PERFORMANCE WORK STATEMENT (PWS)

Quantitative Polymerase Chain Reaction (qPCR) machine: Maintenance and User Training

Part 1
General Information

1. General: This is a non-personal services contract under which the personnel rendering the services are not subject, either by the contract's terms or by the manner of its administration, to the supervision and control usually prevailing in relationships between the Government and its employees.

1.1 Description of Services/Introduction: This is a non-personnel services contract to provide maintenance and user training for equipment used to perform quantitative polymerase chain reaction (qPCR). The Government shall not exercise any supervision or control over the contract service providers performing the services herein. Such contract service providers shall be accountable solely to the Contractor who, in turn is responsible to the Government.

1.2 Background: The Air Force Institute of Technology (AFIT) is seeking to maintain and provide user training for a Quantitative Polymerase Chain Reaction (qPCR) machine, which has not been operated since 2019. qPCR is a technique used to copy deoxyribonucleic acid (DNA), which in turn helps in the identification of microorganisms present in the drinking water. qPCR is to be an essential part of EMGT 640A (Research Methods), a required Engineering Management course that enrolls 25-30 per class. Additionally, qPCR is to be used in research sponsored by the Air Force Civil Engineering Center (AFCEC). For example, qPCR is to be used to identify disease-causing microorganisms that are present in water captured from the atmosphere, as part of a larger effort to protect supply lines during times of war. qPCR is also to be used to study groundwater quality in support of AFCEC/DERA (Defense Environmental Restoration Account) projects.

1.3. Scope: The contractor will provide maintenance service and user training for a qPCR machine located in building 644, room L143

1.4 Objectives: The contractor will perform maintenance and training on a date to be determined during FY26.

1.5 General Information:

1.5.1 Quality Control Plan (QCP): The Contractor shall develop and maintain a Quality Control Plan (QCP) to ensure services are performed in accordance with this PWS. The Contractor shall develop and implement procedures to identify, prevent, and ensure non-recurrence of defective services. The Contractor's QCP is how it assures that the work provided complies with the requirements of the contract. At a minimum, the QCP must include the following to be acceptable:

- Pre-Maintenance Inspection: Review maintenance history and conduct a visual check to identify existing issues.
- In-Process Checks: During service, clean components, and evaluate critical components for wear.
- Performance Testing: Once serviced, test functional components, calibrate instruments, and confirm the qPCR machine meets defined operational specifications.
- Documentation & Sign-off: Complete a detailed checklist including technician notes and sign-off for accountability

A final QCP shall be submitted to the Contracting Officer (KO) through the Contracting Office's Representative (COR) for review and acceptance within 10 business days after date of contract award. After acceptance of the QCP, they will receive the KO's acceptance in writing. Any changes to the accepted QCP will be required to be resubmitted for acceptance within 5 business days before implementation.

The Contractor shall inform the COR of issues or potential issues that might affect the performance within 2 hours of identifying those issues. Verbal reports will be followed up by written reports within 5 business days.

1.5.2 Quality Assurance: The Government will evaluate the Contractor's performance under this contract in accordance with the Quality Assurance Surveillance Plan. This plan is primarily focused on what the Government must do to ensure that the Contractor has performed in accordance with the performance standards. It defines how the performance standards will be applied, the frequency of surveillance, and the minimum acceptable defect rate(s).

1.5.3 Recognized Holidays: US Holidays: Work shall not be performed on U.S. holidays occurring during the normal workweek unless otherwise directed by the KO. When a U.S holiday occurs on a Saturday or a Sunday, the holiday is observed on the preceding Friday or following Monday, respectively.

The US holidays are:

New Year's Day January 1st	M. L. King Memorial Day 3rd Monday in January
President's 3rd Monday in February	Memorial Day last Monday in May
Independence Day July 4th	Labor Day 1st Monday in September
Columbus Day 2nd Monday in October	Veteran's Day November 11th
Thanksgiving Day 4th Thursday in November	Christmas Day December 25th

1.5.4 Hours of Operation: The Contractor is responsible for conducting business, between the hours of 0800-1600 Monday thru Friday except Federal holidays or when the Government facility is closed due to local or national emergencies, administrative closings, or similar Government directed facility closings. For other than firm fixed price contracts, the Contractor will not be reimbursed when the Government facility is closed for the above reasons. The Contractor must always maintain an adequate workforce for the uninterrupted performance of all tasks defined within this PWS when the Government facility is not closed for the above reasons. When hiring personnel, the Contractor shall keep in mind that the stability and continuity of the workforce are essential.

1.5.5 Place of Performance: The work to be performed under this contract will be performed at the Air Force Institute of Technology, Building 644, Room L143.

1.6 Security Requirements:

1.6.1 Security Program: Contractor personnel performing work under this contract must have a must be able to gain access to the base via military or civilian escort provided by AFIT at time of the proposal submission and must maintain the level of security required for the life of the contract. The security requirements are in accordance with the attached DD254. N/A

1.6.2 Installation Access: Access to U.S. installations and controlled areas is limited to personnel who meet security criteria and are authorized by Host Nation law to work in that country. Failure to submit required information/data and obtain required documentation or clearances in accordance with Army in Europe Regulation (AER) 190-16 Installation Access Control, will be grounds for denying access to U.S. installations and controlled areas. The Contractor shall ensure that any subcontractors used in performance of this contract complies with these requirements and that all employees, of both the Contractor and any subcontractor utilized by the Contractor, are made aware of and comply with these requirements. Should anything in this paragraph conflict with AER 190-16, the regulation takes precedent.

The Contractor shall be aware of and comply with the requirements associated with Installation Access Control. The Government is not liable for any costs associated with performance delays due solely to a firm's failure to comply with Installation Access Control System (IACS) processing requirements.

Upon the termination of employment or termination/cancellation of this contract, the Contractor is responsible to collect the installation access passes. The Contractor shall collect the installation access passes the same day employment of an individual has expired/terminated, and shall return them to the issuing office within [*three (3)]* workdays.

AER 190-16 can be found on the following website:
http://www.eur.army.mil/aepubs/publications/AER190-16.pdf?publisheddate=20170427

AER 190-16 G (German translation) can be found on the following website:
http://www.eur.army.mil/aepubs/publications/AER190-16.pdf?publisheddate=20170427

1.6.4 Background Checks: U.S. Contractors. The Contractor shall provide an installation pass log within 30 business days after contract award. The pass log shall be updated as employees are added or removed and submitted to the COR within 5 business days after changes.

1.6.4.1 U.S. Citizen: Contractors that work with or teach youths under the age of 18 years are subject to local and stateside background checks. The activity manager will determine the extent of background checks required. The Contractor employee may begin performance of the contract after receiving a favorable local background check. The Contractor agrees to replace the employee should results of the stateside background check, if required, be unfavorable as determined by the activity manager. The Contractor's replacement of the employee with the unfavorable background check shall be within a timeframe provided by the activity manager. The Contractor also agrees to replace employees whose background check, during their tenure of employment, renders them with an unfavorable local or stateside background check, as determined by the activity manager. Activity managers will forward a copy of each background check, identifying such with the appropriate contract number, to the KO through the COR for inclusion in the contract file. When the Government awards a non-personal services contract directly to an individual, the failure of the individual to provide a favorable background check would be grounds for termination.

1.6.5 Physical Security: The Contractor shall be responsible for safeguarding all Government equipment, information and property provided for Contractor use

1.6.6 Operations Security (OPSEC) Requirements: Contractor personnel shall adhere to facility security policies and restrictions. If applicable, Government issued access badges shall not be worn outside designated facilities where visible to the general public. The Contractor shall immediately report suspicious activities to security personnel.

1.6.7 Employment Eligibility: Contractor shall ensure that all contractor employees and sub-contractor employees performing services under this contract have been pre-screened for employment eligibility using the E-verify Program on the Department of Homeland Security website http://www.uscis.gov/e-verify. Contractor shall ensure that all contractor employees and sub-contractor employees who reside in the U.S. performing services under this contract have been pre-screened for employment eligibility using the E-verify Program on the Department of Homeland Security website http://www.uscis.gov/e-verify.] Personnel that have not met the employment eligibility requirement on this website are not authorized to perform services under this contract. Verification of the eligibility check will be made available to the KO or COR upon request. This requirement is not in lieu of and does not relieve the Contractor from the I-9 Employment Eligibility Verification Forms for employment of personnel.

1.7 Post Award Conference/Periodic Progress Meetings: The Contractor agrees to attend any post award conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation Subpart 42.5. The KO, COR, and other Government personnel, as appropriate, may meet periodically with the Contractor to review the Contractor's performance. At these meetings the KO will apprise the Contractor of how the Government views the Contractor's performance and the Contractor shall apprise the Government of problems, if any, being experienced. Appropriate action shall be taken to resolve outstanding issues. These meetings shall be at no additional cost to the Government.

1.8 Contracting Officer Representative (COR): The COR will be identified by separate letter. The COR monitors all technical aspects of the contract and assists in contract administration. The COR is authorized to perform the following functions: assure that the Contractor performs the technical requirements of the contract: perform inspections necessary in connection with contract performance: maintain written and oral communications with the Contractor concerning technical aspects of the contract: issue written interpretations of technical requirements, including Government drawings, designs, specifications: monitor Contractor's performance and notifies both the KO and Contractor of any deficiencies; coordinate availability of Government furnished property, and provide site entry of Contractor personnel. A letter of designation issued to the COR, a copy of which is sent to the Contractor, states the responsibilities and limitations of the COR, especially with regard to changes in cost or price, estimates or changes in delivery dates. The COR is not authorized to change any of the terms and conditions of the resulting order.

1.9 Key Personnel: The following personnel are considered key personnel by the Government: Willie F. Harper, Jr., Laboratory Supervisor. The Contractor shall provide a technician who shall be responsible for the performance

of the work. The name of this person shall be designated in writing to the KO through the COR within 5 business days after contract award. The technician shall have full authority to act for the Contractor on all contract matters relating to daily operation of this contract. The technician shall be available between 0800 and 1700, Monday thru Friday except Federal holidays or when the Government facility is closed for administrative reasons. Qualifications for the technician are listed below: A high school diploma, equipment-specific training by the qPCR manufacturer, familiarity with laboratory environments.

1.10 Identification of Contractor Employees: All contract personnel (e.g. ORISE participants) attending the qPCR training are required to identify themselves as such to avoid creating an impression in the minds of members of the contractor that they are Government officials. They must also ensure that all documents or reports produced by Contractors are suitably marked as Contractor products or that Contractor participation is appropriately disclosed. Contractor personnel identification shall be easily identifiable through the display of badges IAW AER 27-715 Contractor Identification. Contractor personnel shall wear badges during the training.

1.11 Contractor Travel Contractor shall be required to travel to the Air Force Institute of Technology to perform this service.

1.12 Organizational Conflict of Interest (OCI): Contractor personnel performing work under this contract may receive, have access to or participate in the development of proprietary or source selection information (e.g., cost or pricing information, budget information or analyses, specifications or work statements, etc.) or perform evaluation services which may create a current or subsequent OCI as defined in FAR Subpart 9.5. The Contractor shall notify the KO immediately whenever it becomes aware that such access or participation may result in any actual or potential OCI and shall promptly submit a plan to the KO to avoid or mitigate any such OCI. The Contractor's mitigation plan will be determined to be acceptable solely at the discretion of the KO and in the event the KO unilaterally determines that any such OCI cannot be satisfactorily avoided or mitigated, the KO may affect other remedies as he or she deems necessary, including prohibiting the Contractor from participation in subsequent contracted requirements which may be affected by the OCI.

1.13 Safety: Contractor will wear closed-toed shoes, pants, and a long-sleeved shirt while providing the maintenance service and training. Safety gloves and goggles will be provided.

1.18.1 Safety Plan and Program: Contractor will be briefed by the laboratory supervisor on hazards present in room L143. Contractor must be escorted by the Laboratory Supervisor during maintenance service and training.

1.19 Environmental Compliance: No hazardous materials will be handled during maintenance and training.

1.20 Environmental Compliance Plan and Program: No hazardous materials will be handled during maintenance and training.

PART 2
DEFINITIONS & ACRONYMS

2 Definitions and Acronyms:

2.1 Definitions

Contractor - A supplier or vendor awarded a contract to provide specific supplies or service to the Government. The term used in this contract refers to the prime.

Contracting Officer - A person with authority to enter into, administer, and or terminate contracts, and make related determinations and findings on behalf of the Government. Note: The only individual who can legally bind the Government.

Contracting Officer's Representative (COR) - An employee of the U.S. Government appointed by the KO to administer the contract. Such appointment shall be in writing and shall state the scope of authority and limitations. This individual has authority to provide technical direction to the Contractor as long as that direction is within the scope of the contract, does not constitute a change, and has no funding implications. This individual does NOT have authority to change the terms and conditions of the contract.

Defective Service - A service output that does not meet the standard of performance associated with the Performance Work Statement.

Deliverable - Anything that can be physically delivered, but may include non-manufactured things such as meeting minutes or reports.

Key Personnel - means certain skilled experienced professional and technical personnel who are essential for successful Contractor accomplishment of the work to be performed under this contract.

Physical Security - Actions that prevent the loss or damage of Government property.

Quality Assurance - The Government procedures to verify that services being performed by the Contractor are performed according to acceptable standards.

Quality Assurance Surveillance Plan (QASP) - An organized written document specifying the surveillance methodology to be used for surveillance of Contractor performance.

Quality Control - All necessary measures taken by the Contractor to assure that the quality of an end product or service shall meet contract requirements.

Subcontractor - One that enters into a contract with a prime Contractor. The Government does not have privity of contract with the subcontractor.

Work Day - The number of hours per day the Contractor provides services in accordance with the contract.

Work Week - Monday through Friday, unless specified otherwise.

2.2 Acronyms:

ACOR	Alternate Contracting Officer's Representative
CCE	Contracting Center of Excellence
CFR	Code of Federal Regulations
CONUS	Continental United States (excludes Alaska and Hawaii)
COR	Contracting Officer Representative
COTS	Commercial-Off-the-Shelf
DA	Department of the Army

DD250	Department of Defense Form 250 (Receiving Report)
DD254	Department of Defense Contract Security Requirement List
DPW	Department of Public Works
DFARS	Defense Federal Acquisition Regulation Supplement
DMDC	Defense Manpower Data Center
DOD	Department of Defense
FAR	Federal Acquisition Regulation
KO	Contracting Officer
MSDS	Material Safety Data Sheets
OCI	Organizational Conflict of Interest
ODC	Other Direct Costs
OSHA	Occupation Safety and Health Administration
PIPO	Phase In/Phase Out
POC	Point of Contact
PRS	Performance Requirements Summary
PWS	Performance Work Statement
QA	Quality Assurance
QAP	Quality Assurance Program
QASP	Quality Assurance Surveillance Plan
QC	Quality Control
QCP	Quality Control Program
SSO	Security Site Officer
TASS	Trust Associate Sponsorship System
TE	Technical Exhibit

PART 3
GOVERNMENT FURNISHED PROPERTY, EQUIPMENT, AND SERVICES

3 Government Furnished Items and Services:

3.1 Services: Not applicable.

3.2 Facilities: Not applicable.

3.3 Utilities: Not applicable.

3.4 Equipment: The government will provide access to the QuantStudio™ 6 Flex Real-Time PCR machine.

3.6 Materials: The Government will provide personal protective equipment (e.g. gloves, googles) to the contractor

3.7 Training: The Government will provide lab safety training to the Contractor before the maintenance service and training begins.

PART 4
CONTRACTOR FURNISHED ITEMS AND SERVICES

4. Contractor Furnished Items and Responsibilities:

4.1 General: The Contractor shall furnish all supplies, equipment, facilities and services required to perform work under this contract that are not listed under Section 3 of this PWS.

4.2 Secret Facility Clearance: Not applicable.

4.3 Materials: The Contractor shall provide the tools and supplies necessary to perform the maintenance service and training described in this performance work statement.

4.4 Equipment: The Contractor shall provide the equipment necessary to perform the maintenance service and training described in this performance work statement.

PART 5
SPECIFIC TASKS

5. <u>Specific Tasks:</u> The contractor will perform maintenance and training on a date to be determined during FY26

5.1 <u>Basic Services:</u> The Contractor shall provide services described in section 5.2.

5.2 <u>Task Heading:</u>

5.2.1. Instrument cleaning and inspection. The contractor shall clean the sample block, heated cover, and sample tray with a lint-free cloth. The contractor shall inspect all compartments for any debris.

5.2.2. Lamp Replacement. The contractor shall replace the lamp and perform all calibrations.

5.2.3. Software and electronics. The contractor shall power cycle the PCR machine thermal cycler by turning the device completely off, waiting for a brief period, and then turning it back on to reset its internal systems, clear temporary memory, or resolve errors. The contractor shall perform an instrument self-test, an automated diagnostic routine that verifies the functional integrity of the machine's critical components before or after running a DNA amplification experiment. This procedure shall ensure that the machine is heating/cooling correctly, reading fluorescence accurately, and that there are no hardware faults that could compromise the validity of the results.

5.2.4. System calibration and verification. A background calibration shall be performed to check for contamination and subtract background noise. A region of interest calibration shall be carried out to identify the location of the wells. A uniformity calibration shall be carried out to ensure that the instrument reacts similarly across all wells. A dye calibration should be done to identify and calibrate spectral dyes. A normalization calibration may be done to calibrate the signal from the array card. An RNase P Verification shall be done to confirm that the instrument is performing to manufacturer specifications.

5.2.5. User Training. The contractor shall reference appropriate sections of the QuantStudio™ User Guide during the training session. The contractor shall carry out user training as follows:

5.2.6. System Introduction and Power On Startup Procedure:
- Power on the system (touchscreen), turn on the computer, and launch the QuantStudio Real-Time PCR Software.
- System Check: Eject the tray to verify the correct block type (96-well, 96-well fast, or 384-well) is properly installed.

5.2.7. Experiment Setup (Software)
- New Experiment: Open the software and select "Experiment Setup" to initiate a new run. Define the experiment name, select the instrument (QuantStudio 6), choose the block type, and select the experiment type (e.g., Standard Curve, Relative Standard Curve).
- Reagents and Detection: Select the reagents used (e.g., TaqMan or SYBR Green) and the ramp speed (standard or fast).

5.2.8. Plate Configuration and Setup.
- Define Targets/Samples: Define the target genes and controls in the setup tab.
- Assign Reagents: Assign the targets and passive reference to the appropriate wells.
- Plate Layout: Assign sample names to the corresponding wells in the plate layout view.

5.2.9. Run Method Definition
- Thermal Profile: Review the default thermal cycle, including holding stages and cycling stages.
- Melt Curve: Add a melt curve stage if using SYBR Green to check for specificity.
- Data Collection: Ensure data collection is enabled for the appropriate step (usually the annealing/extension step).

5.2.10. Sample Preparation and Loading.
- Plate Loading: Load prepared reactions into the plate.
- Centrifugation: If necessary, centrifuge the plate briefly to remove bubbles and collect liquid at the bottom.

- Sealing: Apply an optical adhesive film (for plates) or caps (for tubes) to the plate, ensuring a tight seal.
- Loading into System: Load the plate into the instrument and close the drawer.

5.2.11. Run Initiation and Monitoring

- Start Run: Click "Start Run" from the software interface.
- Monitor Run: Use the "Run" screen to monitor the temperature plot and amplification curves during the run.

5.2.12. Data Analysis and Cleanup

- Analysis Settings: Navigate to the "Analysis" tab to view amplification plots, melt curves, and cycle threshold values.
- Post-Run Check: Review "Curve Quality" or "Quality Control Summary" for issues with amplification.
- Exporting Data: Export results, raw data, or amplification data as needed.
- Cleanup: Remove the plate, close the tray, and properly shut down the software and system if required.

5.2.13. Key Maintenance Tips Covered in Training

- Weekly: Check computer disk space and clean the surface.
- Monthly: Perform a background calibration to check for contamination.
- Safety: Wear powder-free gloves and avoid touching the optical adhesive film, as shown in the system tutorial.

PART 6
APPLICABLE PUBLICATIONS

6. **Applicable Publications (Current Editions)**

QuantStudio™ 6 and 7 Flex Real-Time PCR Systems User Guide. Maintenance and Administration. Publication Number 4489821, Revision B. 2022.

PART 7
ATTACHMENT/TECHNICAL EXHIBIT LISTING

7. <u>Attachment/Technical Exhibit List</u>:

7.1 <u>Attachment 1</u> – English Language Fluency Clarification

ATTACHMENT 1

English Language Fluency Clarification

LEVEL 1 Rudimentary Knowledge

At this level an employee is, at most, required to have a rudimentary verbal understanding of a very limited English vocabulary, such as might be required in understanding and following instructions of the type that might be given to a motor pool chauffeur. This level of understanding is typically not required for positions such as laborer and trades occupations where contacts are primarily with other local employees.

LEVEL 2 Limited Knowledge

At this level an employee needs only a limited knowledge of written and spoken English, and a vocabulary limited to the specific occupation. An employee at this level would be expected to understand and carry out verbal instructions of a repetitive character, and to be able to prepare simple reports of the type that might be expected of a motor pool dispatcher.

LEVEL 3 Good Working Knowledge

At this level an employee is required to have a good working knowledge of both written and spoken English. The employee should be able to read and understand agency regulations, operating instructions, memoranda, and related material concerning the field of work, to prepare correspondence and standardized reports, and to communicate effectively with English speaking staff members and the general public, including both English speaking and non-English speaking persons.

LEVEL 4 Fluent

At this level an employee is required to possess a high degree of proficiency in both written and spoken English, including the ability to translate the host country language into precise and correct English, and English into the applicable foreign language. On occasion, an employee at this level might be expected to act as an interpreter in situations where considerable importance attaches to proper word meaning.

LEVEL 5 Professional Translator/ Interpreter or Equivalent

This level is essentially limited to professional translators and interpreters whose proficiency in written and spoken English truly matches that of a well-educated native speaker. This includes the ability to deal effectively with highly technical and sophisticated terminology in which fine nuances of meaning may at times assume major importance in negotiations. At this level an employee should be capable of simultaneous translation, as in the case of conference reporting. An equivalent level of difficulty and responsibility relates to those employees who are required to be fluent in two or more foreign languages, or two or more distinctly different and complex native dialects.