



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

**Circulation to: Ex Management Committee, ExMC**

**TITLE: IECEx Re-Assessment Report for the continued acceptance of SP Technical  
Research Institute of Sweden as an Accepted ExCB in the IECEx System and an  
extension of scope.**

---

**INTRODUCTION**

This document contains the IECEx scheduled 5 year Re-assessment Report for SP Technical Research Institute of Sweden, an Accepted IECEx Certification Body (ExCB). During the re-assessment visit an assessment for an extension of scope was also carried out.

ExMC Members are asked to consider SP Technical Research Institute of Sweden request for an extension of scope to include IEC 60079-28 as identified in 1.6 of this report.

Please complete and return the completed voting form to the Secretariat by  
**2010 08 06**

Your speedy response to the voting process will be very much appreciated.

*Chris Agius*

IECEx Secretariat

<b>Address:</b> SAI Building 286 Sussex Street Sydney NSW 2000 Australia	<b>Contact Details:</b> Tel: + 61 2 8206 6940 Fax: +61 2 8206 6272 E-mail: <a href="mailto:chris.agius@iecex.com">chris.agius@iecex.com</a> <a href="http://www.iecex.com">http://www.iecex.com</a>
--	---



## **IECEX ASSESSMENT REPORT FOR SP, BORAS, SWEDEN (IECEX Certification Body, ExCB)**

### **Type of Assessment:**

**Initial Assessment for Candidate ExCB**

**Re-Assessment of ExCB** X

**Scope Extension of ExCB** X

### **1. OBJECT AND FIELD OF APPLICATION**

#### **1.1. Country:**

Sweden

#### **1.2. Name of Candidate ExCB**

SP Technical Research Institute of Sweden

#### **1.3. Members of the Assessment Team**

Heinz Berger – IECEx Officer - IECEx Lead Assessor  
Ajay Maira – IECEx Expert Assessor

#### **1.4. Place and Date of Assessment**

SP Technical Research Institute of Sweden  
Box 857  
501 15 Boras  
Sweden  
October 1 - 2, 2009

#### **1.5. Assessment References**

- i) ECEX 02 Third Edition 2006-11 IECEx Equipment Certification Program Rules of Procedure
- ii) IECEx OD 003 V1 IECEx Assessment procedures
- iii) IECEx OD 005 V2 Quality System requirements for manufacturers
- iv) IECEx OD 009 V1 Issuing of CoCs, ExTRs and QARs
- v) IECEx Document OD 025 (ExMC/161/CD) Management of assessment and surveillance programs for manufacturers (includes QAR forms)
- vi) ISO/IEC Guide 65:1996
- vii) IECEx Document OD 017 V3 Drawing and documentation guidance
- viii) ExCB application documents dated 16.4.2009 and 21.4.2009



### 1.6. Scope of Application

Number	Title	Acceptance
60079-0 Edition 3.1 Edition 4 Edition 5	Explosive atmospheres - Part 0: Equipment - General requirements	OK
60079-1 Edition 3.2 Edition 4 Edition 5 Edition 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"	OK
60079-2 Edition 4 Edition 5	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure «p»	OK
60079-5 Edition 2 Edition 3	Explosive atmospheres - Part 5: Equipment protection by powder filling «q»	OK
60079-6 Edition 2 Edition 3	Explosive atmospheres - Part 6: Equipment protection by oil immersion «o»	OK
60079-7 Edition 3 Edition 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	OK
60079-11 Edition 4 Edition 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	OK
60079-15 Edition 1 Edition 2 Edition 3	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus	OK
60079-18 Edition 1 Edition 2 Edition 3	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus	OK
60079-25 Edition 1	Electrical apparatus for explosive gas atmospheres - Part 25: Intrinsically safe systems	OK
60079-26 Edition 1 Edition 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga	OK
60079-27 Edition 1 Edition 2	Electrical apparatus for explosive gas atmospheres - Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)	OK



Number	Title	Acceptance
60079-28 Edition 1	<b>Scope extension</b> Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation <b>Restricted to covering "op is" according to 5.2.4 of 60079-28</b>	OK
60079-31 Edition 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"	OK
61241-0 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements	OK
61241-1 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures 'tD'	OK
61241-1-1 Edition 2	Electrical apparatus for use in the presence of combustible dust - Part 1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for apparatus	OK
61241-4 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 4: Protection by pressurized enclosures "pD"	OK
61241-11 Edition 1	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety 'iD'	OK
61241-18 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 18: Protection by encapsulation "mD"	OK

### 1.7. Candidate ExCB Persons Interviewed

Name	Position
Anders Nilsson	Section Manager Electronics - Product Safety
Lennart Aronsson	Section Manager, Product Certification
Peter Bremer	Certification Officer
Lisbeth Pilgard	Quality Manager Electronics
Lennart Mansson	Head of Certification
Christina Andersson	Personnel Department

### 1.8. Legal Entity of the Candidate ExCB

SP Sveriges Tekniska Forskningsinstitut AB is a limited company fully owned by the Swedish State, Ministry of Industry and Commerce. Registration - Bolagsverket – Swedish Registration Office - Registration Number 556464-6874.

### 1.9. Associated Testing Laboratories

SP is operating its own ExTL. ExTL and ExCB are organisationally separated in different departments within SP. The ExCB has its own board. The quality management system and the operational procedures provide sufficient separation of the testing and certification activities.



### **1.10. Associated Certification Functions**

SP operates as a Notified Body in the European certification scheme according to the ATEX Directive 94/9/EC and large number of others. The NB number is 0402. SP operates also in a wide range of other certification schemes (e.g. as a CBTL in CB Scheme) for products and quality systems including ISO 9001.

### **1.11. National Marks and Certificates**

There are marks in other areas than Ex. SP is issuing certificates in areas other than Ex.

### **1.12. Financial Support**

SP is self-funded under a not for profit concept.

### **1.13. History**

In 1975 SP was moved from Stockholm to Borås.  
Before 1993, SP (named Statens provningsanstalt) was a national authority. Since 1994, SP has been a company (Ltd.) fully owned by the Swedish Government. In 2007, the name of the company was changed to SP Technical Research Institute of Sweden.

SP applies its competence to the development and evaluation of technologies, material, products, and processes. SP provides certification of products and quality systems as an independent third party certification body. SP has six subsidiaries.

Type approval of explosion protected equipment started in the early 1960s. SP has provided certification according to European Directives for explosion protected equipment since 1994 and according to the ATEX Directive since 1997. SP is an approved ExCB in the IECEx system since August 1999.

### **1.14. Standards Accepted**

See clause 1.6 of this report.

### **1.15. National Differences to IEC Standards**

The national differences of Sweden are declared and detailed in the IECEx Bulletin.

## **2. ORGANISATION**

### **2.1. Names, Titles and Experience of the Senior Executives**

<b>Name</b>	<b>Title</b>	<b>Comments</b>
Maria Khorsand	CEO Chief Executive Officer, SP	
Lennart Månsson	Head of Department, Certification	
Lennart Aronsson	Section Manager, Product Certification	



## **2.2. Name, Title and Experience of the Quality Management Representative**

<b>Name</b>	<b>Title</b>	<b>Experience in QM</b>
Magnus Holmgren	Quality Manager, SP	> 14 years
Ingrid Isaksson	Quality Manager, Certification	> 10 years

## **2.3. Name and Title of Nominated Principal Contact**

<b>Name</b>	<b>Title</b>	<b>Comments</b>
Peter Bremer	Certification Officer	<a href="mailto:peter.bremer@sp.se">peter.bremer@sp.se</a>

## **2.4. Name and Title of Signatories for Certification**

<b>Name</b>	<b>Title</b>	<b>Comments</b>
Peter Bremer	Certification Officer	<b>IECEX and ATEX</b>
Lennart Aronsson	Section Manager, Product Certification	

## **2.5. Other Employees in ExCB activity**

<b>Name</b>	<b>Title</b>	<b>Responsibility and Experience in Ex</b>
Peter Bremer	Certification Officer, auditor	Product & quality system certification, > 24 years
Lennart Aronsson	Section Manager (Product Certification), auditor	Product & quality system certification, > 12 years
Robert Carlsson	Technical Officer	Report review, > 11 years

## **2.6. Organizational Structure**

See attached organization charts in **Annex 1**.

## **2.7. Administration (including Indemnity Insurance)**

SP is covered by insurance contract issued by the company "If Skadeförsäkring AB". The coverage is adequate according to ISO/IEC Guide 65. The insurance certificate was checked and found to meet the requirements of the IECEx System.

# **3. RESOURCES**

At the moment two persons are involved in Ex Certification supported by one secretary. Presently three persons are involved in Ex Quality Assessments supported by technical experts.

The ExCB facilities are a small part of a large organisation and it is apparent that both physical and human resources may be expanded or contracted as necessary to suit the needs, with adequate controls in place.



## **4. COMMITTEES / Governing Board / Appeals / Advisory Board**

The department Certification has its own board (separate from SP's board) with six representatives:

- Four representatives from industry
- One representative from SP's top management (without voting rights)
- Certification Manager

The aforementioned board is supported by an expert group known as SPAREX committee which functions as the certification board expert group for Ex equipment. This board is convened by a Certification Officer.

## **5. CERTIFICATION OPERATIONS**

### ***5.1. National Approval/Certification Methods***

SP is involved in European Ex certification activities since 1994 and was appointed as a Notified Body (NB) in 1997 under NB number 0402, according to the ATEX Directive 94/9/EC.

Certification of Quality Management Systems of Ex manufacturers, for National Approval, is performed according to SP certification rules SPCR 079 based on the relevant modules in the ATEX Directive 94/9/EC.

For ATEX certification rules, there is a suitable and well-defined work instruction (IP-SPCR 079).

### ***5.2. Certification Policy***

Procedure IP-SPCR 154 describes IECEx services according to OD 009. Documented policy covering conditions and procedure for granting, maintaining, extending, suspending and withdrawing certification are contained in the Quality Manual. The procedure was checked and found to meet the requirements of the IECEx System.

### ***5.3. Application for Certification***

Documents for guidance to applicants are provided in booklets relevant to the certification involved. These documents include a description of the evaluation and certification procedures including the rights and duties of applicants.

The necessary information needed for the application is provided by document SPCR 154.

### ***5.4. Certification Decision***

Certification Decision is taken by signing the Cover Sheet for ExTRs and QARs according to procedure IP-SPCR 154. After clearance of the certification file, the CoC will be created on the IECEx homepage according to procedure IP-SPCR 154.

## 5.5. Suspension and Cancellation of Certificates

Withdrawal and Cancellation of Certificates is handled according to work instruction IP 7.2.

In the case of IECEx CoCs withdrawals and cancellations of certificates are under the authority of the Certification Manager. The client may initiate the complaints mechanism if in disagreement. The procedures are in accordance with IECEx 02 and OD 009 and laid down in procedure IP-SPCR 154.

## 6. STATISTICS

### 6.1. Certificates Issued

Number of **certificates** issued under the IECEx, national schemes (ATEX) in the preceding four years for each type of protection:

*Note: The CoCs can be seen on the IECEx Homepage except the CoCs issued in the early years. Certificates according to ATEX are included in the numbers below*

Standards	Title	Number of issued certificates				Total
		2006	2007	2008	2009	
60079-0	Explosive atmospheres - Part 0: Equipment - General requirements					<b>Part 0 included in numbers below</b>
60079-1	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"	7	5	1		13
60079-2	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure «p»				1	1
60079-5	Explosive atmospheres - Part 5: Equipment protection by powder filling «q»					0
60079-6	Explosive atmospheres - Part 6: Equipment protection by oil immersion «o»					0
60079-7	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	7	11	17	4	39
60079-11	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	3	10	1	3	17





Standards	Title	Number of issued certificates				Total
		2006	2007	2008	2009	
60079-15	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus					0
60079-18	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus	1				1
60079-25	Electrical apparatus for explosive gas atmospheres - Part 25: Intrinsically safe systems					0
60079-26	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga	2	3		3	8
60079-27	Electrical apparatus for explosive gas atmospheres - Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)					0
60079-28	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation					0
60079-31	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"					0
61241-0	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements					<b>Part 0 included in numbers below</b>
61241-1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures 'tD'	10	5	18	2	35
61241-1-1	Electrical apparatus for use in the presence of combustible dust - Part 1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for apparatus					Included in 61241-1



Standards	Title	Number of issued certificates				Total
		2006	2007	2008	2009	
61241-4 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 4: Protection by pressurized enclosures "pD"					0
61241-11 Edition 1	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety 'iD'					0
61241-18	Electrical apparatus for use in the presence of combustible dust Part 18: Protection by encapsulation "mD"					0

## 7. DOCUMENTATION

### 7.1. Quality Manual

The quality manual used by the ExCB is the SP Corporate manual together with the department (Certification) manual, which is well structured to the business of certification. It includes a well-defined policy, which has emphasis on the needs of the client and management of a system following EN 45011 (corresponding to ISO/IEC Guide 65). The Management System provides a clear differentiation between the operating procedures for testing and certification, under the requirements of IECEx and that conducted as part of national accreditation.

### 7.2. Procedures

According to procedure IP-SPCR154. The procedure was checked and found to meet the requirements of the IECEx System

### 7.3. Work Instructions

According to procedure IP-SPCR154. The procedure was checked and found to meet the requirements of the IECEx System

### 7.4. Records

According to procedure IP-SPCR 154 "checklist". The procedure was checked and found to meet the requirements of the IECEx System. Records are kept at least ten years.

### 7.5. Document Change Control

Documents are controlled according to instruction SP-QD 02, documents # 1341/CE-



QD 02: 4:0 4275. The instruction was checked and found to meet the requirements of the IECEx System.

## **8. CONFIDENTIALITY**

Confidentiality is described in document SP-QD 03: 6; # 1326. Several confidentiality agreements were checked and found to meet the requirements of the IECEx System

## **9. PUBLICATIONS**

SP has a well presented homepage [www.sp.se](http://www.sp.se) where the IECEx Scheme is presented in a special chapter. Furthermore, a number of brochures mention the Ex activities including IECEx.

## **10. NATIONAL ACCREDITATION**

SP holds an accreditation for EN 45011 (equivalent to Guide 65) from SWEDAC (Swedish Accreditation body) last issued on February 4<sup>th</sup>, 2009. **Annex 2** shows the accreditation certificate. The last surveillance audit by SWEDAC was performed in September 2008. A surveillance audit will be performed by Swedish Accreditation Body SWEDAC in week 41/2009 also involving product certification for Ex products.

## **11. RECOGNITION AND AGREEMENTS**

Certificates issued by SP are recognized on national level and regional level (Europe). SP is a notified body according to the ATEX Directive 94/9/EC.

## **12. INTERNAL AUDIT AND PERIODIC MANAGEMENT REVIEW**

Internal audits are performed according to SP Quality Manual SP-QD 05, documents Mb10-1 (3855), Mb10 (4507). The audits are performed on an annual schedule. The present internal audit plan covers the years 2008 to 2010. The records were checked and found to meet the requirements of the IECEx System

## **13. SUBCONTRACTING, USE OF OTHER LABS AND USE OF OTHER LOCATIONS**

The ExCB does not use sub-contracting. ExTRs and QARs from other EXCBs are reviewed according to work instructions, according to 7.3 above.

## **14. TRAINING**

Competence requirements are specified in work instructions. Training records are kept in the CV files of the personnel department as seen during the review of the CV files.

## **15. ASSESSMENT OF MANUFACTURERS AND ISSUE OF QARS**

QAR SE/SP/QAR06.0001/00 to 03 was checked in detail. The whole chain from the initial to the latest surveillance assessment could be seen. It was found to meet the requirements of the IECEx System.



## **16. COMPLAINTS AND APPEALS (Including appeals to IECEx)**

Appeals are handled according to the IECEx Rules, according to sub-clause 6.7 in SPCR 154 and SP Quality Manual SP-QD 05.

## **17. SPECIAL FACTS TO BE NOTED**

### **17.1. Supporting Documentation**

Copies of additional supporting information for this assessment have been provided to the applicant and the IECEx Secretariat. These include:

- A site report
- Details of issues raised and how these have been resolved
- Competence Matrix
- Checklist for ISO/IEC Guide 65

## **18. COMMENTS (Including issues found during assessment)**

Since the last IECEx Re-assessment in 2004, SP has introduced a new organization structure. The QM documentation was adapted accordingly.

During the assessment non-conformances were found concerning the governing board and review capacity for QARs. All these NCRs were resolved to the satisfaction of the assessment team and subsequently closed.

## **19. RECOMMENDATION**

Based on the re-assessment performed on 1<sup>st</sup> and 2<sup>nd</sup> of October 2009, the ExCB of SP is recommended for continued acceptance in the IECEx scheme as an Accepted IECEx Certification Body (ExCB) according to the scope of the standards listed in this document including the extension of scope.

Lead Assessor  
Heinz Berger

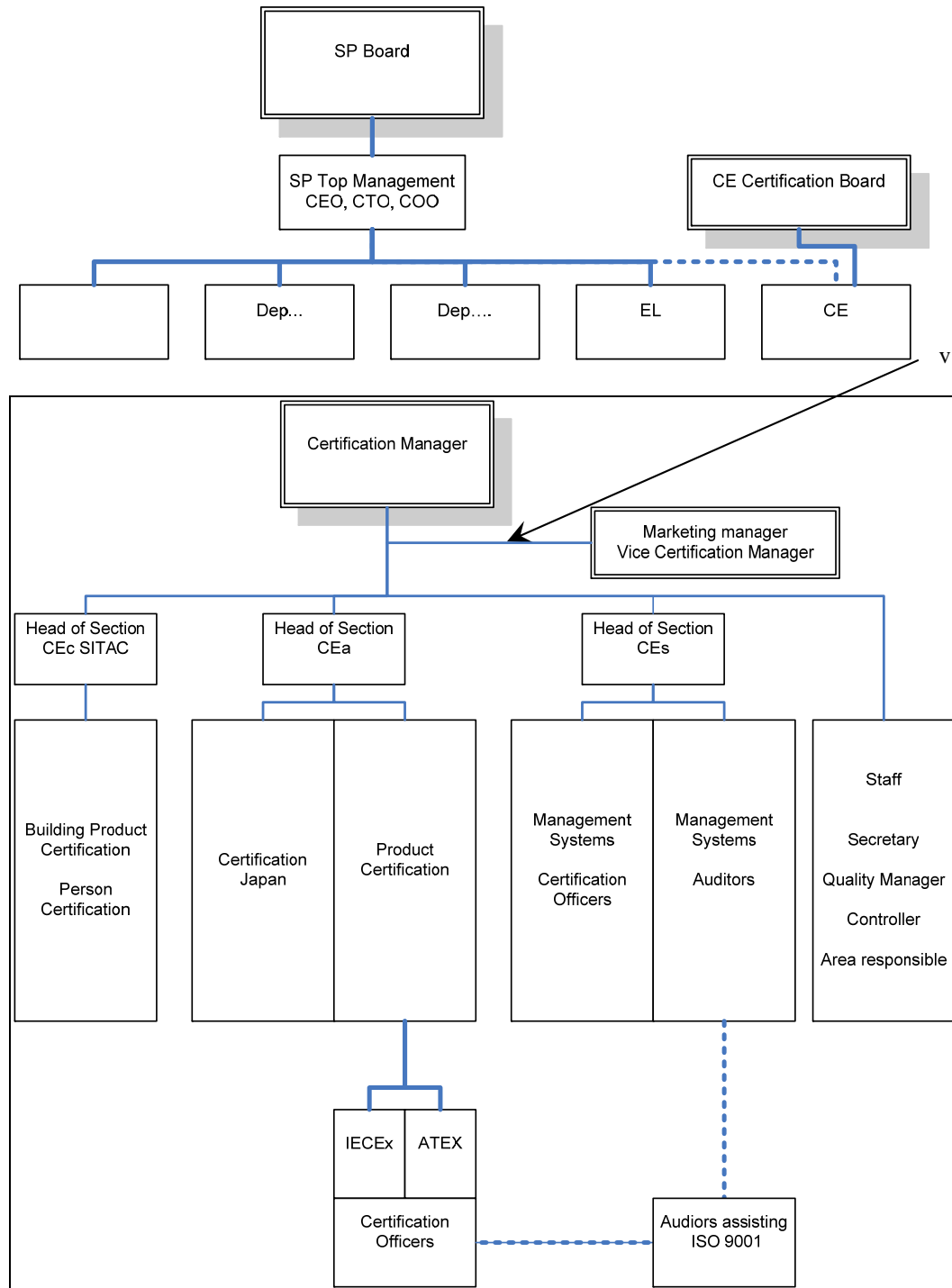
Expert Assessor  
Ajay Maira

Date: October 2nd, 2009

### **List of Annexes:**

- Annex 1: Organization Chart of SP and department Certification  
Annex 2: Accreditation Certificate ExCB for ISO/IEC Guide 65

## ANNEX 1 Organization Chart of SP and department Certification



## ANNEX 2: ExCB Accreditation Certificate (Guide 65)

### ACKREDITERINGSCERTIFIKAT/ACCREDITATION CERTIFICATE



1002  
EN 45011

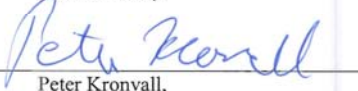
**SP Sveriges Tekniska Forskningsinstitut**  
**Certifieringsenheten**  
Organisationsnummer 556464-6874

är ackrediterat som certifieringsorgan för uppgifter enligt bilaga 2, daterad 2009-02-04. Villkor för ackrediteringen framgår av bilaga 1./is accredited as a certification body for the scope specified in appendix 2, dated 2009-02-04. The terms of the accreditation are specified in appendix 1.

Certifieringsorganet är ackrediterat enligt den internationella standarden/förordningen EN 45011. Ackrediteringen innebär att certifieringsorganet har bedömts inneha erforderlig kompetens inom de områden som definieras i bilaga 2 och tillämpar ett kvalitetsledningssystem som uppfyller ställda krav. Det ackrediterade certifieringsorganet ansvarar för resultatet av utförda certifieringar och bedömningar samt, i förekommande fall, för val av och tillämpning av arbetsmetoder inom ramen för den meddelade ackrediteringen./This certification body is accredited in accordance with the recognised International Standard/Ordinance EN 45011. This accreditation demonstrates competence for a defined scope and the operation of a certification body quality management system. The accredited certification body is responsible for the results of performed certifications and submitted judgements as well as, where applicable, for the selection and application of work methods within the scope of the granted accreditation.

Ackrediteringen gäller tills vidare. Styrelsen för ackreditering och teknisk kontroll (SWEDAC) genomför regelbundet tillsyn, och vart fjärde år en förnyad bedömning, för att bekräfta att ackrediteringens villkor enligt bilaga 1, daterad 2009-02-04, uppfylls./The accreditation is valid until further notice. The Swedish Board for Accreditation and Conformity Assessment (SWEDAC) regularly carries out surveillance, and a full reassessment every fourth year, in order to verify that the requirements for accreditation, see appendix 1 dated 2009-02-04, are continually fulfilled.

Detta ackrediteringscertifikat utfärdades **2009-02-04** av/This accreditation certificate was issued 2009-02-04 by



Peter Kronvall,

Enhetschef enheten för certifiering/Manager of the Certification Division

Beslutet om ackreditering utfärdades med stöd av 15 § i Lagen om teknisk kontroll (1992:1119). SWEDAC är enligt förordningen om teknisk kontroll (2005:894) nationellt ackrediteringsorgan ansvarigt för bedömning av kompetensen hos certifieringsorgan, kontrollorgan och laboratorier som ansöker om ackreditering./Accreditation was granted with the mandate given in § 15 of the Law on Technical Conformity Assessment (1992:1119). SWEDAC is, according to the ordinance on Technical Conformity Assessment (2005:894), the national accreditation body responsible for the assessment of the competence of certification bodies, inspection bodies and laboratories applying for accreditation.