

# **Experimental Unmanned Vehicle (XUV)**

## **Concepts of Employment & Mission Analyses**

## ***Study Purpose***

**Develop potential User applications for XUV technologies to support:**

- XUV User Appraisals**
- XUV Contingency Force Applications**
- Ongoing & Future UGV Requirements Development Activities**

# Study Methodology & Status

Meet w/ Users to:

- Develop study plan
- Identify potential applications

## XUV Concept Analyses

- Combat Engineer Applications
- Military Police Applications
- Infantry Applications
- Field Artillery Applications
- Armor (mounted) Applications
- Chemical School (smoke) Applications
- Additional CSS Applications
- Others (i.e. AF, Navy), as appropriate
- TRADOC Capstone Analysis
  
- Simulation-based (Janus & JCATS)
- Approved scenario excursions
- ARL data review

- XUV Applications
- XUV Contributions in each mission type
- Additional mission module requirements, system performance requirements.

- XUV User Appraisal Planning
- XUV Contingency Force Planning

Action Complete

# ***XUV Mission Applications & Scenarios***

## Combat Engineers

- Route Reconnaissance
- Route Maintenance
- Hornet Minefield Emplacement
- Area Disruption
- Gauntlet

Northeast Asia  
Southwest Asia  
European

## Military Police

- Security of a Designated Convoy

Northeast Asia

## Infantry

- MOUT (RSTA & Non Lethal Munitions)
- MPRS Excursion
- Task Force Scout (RSTA)

McKenna MOUT Site  
McKenna MOUT Site  
European (BCT)

## Chemical Corps

- Rapid Obscuration Platform

McKenna MOUT Site

## Field Artillery

TBD

## Armor

TBD

## CSS

TBD

# ***Emerging Findings***

- **UGVs & XUVs improve soldier survivability**
- **Semi-autonomous/autonomous capability lends itself particularly well to:**
  - **Minefield Emplacement Missions**
  - **Route Maintenance Missions**
  - **Convoy Security Missions**
  - **Mine Detection/Clearing Missions**
  - **Obscuration Mission**
- **Acoustic detectors improve effectiveness by cueing RSTA sensors and by alerting the system of nearby vehicles; critical to rapid obscuration missions**
- **Operators require the ability to control the system and payloads in real-time.**
  - **Engineer Route Reconnaissance**
  - **Select RSTA positions**
  - **Reconnaissance**
  - **Dispense smoke grenades**
- **Operational Tempo remains an effectiveness driver**
- **Ability to locate enemy positions based on direct fire near misses would improve effectiveness; critical to rapid obscuration missions**
- **UGV survivability in MOUT environments is critical to their effectiveness**

# *Summary*

- **Results are focused on developing XUV (system & technologies) applications & areas for improved capability**
- **Analysis process is engaging Users in a detailed dialogue and allowing them to begin developing XUV applications well before User Appraisals**
- **Identifying high payoff UGV missions**
- **Will conduct a TRADOC level capstone analysis to look across the force**

## **High Payoff System Capabilities:**

- **Acoustic Detection**
- **System Survivability**
- **Identify source (location) of incoming direct fire rounds**
- **Operator's ability to employ systems in either a "tele-op" mode or a semi-autonomous mode will increase versatility**