

# Sole Source Request – LE&I UAV

## Preface:

LEI's National Technical Investigations Unit (NTIU), under direction from the Assistant Director of Investigations and Internal Affairs has been monitoring and evaluating UAV's intermittently since 1997, when their use was considered in support of Operation Linebacker, a border enforcement initiative. The NTIU has been working closely with an USFS Aviation Management Specialist who is reviewing UAV's for wildland fire suppression work, the USAF Research Lab at Eglin Air Force Base and the Special Operations Command (SOCOM). The latter two entities have a funded presence at the Missoula Technology and Development Center and have extensive experience with a variety of small, electrically-powered, hand-launched UAV's.

## The following requirements have been established for LEI use of UAV's:

1. UAV must be quiet, electrically-powered device *(Sky Seer is both)*
2. Must be capable of flying to elevation of 7,000 ft. *(Sky Seer will operate to 8,000 ft. above sea level)*
3. Flight/Loiter time should be 60 minutes or more. *(Sky Seer is 70 min.)*
4. Must have both high resolution CCD/EO and Thermal pods/payloads available *(Sky Seer can provide both)*
5. Must operate in wide range of temperatures *(Sky Seer will operate 0-120 F. minimum)*
6. Must have manual, semi autonomous and full autonomous options for flight *(Sky Seer has these modes)*
7. Minimal training required to operate -- no pilot's license *(Sky Seer training provided by co. as part of package)*
8. Ideally should be produced by company who has willingness to work outside defense market to meet some unique requirements *(Octatron/Chang Industry is chief co. to show interest in primarily working with LE agencies)*
9. Manufacturer should be proven entity with solid future to support product *(Octatron/Chang have proven track record in defense and LE arenas)*
10. Should have steerable Pan-tilt camera/gimbal *(Sky Seer is only UAV meeting this requirement and the others)*
11. Must be capable of being operated by no more than 2 people *(Sky Seer is operated by 2 persons)*
12. Must be capable of launch and recovery in harsh environments, small openings in canopy, etc. *(Sky Seer can land and take off in 50 meters)*
13. Should be fully self-contained turnkey system *(Sky Seer meets this requirement)*
14. Must be capable of being easily transported on foot several miles or within a vehicle's storage area *(Sky Seer can be folded into a 4" x 48" tube)*

15. Operable within FS Radio frequency Allocations (*Octatron is willing accommodate specialized frequency requirements- their newest UAV operates on IEEE 802.11/16 WiFi frequencies – no frequency allocation is required*).
16. Should be field repairable for common issues (*Sky Seer canvas can be repaired with duct tape, various other spare parts are provided at training with instruction for repair*)

## **Conclusion:**

USFS LEI has concluded that one UAV meets our requirements and price range, the Sky Seer from Chang Industry of La Verne, CA. Distinguishing attributes of the Sky Seer are:

1. Pan Tilt camera control. The UAV does not require piloting by a skilled operator in order to aim the camera at a particular area.
2. The 2.4 Ghz 802.11/16 telemetry control/data link is not military-specific. The company is willing to build telemetry on a USFS-allocated frequency that we provide.
3. Cost. Training is included in the price and costs between \$12-38K from the other vendors.
4. Octatron/Chang is very willing to address the specialized needs of FS law enforcement, unlike the larger companies who supply the military with their UAV's. Though smaller, Octatron/Chang has in-house engineering ability to respond to unique needs.
5. New requirements being considered by the FAA could make it more difficult to obtain Certificates of Authorization to fly the UAV's. New COA's will be make/model specific, rather than general UAV COA's. For testing purposes, USFS Fire & Aviation will also have access to a U.S. Army-owned Sky Seer to be based out of Missoula. We will have opportunity to collaborate with Fire in obtaining necessary training as they will need it also. This will reduce spool-up costs. Octatron/Chang will be in the Missoula area regularly to work with the local defense contractor and consequently be more available to the USFS.

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