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IAS CALIBRATION PROGRAM FORMS

1.0 DIRECTIONS

Complete the IAS application for laboratory accreditation. An authorized representative of the laboratory must sign the application.

Complete the enclosed forms and submit both the application and the calibration program forms, with required supporting documentation and application fee, to IAS.

Required supporting documentation may be provided electronically or in hard copy.

2.0 REQUIRED SUPPORTING DOCUMENTATION

2.1 Quality Manual (QM) for the laboratory. Manual must meet the requirements of ANS/ISO/IEC Standard 17025:2005.

2.2 Quality Policy for the laboratory, if not contained in the Quality Manual.

2.3 Document Revision Master List or equivalent method of identifying most current document revisions, if not contained in the Quality Manual.

2.4 Evidence of method used to obtain uncertainty budget.

Note: If the uncertainties are not yet known, appropriate studies to determine the uncertainties must be completed and evidence provided prior to assessment.

2.5 Evidence of Proficiency Testing, where proficiency testing is possible and has been performed.

Note: If proficiency testing has not been performed, but is available, then proficiency testing must be completed prior to accreditation being granted.

2.6 Contact information for the laboratory's authorized representative.

2.7 Up-to-date organization chart (or similar method of showing relationships and responsibilities of personnel) which identifies by name the key personnel, including authorized signatories, for each function. If the laboratory is part of a larger organization, clearly indicate its position and reporting relationships within the organization.

2.8 Completed Technical Personnel Matrix, including the names of technical personnel who perform the technique(s) or method(s) for which accreditation is sought. Specify test(s) and/or calibration(s) for which each is trained and which each is qualified to perform.

2.9 List of Reference Standards and Working Standards used to obtain and/or support the tests or calibrations for which accreditation is sought, along with all relevant information as in Tables 1 and 2 (attached).

2.10 Calibration Procedures used by the laboratory.

2.11 Other supporting procedures and documents as appropriate to assist with evaluation of the documented quality system.

IAS CALIBRATION PROGRAM FORMS

For IAS internal use:
Listing No. _____

1.0 Laboratory Name _____

(*exactly* as it is on the APPLICATION FOR LABORATORY ACCREDITATION)

Please refer to the APPLICATION FOR LABORATORY ACCREDITATION for full laboratory contact details.

2.0 What kind of calibration service is provided? Check all that apply.

_____ Only in-house calibrations are performed. This is an internal laboratory or calibration function, servicing a parent organization, whether in the laboratory or in the field.

_____ Commercial calibration is offered. This is a third-party calibration provider servicing client(s) outside itself.

_____ On-site calibration is offered. This includes third-party contract staffing for client location(s).

_____ Mobile calibration is offered.

3.0 For what areas of measurement is accreditation being sought?

MEASUREMENT AREA SELECTION

DIMENSIONAL

_____ Angular
_____ Diameter
_____ Gage blocks
_____ Gears
_____ Laser frequency/wavelength
_____ Length (calipers, micrometers, extensometers, etc.)
_____ Line standards
_____ Mass (weights)
_____ Measuring wires and pin gages
_____ Optical reference planes (includes chrome-on-glass scales)
_____ Ring gages
_____ Roundness
_____ Spherical diameter (plug/ring gages)
_____ Step gages
_____ Surface plate
_____ Surface texture
_____ Surveying rods and tapes
_____ Threaded plug and ring gages s
_____ Two-dimensional gages
_____ Other (please specify)

MECHANICAL

_____ Acoustic
_____ Acoustic emission transducers
_____ Airspeed
_____ Coordinate Measuring Machines (CMMs—includes touch, vision, laser)
_____ Cryogenic flow rate
_____ Dead Weight Tester
_____ Flow rate
_____ Vacuum and pressure transducers
_____ Vibration
_____ Force (compression and tension)
_____ Hardness (Rockwell and Brinnell)
_____ Hydrometers
_____ Mass (scales and balances)
_____ Torque
_____ Ultrasonic reference block
_____ Ultrasonic transducer
_____ Vacuum and pressure gages
_____ Volume and density (includes pipettes)
_____ Other (please specify)

THERMAL

_____ Heat flux gages
_____ Ovens/Furnaces

_____ Humidity (generate and measure)
_____ Laboratory thermometers
_____ Laser Thermometers
_____ Leak artifacts
_____ Radiation thermometry
_____ Resistance thermometry
_____ Thermocouples and pyrometer indicators
_____ Other (please specify)

ELECTRICAL/DC/LOW FREQUENCY

_____ AC current
_____ Capacitance dividers
_____ DC current
_____ DC resistance
_____ DC voltage
_____ High-voltage resistors
_____ High current (above 50 amps)
Inductance dividers
_____ LF capacitance
_____ LF inductance
_____ Mixed dividers
_____ Phase meters
_____ Pulse waveform
_____ Resistance dividers
_____ Voltage and current transformers
Other (please specify)

TIME AND FREQUENCY

_____ Frequency generate/measure (to 500 MHz)
_____ Modulation
Oscillator characterization
_____ TDR/FDR
_____ Time measurement
Other (please specify)

RF/MICROWAVE AND ELECTROMAGNETICS

_____ Antenna and waveguide propagation
_____ Coaxial air line standards
_____ Coaxial/waveguide terminations
_____ Dielectric materials
_____ Electromagnetic field strength
_____ Frequency generate/measure
_____ HF capacitance
_____ High-frequency resistors
_____ Modulation
_____ Noise measurement
_____ Q standards
_____ RF-DC voltage/current converters
_____ RF/microwave attenuators
_____ RF/microwave directional couplers
_____ RF/microwave phase shifters
_____ RF/microwave power measurement
_____ Other (please specify)

OPTICAL RADIATION

_____ Detectors (180 nm and higher)
_____ Fiber-optic signal characterization (generate and measure)
_____ Laser power energy
_____ Photometric
_____ Radiometric
_____ Spectrophotometric
_____ Surface characterization/linear measurement (using optical or laser equipment)
_____ Other (please specify)

CHEMICAL/GAS

_____ Conductivity Analyzer
_____ Gas (O_2, CO_2, N_2 H_2S)
_____ LEL (e.g., hydrogen, propane, methane)
_____ ORP
_____ Resistivity Analyzer
_____ Other (please specify)

pH

4.0 Calibration Activity Facility Information

Describe the typical environmental conditions in the laboratory and those encountered on-site, as applicable.

4.1 Temperature

Laboratory: Temperature range in the laboratory. If temperature is controlled, specify limits.

On-site: Temperature range typically encountered, annual basis.

4.2 Humidity

Laboratory: RH range in the laboratory. If RH is controlled, specify limits.

On-site: RH range typically encountered, annual basis.

4.3 Power and Lighting

Laboratory: Do you have filters? Frequency Correction? Uninterruptible Power Supply (UPS)? What type of lighting?

On-site: What power and lighting conditions are typically encountered?

4.4 Shielding and Noise

Laboratory: What kind of shielding is in place, if applicable? What is the noise level and source?

On-site: What is the noise level, and from what kinds of sources?

4.5 Elevation and Atmospheric Pressure

Laboratory: At what elevation above mean sea level is the laboratory located? What, if any, other atmospheric pressure considerations are encountered? What tests and/or calibrations are affected?

On-site: Elevation and atmospheric pressure conditions typically encountered, annual basis.

4.6 Vibration

Is vibration encountered? If so, from what sources? What tests and/or calibrations are affected?

4.7 Dust

What effect, if any, does dust have on the tests and/or calibrations performed? (Examples: dust effect on highly sensitive scales, or encountered on-site in desert-type area.)

4.8 Other Environmental Conditions Encountered

Describe any environmental conditions encountered, that have not been listed above, that can affect the quality of the test and/or calibration activity.

5.0 Proposed Scope of Accreditation

Please provide the information in sections 5.1 through 5.5 below using the attached forms and tables:

5.1 Each measurement area for which accreditation is sought. Calibration laboratories having multiple measurement areas will likely require more than one assessor.

5.2 The range and resolution of the instrument used for each discipline/parameter.

5.3 Calibration and Measurement Capability: Smallest uncertainty of measurement a laboratory can achieve within its scope of accreditation, when performing more-or-less routine calibrations of nearly ideal measurement standards intended to define, realize, conserve or reproduce a unit of that quantity or one or more of its values, or when performing more-or-less routine calibrations of nearly ideal measurement instruments designed for the measurement of that quantity. The uncertainty provided must be valid for the entire range it is referenced to. Because of that requirement, most disciplines/parameters will have multiple ranges listed.

5.4 Techniques, and/or equipment used to make the measurements, and any unique conditions required.

5.5 For on-site or mobile operations, identify which capabilities are typically performed outside the established laboratory, that is, in the mobile laboratory or at client locations. During the assessment, the assessor(s) will observe a sampling of the on-site and/or mobile operations. *This will require the assessor(s) to observe calibrations "in the field," that is, away from the established laboratory and at client locations.*

Note: Classification of calibration disciplines

IAS has classified calibration disciplines as follows:
Measurement Area: This is the top level term and refers to fields of calibration. Examples include dimensional, mechanical, electrical, etc.
Discipline: This is a mid-level term denoting major emphasis within a measurement area. Examples include force, pressure, current, etc.
Parameter: This is a low-level term denoting specific applications. Examples include calipers, scales and balances, CMM touch probes, etc.

Authorized Signature for Applicant

Name of Signer (type or print)

Title

Date

PROPOSED SCOPE: _____ **(List Measurement Area)**

DISCIPLINE/ PARAMETER	RANGE	RESOLUTION	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY AT 95% CONFIDENCE LEVEL	REMARKS

Note: List all the typical instruments that are normally calibrated by the laboratory with their range and resolution. List dimensional instruments such as calipers, micrometers, dial gages etc.... Scales and balances of different range and resolutions, weights, pressure gages etc. If applicable, list unique conditions, reference standard, technique or equipment in the Remarks column above.

For IAS use only
Laboratory Name _____
File No. _____

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TECHNICAL PERSONNEL MATRIX

CALIBRATION METHOD	STAFF ASSIGNED/ QUALIFIED	DATE ASSIGNED/ QUALIFIED	TRAINING	DEGREE OR PROFESSIONAL CERTIFICATION	AUTHORIZED SIGNATORY? YES/NO

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REFERENCE STANDARDS - TABLE 1

STANDARD	RANGE	RESOLUTION	UNCERTAINTY	WHEN LAST CALIBRATED	NEXT SCHEDULED CALIBRATION DATE	TRACEABILITY

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Laboratory Name _____
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WORKING STANDARDS - TABLE 2

EQUIPMENT	RANGE	RESOLUTION	UNCERTAINTY	WHEN LAST CALIBRATED	NEXT SCHEDULED CALIBRATION DATE	CALIBRATION IN-HOUSE/EXTERNAL	TRACEABILITY

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