INTRODUCING

Situational Awareness in the Last Mile

Opening Statement

STRONGWATCH®

- **Public safety operations require real-time situational awareness, to ensure the greatest levels of effectiveness and safety, in operation.**

- **Challenges / fundamental needs include:**

  - Officer safety requires rapid risk assessment and situational awareness through real-time, actionable intelligence.

  - Common Operating Picture (COP) sharing is a necessity to ensure continuity and cohesiveness of the operating agency as a whole.

  - Cost and availability (manpower, weather, maintenance) of aerial assets can restrict mission readiness to support operations

  - Surveillance assets must be: **RUGGED** in build, **VERSATILE** in operational capability, and **SIMPLE** to use and maintain.

Strongwatch Background

STRONGWATCH®

1. **2008** Worlds lightest 3-axis stabilized aerial smart camera

2. **2009** 500° sec azimuth autonomous 2-axis stabilized smart sensor

3. **2009** Military 2-axis stabilized, on-the-move (OTM) anti-ambush, counter-sniper

4. **2010** Freedom OTM (FOTM) Tactical Surveillance System (1.0)

5. **2012** FOTM Tactical Surveillance System (2.0)

Situational Awareness in the Last Mile

Military Genesis

Mission Objective: Protecting Warfighters

Freedom On-The-Move (FOTM) is an open architecture, gyro-stabilized, tactical surveillance system which has evolved from an original design to support the US Military with OTM counter-sniper, anti-ambush capabilities; giving the war fighter complete situational awareness in the "Last Mile" of combat, day or night.

Battlefield Experience

- **Challenges of US Military MRAP ambush protection in Afghanistan**

  - Maintaining situational awareness through vigilant OTM surveillance for accurate threat detection / mitigation

  - Rugged terrain and extreme climate conditions

  - Detecting both sniper and ambush threats, while OTM

  - Maintaining "eyes on" items of interest (IoI's) in combat

  - Increased safety and effectiveness of war fighting elements in the "Last Mile"
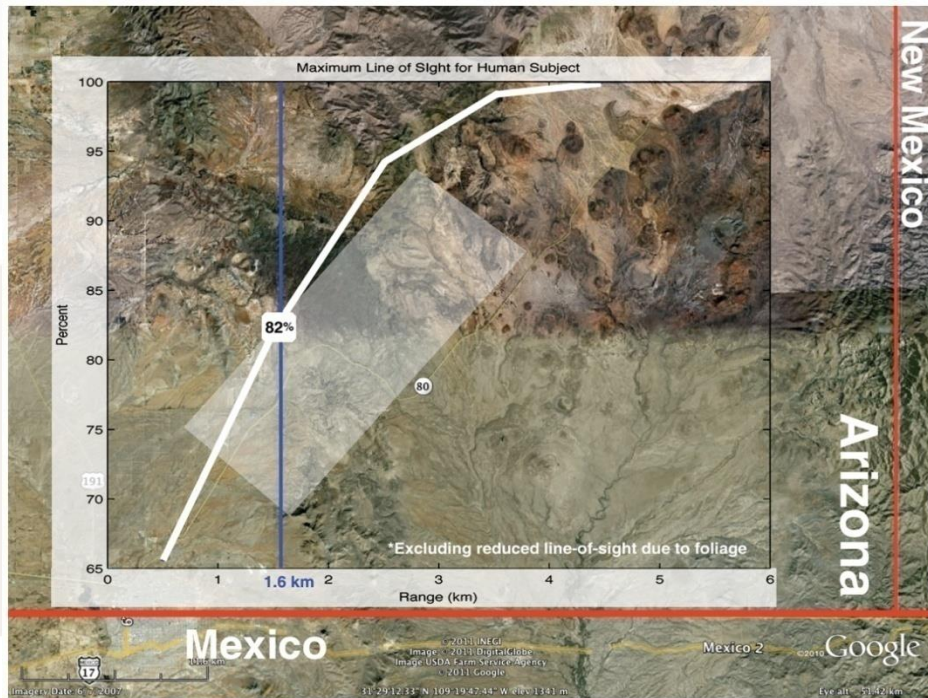
- **Completed delivery of REF order in 2011**

Situational Awareness in the Last Mile
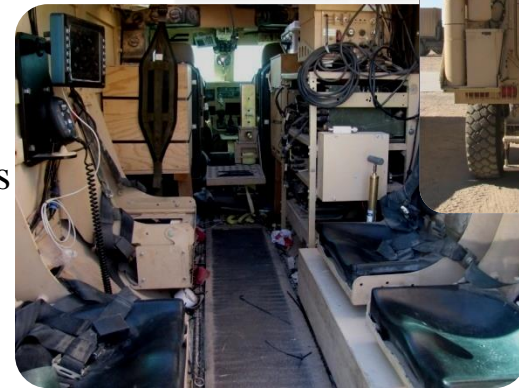
Challenge:
Limited Line-of-Sight

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Southeastern Arizona, Cochise County

Highway 80

- Model is based on 2 x 1 meter subject (NATO).

- Less than one mile line-of-sight (LoS) visibility in 82% of the model's shaded region (estimated at > 92% with vegetation in model).

- **Summary:** Limited LoS on IoI(s) due to terrain / vegetation restrictions increases IOI(s) evasive probability in the "dead space" of an area of operation (AO).

Maximum Line of Sight for Human Subject

82%

1.6 km

*Excluding reduced line-of-sight due to foliage

New Mexico

Arizona

Mexico

Situational Awareness in the Last Mile

Solution:
On-The-Move Capability

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- **"Removing Dead Space"** – OTM capability enables the operator to cover **more ground, in less time, from more angles**; effectively removing "dead space" from the AO, and reducing IOI(s) evasion probability (concept also applies to search and rescue (SAR) missions).

- **Proactive vs. Reactive -** "Spot and Stalk" surveillance approach vs. "Tree Stand" method.

- **"Last Mile"** -"Eyes on" capability while OTM leads to safer and more effective means of detection and interdiction.

- **Maintaining Tactical Advantage** - Rapid deployment and OTM capability enable speed and maintained momentum for interdiction teams.

Situational Awareness in the Last Mile

Urban LE Operations

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- □ **Special Operations (SWAT)**
- □ **Emergency Management**
- □ **Special Events / Crowd Overwatch**
- □ **EOD**
- □ **Counter Terrorism / Homeland Security**
- □ **Protection of High-Value Assets**
- □ **VIP / Convoy Protection**
- □ **High-Risk Warrants**
- □ **Port / Airport Perimeter Security**

Situational Awareness in the Last Mile
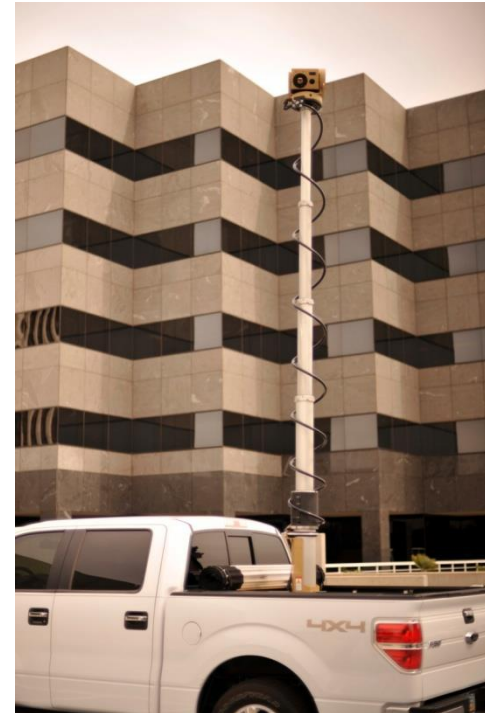
Fire / Emergency Management Operations

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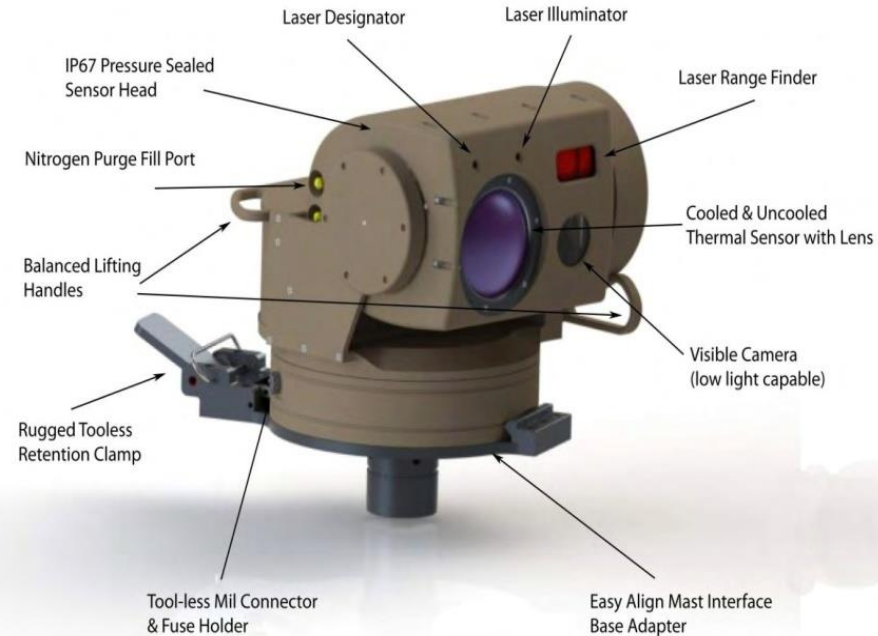
- ❑ **Catastrophic Events**

- ❑ **Emergency Management**

- ❑ **Hazardous Materials**

- ❑ **Firefighting Operations**

- ❑ **Search and Rescue**

Situational Awareness in the Last Mile

Mission Critical System Features

- Fully integrated, **__ruggedized__** platform (IP67)
- "Stow" feature enables the optics to be protected when not in use
- Gyro stabilized, precision gimbal
- Color and thermal (cooled or uncooled) sensors
- Laser illuminator / designator (NVG)
- Laser Range Finder with GIS coordinates
- Wireless capabilities for slew-to-cue, Remote / Dismounted Operator, COP sharing
- On-board DVR for snapshots / video recording
- Integrated safety features to minimize human error
- Intuitive user-interface for simple learning / operating curve (XBox HCU)

Laser Designator
Laser Illuminator
IP67 Pressure Sealed Sensor Head
Laser Range Finder
Nitrogen Purge Fill Port
Cooled & Uncooled Thermal Sensor with Lens
Balanced Lifting Handles
Visible Camera (low light capable)
Rugged Tooless Retention Clamp
Tool-less Mil Connector & Fuse Holder
Easy Align Mast Interface Base Adapter

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System Versatility

- "Expandable" system - features can be added incrementally (Foundation Model starting at $100K)

- Extensible software integration (HDT, LPR, FR).

- Installs on existing fleet vehicles - including tactical, command, and all-terrain vehicles.

- Sensor Head designed to be removed or installed in under 10 seconds (tool-less design)

- Covert Mount System(CMS) -

  - Transportable chassis / receiver system for multi-vehicle use

  - From "folded" to "drive" position under 15 seconds

- Tactical Mast Deployment System (TMDS) – silent energy solution for rapid, stealth deployment of mast (refillable via Cascade Refilling System).
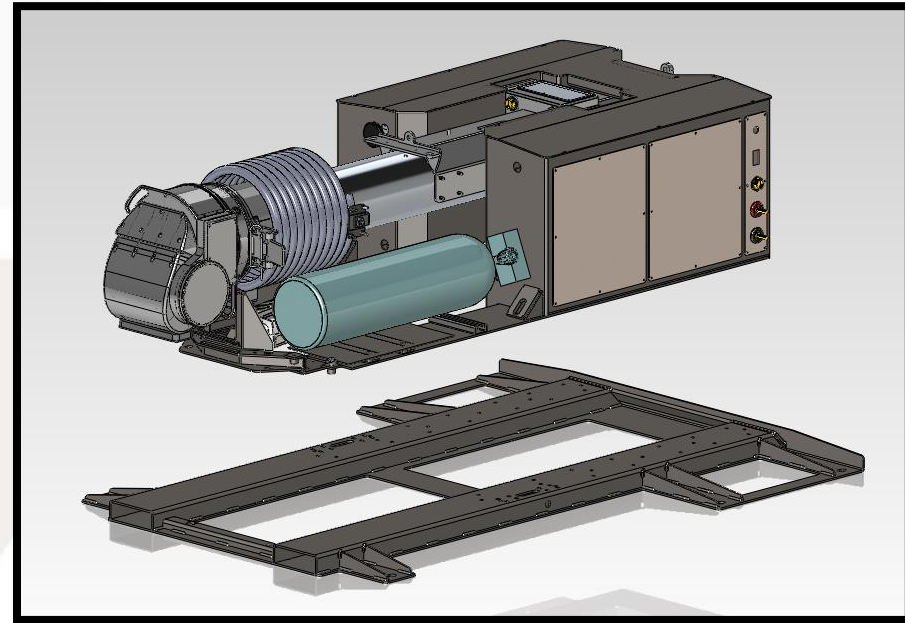
3.0 FOTM CMS

Operational Cost Comparison (Vehicle)

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Aerial Rotary Asset (Blackhawk)	Aerial Rotary Asset (Bell)	Aerial Fixed-Winged Asset (UAV)	Pick-Up Truck
$2,400/hr	$1,600/hr	$400/hr	$32/hr

Situational Awareness in the Last Mile

Summary

- **Strongwatch FOTM technology:**

  - Provides superior situational awareness and actionable (shared) intelligence, with a high level of availability, and a low cost (vs aerial assets).

  - Creates a force multiplier

  - Increases safety and effectiveness of the operator and their team

  - Enables tactical advantages of speed and maintained momentum to interdiction teams

  - Transforms any fleet vehicle into a rural or urban tactical surveillance solution

  - Supports multiple-mission operational needs, tempos, and use-cases

Situational Awareness in the Last Mile

Arizona Counter Terrorism Information Center (ACTIC)

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