



**A. THE GOOD/SERVICE REQUESTED IS RESTRICTED TO ONE SUPPLIER FOR THE REASON STATED BELOW:**

1. Why is the acquisition restricted to this goods/services supplier?(Explain why the acquisition cannot be competitively bid. Explain if this is an emergency purchase or how the supplier is the only source for the acquisition.)

Remotec was the initial provider of robot unit. Their expertise with the upgrade requested, compatibility with its operation, and the high risk to personnel safety involved with the unit's purpose of handling bombs and explosives make this vendor the only feasible supplier.

2. Provide the background of events leading to this acquisition.

The El Dorado County Sheriff Emergency Ordinance Disposal Team (Bomb Squad) assessed their needs by surveying personnel during staff briefings, attending training seminars, and comparing best practices with other agencies. Through this research, the El Dorado County Sheriff's Office determined that upgrades were needed to the EOD Robot in order to stay current and be prepared for unforeseen disasters with handling bombs and mitigating explosives. Sergeant Auwae, Lieutenant Dreher, Undersheriff Williams and Sheriff D'Agostini agreed with the assessment and approved the purchase request.

3. Describe the uniqueness of the acquisition (why was the goods/services supplier chosen?)

The robot unit is essentially being built anew; the main components of the robot will be torn out, reconstructed with new equipment and configurations.

4. What are the consequences of not purchasing the goods/services or contracting with the proposed supplier?

The high risk to personnel safety involved with the unit's purpose of handling bombs and explosives is the primary consequence. Another is that more sites will be compromised, due the complexity with a potential explosive's location and concealment.

5. What market research was conducted to substantiate no competition, including evaluation of other items consider?  
(Provide a narrative of your efforts to identify other similar or appropriate goods/services, including a summary of how the department concluded that such alternatives are either inappropriate or unavailable. The name and addresses of suppliers contacted and the reasons for not considering them must be included OR an explanation of why the survey or effort to identify other goods/services was not performed.)

Remotec was the initial provider of robot unit. Their expertise with the upgrade requested, compatibility with its operation, and the extent of the upgrade proposed makes any other vendor unfeasible.

**B. PRICE ANALYSIS**

1. How was the price offered determined to be fair and reasonable?  
(Explain what basis was used for comparison and include cost analysis as applicable.)

The written price quote is itemized in detail, with parts described and labor involved. It is transparent and fair given the specificity and expertise necessary for the upgrade.

2. Describe any cost savings or avoidance realized (1 time or on-going) by acquiring the goods/services from this supplier

The EOD Team and the EDSO chain of command recognize the ongoing avoidance of extra labor time spent at investigation sites and the undue risk to personnel on duty at any such sites.

**EL DORADO COUNTY SHERIFF'S OFFICE**  
**SHERIFF JOHN D'AGOSTINI**

**MEMORANDUM**



TO: Lt. Dreher

FROM: Sgt. Auwae

SUBJECT: Andros F6A+ robot upgrade

DATE: March 3, 2014

I am submitting a purchase request for an upgrade to our bomb response robot. As you know, the F6A is one of our main tools on the EOD team and is used on almost every call. The mantra in the EOD community is "start remote, stay remote". The use of the robot allows us to fulfill much of our chartered mission without exposing Sheriff's Office personnel to any more harm than is absolutely necessary.

The upgrade to our robot platform provides many advantages over the robot the way it is currently. Most importantly, in order to complete the upgrade Remotec completely tears down the robot and rebuilds it. When we receive the robot back from the vendor it will have all of the motors serviced and repacked, the arm rewired, and new electronics in the chassis. For all intents and purposes, we would have a brand new robot.

In addition to this major benefit, the upgrade included a new back up camera, position sensors on all of the joints and new LED lighting. The LED lighting is lower draw and reduces the drain on the battery and the back up camera improves visibility. The position sensors on all of the joints on the robot allow the robot to "know" how it is configured. This is shown as an avatar of the robot on the OCU that mimics the current configuration. The avatar allows the operator to track the configuration of the robot without tasking a camera to visually check. The robot can also be programmed with preset configurations such stair climbing, PAN loading, battery change, etc. This reduces the amount of time for operations and deployment. It also reduces the learning curve for the robot operator making the team as a whole more effective.



# NORTHROP GRUMMAN

## Remotec

<p style="text-align: center;"><b>REMOTEC, INC. SERVICE DEPARTMENT QUOTE</b></p> <p>353 J.D. Yarnell Pkwy Clinton, TN 37716 Phone: (865) 483-1492 Fax: (865) 483-1436 E-mail: RemotecService@NGC.com</p> <p>Attn: RICKMAN,JUSTIN</p> <p>CMPNY: El Dorado Co Sheriff's Dept ATTN: Melton, Jared ADDR: 300 Fair Lane</p> <p style="text-align: center;">Placerville CA, 95667</p> <p>PHONE: 530-621-5655 FAX: (530) 642-9473 Email: meltonj@edso.org</p>	<p>Date: 2/20/2011</p> <p>Terms: Net 30 Days</p> <p>Prices are F.O.B. Clinton, TN</p> <p>Delivery: 180 Days After Receipt of Order Or Sooner</p> <p>This pricing is valid for 90 days.</p> <p>ROBOT MODEL: F6/ ROBOT S/N: F5522-01N00120</p> <p>QUOTE #: Q-10407</p> <p>RMA# N/A</p>
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ITEM	DESCRIPTION	PART NO.	QTY.	UNIT PRICE	TOTAL PRICE
	<b>Upgrade 2455 F6A to F6+ Style Including:</b>	<b>E2461-0100</b>	<b>1</b>		\$ -
<b>A</b>	<b>Chassis Upgrade</b>				\$ -
1	Vehicle Electronics Assy. (includes Drive Camera Assy.)	E2461-4000	1	\$ 29,700.00	\$ 29,700.00
2	Drive motor conector connector	CON-HDP26-18-6SN	2	\$ 19.00	\$ 38.00
3	Lift bearing plate	C2457-1037	2	\$ 151.00	\$ 302.00
4	Membrane pot	B2461-1020	2	\$ 275.00	\$ 550.00
5	Wiper Plunger	B2461-1006	2	\$ 28.00	\$ 56.00
6	Wiper Mount Block	B2461-1007	2	\$ 22.00	\$ 44.00
7	Labor to Assemble Chassis	LABOR2	40	\$ 185.00	\$ 7,400.00
<b>C</b>	<b>Arm Upgrade Including:</b>				\$ -
1	Arm Joint Pot Assy (Shoulder, elbow, pitch)	B2461-2278	3	\$ 560.00	\$ 1,680.00
2	Grip cords ( pitch)	GRIPCORDER-056	2	\$ 28.00	\$ 56.00
3	New Shoulder Lift plate (Shoulder, elbow, pitch)	B2461-2026	3	\$ 240.00	\$ 720.00
4	Labor to Re-wire wrist pitch Assy.	LABOR2	5	\$ 185.00	\$ 925.00
5	Labor to Re-wire Elbow Assy.	LABOR2	5	\$ 185.00	\$ 925.00
6	TORSO SENSOR GEAR SHAFT	B2461-2267	1	\$ 35.00	\$ 35.00
7	Torso pot mount	C2461-2265	1	\$ 230.00	\$ 230.00
8	Torso Sensor Gear	B2461-2261	1	\$ 86.00	\$ 86.00
9	Sensor	SENSOR-005	1	\$ 135.00	\$ 135.00
10	Cord Grip	GRIPCORDER-055	1	\$ 80.00	\$ 80.00
11	Sensor Cable	CBL-SENSOR-001	1	\$ 13.00	\$ 13.00
12	Gear	GEAR-002	1	\$ 71.00	\$ 71.00
13	Worm gear shaft	D2400-2030	1	\$ 1,200.00	\$ 1,200.00
14	Shoulder Side Plate	C2461-2025	1	\$ 452.00	\$ 452.00
15	Labor to Re-wire Shoulder Assy.	LABOR2	7	\$ 185.00	\$ 1,295.00
16	Labor to further modify arm parts. To F6+	LABOR2	20	\$ 185.00	\$ 3,700.00
17	Firing circuit assy	D2460-3950	1	\$ 560.00	\$ 560.00
<b>D</b>	<b>Camera Upgrades</b>				\$ -
1	Small Pan/Tilt Arm Mount Kit w/LED light	C3865-5030	0	\$ 6,900.00	\$ -



Shipping Via: \_\_\_\_\_  
TAX \$ \_\_\_\_\_  
TOTAL COST \$ 61,547.00

**ALL QUOTES REQUIRE APPROVAL**

<p>Business Management Approval <i>Stephanie Donley</i></p>	<p>Contracts Approval <i>Tom Sauls</i></p>
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- (1) Prices listed are for sales in U.S.A. only. Export prices are available upon request.
- (2) Add travel, labor and subsistence costs if training is located at customer's facility.
- (3) All products have a one-year warranty. Extended Maintenance Contracts are available.
- (4) Prices are based upon acceptance of REMOTEC's Terms and Conditions (attached). Any deviation from these conditions may result in a price increase.
- (5) The prices contained herein are budgetary, are submitted for planning purposes only and are not to be construed as a firm quotation. Any resultant contract shall be contingent upon negotiation of mutually acceptable terms and conditions.



## The F6A+ upgrade features

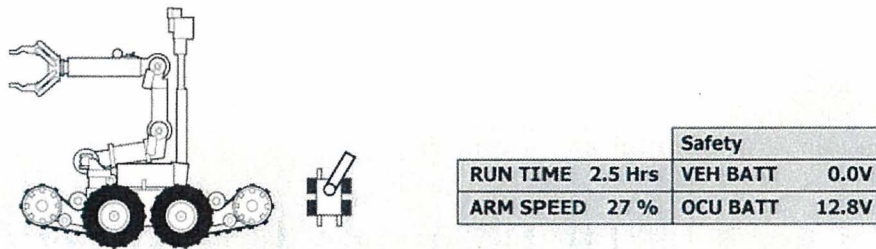
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### On screen graphics

These allow you to know the position of the robot from your control station.

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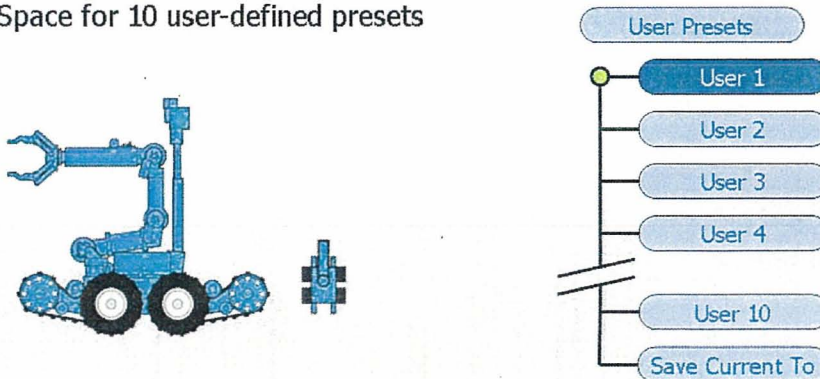
- Left facing side-view of F6A gives accurate and real-time position feedback from on board sensors in the arm and articulators
- Errors and failures are communicated on-screen with the failed area turning either red or yellow depending on status



### Customizable preset arm and articulator settings

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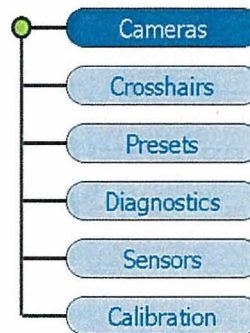
- Menu function allows selection from factory or user-defined presets for the arm and articulators
- Factory presets include most commonly used positions such as: Park, Deploy, Stair Mode Up/Down, and Drive Mode among others
- Space for 10 user-defined presets



## Improved, easier to understand menus

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- Menu based vs. endless loop/scroll
  - More intuitive & easier to read
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Vehicle image = actual orientation



Press **Graphics Switch up** to display the top-level menu.

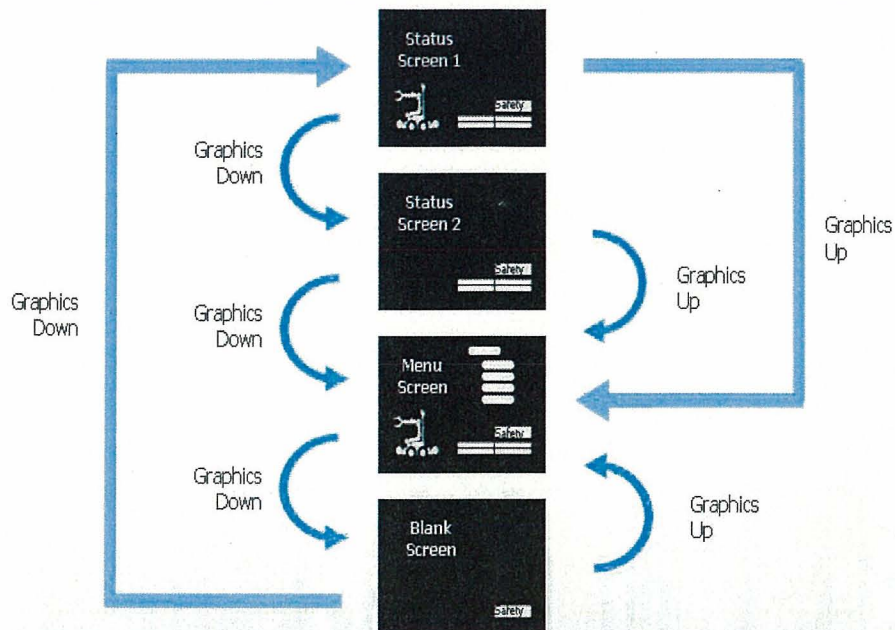
**P/T down** highlights next lower menu item, and will wrap to the top item.

**P/T up** highlights next higher menu item, and will wrap to the bottom item.

**P/T right** drills down into the highlighted menu item.

**P/T left** backs up to the previous menu. It performs no action if on the top-level menu.

## Let's take a look at how that would work.



The Graphics Down switch cycles between the two Status screens, the Top-level Menu Screen, and the Blank Screen. The Graphics Up switch brings up the Menu Screen, and performs no action if already on the Menu Screen. The power-on default is Status Screen 1, with a splash box containing vehicle ID and SW version; press Graphics Down once to remove the splash box and stay on Status Screen 1.

## So, what is involved in getting your robot upgraded?

- Robot and all accessories must be returned to Remotec
- Complete tear-down and service of chassis, and arm (including servicing, repacking grease in gears, rebuilding and testing of all motor/gear packages)
- Rewire of the arm to include the pots/sensors for positioning
- New electronics housing (includes casting, JAUS electronics, and top cover plate)
- Operational test of entire system
- Upgrade takes approximately 3 weeks for rebuild and testing

There may be additional costs, depending on both the shape of your robot and any accessories you might add.

- Any repairs or maintenance not directly related to the upgrade
- Labor and parts not required by upgrade (broken gears, burned out motors, etc.)
- New Tracks and Tires
- Any new accessories

These would all be added to the cost of the “Basic” upgrade quote Along with any shipping costs that might apply.

Some of the more popular accessories are:

### G-man Accessories

## Remotec +G-Man Tow Kit

The G-Man Tow Kit is an easy-to-use set of tools for use with your ANDROS hitches and mounts. Tow Kits come with the following and can be customized:

Includes Ball Hitch Drawbar, Clevis Drawbar, Ring Drawbar, Quick-Release Mount Drawbar, and heavy-duty roll bag for easy storage.

Contact Remotec or G-Man Group for more information, pricing, or customization options.



**also available:**



### Universal Mount

This new bullet-proof receiver assembly can be mounted to the front or rear of your F6A. Sold separately or as tool kit option. Part # GMF6AUNIVERSAL

### F6A Workhorse Package

Workhorse package includes 2 Universal Mounts, 1 F6A Tow Kit, 1 F6A Kit and 2 storage roll bags. Part # GMF6AWORKHORSE

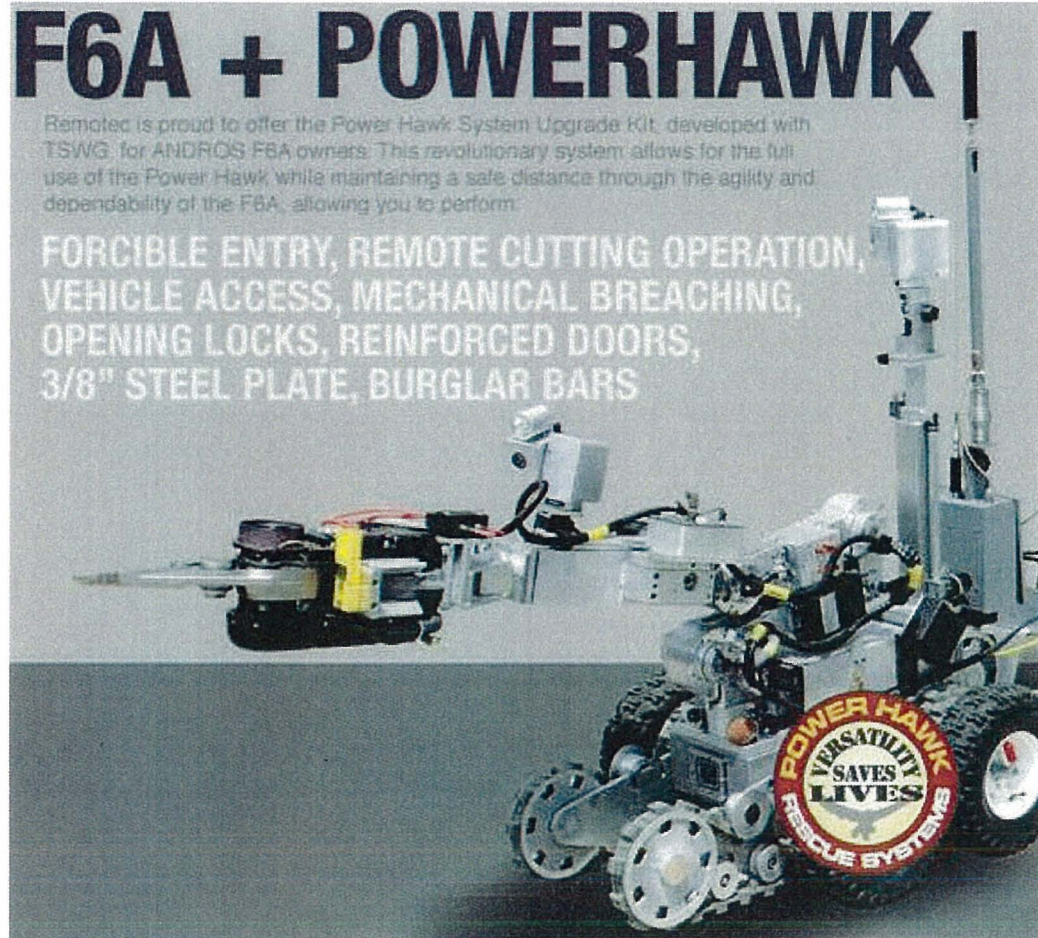


## The Powerhawk

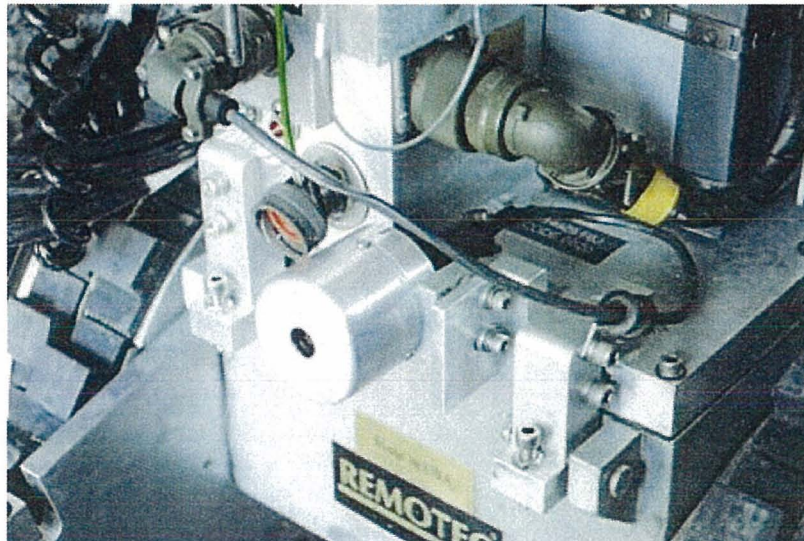
# F6A + POWERHAWK

Remotec is proud to offer the Power Hawk System Upgrade Kit, developed with TSWG for ANDROS F6A owners. This revolutionary system allows for the full use of the Power Hawk while maintaining a safe distance through the agility and dependability of the F6A, allowing you to perform:

**FORCIBLE ENTRY, REMOTE CUTTING OPERATION,  
VEHICLE ACCESS, MECHANICAL BREACHING,  
OPENING LOCKS, REINFORCED DOORS,  
3/8" STEEL PLATE, BURGLAR BARS**

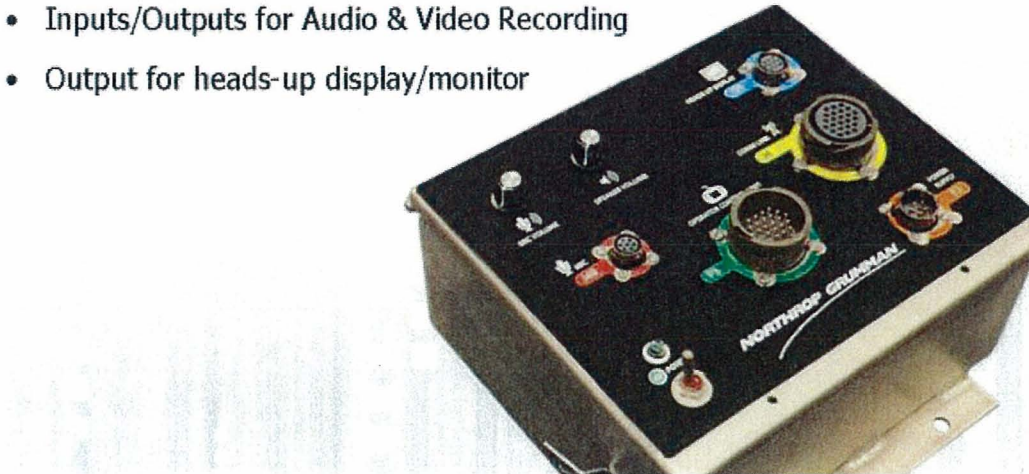


## The rear Drive camera



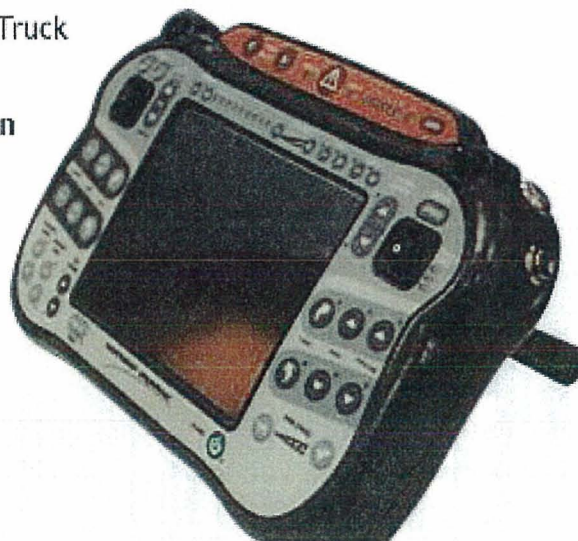
### The Truck Mount Kit

- Wall mountable kit replaces the bulky tabletop controller (OCU purchased separately)
- Compatible with current switchbox or TAC-1 OCU
- Inputs/Outputs for Audio & Video Recording
- Output for heads-up display/monitor

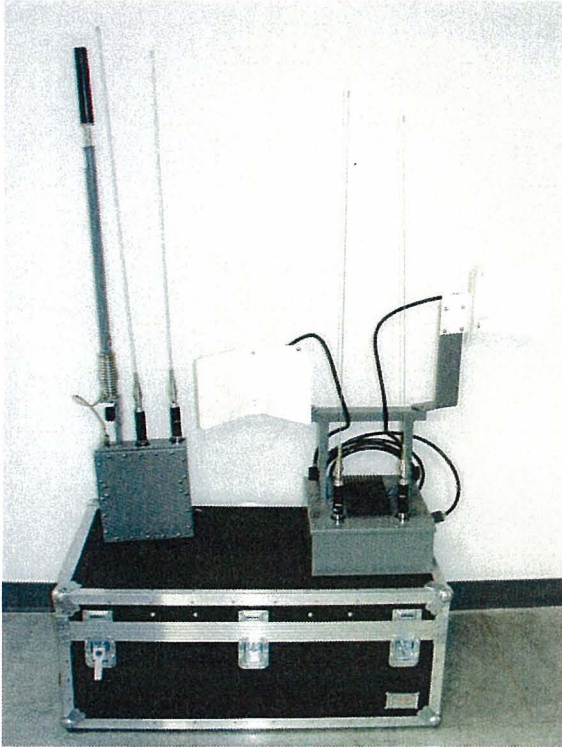


### The Tac-1 Controller

- Handheld controller replaces bulky switchbox with a more ergonomic, lightweight solution
- Works in conjunction with the Truck Mount Kit
- Built-in daylight readable screen
- Built-in microphone & speaker
- LED feedback for weapons, camera, speed and "last pressed" functions



...and of course  
**The Hybrid Radio Control Assembly**



For more information...give us a call

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