, non-metallic enclosures, measurement of	

THANK YOU

The IECEx Secretariat wishes to thank all ExCBs for their prompt assistance and cooperation to date and their understanding of the value in maintaining an up to date On-Line Certificate System