



COST

European Network on New Sensing Technologies for Air Pollution
Control and Environmental Sustainability - *EuNetAir*

COST Action TD1105

WG3-WG4 JOINT SCIENTIFIC MEETING

Duisburg, Germany, 4 - 6 March 2013

Action Start date: 01/07/2012 - Action End date: 30/06/2016

Year: 2012-2013 (*Starting Action*)

Dipl.-Ing. Karsten Pletscher

Invited Expert

TÜV Rheinland Energie und Umwelt GmbH



TÜVRheinland®

Precisely Right.

Precisely Right

EN 15267

Type Approval & Certification (QAL1)



The past (pre-EN 15267) approaches (up to 2009/2010)

German „TUV“ - scheme:

- **Manufacturer applied for test at TUV**
- **TUV conducted approval test in line with German requirements (VDI 4202) as well as European requirements.**
- **TUV presented test report at German LAI committee for assessment.**
- **Positive assessment lead to publication as a type-approved AMS in the Bundesanzeiger (Federal Gazette).**
- **Test report has often served as a basis for English MCERTS certification**

English „MCERTS“ - scheme:

* Used with kind permission of
Sira Test and Certification Ltd.



- **Manufacturer applied for certification by Sira**
- **Existing test data initially reviewed for acceptability**
- **Any gaps in evidence required additional testing - conducted at test house chosen by manufacturer**
- **All reports reviewed by certification committee for approval**
- **MCERTS certificate issued and posted on Sira website**

The present approach according to EN 15267

EN 15267-1:2009

General principle

EN 15267-2:2009

Initial assessment of the AMS manufacturer's quality management system and post certification surveillance of the manufacturing process

EN 15267-3:2007

Performance criteria and test procedures for automated measuring systems for monitoring emissions from stationary sources

EN 15267-4:

Performance criteria and test procedures for measuring ambient air quality
Work stopped – cancelled or on hold only?

General scope

European Standard EN 15267 part 1

specifies the general principles for the product certification of automated measuring systems (AMS) for monitoring emissions from stationary sources and ambient air quality.

This product certification consists of the following sequential steps

- Performance testing of an AMS
- Initial assessment of the AMS manufacturer's quality management system
- Certification
- Surveillance

These steps can be performed by one or different organisations

Roles and responsibilities during certification

Manufacturer of AMS

- Initial approach for performance testing
- Submits at least two complete and identical AMS and information for testing
- Establishes, maintains and operates a quality management system according to **EN 15267-2**
- Ensures quality assurance and control of manufacturing such that all certified AMS continue to meet applicable performance criteria
- Controls and assesses design changes and keep detailed records on that
- Records methods and results of re-testing, if the AMS requires partial or complete re-testing
- Notifies the test laboratory and the relevant body of changes to the AMS

Roles and responsibilities during certification

Test Laboratory

- Holds accreditation for type approval testing according to **EN ISO/IEC 17025**
- Evaluates AMS conformity with performance criteria
- Advises manufacturers on suitability of AMS for different applications and measuring ranges
- Applies for the certification of the AMS at the relevant body
- Evaluates any design changes to the AMS if requested by the manufacturer,
 - if original certification is affected ⇒ notify relevant body,
 - if retesting is required ⇒ advise manufacturer and relevant body

Roles and responsibilities during certification

Relevant Body

- Needs accreditation to **EN 45011**, if the relevant body is a certification body
- Has in place appropriate procedures for certification, if it is an unaccredited competent authority
- Provides guidance on arrangements and requirements for certification to manufacturer and test laboratory
- Assesses test reports and determine, whether test laboratory is appropriately accredited to carry out tests
- Verifies evidence, that manufacturer has an EN 15267-2 conform QMS

Roles and responsibilities during certification

Relevant Body

- Liaises as appropriate with the relevant national competent authority
- Issues certificates with an appropriate scope of certification in either English, French or German
- Adds the AMS to official register (in Germany: www.qal1.de)
- Ensures that post certification surveillance is periodically carried out

QM system and audit scope

European Standard EN 15267 part 2 - specifies the requirements;

- For the QM system of the manufacturer.
- For the initial assessment of the AMS manufacturer.
- For ongoing surveillance to ensure that the AMS fulfills the minimum requirements of the approval test procedure, also after soft- or hardware modifications.

Modifications on the certifies AMS

The manufacturer must keep records and evaluations on any modification of the certified AMS.

The following three classes of changes are defined:

Type 0: Changes that have no measurable influence to the performance of the AMS

Type 1: Changes with a possible influence, but for which can be proved by tests, that the influence is non-significant

- ➔ Latest in the annual audit, the manufacturer has to inform the relevant body
- ➔ If the auditor accepts the internal documentation no additional tests are required

Type 2: Changes with significant influence to the AMS

- ➔ Additional test are always required, if type 2 changes are implemented.

Minimum requirements and test procedures for CEMS

European Standard EN 15267 part 3

defines the performance criteria and test procedures for automated measuring systems that

- measure gases and particulate matter in respective flow of the waste gas from stationary sources.
- This European Standard supports the requirements of particular EU Directives
- It provides the detailed procedures covering the **QAL1 requirements of EN 14181**
- It provides input data for **QAL3** procedure described in **EN 14181**

Minimum requirements and test procedures for CAMS

European Standard EN 15267 part 4 – Not available!

- was planned to define the performance criteria and test procedures for automated measuring systems for ambient air quality for both gases and PM – work was stopped!
- Thus the underlying performance criteria and test procedures for CAMS for **gases** are defined in:
 - EN 14211:2012, chapter 8 for NO_x
 - EN 14212:2012, chapter 8 for SO₂
 - EN 14625:2012, chapter 8 for O₃
 - EN 14626:2012, chapter 8 for CO
 - EN 14662-3:2005, chapter 8 for C₆H₆
- All the mentioned standards except for EN 14662-3 have been currently revised, but the requirements on the part “Type approval test” have not changed significantly compared to the former version of 2005
- EN 14662-3 is still in process of revision.

Minimum requirements and test procedures for CAMS

European Standard EN 15267 part 4 – Not available!

- The underlying performance criteria and test procedures for CAMS for **PM** are currently defined in:
 - VDI 4202 Sheet 1 (September 2010) – Performance criteria
 - VDI 4203 Sheet 3 (September 2010) – Test procedurestogether with
 - EN 12341:1998 for PM₁₀
 - EN 14907:2005 for PM_{2.5}
 - Guide to the Demonstration of Equivalence of Ambient Air Monitoring Methods GDE
- Future: Technical specification CEN/TS 16450 on “Automated continuous systems for the measurement of the concentration of particulate matter (PM₁₀; PM_{2.5})”, developed in WG15, available as final draft, publication expected in Autumn 2013
- CEN/TS 16450 supposed to become an EN Standard in future after validation work

Summary

With EN 15267 for the first time in Europe an uniform and obligatory certification scheme to test and certify AMS is available

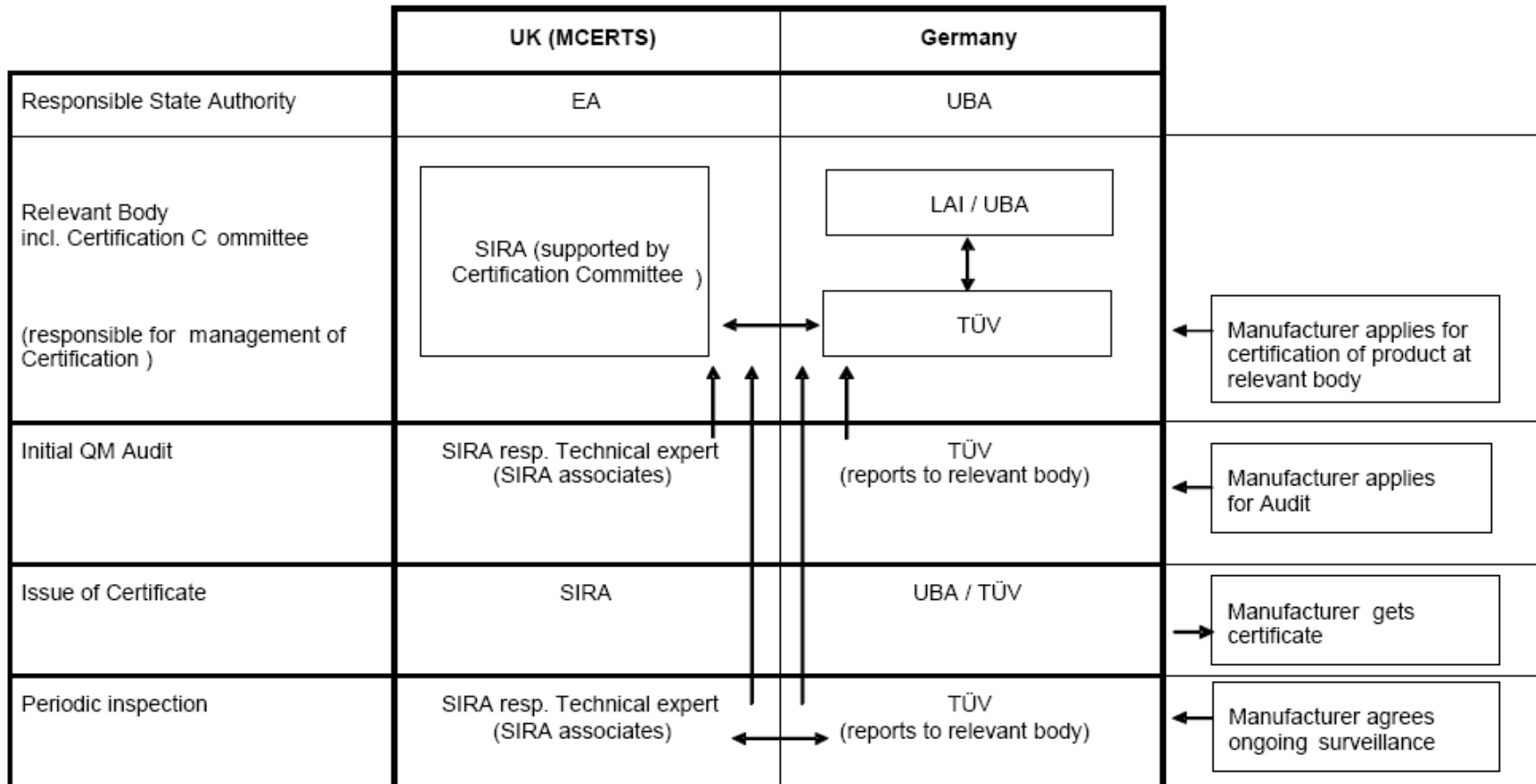
In the future, one test and one certificate in Europe is sufficient!

What has to be done in the future:

- Publication of a uniform basis standard for testing of PM monitors
 - Implementation of relevant bodies in more member states
 - Improved Cooperation between the relevant bodies in Europe in order to allow mutual recognition of type-approval and certifications
- Example is the successful cooperation between UK and Germany

Summary

Comparison of German and British system of Product Certification according to EN 15267



UK: English report, formal decision of SIRA

Mutual information and acceptance
SIRA ↔ TÜV

Germany: German Report, formal decision of LAI

Summary

- **The German approach:**

EN 15267 certificate issued by TÜV and the UBA. In order to be EN 15267 compliant, the “German” certificate is issued by both UBA (representing LAI as relevant body) and TÜV. Certificates (and in case of CAMS also test reports) are published on www.qal1.de

Status: Implemented

- **The MCERTS approach:**

UKAS accredited certificate issued by a “certification body” (Sira) and accepted by the Environment Agency. Certificates are published on www.siraenvironmental.com or www.mcerts.net

Status: Implemented



**Thank you for
your attention**

Mr. Karsten Pletscher

TÜV Rheinland Energie und Umwelt GmbH

Am Grauen Stein, 51105 Cologne, Germany

Phone: ++49 221 806 2592

karsten.pletscher@de.tuv.com

www.qal1.de