

UNITED STATES AIR FORCE
BIRD/DRONE DETECTION RADAR
STATEMENT OF WORK (SOW)

21 Jul 2021 - DRAFT

BACKGROUND AND OVERVIEW

In 2005, independent contractors researched and developed a real-time bird monitoring radar using existing radar technologies to identify local bird hazards at airfields. Within the aviation industry, the developed technology is referred to as Bird Detection Radar (BDR). Since its inception, BDR technologies have advanced to accurately depict bird concentrations and movements in three-dimensional tracks at airfields.

Over the past 15 years, BDR units have been purchased and maintained at eight United States Air Force (USAF) locations, including: Beale Air Force Base, Dare County Bombing Range (Seymour-Johnson Air Force Base), Dover Air Force Base, Joint Base Randolph-San Antonio, Offutt Air Force Base, Royal Air Force Lakenheath, Wake Island (Pacific Air Forces), and Whiteman Air Force Base, with additional units continuously being added by USAF Major Commands (MAJCOMs) and Installation Wing Safety units for detection and avoidance of bird hazards to aircraft.

Over the past several years, advancements in commercially available Small Unmanned Aircraft Systems (sUAS) have posed an operational security threat to USAF Installation assets and a hazard to safe aviation operations from midair collision events. To combat this threat, USAF security and counter sUAS agencies have worked to advance sUAS intrusion detection technologies. However, commercially available BDRs have begun to market dual-detection capability for bird hazards and sUAS targets. These systems differentiate sUAS targets and bird hazards of varying sizes within detection ranges (i.e., Bird/Drone Detection Radar [B/DDR]). Within the USAF, Wings and MAJCOMs have expressed interest and need for detection of wildlife and sUAS strike hazards to safe aviation operations. However, a department-wide solution currently does not exist.

USAF promotes use of BDRs through guidance in Air Force Instruction (AFI) 91-212, *Bird/wildlife Aircraft Strike Hazard Management Program*, encouraging integration of BDR output into site-specific bird hazard avoidance operations and procedures. However, no formal policies, Concept of Operations, or requirements for BDR use in USAF Bird/wildlife Aircraft Strike Hazard (BASH) Programs exist. To formalize use of BDR technology into

USAF BASH directives, a streamline acquisition strategy must be standardized, enabling USAF Commanders with a tool for compliance and proactive BASH safety.

1.0 DESCRIPTION OF REQUIREMENT

1.1. Concept. The USAF experiences thousands of bird strikes each year during flight operations in low-altitude, airfield environments. As a result, the USAF incurs millions of dollars in aircraft damage due to wildlife strike events. The occurrence of hazardous bird abundances on/near airfields threaten the safety of aircrews and reduces the combat capability of military aircraft to fulfill the Department of Defense mission.

USAF Flight Safety (SEF) Offices employ integrated wildlife hazard management operations, consistent with requirements and guidance in AFI 91-212, *Bird/wildlife Aircraft Strike Hazard Program Management*. Current USAF policy requires each installation to implement local bird hazard avoidance procedures, formally known as a Bird/wildlife Hazard Warning System. This unit-defined system requires use of a tiered approach to restricting local flight conditions based on Bird Watch Conditions; an observed wildlife occurrence that could affect flight operations, resulting in a wildlife strike event. Under an increased Bird Watch Condition, aircraft operations can be restricted or terminated based on the threat posed by wildlife, visually observed by ground personnel, Air Traffic Control, and/or aircrews.

Designation of Bird Watch Condition by observation is exclusively limited to the range of sight for air operations personnel or Air Traffic Control supervisors. Confident issuance of Bird Watch Condition is restricted to diurnal air operations (e.g., confirming night bird activity is impossible without enhanced detection equipment). USAF installations with BDR units have reported instances where hazardous bird conditions were detected and avoided, but occurred outside the visual range of detection for operations personnel.

Information provided from B/DDR output can provide real-time hazard avoidance and enhance Midair Collision Avoidance (MACA) Programs while supporting requirements from Air Force Instruction 91-202, *The US Air Force Mishap Prevention Program*, paragraph 7.3.3. Currently, USAF policy for sUAS detection focuses on ensuring operational security from intrusion, with no specific radar requirement for MACA and SEF considerations.

The varying features of sUAS, including size, shape, coloration, and sophisticated movement capabilities, could negatively impact safe flight operations and pose an even greater detection challenge than wildlife. Airport wildlife biologists can anticipate movement of birds based on a familiarity with species behavior and known attractants on/surrounding the airfield. Unlike birds, the movement of a sUAS aircraft is unpredictable, especially if the sUAS operator has malicious intent for operation within a USAF airfield environment. Siting sUAS with ground observers and maintaining visual confirmation over significant linear

distances is inefficient and impractical for assuring midair avoidance by manned aircraft operations.

Integration of BDR and B/DDR technologies into USAF SEF programs enhances a unit's ability to safeguard mission integrity and maintain combat capability through mishap prevention/avoidance. Detection of bird hazards and analysis of local bird movement provides BASH Managers with the data needed for immediate avoidance decisions and provides information to execute long-term management changes to the aerodrome landscape. Detection of sUAS will aid air space management and avoidance procedures for manned USAF aircraft operations (e.g., MACA program).

1.2. Scope. The objective of this SOW is to provide the USAF with a streamline acquisition solution for BDR or B/DDR units and support services. The purchase of radar units and services under this SOW may occur as initial investments into detection radar technology, replace aging, inefficient BDRs currently maintained at USAF airfields, or support sustainment of current radars on USAF installations. The availability of funds within each Squadron, Wing, and/or Major Command will dictate the number of radar units acquired under this SOW. The department-wide standup of BDR technologies involves over 59 USAF locations and within 140 Air National Guard units.

Acquisition under this ID/IQ contract is accomplished through a Delivery Order. Each Delivery Order can include one or multiple Task Options, including:

- Unit purchase (BDR or B/DDR with five-year parts warranty)
- Radar site planning
- Delivery and installation
- Annual system service program (e.g., maintenance, data storage, and training).

1.3. PROGRAM MANAGEMENT

1.3.1. General. The Government and contractor must communicate effectively to ensure the SOW requirements meet the functional needs of USAF Safety programs while remaining consistent with USAF Safety and Security requirements. The relationship between the contractor, Air Force Safety Center (AFSEC), and USAF customers is critical to facilitate effective mission support, maintenance, sustainment, and technical support of radar technologies. The contractor shall manage all aspects of contract delivery, with consideration for enhancing proactive safety procedures to reduce the threat of bird and sUAS hazards to aircraft. The contractor shall provide a skilled, experienced workforce to ensure all contract deliveries meet all SOW requirements.

1.3.2. Work Hours. Contract services will be provided on normal business days, which are Mondays through Fridays, during business hours from 8:00 AM to 5:00 PM (EST), except for

United States (U.S.) Federal holidays. The contractor shall be available by telephone within 30 minutes after notification to discuss contract matters with Government personnel. After scheduled duty hours, the contractor shall be available within two hours after notification. Any overtime for management functions shall be performed at no additional cost to the Government.

1.3.3. Reporting. The contractor will report to the 377 Mission Support Group (MSG) and AFSEC on all executed Delivery Orders. The contractor will report all BDR and B/DDR units purchased under this SOW, including all acquired annual service program options. The reports support the 377 MSG and AFSEC to serve an intra-agency liaison role to USAF customers and not as Contract Officer Representatives. Contractor reports will be submitted to the 377 MSG and AFSEC quarterly, to include:

- USAF organization purchasing unit and contact information.
- Status of each Delivery Order (e.g., production, site selection, planning, and status to final functional capability).
- Sustainment, updates, and warranty actions/repairs.
- Communication with customers (USAF organizations).

1.3.4. Compliance. The contractor shall ensure that all options executed under this contract are accomplished in accordance with applicable Government regulations, directives, instructions, policies, and best business practices.

1.4. PERSONNEL

1.4.1. Qualifications. The contractor will ensure all staff supporting BDR and B/DDR units have a comprehensive understanding of USAF airfield environments, wildlife biology, radar detection, aviation safety, airspace security, USAF airfield operations, and sUAS systems. The contractor must provide documentation, demonstrating technical competency and capability for development of BDR and B/DDR units.

1.4.2. Setup and Sustainment. The contractor shall provide a sufficient number of qualified personnel to complete site selection, setup, and on-site sustainment at each USAF Installation. The contractor shall ensure personnel fulfilling site selection, setup, and on-site sustainment meet qualifications for access to USAF installations. The contractor will provide sufficient personnel to ensure the unit is fully operational at final setup. All personnel performing maintenance on electronic equipment shall meet the minimum qualification standards established by the U.S. Department of Labor's Service Contract Act Directory of Occupations.

1.5. Operational Security

1.5.1. Purpose. Contractor adherence to USAF and Department of Defense (DoD) Operations Security (OPSEC) requirements is mandatory, to include stipulations under this SOW. Adherence to OPSEC requirements includes real-time changes occurring throughout the life cycle of this contract. Government contractors are provided this guidance to ensure compliance and protection of critical information that may be a threat to national security.

1.5.2. Definition. OPSEC is a methodical process to identify Critical Information (CI), identify threats to that CI and the related vulnerabilities and risks of exploitation to that CI, and identify, develop, and implement countermeasures to protect that CI. CI is specific facts about friendly intentions, capabilities, and activities vitally needed by adversaries for them to plan and act effectively so as to guarantee failure or unacceptable consequences for friendly mission accomplishment. CI includes those facts, which individually, or in the aggregate, reveal sensitive details about U.S. Government (i.e. USAF installation or the contractor's security or operations related to the support or performance of the SOW). These sensitivities require a level of protection from adversarial collection or exploitation not normally afforded to unclassified information. OPSEC supplements, but does not replace traditional security practices such as Physical Security and Information Security. OPSEC is essential to ensure the initial and continued success of our mission, operations, systems, and procedures.

1.5.3. OPSEC Applicability. OPSEC safeguards are essential for this contract, and imposes OPSEC as a Task in the responsibilities of this contract. The contractor will adhere to the following minimum requirements in support of the USAF OPSEC Program:

- Introduction of personnel electronic devices into government spaces, laptops, tablet PCs, cellular phones, cameras, recording devices, and data recording/storage devices is STRICTLY controlled and forbidden in some areas of USAF installations. Photography and recording is not allowed except for official use and by permit only. (Unless otherwise stipulated in the contract).
- Contractor personnel shall not discuss government operations in public or over unprotected or unencrypted communications. Official business, controlled unclassified information may only be transmitted as directed in the SOW.
- The contractor shall not post to company websites, publications, newsletters or other media any images, data or information that reveal sensitive government operations, personnel, equipment, and/or classified or controlled unclassified information. When in doubt, company press releases related to this contract should be coordinated through the purchase agencies Contracting Office.
- Because observation of events, operations, physical changes, and other related actions may reveal National Security information, specific restrictions are needed to preclude unintentional release of this information to unauthorized parties. (Unauthorized disclosure

and transfer of National Security Information is punishable under 18 USC § 793).

Therefore, contractor personnel shall not disclose to unauthorized third parties, post to unofficial sites (including Social Networking sites) any images, data or information, or observed events that reveal sensitive government operations, personnel, or equipment.

- Government-issued badges and identification shall be removed and/or concealed from plain sight when off installation and shall not be left unprotected. Badges and passes may not be duplicated or copied or loaned to others. Lost or stolen identification credentials will be immediately reported to the Installation Security Forces Law Enforcement Desk.
- Practice OPSEC and implement countermeasures to protect CI and other sensitive unclassified information and execution of military operations performed or supported by the contractor in support of the mission.
- The contractor shall mark and protect related internal production schedules, deliverables, inventories, shortages, and identified vulnerabilities related to production of government material. Internal company markings e.g., Business Sensitive, etc., are appropriate for identifying the aforementioned as sensitive information. Specific Government-provided information, drawings etc., will be protected in accordance with guidance in applicable Sections of this SOW.
- Destroy critical and/or sensitive unclassified information no longer needed to prevent the inadvertent disclosure and/or reconstruction of this material.
- Critical information identified by Installation Safety Office will be marked and handled appropriately as FOR OFFICIAL USE ONLY (FOUO). Government CI includes but is not limited to: known or probable vulnerabilities to any U.S. system and their direct support systems, details of information about military operations, unit, vessel, aircraft movements/arrivals, missions and exercises, etc.
- Questions regarding CI shall be directed to the Installation OPSEC Program Manager or USAF OPSEC Support Team.

2.0. BDR and B/DDR REQUIREMENTS

Delivery Order purchases will include one of two unit options: a BDR (Section 2.1.) or B/DDR (Section 2.2.) unit. Individual site planning, delivery, setup, and annual support/sustainment tasks (Sections 2.3. through 2.6.) are available as separate Delivery Order options under this contract.

2.1. TASK – BDR Option Technical Capability. The contractor will provide a turnkey, sustainable BDR unit package, which includes all elements necessary for full operating capability, user output, visualization, and service.

2.1.1. Mobility. BDR units will be a corrosion-resistant mobile system. Mobility must be achieved using a full-size truck (transported within the truck bed or by ball tow hitch). Towed radar systems must be constructed to U.S. Department of Transportation road

standards. Delivery of radar units must meet DoD requirements for tie-down on board military airlift and sea freight.

2.1.2. Operational Capability. BDR radar system configuration must provide a continuous radar solution (24 hours per day, 7 days a week, 365 days per year) for real-time detection of bird hazards in support of safe aviation operations. BDR systems must include all operational components needed for full operational capability.

2.1.3. Durability. BDR antenna arrays and exterior coatings must be corrosion resistant and adequately safeguard internal components of the radar system from all possible extreme temperature ranges (-30°F to 120°F) and precipitation (rain/snow). The type of antenna array utilized must meet the needs of each site, providing the greatest detection capability possible and consistent with identified performance standards.

2.1.4. Power and Connectivity. Provide adequate power and network connection capability for each BDR unit, consistent with standards in industry, USAF systems, and each geographic location. Power connections must adequately support functionality of the radar unit and allow the simplest level of connection to available sustainment sources (identified by each purchasing installation). Connections must be compatible with systems available at Outside the Contiguous United States (OCONUS) locations. Network connection must be compatible with USAF hard-wired and wireless connections.

2.1.5. Backup Power. Provide and maintain a backup AC power source for each BDR unit in case of a failure or interruption of prime AC power. The backup power source shall be capable of maintaining full radar operational power for up to five hours. The backup power source shall be initially sized for full system load plus 50 percent future capacity.

2.1.6. Site-Specific Equipment. Provide ancillary support equipment necessary for BDR configuration at the approved location. Support equipment will only be provided if the Task Order under Section 2.3.2. is executed and the need is identified in the contractor-generated Installation Site Plan. Various support equipment may include: wheel chocks, lightning protection, tie-downs/ground anchors, basic tools and equipment storage box on site, reflective safety markings, frangible elements, fire extinguishers, and signage.

2.1.7. Risk Alert. Incorporate an automated bird strike risk alert system for bird detection within the approach/departure corridors and surrounding airfield environment. Calibration of the automated bird strike risk alert system must be flexible to each installation/site. Detection alerts must include the capability to notify users using multiple communication techniques, to include but not limited to: email, text messaging, visual alert in the radar output, and Air Traffic Control tower information display systems (e.g., IDS5).

2.1.8. Coverage and capability. Provide three-dimensional bird detection coverage within a 360 degree field of view around the airfield out to at least eight nautical miles (nm) from the ground level to aircraft operational altitudes (18,000 feet above ground level). BDR units must detect individual birds and bird flocks that include multiple sized bird targets (small to large body size), minus site-specific limitations (e.g., including but not limited to tree cover, buildings, or topography).

2.1.9. Detection and Range. The contractor must provide data processing techniques and tracking methods to detect bird movement across the landscape. BDR detection response time must be within five seconds of Standard Object Detection. BDRs must have a range accuracy of at least 20 meters, and an azimuth/elevation accuracy of at least one degree, respectively, for bird detection. The radar will include a strategy for eliminating false target detections and errors. The radar design must include a strategy for reducing the impact of precipitation on target detection.

2.1.10. Network Security. Ensure real-time system display is available through closed, remote platforms and/or over USAF networks. The contractor will provide all required services for a remote output solution (if requested by the purchasing organization, to include access over USAF computers, tablets, and cell phones, and other devices). The contractor will ensure compatibility with all USAF Operational Security, Information Technology, and Cooperative Vulnerability and Penetration Assessment (CVPA) requirements. The contractor is responsible for obtaining and sustaining an approved ATO from the USAF to operate radars on USAF networks, as necessary.

2.1.11. Detection Visualization. Display output must clearly depict plotted bird detections and bird tracks for immediate visualization, complemented by a risk alert system (Section 2.1.7.). The radar system must include a technical solution to differentiate birds from other targets, and false detections. The contractor will provide radar technologies and outputs that depict multiple bird targets simultaneously in short-(1-2 nm) and long-(6-8 nm minimum) range settings.

2.1.12. Detection Reports. Generate recurring reports for bird movement within the detection area. Reports must provide generalized interpretation of detection information for use by all levels of USAF personnel (i.e., BASH Managers, wildlife biologists, SEF personnel, and/or Senior Leadership). Reports should identify movement trends by hour, day, week, and month for analysis.

2.1.13. Detection of sUAS Capability. BDR units must include all technical capability requirements to fulfill drone detection upgrades and support features (acquired by the purchasing agency outside this SOW). Support features include but are not limited to: sUAS detection hardware/software, video verification, electro-optical/infra-red cameras, acoustic

sensors, Light Detection and Ranging (LiDAR) technology, and/or Radio Frequency detection. These updates are not individually available as options under this contract, but each BDR unit must have integration capabilities.

2.1.14. Equipment Warranty. All unit hardware and software is covered under an all-inclusive warranty for five-years, beginning at the date of Government Acceptance of the Order for each individual unit. The contractor will repair or replace radar system components deemed defective due to manufacture or workmanship. All repairs and replacement parts will be new or refurbished parts – which ever provides the greatest benefit to the Government. The contractor will certify the repairs and workmanship performed by all employees; ensuring radar unit downtime does not exceed seven consecutive days. The five-year warranty does not include damage to the radar unit for actions outside the control of the contractor (i.e., damage or part failure due to an outside source).

2.1.15. Information Security. The contractor will maintain radar system hardware and software to ensure connectivity is sustained in accordance with USAF and DoD Information Technology security requirements at the time of award for each Delivery Order.

2.2. TASK – B/DDR Option Technical Capability. The contractor shall ensure each B/DDR unit meet all functional operation capabilities for detection of sUAS intrusion into the aerodrome. The B/DDR must meet all requirements and specifications of Section 2.1. (Subsections 2.1.1. through 2.1.15.), as well as sUAS detection elements (Subsections 2.2.1. through 2.2.5.)

2.2.1. Detection Standard. Provide continuous, real-time automated sUAS intrusion alerts and tracking within the runway approach/departure corridors and other critical phase of flight areas for surrounding airfield environment. B/DDR coverage will encompass 360 degree field of view around the airfield out to at least four nautical miles (nm) from the ground level to aircraft operational altitudes (12,000 ft above ground level).

2.2.2. Range and System Compatibility. B/DDR must be capable of detecting small (approximately 245 x 290 x 55 mm) to medium (approximately 322 x 242 x 84 mm) sized, commercially available sUAS targets. Detection of sUAS targets must be compatible with bird detection. B/DDR detection sensor(s) must support signature of multiple targets at one time.

2.2.3. Visualization and System Security. Ensure real-time system display is available through closed, remote platforms and/or over USAF networks. The contractor will provide all sustainment for a remote output solution (if requested by the purchasing organization, to include access over USAF computers, tablets, cell phones and other electronic devices). Visualization of sUAS intrusion into the aerodrome must be depicted in a clear, easy to interpret output, complimented by intrusion alerts. The contractor must ensure system

compatibility with all USAF Operational Security, Information Technology requirements for operation, and Cooperative Vulnerability and Penetration Assessment (CVPA) requirements.

2.2.4. Hardware and Software Requirements. Provide a software and hardware solution for sUAS detection in B/DDR units. Each B/DDR unit must be technically compatible for inclusion of future system enhancements and upgrades not included in this SOW. Compatibility should, include, at a minimum: video verification, electro-optical/infra-red cameras, acoustic sensors, Light Detection and Ranging (LiDAR) technology, and/or Radio Frequency detection. Adoption of any system updates, outside the technical contractor solution, are not options under this contract. The B/DDR must include a solution to differentiate between avian and sUAS targets.

2.2.5. System Calibration. Provide a one time, site-specific calibration of individual B/DDR units to execute sUAS target classification and verification. The contractor must coordinate with the Installation Primary Contact and is responsible for all administrative planning and execution of sUAS detection calibration (e.g., administrative planning for flying test sUAS).

2.3. TASK – Site Planning

2.3.1. Site Access. Each purchasing organization will designate an Installation Primary Contact for each site. The contractor will coordinate with the Installation Primary Contact for executing the Delivery Order. Coordination must include planning for site access needed to fulfill each Delivery Order, consistent with all SOW requirements. All contractor personnel must comply with Installation Commander policies for base access, including local security requirements and procedures. The Installation Primary Contact will support the contractor for installation access, coordinating with each respective Installation Security Office.

2.3.2. Site Selection. The contractor must coordinate with each Installation Primary Contact to develop a radar Installation Site Plan. Development of the Installation Site Plan must include a site visit to collect critical information needed for positioning the radar unit, including siting limitations. The Installation Site Plan must identify the optimal placement of the radar unit, identifying limitations of siting in relation to base infrastructure (e.g., trees, buildings, and other obstructions affecting radar output), as well as other Unified Facilities Criteria requirements and airfield safety standards. The Installation Site Plan must identify at least three additional contingent siting locations if the optimal placement cannot be achieved. The Installation Site Plan will include spatial depictions of radar capabilities relative to the preferred placement.

The Installation Site Plan will identify radar utility needs required for functionality, including power and network connections. Utility services (i.e., primary power source and network) are the responsibility of the Government. The Installation Primary Contact will coordinate

all utility needs outside this SOW. The purchasing organization is responsible for ensuring sufficient utilities are available at the proposed site prior to radar delivery (i.e., network/wireless connectivity and power). The contractor is responsible for fulfilling backup, auxiliary power requirements, as identified in Section 2.1.5. The Installation Site Plan will be confirmed by the Installation Primary Contact by signature.

2.4. TASK – Delivery, Installation, and Training

2.4.1. Delivery Contact. The contractor will coordinate with the Installation Primary Contact to facilitate all logistics for delivery of all order components. The Installation Primary Contact is responsible for all administrative functions required for delivery of each radar unit onto the site.

2.4.2. Delivery. The contractor is responsible for delivery of radar systems to a Contiguous United States (CONUS) location designated by the Installation Primary Contact. CONUS delivery is complete when the unit is operational, fulfilling Government Acceptance of the Order, consistent with Section 2.4.4.

For OCONUS orders without the Section 2.5. Option:

- The contractor must provide delivery to a CONUS port identified the by Installation Primary Contact, in writing.
- The purchasing agency must inform the contractor how the deliverables will be shipped (i.e., sealift or airlift). The contractor is responsible for packaging and crating all deliverables, consistent with Transportation Mobility Office requirements.
- Logistics and costs for shipment of radar deliverables from a CONUS port to the final OCONUS location are the responsibility of the agency executing the Delivery Order, outside this SOW (unless the Section 2.5. Option is executed).

2.4.3. Setup. The contractor is responsible for final setup of the BDR or B/DDR unit at the designated site identified in the Installation Site Plan. Setup for radar unit purchases (CONUS and OCONUS) shall be executed within 90 to 150 days of an official *Notice to Proceed* issued by the Installation Primary Contact, following award of each Delivery Order. Execution of the Site Planning (Section 2.3.) Task Order is highly recommended before or concurrent with the purchase and delivery/installation Task Orders to avoid setup issues.

The Installation Primary Contact will ensure all utilities necessary to perform final setup are complete prior to issuance of the *Notice to Proceed*. The contractor will coordinate with the Installation Primary Contact for setup access no later than 72 hours prior to entrance onto the Installation.

2.4.4. Government Acceptance. For CONUS sites, Government Acceptance of the Order will be designated once the radar is operational.

For OCONUS orders without the Section 2.5. Option, Government Acceptance of the Order will be designated once the radar is received at the CONUS port location identified by the purchasing organization, in writing.

For OCONUS orders with the Section 2.5. Option, Government Acceptance of the Order will be designated once the radar is operational at the OCONUS site.

2.4.5. Training Instruction. Upon Government Acceptance of the Order for each individual radar unit, the contractor will provide an in-person training for use of the BDR or B/DDR unit. At a minimum, the target audience for initial instruction must include, but not limited to: uniform and civilian representatives from SEF, Airfield Management, Air Traffic Control, Security Forces, and Command Post. Annually, or upon request, the contractor will provide a remote training for each year of the course upon request five-year warranty period. The contractor will coordinate remote and annual trainings (i.e., interactive video conferencing) with the Installation Primary Contact.

2.4.6. Training Materials. The contractor shall maintain high quality, effective visual training materials for Installation personnel on BDR and B/DDR operations. Training materials must focus on operation of the unit, interpretation of detection output, and troubleshooting for BDR and B/DDR units. The method for recurrent, remote educational outreach will include, but is not limited to: interactive video conferencing (e.g., Microsoft Teams), internet-based training, and proposed strategies for improved radar detection.

2.5. TASK – OCONUS Delivery.

Contractor delivery for OCONUS orders is accomplished through a separate contract Option under this SOW. Under this option, the contractor is responsible for all phases of delivery to the OCONUS site. The contractor is responsible for integrity of the shipment to the OCONUS site (i.e., Government Acceptance of the Order is complete when the unit is operational OCONUS, consistent with Section 2.4.4.). For planning, the contractor will provide delivery tracking updates to the Installation Primary Contact for movement of the cargo.

2.6. TASK – System Service and Data Management.

2.6.1. Services. An annual, full-service system support option must be available to support each purchased unit. The contractor must accomplish all BDR or B/DDR system services (e.g., data processing, analysis, reporting support) and upgrades for a one-year period beginning on the date of Government Acceptance of the Order for each unit. All upgrades

shall be coordinated with the Installation Primary Contact prior to completion. As necessary, the contractor will conduct an on-site visit to each BDR and B/DDR location to inspect the unit and ensure operational integrity.

In the event of a system failure or defect, the Government will notify the contractor in a reasonable and timely manner. The contractor shall respond within three (3) business days to coordinate parts delivery and repair. The contractor will cover all costs to repair any damages to safety system components or any associated equipment in the event of any malfunction or non-operation of the equipment during the warranty period. Any costs associated with fulfillment of warranty repairs, including personnel travel or shipping, is the responsibility of the contractor. The contractor will coordinate with the Installation Primary Contact for service access no later than 72 hours prior to entrance onto the Installation.

2.6.2. Data Storage Management. The contractor will provide all equipment and processes for the sustainment of bird data collected from BDR and B/DDR units. The contractor will maintain backup storage of all bird data collected from BDR and B/DDR for each annual service Task Order.

2.6.3. USAF Safety System Integration. The contractor must collect and store all bird radar detection data in a format this is compatible for integration into the USAF Bird Avoidance Model (BAM)/Avian Hazard Advisory System (AHAS). Bird detection data must be stored and provided to the Installation Primary Contact and AFSEC Bird/wildlife Aircraft Strike Hazard Team using a Compact Disc or other electronic data storage/exchange strategy compatible with USAF Information Technology and Security requirements.

2.6.4. Data Rights. All data and data rights, including report documentation associated with this SOW, is property of the U.S. Government. The contractor shall provide the Government with unlimited data rights to all software and information developed under this contract. The contractor will not use data for marketing, publication, or presentation without prior written consent from the AFSEC. Contact the AFSEC Bird/wildlife Aircraft Strike Hazard Team to coordinate use and release of radar detection data.

2.6.5. Updates. Annually, at a minimum, contractor-released updates to operating software will be provided and installed either on-site (as necessary) or remotely. Updates must remain consistent with USAF and DoD Information Technology security requirements.