PERFORMANCE WORK STATEMENT

NPSC FOR GEOGRAPHICAL INFORMATION SYSTEMS (GIS) AND ECOLOGICAL NICHE MODELING (ENM) SPECIALIST FOR VBRP RESEARCH ACTIVITIES

1.0 Background

U.S. Naval Medical Research Unit EURAFCENT (NAMRU-EAC) is an infectious disease research institute of the United States Navy located in Cairo, Egypt. NAMRU-EAC conducts scientific research and public health initiatives throughout the Middle East, Eastern Europe, Central and Southeast Asia, North and West Africa.

Vector Biology Research program (VBRP) at NAMRU-EAC has initiated research activities in collaboration with health sectors and research Institutes in AFRICOM, CENTCOM and EUCOM countries. Currently, VBRP has received Global Emerging Infection Surveillance (GEIS) funding for conducting mapping and prediction modeling for insect and tick vectors of disease. These studies aim at understanding the environmental factors, geographic distribution, diversity, and abundance of arthropod vectors transmitting viruses potentially involved in acute febrile illness. The goal of these studies is to fill in this information gap by developing a species distribution model that will elucidate the relative health risks associated with the presence of vector species and/or vector-borne diseases.

1.1 Scope

This is a non-personal service contract for support of NAMRU-EAC vector surveillance. The contractor shall record and document all ecological, environmental and biological factors and parameters under which the arthropods will be collected in AFRICOM, CENTCOM and EUCOM countries based on research requirements. Contractor shall ensure all software is up to date, download all data layers, submit monthly report and develop risk map using GIS tools based on Ecological Niche Modeling (ENM).

2.1 Requirement

2.1.1 The contractor shall have PhD degree in Ecology.

2.1.2 The contractor shall have advanced experience with recent software related to geographic analysis (GIS software), modelling (Maxent, DIVA GIS, Openmodeller), environmental statistics (Canoco, cap analysis, SPSS, R).

2.1.3 The contractor shall have at least 10 years' experience with the ESRI ArcGIS Software, ENVI Software, 3D Spacebuilder and to some degree open source GIS (3D Analyst, Illustrator, Quantam GIS, Surfer, IDRISI, Erdas Imagine, GSTST, WIKI-BioMapper, GRASS GIS, and Zonation.).

2.1.4 The contractor shall have at least 10 years' experience from national and international multidisciplinary collaboration working as a GIS coordinator and engaged with GIS-analysis, spatial modelling.

2.1.5 The contractor shall have extensive field-work experience (at least 7 years), including experimental design, surveys, data collection, habitat assessments (terrestrial, marine, freshwater) and biodiversity estimates.

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2.1.6 The contractor shall have 10 years' experience in: Cartographic production, data creation, Geodatabase design and creation, data editing, topology, projections, geoprocessing, GPS data capture, aerial photography interpretation, georeferencing, data conversion, metadata implementation.

2.1.7 The contractor shall have at least 7 years' experience in using and modifying GIS tools to serve in the field conservation management, for example: 3D analysis which include surface analysis, spatial analysis (aspect, slope, elevation, curvature, hillshed, flow direction, solar radiation, interpolation), suitability analysis (suitable habitat for growth), hotspots, distribution maps, areas under risk, Ecological Niche Modeling, Potential habitat under threats, buffering zone, Spatial analysis, IUCN Red List Mapping, Categorization, ranking, and Prioritization, Gap analysis, etc.

2.1.8 The contractor shall have at least 5 published articles in peer reviewed journals in the field of geoinformatics, prediction, geographical distribution, attribute analysis, habitat suitability and hotspots.

2.1.9 The contractor shall be able to work independently, have strong problem-solving skills, and able to provide creative suggestions when problems arise.

2.2 Task

2.2.1 The contractor shall serve as an in-country GIS expert who will be responsible for documenting all data obtained from different sites in different countries as specified above.

2.2.2 The contractor shall manage processing the data from different sites following the project schedule.

2.2.3 Contractor shall update new GIS extensions as needed for the different data layers.

2.2.4 The contractor shall download all data layers needed for mapping.

2.2.5 Contractor shall provide the Principal Investigator (PI) with all data sheets that need to be filled out in the field and train one of the field personnel on how to fill out these sheets at the beginning of the project.

2.2.6 Contractor shall develop periodic maps every month based on the data that the PI will provide, submit a draft risk map by the end of the base year and develop risk maps of arboviruses transmission from different sites by the end of the period of performance of this contract. The contractor shall provide the risk map to the TPOC at the end of the contract.

2.2.7 Contractor shall ensure the accuracy of the coordinate calculations.

2.2.8 Contractor shall provide a monthly report to the assigned PI for the project on monthly basis or as requested. The report shall contain an updated data sheet and an updated map for the different collection sites and comparison between different sites if requested.

2.2.9 The contractor must serve as a focal point for field work.

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3.0 General Information:

3.1 **Period of Performance:** The period of performance shall be for one (1) Base Year of 12 months and two (2) option years.

3.2 **Quality Assurance:** Head of the VBRP will evaluate the contractor's performance under this contract in accordance with the Quality Assurance Surveillance Plan (QASP) to ensure that the contractor has performed in accordance with the performance standards. This includes but not limited to application of performance standards and the minimum acceptable defect rate(s). The services to be furnished will be inspected and accepted through electronic communication by the Head of Vector Biology Research Program, NAMRU-EAC, and alternatively by the PI.

3.3 **Place of Performance**: The work schedule is solely governed by the accomplishment of the specific needs as stated performance work statement. The contractor will not be working on NAMRU-EAC campus. This kind of work needs computer software and internet connectivity and can be accomplished anywhere. The contractor will be called only to NAMRU-EAC for meetings with the project PI on a monthly basis to follow up and check progress.

3.4 **Security Requirements:** N/A.

3.5 **Recognized Holidays:** The contractor is not required to work on the U.S. Federal Government holidays listed below or on the U.S. Embassy designated Egyptian holidays.

New Year's Day	Labor Day
Martin Luther King Jr.'s Birthday	Columbus Day
President's Day	Veteran's Day
Memorial Day	Thanksgiving Day
Independence Day	Christmas Day

4.0 DEFINITIONS AND ACRONYMS

4.1 DEFINITIONS:

4.1.1 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.

4.1.2 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.

4.1.3 DEFECTIVE SERVICE. A service output that does not meet the standard of performance associated with the Performance Work Statement.

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

4.1.5 KEY PERSONNEL. Contractor personnel that are evaluated in a source selection process and that may be required to be used in the performance of a contract by the Key Personnel listed in the PWS. When key personnel are used as an evaluation factor in best

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value procurement, an offer can be rejected if it does not have a firm commitment from the persons that are listed in the proposal.

4.1.6 PHYSICAL SECURITY. Actions that prevent the loss or damage of Government property.

4.1.7 QUALITY ASSURANCE. The government procedures to verify that services being performed by the Contractor are performed according to acceptable standards.

4.1.8 QUALITY ASSURANCE Surveillance Plan (QASP). An organized written document specifying the surveillance methodology to be used for surveillance of contractor performance.

4.1.9 QUALITY CONTROL. All necessary measures taken by the Contractor to assure that the quality of an end product or service shall meet contract requirements.

4.1.10 SUBCONTRACTOR. One that enters into a contract with a prime contractor. The Government does not have privacy of contract with the subcontractor.

4.1.11 WORK DAY. The number of hours per day the Contractor provides services in accordance with the contract. The contractor will provide services up to 4 hours per day

4.1.12 WORK WEEK. Sunday through Thursday, unless specified otherwise.

4.2 ACRONYMS:

CONUS	Continental United States (excludes Alaska and Hawaii)
COTS	Commercial-Off-the-Shelf
DFARS	Defense Federal Acquisition Regulation Supplement
DMDC	Defense Manpower Data Center
DOD	Department of Defense
FAR	Federal Acquisition Regulation
ENM	Ecological Niche Modeling
GIS	Geographical Information System
VBRP	Vector Biology Research Program
KO	Contracting Officer
NAMRU-EAC	US Naval Medical Research Unit EURAFCENT
OCI	Organizational Conflict of Interest
OCONUS	Outside Continental United States (includes Alaska and Hawaii)
ODC	Other Direct Costs
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
TE	Technical Exhibit
AOR	Area of Responsibility

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5. GOVERNMENT PROPERTY FURNISHED: N/A

7. ATTACHMENT/TECHNICAL EXHIBIT LISTING

Attachment/Technical Exhibit List:

Attachment 1/Technical Exhibit 1 – Performance Requirements Summary
Attachment 2/Technical Exhibit 2 – Deliverables Schedule
Attachment 3/Technical Exhibit 3 – Estimated Workload Data

1. **Purpose**: To ensure that the Government has an effective and systematic method of surveillance for the services in the PWS. The QASP will be used primarily as a tool to verify that the contractor is performing all services required by the PWS in a timely, accurate and complete fashion.

2. **Performance Standards:**

a. Schedule - The due dates for deliverables and the actual accomplishment of the schedule will be assessed against original due dates and milestones established for the contract or task order(s).

b. Deliverables – The deliverables required to be submitted will be assessed against the specifications for the deliverables detailed in the PWS for the required content, quality, timeliness, and accuracy.

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TECHNICAL EXHIBIT 1

Performance Requirements Summary (PRS)

The contractor service requirements are summarized into performance objectives that relate directly to mission essential items. The performance threshold briefly describes the minimum acceptable levels of service required for each requirement. These thresholds are critical to mission success.

Performance Objective	Standard	Performance Threshold	Method of Surveillance

PRS # 1. The contractor shall serve as an in-country GIS expert who will be responsible for documenting all data obtained from the specified countries, manage processing the data and ensure purchasing/downloading new GIS extensions as needed for the different data layers (PWS 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.8, 2.2.9)	100% of monthly reports accurately depict current status	0% error	Data reviews and periodic inspections To TPOC
PRS # 2. The contractor shall develop risk maps of arboviruses transmission from different sites by the end of the project (PWS 2.2.6).	A risk map that is 100% accurate	0% error	Data reviews To TPOC

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TECHNICAL EXHIBIT 2

DELIVERABLES SCHEDULE

Deliverable	Frequency	# of Copies	Medium/Format	Submit To
Contractor shall provide the Principal Investigator (PI) with all data sheets that need to be filled out in the field and train one of the field personnel on how to fill out these sheets.(PWS 2.2.5)	At the beginning of the contract	N/A	Electronic copies	To TPOC
The contractor shall provide regular work progress report and updated maps (PWS 2.2.9)	Monthly	N/A	electronic reports	To TPOC
The contractor shall provide a draft risk map (PWS 2.2.6)	by the end of the base year	N/A	electronic reports	To TPOC
The contractor shall develop risk maps of	At the end of the contract	N/A	electronic reports	To TPOC

Deliverable	Frequency	# of Copies	Medium/Format	Submit To
arboviruses transmission (PWS 2.2.6)				

TECHNICAL EXHIBIT 3

ESTIMATED WORKLOAD DATA

ITEM	NAME	ESTIMATED QUANTITY
1	GEOGRAPHICAL INFORMATION SYSTEMS (GIS) AND ECOLOGICAL NICHE MODELING (ENM) SPECIALIST	12 MONTHS

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4. Reporting:

The Technical Point of contact (TPOC) makes an annual report on Contractor Performance. The contractor's failure to achieve satisfactory performance under the contract/task order, reflected in the TPOC's annual report, may result in the loss of future Government contracts.

For each item that does not meet acceptable levels, the Government may issue a Contract Discrepancy Report (CDR). CDRs will be forwarded to the Contracting Officer with a copy sent to the contractor. The contractor must reply in writing within 5 days of receipt identifying how future occurrences of the problem will be prevented. Based upon the contractor's past performance and plan to solve the problem, the Contracting Officer will determine if any further action will be taken.

In accordance with the inspection of services provisions of the contract, the contractor will be incentivized to provide quality products in a timely manner since the Government can require the Contractor, at no additional cost, to replace or correct work that fails to meet contract requirements.

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