



BETSS-C Overview



Base Expeditionary Targeting Surveillance Systems- Combined (BETSS-C)





Operation Enduring Freedom

BETSS-C Systems



BETSS-C consists of multiple surveillance systems:

- *Force Protection Suite (FPS)*
 - *Rapid Aerostat Initial Deployment (RAID) Tower*
 - *Cerberus*
 - *Rapid Deployment Integrated Surveillance System (RDISS)*
 - *Cerberus Scout Surveillance System*
- Interoperable**
- Stand Alone**

Actual BETSS-C sub-system type & configuration is location dependent, but all locations have some combination of BETSS-C capability

NOTE: When upgraded with Cisco router and new SGS software, systems highlighted in red will operate a common graphical user interface (GUI) to facilitate interoperability



BETSS-C Systems



Rapid
Aerostat
Initial
Deployment
(RAID)



107' or 80'
Tower

Star Safire
III

Rapid Deployment Force Protection
Suite (FPS)
Integrated
Surveillance
System
(RDISS)



Cerberus



Cerberus Scout



3D Targeting Application
(TerraSight)



Operational Picture
For SGS



Rapid Deployment Integrated Surveillance System (RDISS)



Pan/Tilt/Zoom Camera



Fixed Camera



Capabilities

- Persistent real-time over-the-wall video surveillance
- Automatic continuous recording video; files can be archived for later analysis
- Operator can monitor 10 or more cameras simultaneously
- PTZ cameras have integrated IR illuminators
- Some systems include Mid-Range Thermal Imager (MRTI) to augment CCTV in low-light situations; detects vehicles up to 4 km, personnel up to 1.5 km (MRTI is also fielded as a stand-alone sensor)



MRTI



Workstation

Description

- Suite of COTS video surveillance cameras
- Provides “over-the-wall” surveillance for FOB/COP
- Technically simple system to operate and maintain
- System enhanced with thermal imagery capability

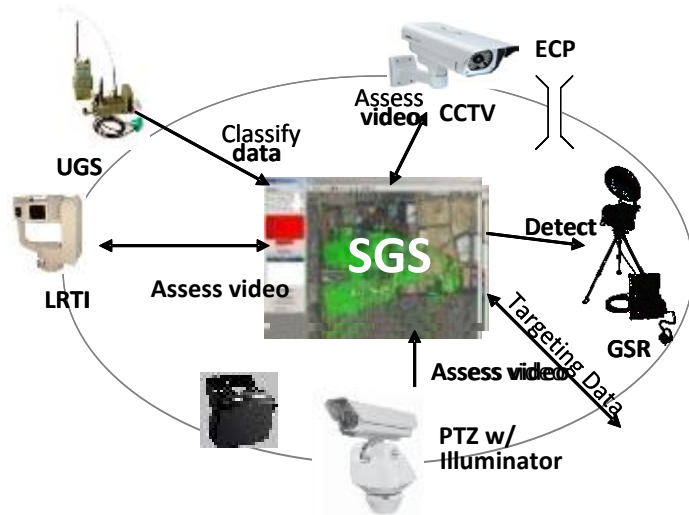
Limitations

- Stand-alone system; no interoperability with other BETSS-C sub-systems
- Cameras susceptible to damage/destruction by enemy
- CCTV view is limited to fixed line-of-sight
- Cameras will not see through dust, fog, smoke, etc...
- CCTV cameras require external light source for night use
- PTZ cameras must be within 300 meters of monitoring station

Fielded as a “stand alone” that does not integrate with other BETSS-C systems



Force Protection Suite



Capabilities

- Common Operating Picture and connectivity w/other sensor systems
- PTZ and CCTV cameras
- Man-Portable Surveillance and Target Acquisition Radar (MSTAR); detects large moving vehicles up to 36 km, small moving vehicles up to 24 km, moving personnel up to 12 km
- Layered “over-the-wall” detection capability using Battlefield Anti-Intrusion System (BAIS)
- Long Range Thermal Imager (LRTI)
- System can control up to 20 PTZ cameras

Description

- All-weather, day/night-camera, radar, and sensor package that provides line-of-sight detection capability, slew-to-cue for visual assessment
- Flexible enough to accommodate small, medium and large operating bases

Limitations

- Obstructions, whether man-made or natural, decrease detection range of sensors
- Wind-borne debris, as well as sensors operating on the same channel, trigger false alarms with BAIS
- Same CCTV limitations as with RDISS



Rapid Aerostat Initial Deployment (RAID) Tower



RAID SYSTEM

107' Tower / 80' Tower



Capabilities

- FMV and connectivity with other sensor systems
- 360 degree high-resolution, day/night capability
- Sensor and display integration of multiple sensors into one COP
- Can withstand wind speed of 70 mph in fully extended configuration
- Some OEF RAID towers include same MSTAR GSR as FPS

Description

- FLIR System Inc. STAR Safire III – similar to what is used in Apache & Kiowa Warrior
- Laser range finder for point and click targeting
- Laser illuminator
- Trailer-mounted, sling-load capable
- Remote FMV & camera control to Command Post / Tactical Operations Center
- Multiple sensor supported inputs simplifies target acquisition and Base Defense COP

Limitations

- Intermediate obstacles affect range accuracy
- SGS must be within 1200 ft of the Tower if not using a fiber optic ring
- Large footprint (minimum 200 ft diameter circle for 107' tower, 80 ft for 80' tower)
- Set-up & break-down are slow and complex
- High winds (70 mph +) can require lowering the tower



Cerberus Surveillance System



Capabilities

- User-defined detection areas (range & azimuth)
- Can be sling-loaded for transport
- Advanced Radar Surveillance System (ARSS) GSR for each tower provides continuous tracking of all targets in detection area
- Each Cerberus tower can operate up to 4 video motion detectors simultaneously; towers can be netted to a Common Operating Picture (COP)
- System can employ up to 32 UGS simultaneously
- System can be controlled by SGS

Description

- Mil-standard trailer mounted, rapid two-person setup
- Self-contained with wireless operation
- Sensor payload consists of a cooled IR & day camera, GSR, LRF/Pointer and the ability to support various unattended ground sensors (UGS)
- Batteries automatically recharged by on-board 3KW Diesel Generator or 110V AC

Limitations

- Easily identifiable signature
- System requires protection assets when deployed outside perimeter



BETSS-C Dismounted Surveillance

Cerberus Scout Surveillance System



Capabilities

- **Target Geo-Location Capability w/ GPS: Slew-to-Cue & Slew –to-Click to Radar and UGS targets overlaid on geo-referenced map display**
- **DVR storage of up to 72 hours**
- **Power options: 24VDC Lithium-Ion Bat packs (16 hrs run), or 120-240 VAC, or Vehicle Slave & Solar Panel**
- **Fielded with UGS kit and Integrated Receiver. UGS— Passive Infrared Head (PIRH), seismic, and magnetic detection**

Description

- **Sensor payload includes a RECON III cooled IR & daylight camera, Advanced Radar Surveillance System (ARSS) GSR, LRF, and IR laser pointer**
- **Two modes of operation: Single operator hard-wired or wireless at deployed location**

Limitations

- **Stand-alone system; no interoperability with other BETSS-C sub-systems**
- **Unsecure line of sight communications link enables remote control, but does not interface with tactical communications networks**
- **Overall weight 180 lbs in expeditionary configuration (360 lbs for full system capability w. storage 2K diesel generator and WLAN)**

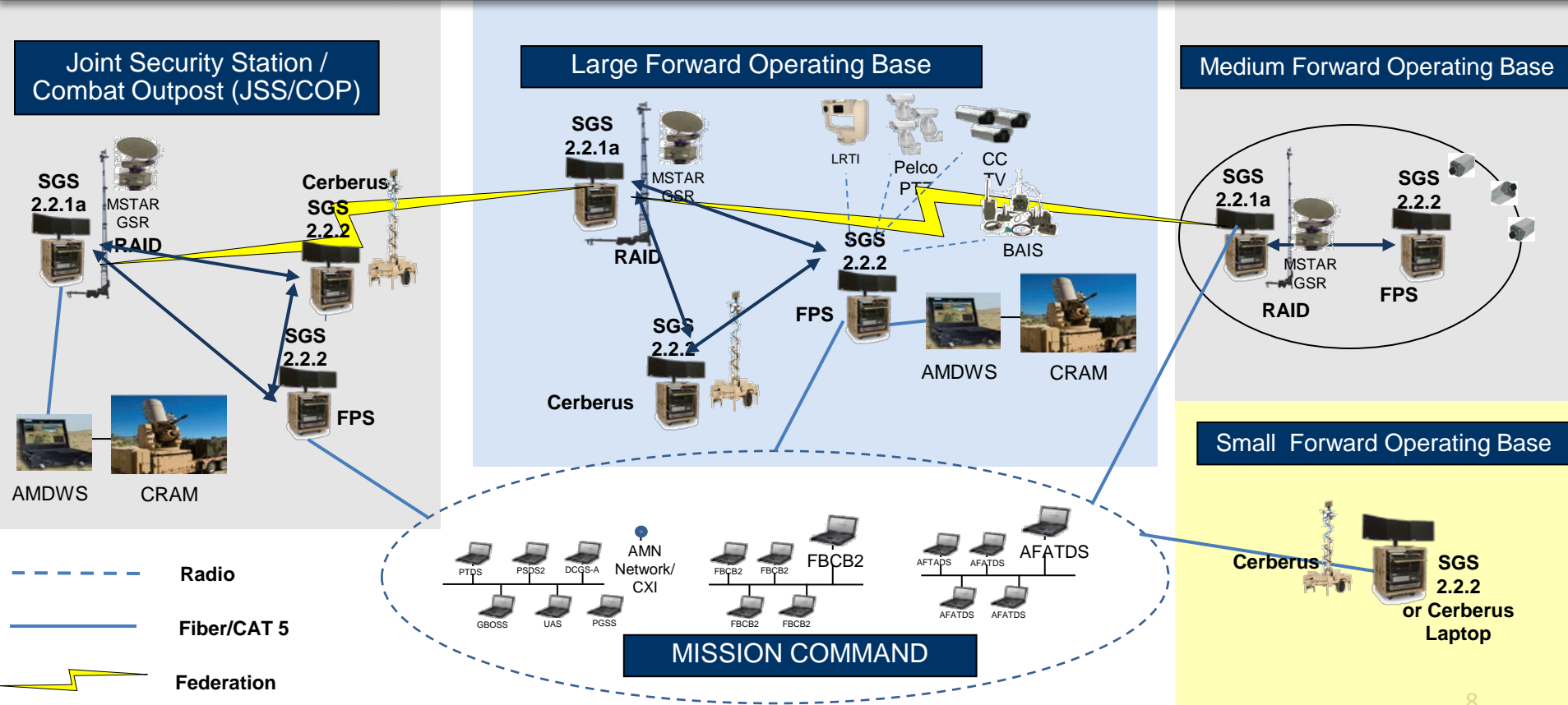


SGS Program Approach

- Deployed to Forward Operating Bases (FOB) and Joint Security Station/Combat Outposts (JSS/COPs) BETSS-C Command & Control Node
- Operator harvests data to support integrated persistence surveillance in support of the Integrated Base Defense (IBD Mission)

Capabilities:

- Integration and display of sensor video data (RAID, Cerberus) including digital encoding, multi-sensor suite control (FPS), MISB FMV, sensor calibration, track/entity management, data storage, message passing, and sensor cross-cueing
- Includes additional sensor integration POO/POI messages, DVR, video export, and SGS Federation





BETSS-C

Sub-Systems By Regional Command



Sub-System	RC-North	RC-West	RC-Central	RC-East	RC-Southwest	RC-South	Total
RAID	3	8	44	61	2	65	183
Cerberus	3	2	2	37	15	22	81
FPS	1	4	3	48	1	16	70
RDISS	17	10	2	168	1	127	325
MRTI	3	11	3	42	3	85	144
Cerberus Scout - 62 fielded directly to CJSOTF and 119 fielded directly to other operational units							



BETSS-C Training



Doctrine & Tactics Team



Mobile Training Teams



BETSS-C Academy – Fort Leonard Wood MO



Rim Rd – Fayetteville NC





Fayetteville Contractor Training Facility



Facility Facts

- 4,800 square feet of office and classroom space in main building.
- 9,600 square feet of warehouse offers function versatility (storage, lab, lecture).
- 4 classrooms to handle up to 100 students.
- Simulations Station w/ 12 workstations
- Internet throughout the complex.
- Over 2 acres of training area.
- Space for 9 RAID towers (2x107' and 7x80' tower pads), 4 Cerberus Long-Range Trailers, and multiple FPS and RDISS cameras.
- Shore power available for all exterior locations except new 107' tower pad.

Contractor Training Facility



Front View





BETSS-C Train the Trainer (T3) Protection Academy



The Protection Academy, located at Ft Leonard Wood, MO, provides BETSS-C NET training and focuses on Train-The-Trainer activities. Training is tailored to unit needs depending on specific deployment locations. Soldiers are trained to operate BETSS-C; understand system capabilities, limitations and employment considerations for RSTA, Persistent Surveillance, and Force Protection applications; and to train other Soldiers upon return to units

Training Description ** working to reduce to 10 days/80 hrs

Full Course: 14 days / 106 hrs

RAID: 5 days / 40 hrs

Cerberus: 4 days / 32 hrs

Force Protection Suite: 3 days / 24 hrs

Rapid Deployment Integrated Surveillance System: 2 day / 10 hrs

Field Training Exercise: Virtual Simulation (VBDOC) for each system will be incorporated into each systems POI

Requirements and Info

Cost: Unit pays Soldier TDY costs; some billeting mat be available, Unit may want to coordinate with FLW TMP in lieu of rental

Type: NET designed as Train the Trainer (T3)

Pax: Configurable to unit needs

Length: Scalable to unit needs

Location: TA 74A FOB Falcon Ft Leonard Wood, MO

Clearance: None

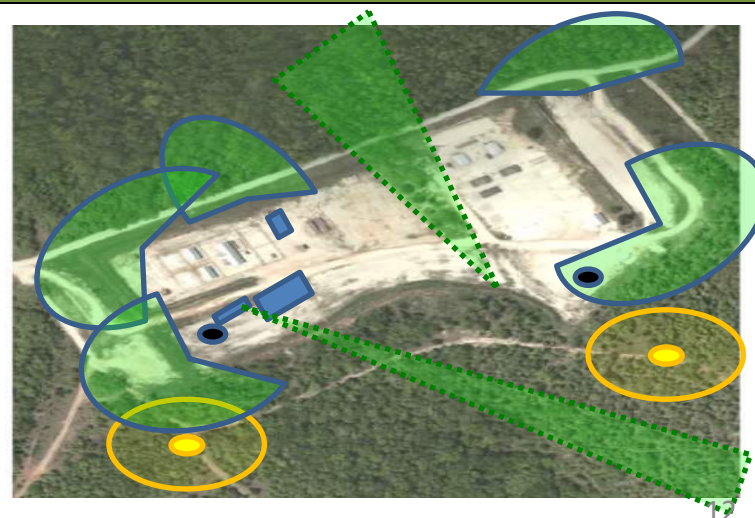
T3 Course Point of Contact

Craig White craig.s.white1@us.army.mil W: 573.563.6243

Fixed Site Highlights

- 10 students per system; total max throughput 40 students per week plus an additional 10 with VBDOC
- Trains any MOS/Rank and Service
- Site can serve as test bed for future protection systems
- Training can be tailored to specific systems and Service Member/Unit timelines
- Future site for OCONUS ECP training, IAW JEEP Handbook for a Medium size FOB
- MSCoE NCOA is the land owner, T3 course conducted by the MSCoE G-3. Not in ATRRS, contact the Govt. POC to schedule classes

FOB Falcon Protection Academy





BETSS-C Mobile Training Facility (MTF) Operator Training



The **BETSS-C Mobile Training Facility (MTF)** provides hands-on BETSS-C operator training. The MTF comes to the unit's desired location and training is tailored to unit needs depending on specific deployment locations. Soldiers are trained to operate BETSS-C, and to understand system capabilities, limitations and employment considerations for RSTA, Persistent Surveillance, and Force Protection applications.

Training Description

Full Course: 15 days / 156 hrs

RAID: 5 days / 40 hrs

Cerberus: 3 days / 24 hrs

Force Protection Suite: 4 days / 32 hrs

Rapid Deployment Integrated Surveillance System: 1 day / 10 hrs

Field Training Exercise: 48 hrs / 12 hrs per system

Requirements and Info

Cost: No Cost to unit

Type: Operator Training

Pax: 20 per session with multiple sessions available

Length: Scalable to unit needs

Location: Unit home station or CTE location

Clearance: None

MTF Point of Contact

Cary Bragg cbragg@caci.com 910.864.7665

Mobile Training Facility (MTF)

- MTF comes to unit home station or CTC
- MTF has two trailers – 1 with instructor AV and student computer work stations w/ SIM capability; 1 with actual systems and OPCEN
- Significant increase in student “hands-on” training
- Tailored scenarios that can replicate current AOR locations
- Knowledge management tools allow instructors to measure student proficiency
- Reduced training over-head to unit

Mobile Training Facility (MTF)





Mobile Training Team / Mobile Training Facility





BETSS-C

Contact Information



BETSS-C Training Coordinator PM NV/RSTA – Ft Belvoir

Steven Beltson steven.beltson@us.army.mil 703.704.1053

Train the Trainer (T3) Course and BETSS-C Digital Blackboard – Ft Leonard Wood

Course Manager - Craig White craig.s.white1@us.army.mil 573.563.6243

<https://www.blackboard.wood.army.mil>

Operator MTF Training – Ft Bragg

Cary Bragg cbragg@caci.com 910.864.7665

In-Theater BETSS-C Listing (Classified)

Mark Roper mark.e.roper.ctr@mail.mil 703.704.3937

DTT Team (Leader and Battle Staff Training)

Phil Thompson philip.thompson1@us.army.mil 253.961.3505

Tom Jameson thomas.jameson@us.army.mil 360.951.7317

Dave Smith david.m.smith6@us.army.mil 253.495.3670



BETSS-C Training with III Corps



Questions?