

C4ISR - SPAWAR



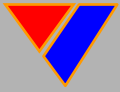
# KEYHOLE / RCOS / EODOS / VISDES Optics and Program Brief

This Brief is Classified UNCLASSIFIED//FOR OFFICIAL USE ONLY

**SPAWAR**



Systems Center  
PACIFIC



# Thermal Imagery

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All objects, cold or hot, radiate heat in the form of infrared energy. As an object increases in temperature, it radiates more energy.

Infrared radiation, visible light and ultraviolet light are forms of energy in the electromagnetic spectrum. The only difference is their wavelength or frequency.

Organic objects produce their own heat. Inorganic/inanimate objects retain heat from external sources (e.g. sunlight) which then dissipates and is lost to the environment.

The relative uniformity of retained heat in inorganic/inanimate objects correlates to particular events, such as touching, moving or exposing it to a heat source.



**Thermal imaging devices detect infrared radiation associated with heat differentials: differences between the temperatures of objects.**

**Thermal imagers operate without need for ambient light and are effective in conditions that challenge traditional night vision devices (smoke, fog, etc).**



# LRTV

(Long Range Thermal Video)



## SPECS

**Weight:** 6.1 lbs

**Size:** 12.3" X 9.2" X 4.2"

**Detect man-size tgt:** 5000m

**PID:** 2000m

**Vehicle Detect:** > 9 km

**Recognition:** > 3.5 km

**Optics:**

**Magnification:** X2, X4, X8

Wide or narrow FOV

**Output:** Still or video

**Power:**

**Battery:** BB 2847  
(rechargeable)  
or BA 5590

**Duration:** 2-4 Hours (BB 2847)  
7-8 Hours (BA 5590)

**Startup:** 3-6 minutes

**Temp range:** -33°C to +55°C

**Noise:** Undetectable at 25 m in regulated mode

## OUTPUT



Thermal image of personnel  
Range: 750 meters



Individual with RPG  
Range: 750 meters

## CAPABILITIES

- High performance, multi-function, cooled, thermal binocular that includes essential observation, detection, location and targeting functions.
- Powerful imager significantly enhances detection range
- Integrated commercial GPS, IR pointer, laser range finder, inclinometer, magnetic compass.
- Target locator function includes range/azimuth/inclination and coordinates
- Day optical viewing in color with 2X and 4X magnification.
- Ruggedized, water/weather resistant



# UTB

(Universal Thermal Binocular)

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“Perfect design, easy to operate, and capable of fast muscle memory.”

– Sgt, USA

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## SPECS

**Weight:** 32 oz (1.9 lbs)

**Size:** 6.5”x 2.1” x 3.2”

**Detect Range :** ~1500m+  
with high resolution lens for  
man-size target

**Optics:**

**Magnification:**  
2.2 X (standard lens )  
4.4 X (high res lens)  
2 x Digital zoom

**Resolution:** 640 X 480

**Output:** Still or video

**Power:**

**Battery:** Disposable AA or  
CR123A

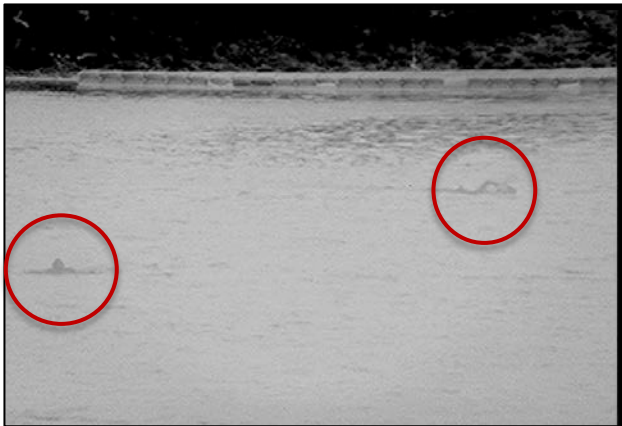
**Duration:**

3 batteries: each battery  
2.5 hrs (7.5 hrs total).

**Startup:** <4 secs

**Temp range:** -38°F to 140°F

## OUTPUT



Thermal image detected surface swimmers at approximately 750 meters. Standard NVGs would not have detected these targets at this range.

## CAPABILITIES

- Lightweight, high performance, thermal binocular
- Uncooled – noiseless
- Ruggedized, water/weather resistant
- Built-in visible and IR laser pointers, digital compass, inclinometer
- Simple controls
- Greatly enhances vision at night or in challenging dust and smoke conditions. Operates without ambient light. No blooming effect experienced by other night vision technologies
- Enhances ability to remain concealed while still observing target.

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# UTM

(Universal Thermal Monocular)

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“Much more effective and easier to use than past handheld thermal systems.”

– SSG, USA

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UTM on weapon

## SPECS

**Weight:** 12.8 oz (0.8 lbs)

**Size:** 5.1" X 2.1" X 3.2"

**Detect Range:** ~800M  
(human, man-size)

### Optics:

2 X Digital Zoom

640 X 480 resolution

**Eye relief:** 1" (up to 8"  
on weapon)

**Output:** Still or video

### Power:

**Battery:** Disposable  
CR123A

### Duration:

1 Battery: 2.5hrs of use

2 batteries: 5.5hrs

**Startup:** < 4 secs

**Temp range:** -38°F to 140°F

## OUTPUT



Rectangular  
Pressure Plate  
Range:  
approximately 20  
meters

Disturbed Earth of HME  
jug buried 6"-7"  
3 hours after emplaced  
Range: 25 meters



## CAPABILITIES

- Palm sized, high performance thermal monocular
- Operates as individual thermal viewer or weapons mounted sighting device.
- Able to clone the BZO of an existing day sight, or be utilized with adjustable reticle.
- Integrated, adjustable visible and IR laser pointers that can be bore sighted with weapon.
- Built-in magnetic compass and inclinometer
- Uncooled, noiseless operation
- Ruggedized, water/weather resistant

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PHOTO 41 OF 41 ◀ NEXT ▶ DEL



# UTC

## (Universal Thermal Clip-On)

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“Hands down the best weapons mounted thermal optic I’ve ever used.”

– Sgt, USA

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Also known as UNS-T/LR  
(Universal Night Sight –Thermal, Long Range)

## SPECS

**Weight:** 27 oz. (1.6 lbs)

**Size:** 6.75” x 4.0” x 3.25”

**Detect range:** 800m-1000m  
(human, man-size)

**Optics:**

0.5x, 1x, 2x Digital Zoom

640 X 480 resolution

**Eye Relief:** 1” – 8”

**Power:**

**Battery:** CR123

**Duration:**

1 Battery: 2.5hrs of use

2 Batteries: 5.5hrs

**Temp range:**-38°F to 140°F

**Startup:** < 4secs

**Output:** Still and Video

## OUTPUT



Thermal image taken at night in low visibility at ~420 meters. The UTC supports long range sniper and surveillance missions effectively.

## CAPABILITIES

- High performance thermal weapon sight
- Supports long range sniper and surveillance missions.
- Compliments existing unity day sight systems, as well as day sights with variable magnification in excess of 10x when used as a pass through sighting device.
- Single handed operation for all controls; will not interfere with bore sight and day sight indexing methods.
- Rugged design with simple menu functions; water/weather resistant
- Crew Served Weapons Mountable

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# SKEETIR

## (Micro Thermal Imaging Monocular)

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“Very compact, easily deployed, clear image...better than the NVG’s we currently use.” – PEC, USA

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## SPECS

**Weight:** 6.5 oz (0.4 lbs)

**Size:** 3.6”x 2.3”x 1.5”

**Detect Range:** 300m -400m

**Optics:**

**Optics:**

0.5x, 1x, 2x

Digital Zoom

Resolution: 320 X 240

**Output:** still or video

**Temp range:** -38°F to 140°F

**Mounts:** weapon or helmet mountable

**Power:** 1 X CR123A Batt

**Run Time:** 3+ Hours

**Startup:** <4secs

## OUTPUT



Thermal image from SkeetIR at ~350 meters in limited visibility and vegetation environment. STD NVGs may not have detected these people.

## CAPABILITIES

- High performance micro-thermal viewer
- Operates as hand-held thermal viewer or can be mounted on weapon or helmet.
- Able to clone the BZO of an existing day sight, or be utilized with adjustable reticle.
- Integrated IR laser pointers
- Built-in magnetic compass and inclinometer
- Uncooled – noiseless; ruggedized, water/weather resistant



# PLRF – 15C

(Pocket Laser Range Finder)

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“The PLRF changed the way we shoot due to known angles and exact ranges” – Sgt, USMC



## SPECS

**Weight:** 1.5lbs  
**Size:** 5" x 2.6" x 4"

### Optics

**Magnification:** 6x  
**Field of view:** 106mil/6°  
**Focus:** Fixed  
**Range:** 5m – 3000m  
**Max. inclination:**  $\pm 45^\circ$

**Laser type:** Class 1 (eye safe)

### Accuracy:

$\pm 2$  m (>50m to <1500m)  
 $\pm 5$  m (<50m/>1500m)

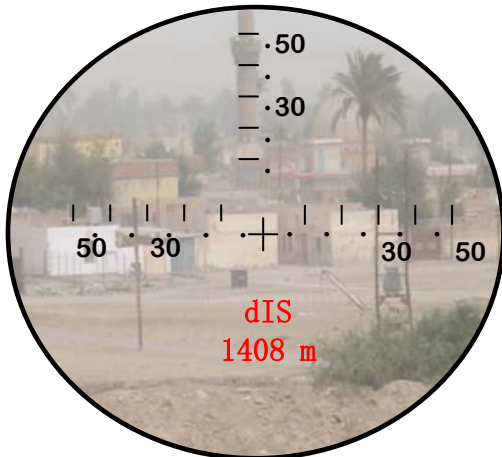
### Beam divergence:

0.5 x 2.0mil

### Power:

**Batteries:** 2 X CR123A  
Lithium  
**Duration:** > 5,000 ranges  
**Temp range:** -35°C to +63°C

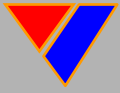
## OUTPUT



## CAPABILITIES

- Pocket-size laser range finder
- Class 1 eye-safe laser
- Handheld, 2-button operation
- Integrated digital magnetic compass and sighting optic.
- Provides distance, azimuth and inclination
- When integrated with a GPS, provides geographic coordinates of target
- Can be mated to the AN/PVS-18 night vision monocular for nighttime operations.





# Image Stabilized (IS) Binoculars

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## SPECS

**Type:** IS Prism binoculars

**Weight:** 2.3 lbs

**Size:** 5.4 x 6.9 x 3.4 in

**Magnification:** 10x

**Objective Lens Diameter:**  
42mm

**Filter Size:** 52mm

**Real Field of View:** 6.5°

**Apparent Field Of View:** 65°

**Eye Relief:** 16mm

**Focusing Method:** Manual

**Closest Focusing Distance:**  
8.2 ft

**Image Stabilizer:** Vari-Angle  
Prism

**Tripod Socket:** Provided

**Power Source:** 2 X AA-size  
batteries

## OUTPUT



Stabilizes images, especially from moving vehicles.

## CAPABILITIES

- Imaged Stabilized Binocular
- Effective through vehicle windows (Thermal imagers are not effective through glass)
- One touch image stabilization
- Distortion-free images from edge-to-edge of lens;
- Metallic coating of components prevent fogging
- Large pupil diameter ensures bright field of view
- Ruggedized, water/weather resistant
- Coated, sealed design prevents fogging



# RED - I

(Remote Eyepiece Display - Imager)



## SPECS

**Weight:** <3.5 oz

**Optics:**

See-through optical viewer

**Resolution:** 640 X 480

**Field of View:** clones coupled systems up to 30°

RS170 coupler compatible with all DoD thermal sensors

**“Instant-On”** at all operational temperatures.

**Power:**

**Battery:** CR123 or AA

**Duration:** 1 battery: 13 hours

2 batteries: 30 hours

## OUTPUT

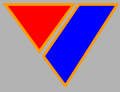


Operator using RED-I to observe danger area without exposing himself.

## CAPABILITIES

- Lightweight remote eyepiece display replicates image from thermal viewers
- Patented see-through optical display w/“snap-cap” cover for covertness.
- Headset mounts to helmet or eyeglass frames. Fits underneath CPE blast visor. User configurable left or right eye (no tools required).
- Remote break-away battery box with clip attaches to any outerwear and provides easy access to controls.
- Allows for no-threat viewing while imager is attached to telescoping pole mount.





# ACCESSORIES

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**Pelican case**



**DAGR GPS**



**Tripod**

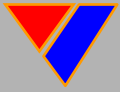


**Charger and batteries  
(BB2847 rechargeable)**



**Telescoping pole**

- Carbon fiber, extends to 9 ft
- Shown with SKEET-IR mounted and connected to a RED-I monitor
- Looking over walls, around corners, or in culverts.



# NEW ACCESSORIES

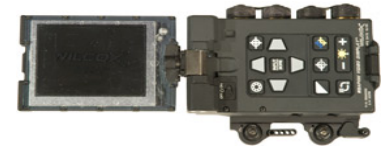
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LCD Compatible Screens



Weapons Video Display

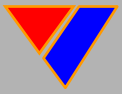


New  
Helmet  
mounting



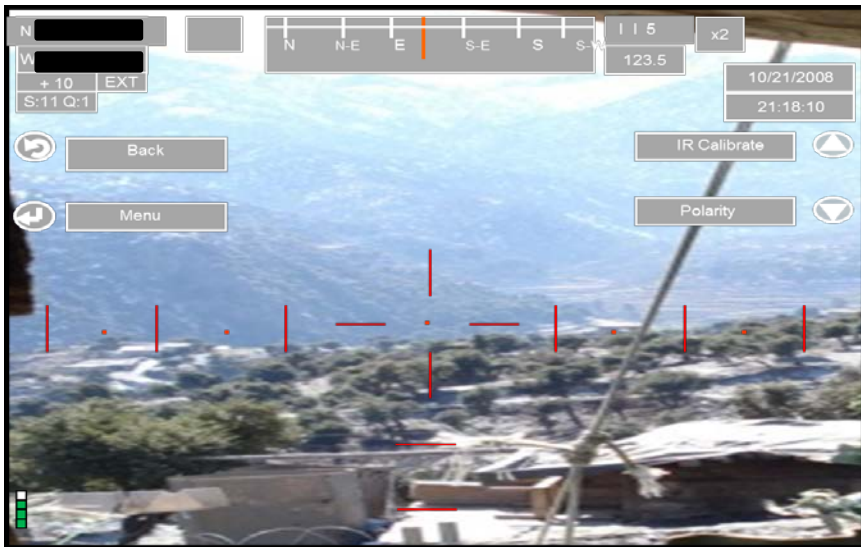
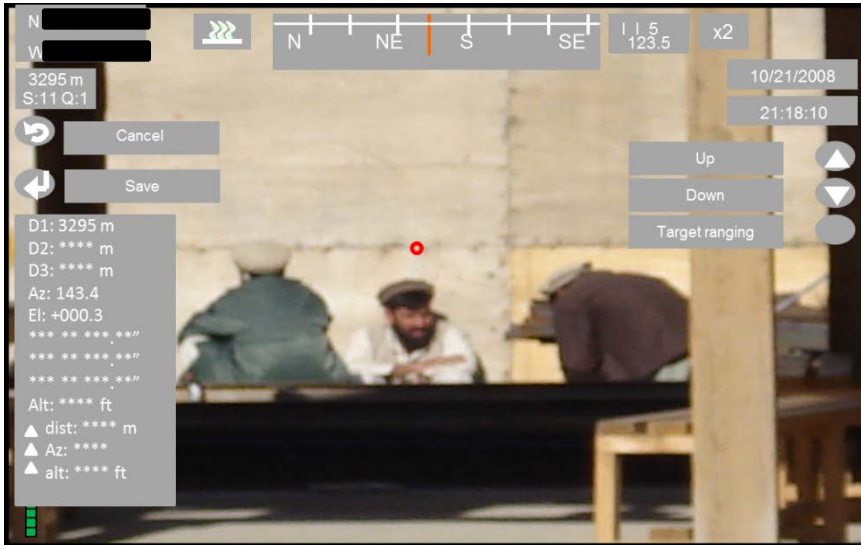
COTI (Clip-On Thermal Image) capable – thermal overlay on NVG

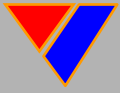




# LRTV – IR, Day Video, Laser Range Finder, GPS

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# IED Signature Detection – Example

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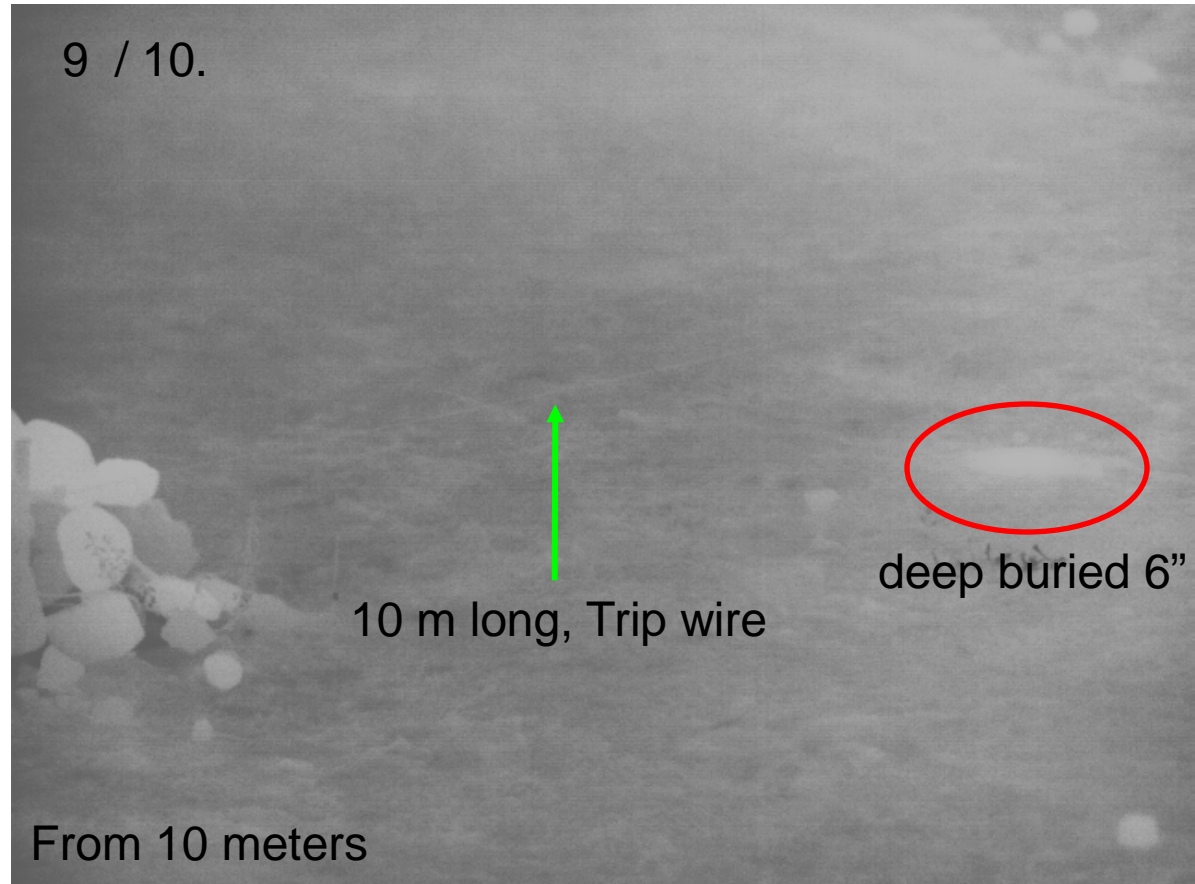
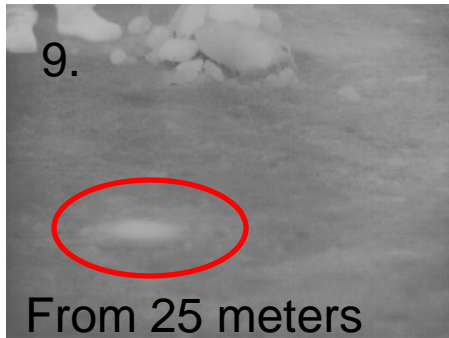
**AREA:** Hard packed dirt road.

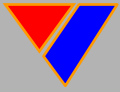
**TIME/ATMOSPHERICS:** 1230, 92 degrees, 29.86inHg

**IED:** TC-6 antitank mine, deep buried 6"

**INITIATOR:** Pressure release, Initial (9.)

Trip wire (white cloth/cotton) string, secondary (10.)





# Inert IED Emplacement – August 2012

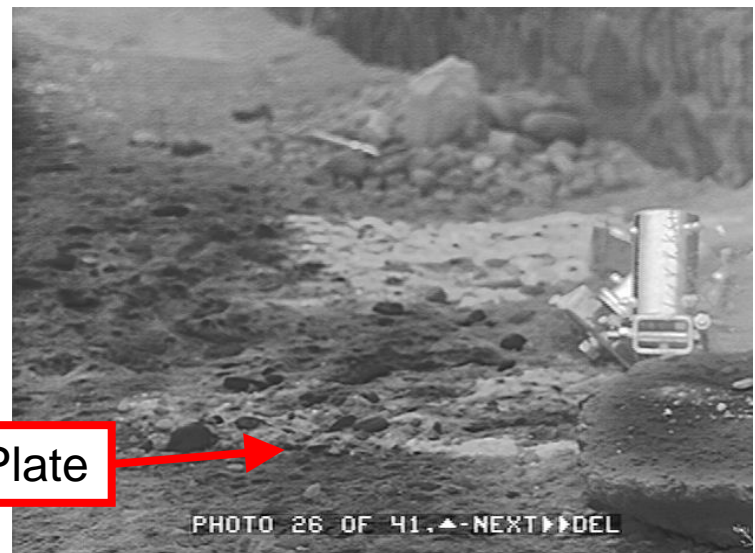
C4ISR – SPAWAR

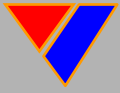


Main Charge



Pressure Plate





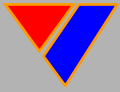
# Inert IED – August 2012 (Cont'd)

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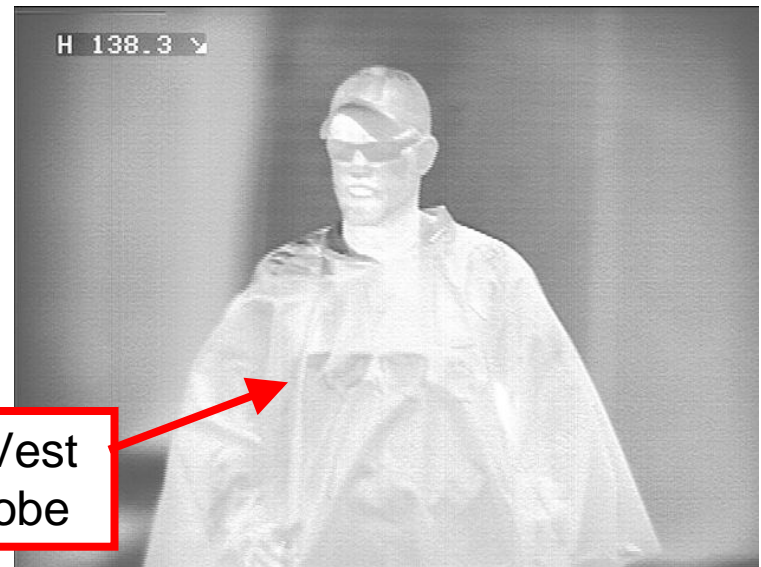
Pressure plate 52 hours after emplacement –  
photographed 2 hours after sundown.



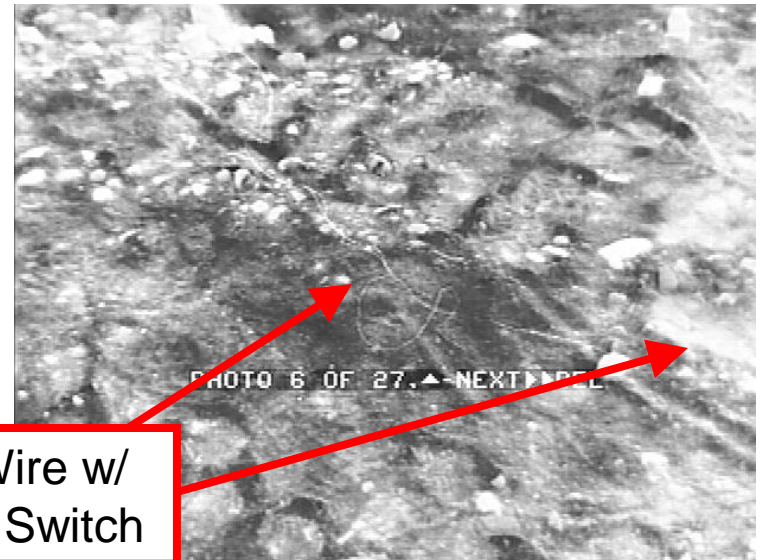
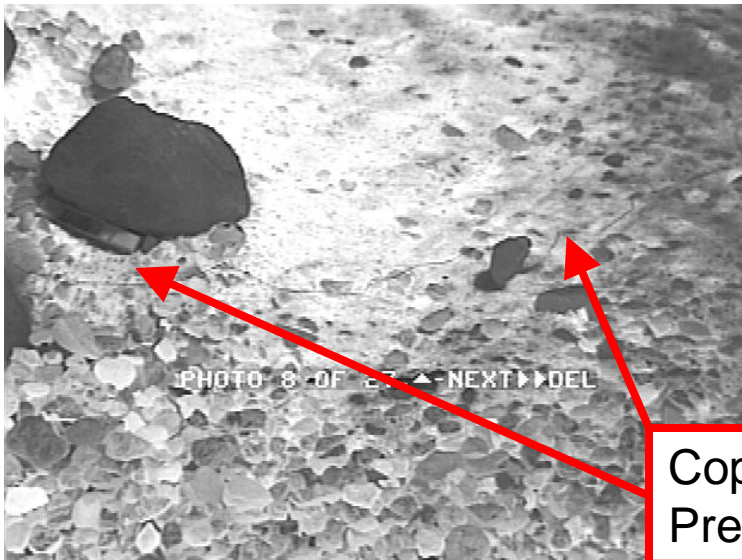


# Operational Testing with EOD – Sep 2012

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Suicide Vest Under Robe

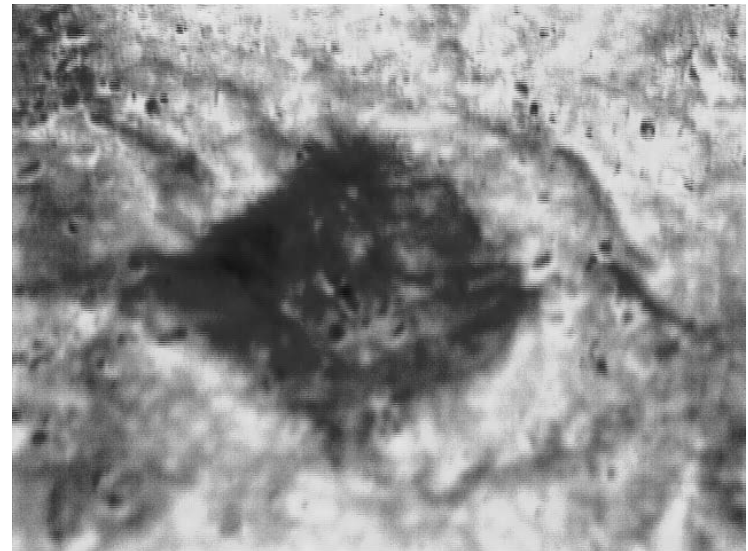
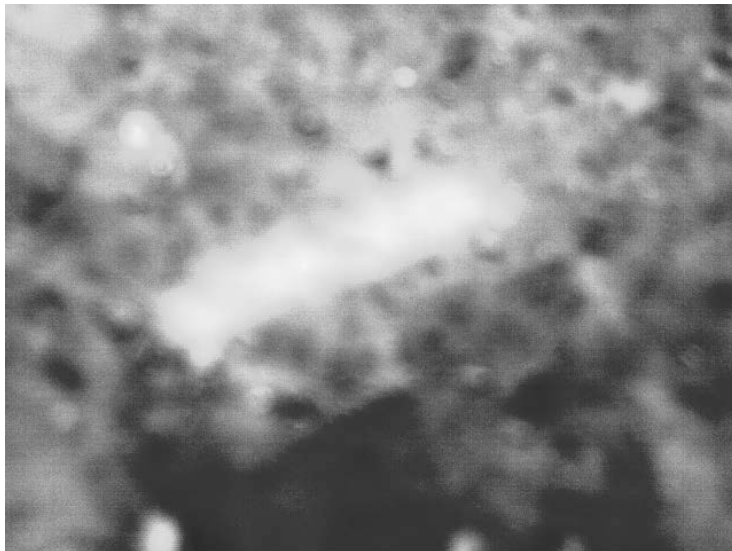


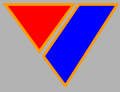
Copper Wire w/ Pressure Switch



# IED Find w/ UTM – Afghanistan

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# Edge Detect Function

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UTC



UTB



UTM

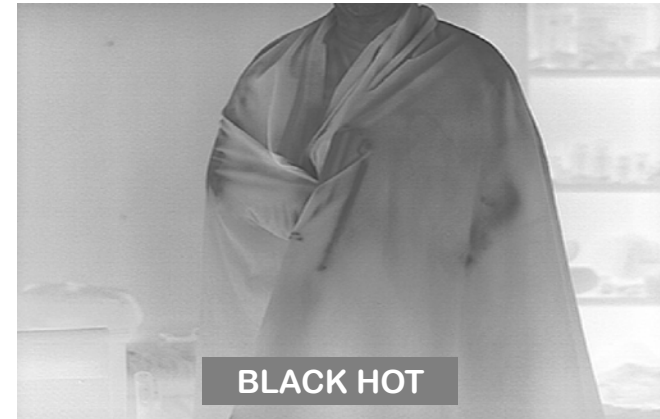


SKEETIR



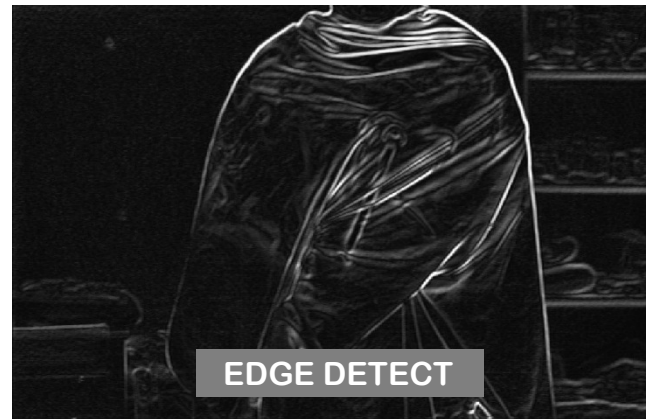
WHITE HOT

- WARMER OBJECTS ARE WHITE



BLACK HOT

- WARMER OBJECTS ARE BLACK



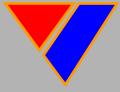
EDGE DETECT

- SHOWS THE HEAT HORIZON OR "EDGE" WHERE TEMPERATURE DIFFERENCES OCCUR

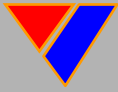
**NOTE: THE UTC, UTB, UTM, AND SKEETIR CAN ALL TAKE SNAPSHOTS IN EITHER WHITE HOT OR BLACK HOT MODES, BUT *NOT* WHILE IN EDGE DETECT MODE**

**ALL THREE MODES ARE VISIBLE WHEN USING VIDEO CAPTURE VIA THE RS-170 INTERFACE CABLE**

**Thermal pictures are of a male with a rifle concealed under a tunic.**



**EXISTING PROJECTS**  
**(KEYHOLE / RCOS / VISDeS)**  
**(VISDeS Phase II)**

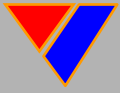


# KEYHOLE / RCOS / VISDeS Projects

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- **KEYHOLE (Sniper Optics Suite) / RCOS (Route Clearance Optics Suite) / VISDeS (Visual IED Signature Detection Suite)**
- Fully funded JIEDDO projects currently being fielded by PM SPAWAR to troops in Afghanistan as Theater Provided Equipment (TPE).
- SPAWAR SSC-PAC / AUSGAR Technologies provide the equipment, training and the logistical support.
- This is done at no cost to the client for the life of the project, until it goes through the T2 process (Transition or Terminate - approximately 2 years).
- Broken equipment in theater is sent to SPAWAR personnel at Bagram and replacements are immediately sent back to the unit at no cost.
- Optics Kits “spawned” from JUONS CC-0301 KEYHOLE; a C-IED, Sniper Enhancement Suite

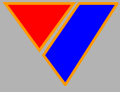
- 
- KEYHOLE Proof of Concept development - 2006
  - KEYHOLE Proof of Concept DEPLOYMENT - 2008
  - KEYHOLE Spiral I (SOF) DEPLOYMENT – 2009/CURRENTLY
  - Route Clearance Optics Suite (RCOS) DEPLOYMENT – 2009/CURRENTLY
  - KEYHOLE ENHANCED Spiral II (Conventional Forces) - 2010/CURRENTLY
  - VISDeS (Conventional Forces, EOD) - 2012/CURRENTLY
  - VISDeS Phase II (Conventional Forces, SOF, Rangers) – 2013/CURRENTLY



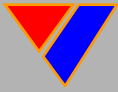
# Training and Support

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- Training packages can be tailored to accommodate a clients schedule and time line CONUS or OCONUS
- Normal training includes 2 to 3 days of classroom and practical application
- Training is taking place CONUS and OCONUS simultaneously
- Operators are taught equipment usage, maintenance, care and cleaning, and procedures for exchange of broken or non-functional equipment



# EXISTING and FUTURE KITS



# KEYHOLE Spiral I Equipment Suite

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1



5



2



6



3



7



4



8

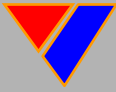


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No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x1	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>CNVD-T - Clip-on Night Vision Device Thermal</u>	x1	White and black hot thermal imager, short to intermediate range, weapons mountable
3	<u>MTM - Mini-Thermal Monocular</u>	x2	White and black hot thermal imager, thermal camera, laser pointer, weapons and helmet mountable (also known as HMTI – Handheld Mini-Thermal Imager)
4	<u>PLRF-15C - Pocket Laser Range Finder</u>	x1	Laser range finder, digital magnetic compass, inclinometer, fall of shot indirect fires corrections
5	<u>Canon IS Binos - Image Stabilized Binoculars</u>	x2	Image stabilized 10x42 binoculars, low-light capable
6	<u>DAGR - Defense Advanced GPS Receiver</u>	x2	Secure GPS, works with LRTV and PLRF-15C laser range finders to give target location measurements
7	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x2	Stable platform for use with all optics included in kit
8	<u>Battery Charger</u>	x1	Recharging station for LRTV batteries
9	<u>BB-2847 A/U - Rechargeable Batteries</u>	x10	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)

<u>KIT ALLOCATION</u>	<u>Fielded</u>
<b>FIELDING:</b>	403
<b>TRAINING:</b>	23
<b>SPARES:</b>	0





# KEYHOLE Enhanced Equipment Suite

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No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x1	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTC - Universal Thermal Clip-on</u>	x1	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
3	<u>UTM - Universal Thermal Monocular</u>	x2	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
4	<u>PLRF-15C - Pocket Laser Range Finder</u>	X1	Laser range finder, digital magnetic compass, inclinometer, fall of shot indirect fires corrections
5	<u>Canon IS Binos - Image Stabilized Binoculars</u>	x2	Image stabilized 10x42 binoculars, low-light capable
6	<u>DAGR - Defense Advanced GPS Receiver</u>	x2	Secure GPS, works with LRTV and PLRF-15C laser range finders to give target location measurements
7	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x2	Stable platform for use with all optics included in kit
8	<u>Battery Charger</u>	x1	Recharging station for LRTV batteries
9	<u>BB-2847 A/U - Rechargeable Batteries</u>	x10	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)

<u>KIT ALLOCATION</u>	<u>Fielded</u>
<b>FIELDING:</b>	115
<b>TRAINING:</b>	0
<b>SPARES:</b>	0



# RCOS Equipment Suite

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1



2



3



4



5



6

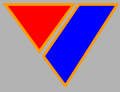


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No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x2	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTM - Universal Thermal Monocular</u>	x10	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
3	<u>PLRF-15C - Pocket Laser Range Finder</u>	X2	Laser range finder, digital magnetic compass, inclinometer, fall of shot indirect fires corrections
4	<u>Canon IS Binos - Image Stabilized Binoculars</u>	x10	Image stabilized 10x42 binoculars, low-light capable
5	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x2	Stable platform for use with all optics included in kit
6	<u>Battery Charger</u>	x1	Recharging station for LRTV batteries
7	<u>BB-2847 A/U - Rechargeable Batteries</u>	x10	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)

Route Clearance Optics Suite intended to provide better C-IED optics to route-clearance packages/teams

<u>KIT ALLOCATION</u>	<u>Fielded</u>
<b>FIELDING:</b>	234
<b>TRAINING:</b>	45
<b>SPARES:</b>	0



# SOF RCOS Equipment Suite

C4ISR - SPAWAR



1



4



2



5



3



6

No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x2	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTM - Universal Thermal Monocular</u>	x12	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
3	<u>Canon IS Binos - Image Stabilized Binoculars</u>	x12	Image stabilized 10x42 binoculars, low-light capable
4	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x2	Stable platform for use with all optics included in kit
5	<u>Battery Charger</u>	x1	Recharging station for LRTV batteries
6	<u>BB-2847 A/U - Rechargeable Batteries</u>	x10	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)

Route Clearance Optics Suite intended to provide better C-IED optics and route-clearing ability to SOF

<u>KIT ALLOCATION</u>	CONUS	OCONUS
<b>FIELDING:</b>	15	90
<b>TRAINING:</b>	0	
<b>SPARES:</b>	0	



# EOD Optics Suite (EODOS)

C4ISR-SPAWAR



No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x1	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTM - Universal Thermal Monocular</u>	x3	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
3	<u>SKEETIR - Miniature Infra-Red Device</u>	x3	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
4	<u>RED-I - Remote Eyepiece Display Imager</u>	x3	Helmet and eye-pro mountable remote display, connects to thermal imagers
5	<u>Canon IS Binos - Image Stabilized Binoculars</u>	x3	Image stabilized 10x42 binoculars, low-light capable
6	<u>PLRF-15C - Pocket Laser Range Finder</u>	x1	Laser range finder, digital magnetic compass, inclinometer, fall of shot indirect fires corrections
7	<u>UTB - Universal Thermal Binocular</u>	x1	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
8	<u>UTC - Universal Thermal Clip-on</u>	x1	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
9	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x1	Stable platform for use with all optics included in kit
10	<u>Articulated Pole</u>	x1	9.5 foot extendable pole with integrated RS-170 cable, connects to thermal imagers and RED-I
11	<u>Battery Charger</u>	x1	Recharging station for LRTV batteries
12	<u>BB-2847 A/U - Rechargeable Batteries</u>	x10	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)

<u>KIT ALLOCATION</u>	A Kits	B Kits
<b>FIELDING:</b>	79	8
<b>TRAINING:</b>	0	
<b>SPARES:</b>	0	



# Air Force EOD Optics Suite

C4ISR - SPAWAR



<u>No.</u>	<u>Component Name</u>	<u>Qty</u>	<u>Capabilities</u>
1	<u>UTB - Universal Thermal Binocular</u>	x1	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
2	<u>UTM - Universal Thermal Monocular</u>	x3	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
3	<u>SKEETIR - Miniature Infra-Red Device</u>	x3	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
4	<u>RED-I - Remote Eyepiece Display Imager</u>	x3	Helmet and eye-pro mountable remote display, connects to thermal imagers
5	<u>Articulated Pole</u>	x1	9.5 foot extendable pole with integrated RS-170 cable, connects to thermal imagers and RED-I

## KIT ALLOCATION      **Fielded**

**FIELDING:**                      50

**TRAINING:**                        0

**SPARES:**                         0



# VISDeS Phase I Suite – Kits 1 thru 4

C4ISR – SPAWAR

## Kit 1 (Army)

1



2



3



No.	Component Name	Qty	Capabilities
1	<u>UTM</u> - <u>U</u> niversal <u>T</u> hermal <u>M</u> onocular	x1	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
2	<u>UTB</u> - <u>U</u> niversal <u>T</u> hermal <u>B</u> inocular	x1	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTC</u> - <u>U</u> niversal <u>T</u> hermal <u>C</u> lip-on	x1	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera

## Kit 2 (Army)

1



No.	Component Name	Qty	Capabilities
1	<u>SKEETIR</u> - <u>M</u> iniature <u>I</u> nfra- <u>R</u> ed <u>D</u> evice	x1	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable

## Kit 3 (USMC)

1



No.	Component Name	Qty	Capabilities
1	<u>VORTEX</u> - 8x36 Ranging Monocular	x1	8x36 ranging monocular, milradian-based, quick-ranging silhouettes in reticle

## Kit 4 (Army EOD)

1



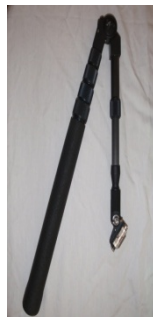
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3



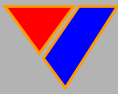
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No.	Component Name	Qty	Capabilities
1	<u>SKEETIR</u> - <u>M</u> iniature <u>I</u> nfra- <u>R</u> ed <u>D</u> evice	x1	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
2	<u>UTB</u> - <u>U</u> niversal <u>T</u> hermal <u>B</u> inocular	x1	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTC</u> - <u>U</u> niversal <u>T</u> hermal <u>C</u> lip-on	x1	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera

### KIT ALLOCATION

	Kit 1	Kit 2	Kit 3	Kit 4
<b>FIELDING:</b>	205	1012	288	127
<b>TRAINING:</b>	20	103	72	24
<b>SPARES:</b>	25	135	17	0



# VISDeS Phase II Suite – Kits 1 thru 4

C4ISR – SPAWAR

## Kit 1 (Army)



No.	Component Name	Qty	Capabilities
1	<u>UTM</u> – <u>U</u> niversal <u>T</u> hermal <u>M</u> onocular	x1	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
2	<u>UTB</u> - <u>U</u> niversal <u>T</u> hermal <u>B</u> inocular	x1	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTC</u> - <u>U</u> niversal <u>T</u> hermal <u>C</u> lip-on	x1	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera

## Kit 2 (Army)



No.	Component Name	Qty	Capabilities
1	<u>SKEETIR</u> – Miniature <u>I</u> nfra- <u>R</u> ed Device	x1	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable

## Kit 3 (USMC)



None ordered as part of Phase II

## Kit 4 (Army EOD)



No.	Component Name	Qty	Capabilities
1	<u>SKEETIR</u> – Miniature <u>I</u> nfra- <u>R</u> ed Device	x1	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
2	<u>UTB</u> - <u>U</u> niversal <u>T</u> hermal <u>B</u> inocular	x1	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTC</u> - <u>U</u> niversal <u>T</u> hermal <u>C</u> lip-on	x1	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera

### KIT ALLOCATION

	Kit 1	Kit 2	Kit 3	Kit 4
<b>FIELDING:</b>	100	400	0	57
<b>TRAINING (20%):</b>	0	0	0	0
<b>SPARES (10%):</b>	173	255	0	0



# VISDeS Suite – Kit 6 (USMC)

C4ISR – SPAWAR



2



3



4

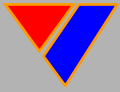


No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x2	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTM - Universal Thermal Monocular</u>	x6	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
3	<u>PLRF-25C - Pocket Laser Range Finder</u>	x2	Laser range finder, digital magnetic compass, inclinometer, fall of shot indirect fires corrections
4	<u>Canon IS Binoculars - Image Stabilized Binoculars</u>	x4	Image stabilized 10x42 binoculars, low-light capable
5	<u>UTB - Universal Thermal Binocular</u>	x2	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
6	<u>UTC - Universal Thermal Clip-on</u>	x2	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
7	<u>Battery Charger</u>	x2	Recharging station for LRTV batteries
8	<u>BB-2847 A/U - Rechargeable Batteries</u>	x10	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)

## KIT ALLOCATION

<b>FIELDING:</b>	28
<b>TRAINING (20%):</b>	6
<b>SPARES (10%):</b>	3





# VISDeS Suite – Kit 5 (SOF)

C4ISR – SPAWAR

1



2



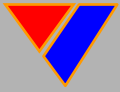
3



No.	Component Name	Qty	Capabilities
1	<u>SKEETiR</u> – Miniature Infra-Red Device	X8	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
2	<u>Bridgemount</u>	x8	Helmet mounting system for thermal imagers and night vision devices, compatible with Wilcox-style helmet mounts
3	<u>COTI</u> – Clip On Adapter	x8	Adapter for SKEETiR to be used as a COTI (thermal image overlay onto NVG) device

## KIT ALLOCATION

<b>FIELDING:</b>	104
<b>TRAINING (20%):</b>	21
<b>SPARES (10%):</b>	11



# VISDeS Suite – Kit 7 (SOF)

C4ISR – SPAWAR

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2



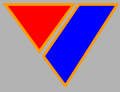
3



<u>No.</u>	<u>Component Name</u>	<u>Qty</u>	<u>Capabilities</u>
1	<u>UTC</u> - <u>U</u> niversal <u>T</u> hermal <u>C</u> lip-on	x4	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
2	<u>UTB</u> - <u>U</u> niversal <u>T</u> hermal <u>B</u> inocular	x2	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTM</u> - <u>U</u> niversal <u>T</u> hermal <u>M</u> onocular	x3	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable

## KIT ALLOCATION

<b>FIELDING:</b>	104
<b>TRAINING (20%):</b>	21
<b>SPARES (10%):</b>	11



# VISDeS Suite – Kit 8 (SOF)

C4ISR – SPAWAR

1



2



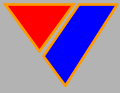
3



<u>No.</u>	<u>Component Name</u>	<u>Qty</u>	<u>Capabilities</u>
5	<u>PLRF-25C - Pocket Laser Range Finder</u>	x4	Laser range finder, digital magnetic compass, inclinometer, fall of shot indirect fires corrections
6	<u>TSE Remote Video Displays</u>	x2	6" and 10.4" VGA LCD video display for thermal video
9	<u>3" Wilcox Weapons Video Display (WVD)</u>	x3	Weapons mountable video display (WVD) for thermal video

## KIT ALLOCATION

<b>FIELDING:</b>	104
<b>TRAINING (20%):</b>	21
<b>SPARES (10%):</b>	11



# VISDeS Suite – Kit 9 (Ranger-Line Squads)

C4ISR – SPAWAR

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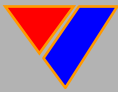
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No.	Component Name	Qty	Capabilities
1	<u>UTB - Universal Thermal Binocular</u>	X1	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
2	<u>UTM – Universal Thermal Monocular</u>	X2	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
3	<u>UTC - Universal Thermal Clip-on</u>	X3	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
4	<u>SKEETIR – Miniature Infra-Red Device</u>	X3	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
5	<u>Bridgemount</u>	X3	Helmet mounting system for thermal imagers and night vision devices, compatible with Wilcox-style helmet mounts
6	<u>COTI – Clip On Adapter</u>	X3	Adapter for SKEETIR to be used as a COTI (thermal image overlay onto NVG) device

## KIT ALLOCATION

<b>FIELDING:</b>	108
<b>TRAINING (10%):</b>	10
<b>SPARES (10%):</b>	10



# VISDeS Suite - Kit 10 (Ranger - Weapons Squads / Sniper Teams / Multi-Purpose K-9)

C4IIR - SPAWAR

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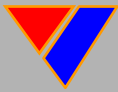
No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	X1	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTB - Universal Thermal Binocular</u>	X2	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTM - Universal Thermal Monocular</u>	X6	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
4	<u>UTC - Universal Thermal Clip-on</u>	X5	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
5	<u>SKEETIR - Miniature Infra-Red Device</u>	X4	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
6	<u>Bridgemount</u>	X4	Helmet mounting system for thermal imagers and night vision devices, compatible with Wilcox-style helmet mounts
7	<u>COTI - Clip On Adapter</u>	X4	Adapter for SKEETIR to be used as a COTI (thermal image overlay onto NVG) device
8	<u>Battery Charger</u>	X4	Recharging station for LRTV batteries
9	<u>BB-2847 A/U - Rechargeable Batteries</u>	X10	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)
10	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x3	Stable platform for use with all optics included in kit

## KIT ALLOCATION

**FIELDING:** 36

**TRAINING (10%):** 4

**SPARES (10%):** 4



# VISDeS Suite – Kit 11 (Ranger- Command Elements / RECCE)

C4ISR – SPAWAR

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No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x2	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTB - Universal Thermal Binocular</u>	x2	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTM – Universal Thermal Monocular</u>	x2	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
4	<u>UTC - Universal Thermal Clip-on</u>	x3	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
5	<u>SKEETIR – Miniature Infra-Red Device</u>	x3	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
6	<u>Bridgemount</u>	x3	Helmet mounting system for thermal imagers and night vision devices, compatible with Wilcox-style helmet mounts
7	<u>COTI – Clip On Adapter</u>	x3	Adapter for SKEETIR to be used as a COTI (thermal image overlay onto NVG) device
8	<u>Battery Charger</u>	x2	Recharging station for LRTV batteries
9	<u>BB-2847 A/U - Rechargeable Batteries</u>	x20	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)
10	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x4	Stable platform for use with all optics included in kit

## KIT ALLOCATION

**FIELDING:** 12

**TRAINING (10%):** 2

**SPARES (10%):** 2



# VISDeS Suite – Kit 12 (Ranger- Special Troops Battalion)

C4ISR – SPAWAR

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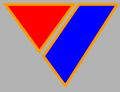
No.	Component Name	Qty	Capabilities
1	<u>LRTV - Long Range Thermal Video</u>	x2	White and black hot long range thermal, thermal camera, day video, laser range finder, laser pointer, GPS
2	<u>UTB - Universal Thermal Binocular</u>	x2	Long range thermal binoculars, white & black hot, edge detect, IR and visible laser, thermal camera
3	<u>UTM – Universal Thermal Monocular</u>	x2	Short and intermediate range thermal imager, white and black hot, edge detect, IR and visible lasers, thermal camera, weapon mountable
4	<u>UTC - Universal Thermal Clip-on</u>	x3	Intermediate and long range thermal imager for use in front of sniper scopes and powered optics, weapons mountable, white and black hot, edge detect, thermal camera
5	<u>SKEETIR – Miniature Infra-Red Device</u>	x3	Short and intermediate range thermal imager, white & black hot, edge detect, IR laser, thermal camera, weapon and helmet mountable
6	<u>Bridgemount</u>	x3	Helmet mounting system for thermal imagers and night vision devices, compatible with Wilcox-style helmet mounts
7	<u>COTI – Clip On Adapter</u>	x3	Adapter for SKEETIR to be used as a COTI (thermal image overlay onto NVG) device
8	<u>Battery Charger</u>	x2	Recharging station for LRTV batteries
9	<u>BB-2847 A/U - Rechargeable Batteries</u>	x20	Rechargeable batteries for LRTV (LRTV also runs off of BA-5590 Lithium Batteries)
10	<u>Manfrotto Tripod, Pan-Tilt Head, Rifle Rest</u>	x4	Stable platform for use with all optics included in kit

## KIT ALLOCATION

**FIELDING:** 6

**TRAINING (10%):** 1

**SPARES (10%):** 1



# VISDeS 2013 FIELDING TEAM

C4ISR - SPAWAR

**Contact any of the following individuals for project inquiries and training requests:**

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SSC PAC Project Manager

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Email: kevin.quinn@navy.mil

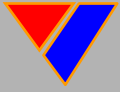
**David Bond**

AUSGAR Project Manager

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Email: david.l.bond@ausgar.com





# QUESTIONS

# QUESTIONS?