

STATEMENT OF WORK

For
AEROFLIGHTDYNAMICS DIRECTORATE (AFDD),

CALIBRATION SERVICES

at

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)
AMES RESEARCH CENTER
MOFFETT FIELD, CA 94035

October 29, 2009

1.1. Introduction

This Statement of Work (SOW) outlines the requirements necessary to provide calibration and repair services for instruments and tools used by US Army Directorate and US Army Research Support Division of NASA Ames Research Center (ARC) located at Moffett Field, CA.

1.2. Scope of Work

The primary scope of work includes calibration and repair of both physical measuring devices and electronic equipment. Physical measuring devices include such items as class seven weights, micrometers, calipers, gage blocks, levels (both mechanical and electronic), and torque wrenches to support wind tunnel and machine shop operations. Electronic equipment consists of meters, oscilloscopes, pressure sensors, and instrumentation devices to support wind tunnel and machine shop operations. A complete list of physical measuring devices and electronic equipment to be calibrated is listed in Appendix A.

The types of calibration measurements to be performed include, but are not limited to DC voltage, DC resistance, DC current, AC voltage, AC current, mass, pressure, temperature, humidity, capacitance, inductance, frequency, torque, and dimensional-flatness, length, angle, optical angle, and thread.

The current scope of work is contingent upon supporting approximately 1,000 pieces of inspection, measurement, and test equipment (IM&TE) +/- 10% per year. This figure is derived from historical data and may change without advance notice.

1.3. References and Standards

The contractor shall be required to comply with the following references and standards for calibration procedures, calibration cycles and accuracy requirements:

- ISO 9001/ASQC Q9001

- ANSI/NCSL Z540.1-1994
- NPD 8730.1 (NASA)
- US Army (TB43-180)

The Government retains the right to inspect all calibration standards used to calibrate equipment in accordance with this SOW, at any time to verify that the applicable standards are being used.

1.4. Handling

The contractor shall ensure, and be held liable for, the safety of instrumentation and documentation during pickup, shipping, or delivery. Instrumentation shall be returned in as-found condition.

2. Service

2.1. General Requirements

The Contractor shall calibrate all equipment in accordance with applicable standards for the equipment and in accordance with Section 1.3 of this SOW.

The majority of IM&TE may be calibrated or repaired at the Contractor's Laboratory; however a small percentage of instrument calibrations shall be performed "in-place" due to inherent characteristics that make it impractical to remove and/or transport the IM&TE to a laboratory environment.

2.2. Calibration

If the Contractor does not possess calibration instructions or manuals for the IM&TE from the OEM, then the Contractor must create and document calibration procedures. Written approval of these procedures must be obtained from the Government prior to implementation.

Working standards with the maximum practical accuracy ratio shall be used. Accuracy ratios shall be no lower than 4 to 1 unless written justification is approved, by the IM&TE Custodian.

The contractor shall test the performance of instruments and adjust them for proper operation utilizing volt/ohm-meters, frequency meters, auto collimators, alignment telescopes, and other similar test equipment.

The Government may specify calibration tolerances outside of the OEM's original specifications.

In the event an instrument fails calibration, a detailed report shall be generated describing the issues with the instrument, including as-received and post calibration data.

A limited calibration may be performed, at the discretion of the IM&TE Custodian, for the following reasons:

- Instrumentation cannot be made to meet all specifications
- Certain functions have not been calibrated or have not been calibrated to full specification.

- When the manufacturer's specifications are unknown.
- When calibration to the full OEM specification is unnecessary for Government requirements.

2.3. Repair and Modification

- All IM&TE shall be maintained and repaired to ensure compliance with original equipment performance specifications.
- The Contractor may modify instruments, in accordance with the OEM, to improve operating characteristics or to rectify design defects, but written approval must be sought from the IM&TE Custodian.
- Any estimated repair costs shall be approved by the Government prior to repair. A separate BPA Order will be issued by the Government for the repair.
- The Contractor shall maintain an adequate working stock of parts to perform timely repair of common test instruments routinely calibrated or repaired.

2.4 Instrumentation Database -

- The Contractor shall provide an instrumentation database accessible through the Internet with appropriate security preventing another party from viewing or modifying its content or format.
- The Government shall be able to modify any field in the database through administrative privileges or through a representative of the Contractor.
- Calibration records accessible on the database shall be accurately and completely maintained by the Contractor.
- The database shall have the ability to include in-house calibrated instruments and their certificates generated by another party or in-house, at the discretion of the Government. The information and documentation will be provided to and managed by the Contractor.
- Fields shall include, but are not limited to:
 - Asset Number
 - Current Asset Number
 - Old Asset Number
 - Instrument Information
 - Manufacturer
 - Model
 - Serial Number
 - Item Description
 - Location and Responsibility

- IM&TE Custodian Name
- IM&TE User Name
- Building/Room
- Pickup/Delivery Location
- Branch Code
- Notification Method (e-mail, phone, or both)
- Calibration Information
 - Calibration Date
 - Certificate Number
 - Calibration Limits/Modification
 - Calibration Certificate and Data (hyperlink)
 - Recall Status
 - Required Turnaround
 - Calibration Interval
 - Automatic Calibration Interval Adjustment
 - User Calibration (Y/N)
 - Third Party Calibration Required (Y/N)
 - GEP Required (Y/N)
 - On-site Calibration Required (Y/N)
 - Received By
 - Date/Time Received
 - Current Status
 - Estimated Date of Completion
 - Actual Date of Completion
- Government definable fields for queries.
- The Government shall be able to either edit the database fields with administrative privileges or request modification of the database by the Contractor. There shall be a One-week turnaround minimum on database modifications.
- 24 hour 7 day a week online database access with no noticeable disruption of service.
- Scanned copies of original calibration certificate shall be available online.
- As received and as calibrated data shall be shown as required .

3. Execution

3.1. General Requirements

The Contractor shall ensure that sufficient qualified and trained personnel are assigned to the contract to maintain continuity of schedule and emergency services in the event of unscheduled absences due to illness, vacation, injury, resignation, or other leave.

The Contractor may be required to perform services at times other than during the normal workweek, such as after normal work hours, weekends, or holidays.

The Contractor, if requested by the Government, shall train other contract and/or government personnel in the equipment, techniques, methods, and processes that the Contractor utilizes, or expects to utilize in the performance of this SOW.

An automatic adjustment to the calibration intervals of certain instruments may be required for instruments deviating from their calibrated settings or that have been repaired. The formula will be provided by the Government.

The Contractor shall provide all necessary management, personnel, facilities, tools, equipment (except for GFP), and replacement parts and materials that are required to perform the tasks of this SOW. The services shall be performed during the time periods specified in the contract and shall include regularly scheduled maintenance services, emergency maintenance service, and all stocking of replacement parts and materials required to maintain each instrument. All IM&TE shall be maintained and repaired to ensure compliance with original equipment performance and specifications.

When requested, all statistics shall be provided to the Government. The data shall be in a tab-delimited format, non-image PDF, or Excel spreadsheet format.

3.2. Calibration Identification

The Contractor shall affix to all instruments a readily visible calibration sticker showing the asset number, last calibration date, and the next calibration due date.

The limited calibration label shall show the asset number, date of calibration, and due date

Seals shall be affixed where needed on calibrated instruments to inhibit or detect unauthorized access to an instrument. If the seal is broken upon receipt, it should be noted in the calibration report.

3.3. Repair or Maintenance

Articles and materials maintained and repaired shall be accompanied by a tag, label, certificate, or similar device (whenever practical) stating that the concerned articles and materials are serviceable.

- Such tag, label, certificate, or instrument shall be verified by the Contractor inspection/quality organization by means of a signature and/or quality stamp and shall be dated.

3.4. Pickup and Delivery

There will be single pickup and delivery location for hardware located within each of the following buildings at NASA Ames Research Center:

N215 Room 117

N216B Room 101

The Contractor must use the most recent pickup/delivery location identified on the instrument database.

The Contractor shall be able to manage correspondence with designated point(s) of contact.

The Contractor shall notify IM&TE Users via phone and/or e-mail one month prior to the instrument's calibration deadline.

- If the instrument has not been received by the Contractor prior to one week after the expiration of the calibration deadline, then the Contractor shall notify the IM&TE Custodian by phone and e-mail.

3.5. Emergency Calibrations

A maximum of a 24-hour turnaround is required for calibrations classified as "emergency", such as during a test.

The IM&TE custodian will notify the Contractor via phone, e-mail, or online Contractor sponsored interface.

3.6. Glossary of Acronyms

ARC	NASA Ames Research Center, Moffett Field, CA
Y	US Army Directorate
YSX	US Army Experimental Research Support Division
GFP	Government Furnished Property
GIDEP	Government Industry Data Exchange Program
IM&TE	Inspection, Measurement, and Test Equipment
MAP	Measurement Assurance Program
MCWG	Metrology and Calibration Working Group
NASA	National Aeronautics and Space Administration
NIST	National Institute of Standards and Technology
OEM	Original Equipment Manufacturer
SOW	Statement of Work

3.6 Definitions

IM&TE Custodian - Has greater authority than IM&TE Users with responsibilities as outlined in this Statement of Work (SOW).

Serviceable - That condition wherein articles and materials have been maintained and repaired in conformance with all applicable contractual specification requirements and all required inspections and tests have been successfully completed.

IM&TE User - End user of the instrument being calibrated. This individual is assigned to each instrument and is responsible for the care and storage of the instrument at the Government's site.