MOBILE VIDEO SURVEILLANCE
MOBILE SURVEILLANCE

MOBILE VIDEO ON THE MOVE
REAL-TIME SITUATIONAL AWARENESS

SECURITY OPERATIONS REQUIRE REAL-TIME SITUATIONAL AWARENESS, TO ENSURE THE GREATEST LEVELS OF EFFECTIVENESS AND SAFETY, IN OPERATION.

• Challenges / fundamental needs include:
  – Safety requires rapid risk assessment and situational awareness through real-time, actionable intelligence (visual and geo-spatial data).
  – 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.
CHALLENGE: LIMITED LINE-OF-SITE

LIMITED LOS OF ITEMS OF INTEREST (IOI) DUE TO TERRAIN / VEGETATION RESTRICTIONS INCREASES IOI(S) EVASIVE PROBABILITY IN THE “DEAD SPACE” OF AN AREA OF OPERATION (AO).
SOLUTION: ON-THE-MOVE CAPABILITY

• “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.
MISSION CRITICAL SYSTEM FEATURES

- Rugged design, hermetically-sealed sensor (IP67)
- “Stow” feature protects optics 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
- IP Network compatible 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)
MISSION CRITICAL SYSTEM FEATURES

• Expandable” system design - features can be added incrementally
• Extensible software integration (HDT, ANPR, 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).
<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial Rotary Asset (Blackhawk)</td>
<td>$4,800/hr</td>
</tr>
<tr>
<td>Aerial Rotary Asset (Bell)</td>
<td>$3,200/hr</td>
</tr>
<tr>
<td>Aerial Fixed-Winged Asset (UAV)</td>
<td>$800/hr</td>
</tr>
<tr>
<td>Pick-Up Truck</td>
<td>$32/hr</td>
</tr>
</tbody>
</table>
MOTOROLA MOBILE VIDEO INTEGRATION

SAFER CITIES. THRIVING COMMUNITIES.
INTEGRATION CAPABILITIES

• Motorola MW810
• Additional optional Integration:
  – Radio Integration
  – Motorola RIC integration
• Live, responsive, low-latency, full-screen video view with overlaid symbology and menus

• Primary system controls via game controller (joysticks, triggers, d-pad, buttons)

• Secondary controls via keyboard, mouse, and touch screen
• Switch between live video view and IDP view (browser) using soft buttons on MW810 display

• IDP view will allow pop-out of live video and snapshots via web elements served from on-vehicle Web Service

• Future: IDP and FOTM UI in one app
VEHICLE INSTALLATION
• 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
FOTM CAN BE ORDER IN THE BELOW CONFIGURATIONS:

- Uncooled Thermal with Long Range Finder
- Uncooled Thermal with Laser Pointer / Laser Illuminator
- Cooled Thermal with Long Range Finder
- Cooled Thermal with Laser Pointer / Laser Illuminator
DETAILS ON THE FOTM MODULES ARE THE FOLLOWING:

- **Uncooled Thermal:** The long wave infrared (LWIR) is their most popular thermal infrared option. It provides up to a 1 mile human detection capability, and includes a 30-90mm dual field of view lens which is bore sight aligned and field-of-view matched for ease of use during operations.

- **Cooled Thermal:** Mid-wave infrared (MWIR) that provides a 4 mile human detection capability for operations that require long range surveillance, such as coastal or border operations. A 15-400mm continuous zoom lens provides smooth and seamless functionality.

- **Tactical Packages:**
  - **Package 1:** Long Range Finder (LRF): minimum 4K range finder that provides GIS information and distance to IoI(s). Integrated with IDP, operators can plot specific IoI(s) onto the common operating picture, enhancing accuracy and situational awareness across all ranks.

  - **Package 2:** Night Vision Systems (NVG) Lasers: provides illumination of IoI(s) to NVG-users to enhance non-verbal communication among operators.
### FOTM Solution Price Estimation

<table>
<thead>
<tr>
<th>FOTM Solution</th>
<th>QTY</th>
<th>Unit price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1: Uncooled Thermal with Laser Pointer / Laser Illuminator *</td>
<td>1</td>
<td>~ $300,000</td>
</tr>
<tr>
<td>Option 2: Cooled Thermal with Laser Pointer / Laser Illuminator **</td>
<td>1</td>
<td>~ $420,000</td>
</tr>
<tr>
<td>Option 3: Uncooled Thermal with Laser Pointer / Laser Illuminator –Preloaded on Truck</td>
<td>1</td>
<td>~ $359,200</td>
</tr>
<tr>
<td>Option 4: Cooled Thermal with Laser Pointer / Laser Illuminator –Preloaded on Truck</td>
<td>1</td>
<td>~ $482,520</td>
</tr>
</tbody>
</table>

FOTM Solution includes:
- StrongWatch FOTM package
- Motorola in-vehicle MW810 package

* Package 2, uncooled Tactical
** Package 2, cooled Tacttical
### PROJECT PRICE ESTIMATION (2/2)

<table>
<thead>
<tr>
<th>Services</th>
<th>Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> PM &amp; Engineering Services</td>
<td>To Be Discussed based on scope and QTY</td>
</tr>
<tr>
<td>- Option 3 &amp; 4 is implemented in the US</td>
<td></td>
</tr>
<tr>
<td>( includes: design, install, integration, commission, testing and calibration)</td>
<td></td>
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<tr>
<td><strong>2</strong> 1 Year Technical support services</td>
<td>To Be Discussed based on scope and QTY</td>
</tr>
<tr>
<td>- HW/SW support, spare parts etc..</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong> In Country support services:</td>
<td>-To Be Discussed based on scope and QTY</td>
</tr>
<tr>
<td>- initial Field Eng. Support on-site support</td>
<td></td>
</tr>
<tr>
<td>- Preventive maintenance</td>
<td></td>
</tr>
<tr>
<td>- on-site support</td>
<td></td>
</tr>
<tr>
<td><strong>4</strong> 5-day In Country Training</td>
<td>To Be Discussed based on scope and QTY</td>
</tr>
</tbody>
</table>
• Integrated Solution delivered from up-fitting facility in USA
• Option 3 & 4 will be fully commissioned and tested in up-fitting Facility and ready for operations
• Export/shipping not included
• Taxes, Tariffs, clearances if applicable is responsibility of customer
• Vehicle:
  • Current provided vehicles are STD GCC specification vehicles
  • Vehicle quoted is 2015 GMC SIERRA DOUBLE CABIN LONG BOX 2500 HD 4X4
  • Any additional requirement in paint, chassis and options will impact price
  • Vehicle comes with Standard dealer warranty and is not part of any service/support contract
• Should an FAT (Factoring acceptance testing) be required, this will be quoted separately
• Contractual terms to be mutually discussed and agreed
• In order for Motorola Solutions to issue an official quote for this project, Cavalcade must be a registered Motorola partner. It is advised to start this process ASAP should Cavalcade sense this opportunity is moving fast as process does take time.
  • Should Cavalcade Services do not which to be a registered MSI partner, the quote will need to be channeled to Cavalcade through a registered partner which will have a cost impact on the project.
OPTIONAL SOLUTIONS

THE FOLLOWING ADD-ON SOLUTION CAN BE OFFERED:

• Motorola Integrated in-vehicle P25 Mobile radio terminals
• Motorola Intelligent Data Portal integration
• Motorola RIC (Real-time Intelligent Console)
• StrongWatch Motion Detection solutions
• Motorola LTE Data Networks for backhauling and information sharing

* Some of the above solutions will required Data Network connectivity to be available
THANK YOU