АКРЕДИТАЦИОНО ТЕЛО СРБИЈЕ

ATS-UP04

GUIDES FOR THE FORMULATION OF SCOPES OF ACCREDITATION FOR CALIBRATION LABORATORIES

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Any differences between the Serbian and English versions of this document are not intended, but if in doubt, the Serbian version should be consulted.

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1. SCOPE

This document shall provide recommendations for the uniform formulation of scopes of accreditation for calibration laboratories.

The document shall be applied when formulating scopes of accreditation of applicants for accreditation and accredited conformity assessment bodies, which shall also include amendments to the granted scope of accreditation. .

The document is intended for:

- calibration laboratories, applicants for accreditation and accredited laboratories;

- the assessors of Accreditation Body of Serbia that participate in procedure of assessment of calibration laboratories.

The purpose of describing the accreditation scope is to:

(1) determine fields of activities of calibration laboratories to be confirmed by the Accreditation body of Serbia;

(2) enable clients to gain an insight into measurement and calibration capabilities that are achieved by accredited laboratories.

2. REFERENCE DOCUMENTS, DEFINITIONS AND ACRONYMS

– SRPS ISO/IEC 17025:2006, General Requirements for the Competence of Testing and Calibration Laboratories;
– ILAC-G18:04/2010, Guideline for the Formulation of Scopes of Accreditation for Laboratories;
– EA-4/02 M: 2013 Evaluation of the Uncertainty of Measurement in Calibration;
– VIM - International Vocabulary of Basic and General Terms in Metrology, Directorate of Measures and Precious Metals, 1996 (Serbian & English edition, International Vocabulary of Basic and General Terms in Metrology, BIPM, IEC, IFCC, ISO, IUPAC, IUPAP and OIML) - ILAC P14:01/2013 – ILAC Policy for Uncertainty in Calibration;
– JCGM 100:2008 „Evaluation of measurement data — Guide to the expression of uncertainty in measurement;
- ATS PA 06 Rules on estimate of the uncertainty of measurement;
– ATS-UP07, List of Testing/ Calibration/ Inspection/ Certification Codes/Key Words.

CMC is a calibration and measurement capability available to service users under normal circumstances:

(a) as formulated in the scope of the accreditation of laboratories granted by signatories to the multilateral agreement on mutual recognition, or

(b) as published in the key comparisons database of the International Bureau for Weights and Measures (BIPM-KCDB).

The measurement and calibration capability is expressed, in principle, as an extended measurement uncertainty for a coverage factor k and a coverage probability of approximately 95%.

For the purposes of these Guides, terms defined in the said reference documents shall be used.

3. FORMULATION OF SCOPES OF ACCREDITATION

3.1 Content of the Scope of Accreditation

The scope of accreditation should contain at least the following elements:

(a) Field of calibration: to be presented in accordance with Section 5 of this document;

(b) Item of calibration (measuring instrument or type of instrument, measuring system, measures or reference materials);

(v) Measuring range (described as per Rules of use and writing of measuring units and physical quantities, http://www.dmdm.rs/cr/MJPravila.php);

(g) Calibration and measurement capability is expressed, in principle, as an extended measurement uncertainty for a coverage factor k and a coverage probability of approximately 95%.

(d) Calibration method (standard, equipment or in-house method);

(e) Calibration method (reference document);

Calibration method (reference document) can be as follows:

- standard methods developed by organizations for standardization or other recognized organizations and technical institutions the methods of which are widely accepted in particular technical sector;
- methods defined in national technical regulations if appropriate for the intended use;
- validated in-house methods (methods that were developed or adapted by a laboratory itself, extended or modified standard methods if they are appropriate for the intended use).

In case of standard methods, current edition of standards or other reference documents shall be stated as reference in the form of reference number of standards/documents and year of issuance thereof, and, if need be, a short description of the method shall be stated.

In case of methods defined in national technical regulations, title of the regulation shall be stated together with a part of that regulation containing description of the calibration method.

If two or more reference documents are listed in the column "Calibration Method (reference document)", for one calibration item, all listed shall be documents used or, if separated by horizontal lines, then they shall be used as an alternative to the said calibration;

(dj) Location where calibrations are performed (if calibrations are performed on-site, then the name of the measuring instrument shall be marked with „*“, and if calibrations are performed both in the laboratory and on-site, then the name of the measuring instrument shall be marked

with „**“). If calibrations are performed solely in the laboratory it shall not be necessary to put a mark.

An applicant for accreditation is obliged to formulate the scope of accreditation in a tabular form using the recommendations from example given in Annex 1 of this document.

3.2 Fields of calibration

E-01 Acceleration,velocity and drift
E-02 Acoustics and ultrasound
E-03 Chemistry (pH meters, gas analysers...)
E-04 Density and viscosity
E-05 Dimensional quantities
E-06 Electrical engineering, DC and LF
E-07 Electrical engineering, HF
E-08 Flow (including liquid velocity)
E-09 Power and force
E-10 Hardness
E-11 Humidity
E-12 Ionising radiation and radioactivity
E-13 Magnetism
E-14 Mass
E-15 Optics
E-16 Pressure and vacuum
E-17 Reference materials
E-18 Temperature
E-19 Time and frequency
E-20 Volume
E-21 Other

Examples of how to formulate scopes of accreditation for certain calibration fields are given below:

1) ***Mass:*** weights; electromechanical scales with non-automatic function, mechanical scales,built-in weigh scales

2) ***Temperature:*** resistant thermometers, thermocouples, glass thermometers filled with liquid, digital thermometers, temperature indicators/simulators, temperature chambers, temperature baths and furnaces, radiation thermometers, optical pyrometers, silo thermometers

3) ***Humidity:*** *relative humidity (*thermo hygrometers/dew point measurement hygrometers;thermohygrometers/relative humidity hygrometers, relative humidity chambers)

4) ***Volume****: Laboratory glass measuring instruments* (burettes, graduated pipettes,single line pipettes, graduated cylinders); *Piston devices* (piston pipettes, piston burettes, dispensers, diluters); *Pycnometers*

Where applicable, an applicant for accreditation can, when formulating its scope of accreditation, state other sub-fields that are not included in the classification presented in this Section.

4. DOCUMENT DISTRIBUTION

This document shall be used by the ATS assessors and calibration laboratories when preparing documentation needed for the submission of applications for accreditation. This document shall be made available to the assessors employed in ATS and shall be kept on "Juatsrv" server (the folder entitled "QMS_ATS"). This document shall be made available to other ATS assessors and calibration laboratories via the ATS website at www.ats.rs

5. ANNEXES

Annex 1: Model of formulated scope of accreditation

6. FORMS

None.

7. ATS-UP03 DOCUMENT AMENDMENT HISTORY

Issue/ Revision	Issue/ Revision date
1/1	13.03.2008
1/2	30.06.2009
1/3	04.02.2010
2/0	15.12.2010
2/1	06.09.2017

Annex 1: MODEL SCOPE OF ACCREDITATION FOR A CALIBRATION LABORATORY

Calibration field/item	Range	Calibration and measurement capability[1)] (CMC)	Calibration method (reference document)
E-14: Mass			
	Electromechanical scales with non-automatic function *		EURAMET/cg-18/v.04:2015
	1 mg - 100 mg	0,004 mg - 0,009 mg	
	0,1 g - 1 g	0,009 mg - 0,018 mg	
	1 g - 10 g	0,018 mg - 0,035 mg	
	10 g - 100 g	0,035 mg - 0,09 mg	
E- 18: Temperature			
	Glass thermometers filled with liquid**		NIST SP250-23: 1988
	-90 ºC - 100 ºC	0.03 ºC	
	100 ºC - 270 ºC	0.08 ºC	
	270 ºC - 550 ºC	0.6 ºC	
E-16: Pressure and vacuum			
	Manometers, vacuum meters and Mano-Vacuum meters with measuring transducer (electromechanical)**		DKD-R6-1:2014 EURAMET Calibration Guide No. 17 Version 3.0:2017
	Working fluid: air	-0,9 bar - -0,01 bar	0.7 mbar
		-10 mbar - -2 mbar	0.07 mbar
		-2 mbar - 2 mbar	0.02 mbar
E-20: Volume			
	Volume devices with piston – Piston pipettes		SRPS EN ISO 8655-6:2010 **gravimetric method**
		1 µl - 10 µl	0,02 µl - 0,03 µl
		10 µl - 100 µl	0,03 µl - 0,13 µl
		100 µl - 1000 µl	0,13 µl - 1,3 µl
		1000 µl - 10000 µl	1,3 µl - 13 µl

1) Measurement capability is expressed as expanded uncertainty of measurement for the coverage factor k and a *coverage probability* of approximately 95 %.

* location where calibrations are performed: on-site

**location where calibrations are performed: in the laboratory and on-site