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RDECOM

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

XM153 CROWS Vehicle Integration

**Presented By:
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XM153 CROWS (SOCOM Team)**

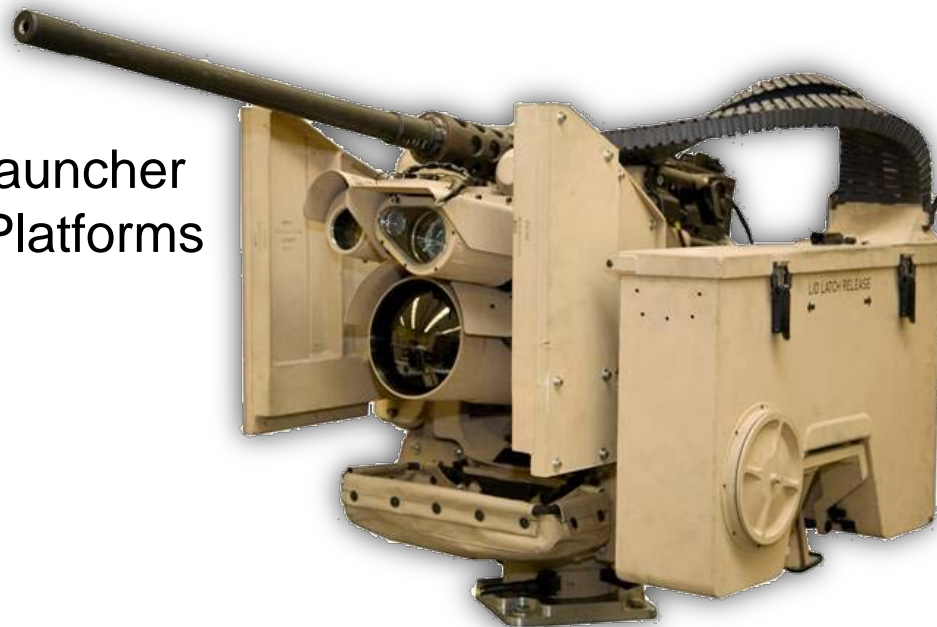
Agenda

- System General Description
- Basic CROWS Components
- XM153 CROWS Advantages
- XM153 Configurations
- Integration Considerations
- Vehicle Integration Kit
- Vehicle Configuration File
- Modeling and Simulation
- Testing
- Logistics
- Fielding and Sustainment
- Vehicle Platforms



General Description

- Stabilized Remotely Operated Weapons Station
- Capability to Aim and Fire a Suite of Crew Served Weapons
 - M2HB .50 Caliber
 - M240 7.62mm MG
 - M249 5.56mm SAW
 - Mk19 40mm Grenade Launcher
- Supports Large Number of Platforms
 - Stationary
 - Vehicle
 - US Army
 - US Air Force
 - SOCOM
 - DOE
 - Host Vehicle Power



Basic Components

- Mount with Weapon Cradle
- Traverse and Elevation Drives
- Laser Range Finder
- Weapons Interface
- Remote Weapon Charger
- Ammunition Magazine Feed System
- Control Grip
- Fire Control Unit
- Viewing and Sighting Unit
 - Visual
 - Thermal



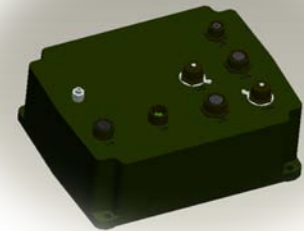
Weapons Station



Control Grip



Display & Control Panel (DCP)



Main Processing Unit (MPU)

XM153 CROWS Advantages

- Gunner Protected Under Armor
- Can Be Installed on Light Armored Vehicles
- Enhanced Target Acquisition
 - Day
 - Night
- Enhanced Target Identification
- Engagement Capabilities
 - Shoot-on-the-move
 - Target Leading
- 360 Degree Capability





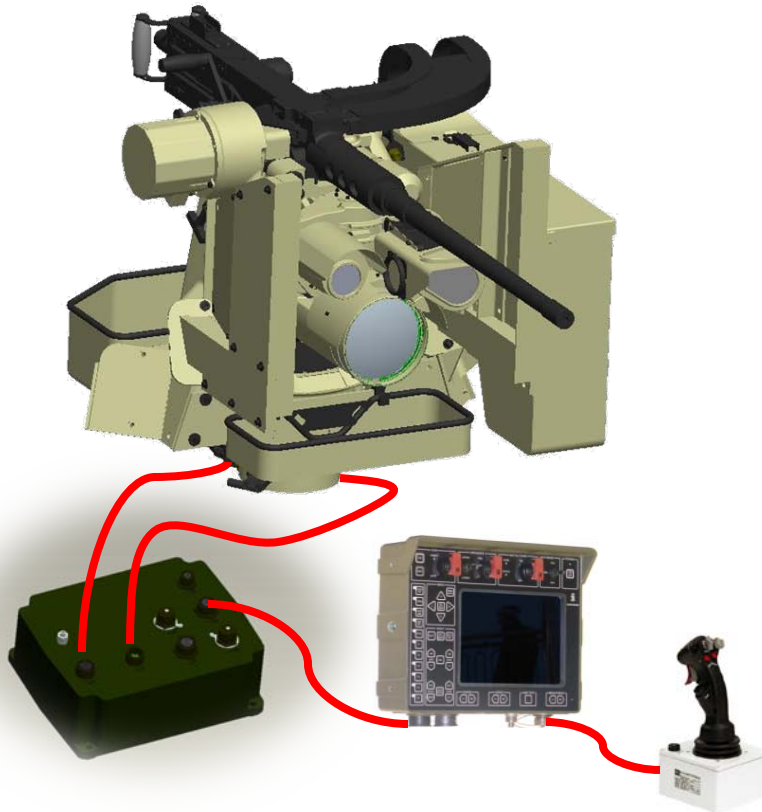
XM153 CROWS Integration



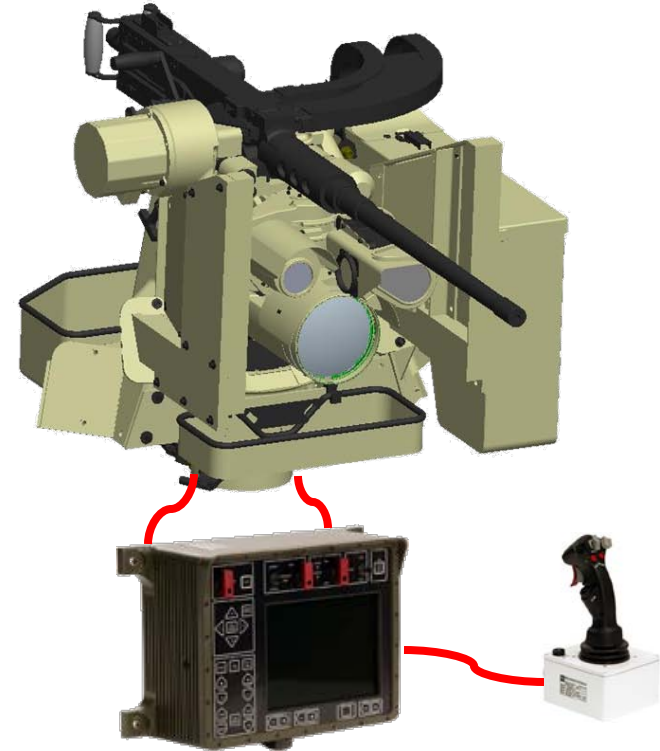
Vehicle Integration



Baseline XM153 CROWS
(aka Split Screen)

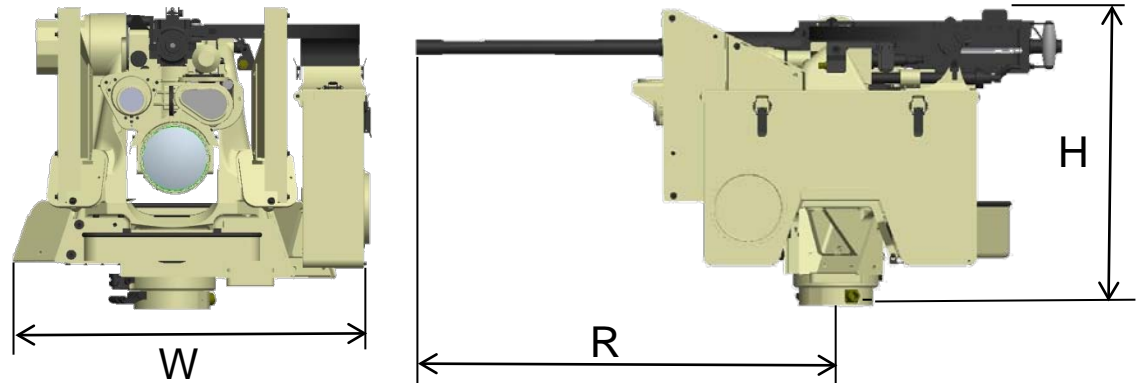


Optional XM153 CROWS
(aka Thick Screen)



Weapons Station Integration Considerations

- Height w/ M2 @ Maximum Elevation: 65" Approx.
- Height @ 0 Elevation: 30" Approx.
- Traverse Radius w/ M2 @ 0 Elevation: 43" Approx.
- Maximum Weight Above Roof : 600 lb. Approx.
- Above Height & Weight Exclude Vehicle Integration Kit
- Power Requirements
- Vehicle Egress
- Transportability
- Weapon Station Access
 - Reload
 - Clear Jams
 - Manual Firing



Interior Integration Considerations

- Human Factors
 - Control Grip Location
 - Screen Location
 - Gunner Distance
 - Two Hand Operation
- Egress
 - Control Grip Location
 - Cable Routing
- Gunner Seat Location
 - Forward/Rear Facing
 - Vehicle Side
- Vehicle Fire Suppression System

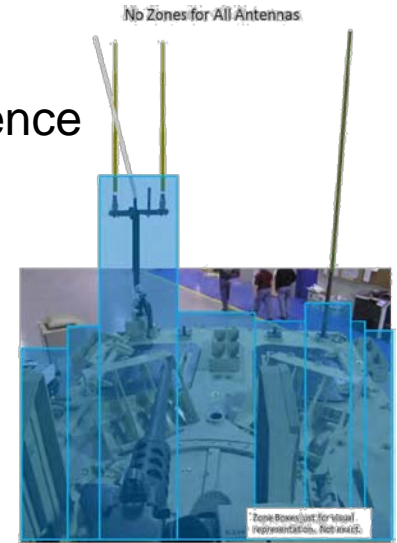


Vehicle Integration Kit (VIK) Considerations

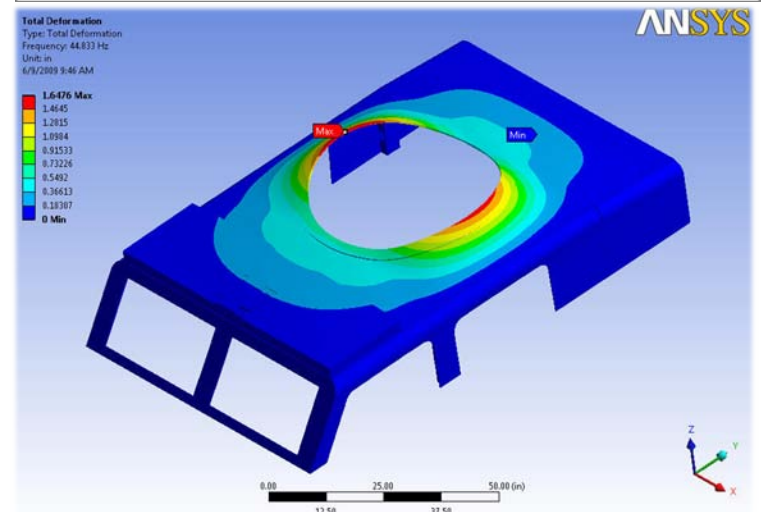
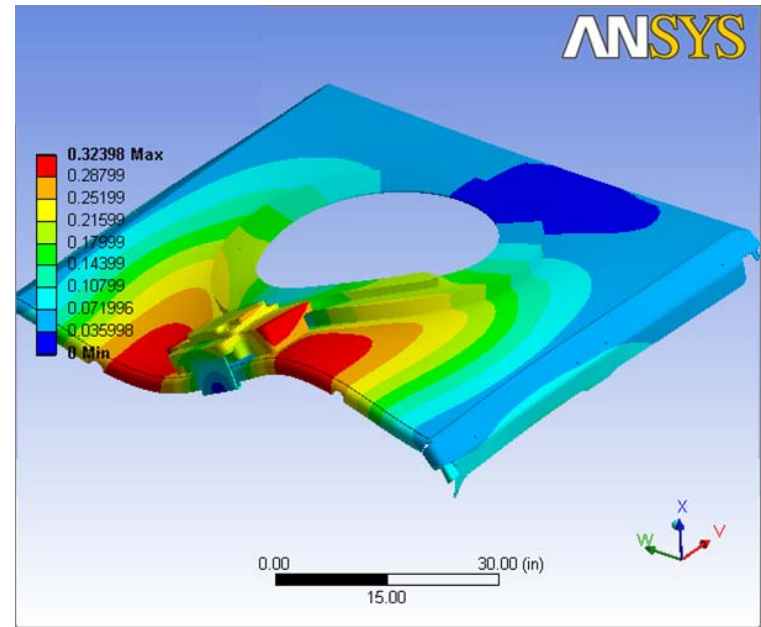
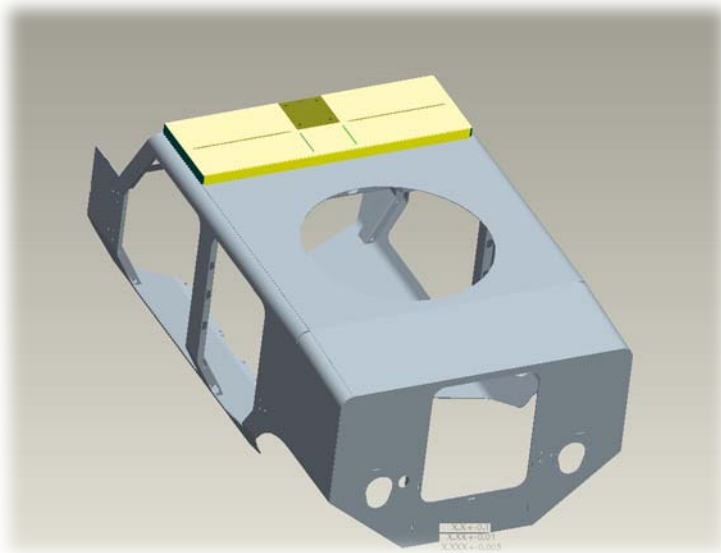
- Mechanical and Electrical Interface Control Document
- Mounting Hardware
 - Weapon Station
 - Structurally Sound Mounting
 - RWS mounting surface > Resonance Frequency
 - 360 Degree Visibility
 - Control Unit
 - Display location relative to gunner seat
 - Egress
 - Control Grip
 - Wrist/Arm Support
 - Egress
 - Hatch/Door Interlock Sensor Mounts
 - Hatch Traverse Lock
 - Fuse Box

Vehicle Configuration File (XM153 CROWS II Only)

- PM CSW Maps Each Vehicle
 - No Traverse Zones: Weapons Station Physical Interference
 - No Fire Zones: Safety Inhibits, GFE Protection, etc
- All Exterior GFE Installed in Final Configuration
 - Overrideable Zones
 - Non Overrideable Zones
 - Hatch Specific Zones
- CROWS II Mounted in Fielded Configuration
- Exterior Vehicle Configuration Changes May Require Remapping
 - Bar Armor
 - Additional Antennas
 - Other GFE
 - Hardware Specific to a Single Vehicle can be Defined by the User
- PM CSW creates VCF, Platform PM Must Signoff Prior to Official Release



- Modeling and Simulation
 - Structural Analysis
 - Stiffness Analysis
 - Weapon Accuracy
 - Weight Optimization



Safety Confirmation Objective and Required Tests

■ Non-Vehicle Specific

- Accuracy
 - Mk19
 - M2
 - M240
 - M249
- High Temperature
- Low Temperature
- Power Sources
- Software Verification
- Weapons Adapter Kit (WAK)
- Feed Performance (Functional Firing)

■ Vehicle Specific

- E3
- Human Factors
- Vehicle Profile Verification (VCF)
- Vehicle Characteristics
- RAM
 - Durability / Reliability (500 Miles)
 - Functional Firing from Vehicle
- Blue Jammer Interoperability/Compatibility
- M2 Accuracy from the Vehicle



Logistics

- Operator Training
 - Training Materials
 - Tech Bulletins
- Maintenance
 - Field Service Representatives (FSR's)
 - Initial Spares
 - Depot Maintenance Support CLS oversight
- Delivery Schedules
- Installation
 - Manuals
 - Schedules
 - Sites
 - CONUS
 - OCONUS



Fielding & Sustainment

- VIK Production and Installation
 - Schedules
 - Locations
- Install Vehicle Configuration File
- New Equipment Training (NET)
- Manuals
- Spares
- Maintenance/ Repair of CROWS
- Software Updates



Platforms

Supported Vehicles

- M1114 Humvee
- M1151 Humvee
- M1116 Humvee
- RG-33 MRAP
- RG-31 MRAP
- JERRV MRAP
- Buffalo
- Maxxpro MRAP
- M-ATV
- M1 Abrams TUSK
- M93 Fox
- Bearcat
- MMPV
- Caiman MRAP
- Cougar MRAP

Customers

- United States Army
- United States Air Force
- US SOCOM
- DOE



Questions?