

Procurement Specification: Commercial-Off-The-Shelf (COTS) Professional-Grade Inspection Unmanned Aircraft System (UAS)

1. Scope of Work

The State of Hawaii Department of Health (HDOH) Safe Drinking Water Branch (SDWB) is requesting proposals for one (1) Skydio X10 Drone Starter Kit or an approved equal commercial-off-the-shelf (COTS) professional-grade inspection Unmanned Aircraft System (UAS). The procurement is inclusive of corresponding operational spare parts, software subscriptions, shipping, handling and applicable taxes.

The UAS referenced above shall have a professional-grade airframe featuring advanced automated navigation, true 360-degree omnidirectional obstacle avoidance, high-resolution visual and radiometric thermal imaging, and suitability for operations in challenging weather and zero-light environments. References to specific brands or models are intended to establish a standard of quality, performance, and capability, and are not intended to limit competition. Alternate products or brands that meet or exceed these specifications, including all security certifications, will be considered.

Delivery Destination:

State of Hawaii Department of Health
Safe Drinking Water Branch
2385 Waimano Home Road, Suite 110
Pearl City, HI 96782

2. Technical Specifications & Quantity Requirements

The agency requires a professional-grade inspection UAS meeting or exceeding the performance, hardware, and security criteria of the Skydio X10 Drone Starter Kit or an approved equal:

- **Startup & Deployment Time:** Must transition from a packed, folded state to airborne in under 40 seconds without requiring specialized tools.
- **Flight Performance:** Minimum maximum flight time of 40 minutes (minimum 35-minute hover time). Maximum horizontal speed of at least 45 mph (20 m/s).
- **Portability & Weight:** Airframe must feature a folding design for rapid deployment. Maximum takeoff weight must not exceed 5.0 lbs including battery and standard sensor payload.
- **Environmental Resistance:** Minimum Ingress Protection rating of IP55 (dust and water-resistant, capable of operating in continuous light rain). Wind resistance threshold of at least 27 mph (12 m/s).
- **Operating Temperature Range:** Operational capability from at least -4°F to 113°F (-20°C to +45°C).
- **Navigation & Obstacle Avoidance:** True 360-degree omnidirectional obstacle avoidance utilizing an integrated multi-camera or sensor-based navigation suite. System must possess onboard edge-computing capabilities to calculate flight paths and avoid obstacles autonomously without relying on GPS or active operator input.

- **GNSS Support:** Multi-constellation support including GPS, Galileo, GLONASS, and BeiDou.
- **Positioning Accuracy (Optional Module):** Support for Real-Time Kinematic (RTK) or Post-Processed Kinematic (PPK) mapping modules to achieve centimeter-level accuracy.

2.1 Hardware and Spares Quantity Matrix

The submitted proposal package must include the following hardware, accessories, training, and support elements equivalent to or exceeding the target kit structure:

- 1x Professional-grade airframe equipped with standard RF controls and integrated low-light/navigation cameras.
- 1x Modular or integrated Optical/Thermal Multi-Sensor Payload (meeting specs in Section 2.2).
- 1x Ground Control Station / Enterprise Controller with integrated high-brightness display.
- 2x Wall charging adapters.
- 1x Dual/multi-battery simultaneous charging hub.
- 3x Intelligent flight batteries.
- 2x Sets of spare propellers (complete aircraft sets).
- 2x 256GB high-endurance microSD cards (or equivalent onboard secure storage).
- 1x Ruggedized, weather-resistant transport/ready case.
- 1x Enterprise software and autonomous navigation subscription (minimum 1-year term included).
- 1x Manufacturer warranty (minimum 1-year term included).

2.2 Imaging & Payload Requirements

The system must support a modular or integrated multi-sensor payload capable of simultaneous visual and thermal data capture, meeting or exceeding the following specifications:

- **Wide Angle Sensor:** Minimum 1-inch CMOS sensor, minimum 48 MP resolution, and an f/2.0 or wider aperture.
- **Narrow/Zoom Sensor:** Minimum 1/1.7-inch CMOS sensor, minimum 64 MP resolution, optimized for high-magnification asset inspection. Optical/digital zoom capability must be capable of clearly identifying structural anomalies or assets at a minimum distance of 800 feet.
- **Telephoto/Detail Sensor:** High-resolution dedicated telephoto sensor (minimum 40 MP) optimized for long-range detail capture.
- **Thermal Imaging Sensor:** Radiometric Long-Wave Infrared (LWIR) sensor with a minimum resolution of 640×512 pixels and a thermal sensitivity (NETD) of <30 mK.
- **Night Operations Illumination:** Integrated Infrared (IR) illuminator or specialized IR navigation cameras to enable safe flight and obstacle avoidance in zero-light/pitch-black conditions without emitting visible light.

2.3 Connectivity & Cybersecurity Requirements

- **Dual-Path Connectivity:** Support for multi-carrier Cellular 5G/LTE connectivity for remote data transmission and control, operating in parallel with standard point-to-point radio frequency (RF) line-of-sight control.
 - **Cybersecurity Compliance:** Must be fully compliant with the National Defense Authorization Act (NDAA) Section 848. Must feature secure data encryption using at least AES-256 standards for data-at-rest (onboard storage) and data-in-transit (downlink).
 - **Supply Chain Certification: Must be fully compliant and actively listed on the US Department of Defense (DoD) Defense Innovation Unit (DIU) Blue UAS Cleared List at the time of proposal submission.** No non-Blue UAS cleared alternatives will be accepted.
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3. Evaluation Criteria for Alternate Submissions

Bidders proposing an alternate airframe platform to the Skydio X10 Drone Starter Kit must provide a formal, itemized compliance matrix demonstrating strict equivalency or superiority to every metric detailed in Section 2.

- **Blue UAS Verification:** Bidders must provide proof of active clearance on the DIU Blue UAS Cleared List.
 - **Autonomy Demonstration & Documentation:** Bidders must submit technical data, validating how their system achieves true omnidirectional obstacle avoidance and autonomous navigation in zero-light/GPS-denied environments.
 - **Data Security Certification:** Bidders must provide certified documentation verifying NDAA compliance, specifying the country of origin for all critical flight controllers, communications modules, software stacks, and sensor components.
 - **Network Interoperability:** Bidders must provide proof of cellular network certification and integration capabilities (e.g., compatibility with US commercial 5G/LTE networks) for remote operations.
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4. Proposal Submission Requirements

Bidders must be Hawaii Compliance Express (HCE) compliant and submit their proposal package via the State of Hawaii's eProcurement system (HlePRO) containing the following:

- **Price Proposal:** Itemized cost breaking down the kits, supplemental batteries, supplemental propellers, delivery, shipping, and any extended warranty options.
- **Technical Specifications Sheet:** Manufacturer brochures for the specific model being offered, including verifiable proof of Blue UAS listing.
- **Delivery Timeline:** Estimated lead time from receipt of order to hardware delivery FOB Pearl City, Hawaii 96782.