

LITTORAL COMBAT FUTURE NAVAL CAPABILITY



**Industry R&D Partnership Conference
MAGTF Maneuver Technology Investment Overview**

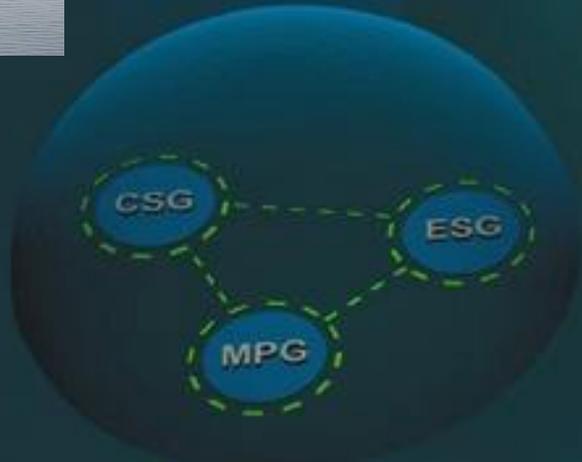
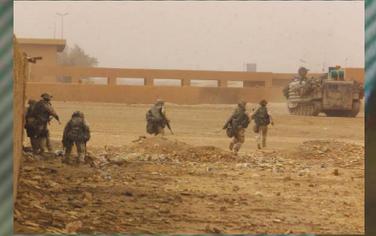
**Mr. Ashley Johnson
6 June 2004**

Voice: 703.696.4223

Fax: 703.588.2438

E-mail: johnsoa@onr.navy.mil





Seabasing

OMFTS

STOM

OMFTS

USMC EMW Tenets

MAGTF Maneuver Required Capabilities

- Maneuver in all dimensions – land, air and operational maneuver from the sea
- Concentrate force at critical points
 - Achieve surprise
 - Psychological shock
 - Momentum
- Maintain and exercise freedom of action

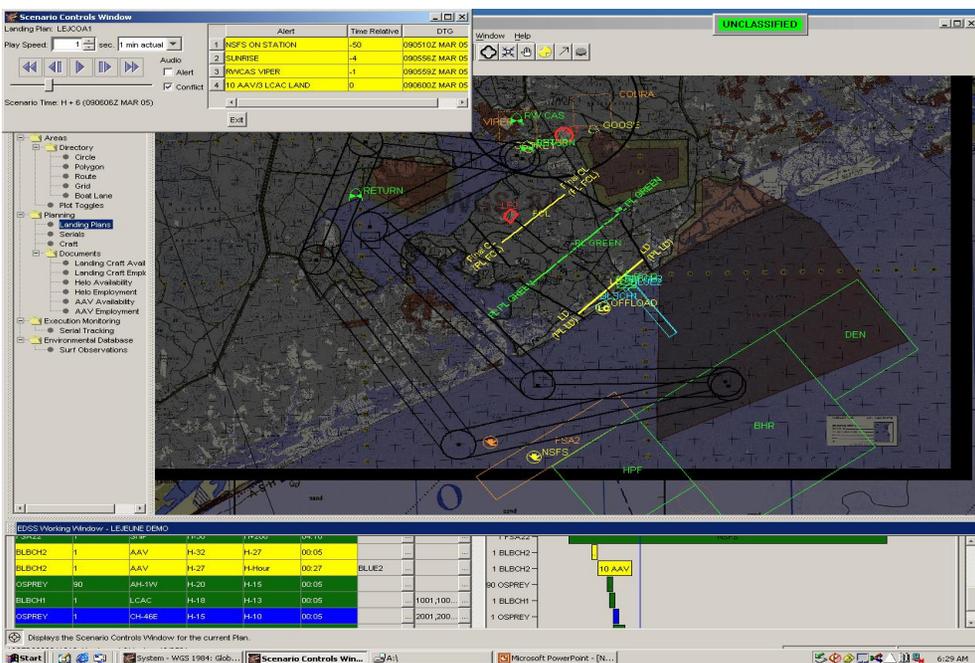
EC 3 Maneuver

Description. To support the development of Naval Expeditionary Maneuver Warfare tenets via the application of technologies which enhance the ability of the Navy-Marine Corps team to achieve assured access and sustained operations in the littorals as the naval portion of a joint campaign. Enable MAGTF elements to gain, maintain and exercise freedom of action aided by technological solutions encompassing (a) knowledge based situational awareness tools (b) enhanced tactical maneuver support (c) advanced mobility and survivability and (d) land mine counter measures.

- Ø Product Line 1 Knowledge-based Situational Awareness
 - Ø Adaptive Expeditionary Maneuver Warfare System
- Ø Product Line 2 Tactical Maneuver Support
 - Ø EFV Collision Avoidance System
 - Ø Navigation in a GPS Denied Environment (New Start FY05)
- Ø Product Line 3 Advanced Mobility/Survivability
 - Ø Gunslinger: Hostile Fire Detection and Response
 - Ø Active RPG Defense (New Start FY05)
- Ø Product Line 4 Landmine Countermeasures and Breaching
 - Ø Insensitive Munitions (IM) Compliant MICLIC



Adaptive Expeditionary Maneuver Warfare System



OBJECTIVE:

- Develop, evolve, demonstrate and transition a technology solution capable of supporting the planning, evaluation, and execution of all phases of Expeditionary Warfare.

PAYOFF:

- Reduced planning time, increased tempo and in-stride flexibility to facilitate all phases of the MAGTF planning process from COE development through execution.

TECHNICAL APPROACH:

- Evolutionary software development within COE
- Integrated software tools for CATF/CLF, major subordinate commanders as well as their staffs designed to support the USN/USMC staff planning process in all phases of Expeditionary Maneuver Warfare
- Extensive use of Intelligent Agents, web technology, augmented reality, and active templates

PERFORMERS: SAIC, SPAWAR, NRL

SCHEDULE:

Tasks/Milestones	FY03	FY04	FY05	FY06
DII COE 3.1 Build Number	▲ 1.2	△ 1.3		
3.1 Field Tests and Demos	TH 03 Continuous at all commands			
DII COE 4.X Build Number		△ 2	△ 3	△ 4
4.X Field Tests and Demos			SV 04	KB 05
GCCS-M Cert / Integration		△ OPEVAL		△ NGES

TRANSITION:

- Ground C2 / Tactical Combat Operations / MCSC
- PMS 490/ N753



EFV Obstacle Avoidance System



OBJECTIVE:

- Provide a collision avoidance system that leads to an enhanced EFV STOM capability
 - Detect floating objects, shallow bottoms, and submerged objects
 - Determine location of obstacles, share information with MAGTF (Integrate information into CROP)

PAYOFF:

- 1 Enhanced maneuverability of surface-landed elements of the MAGTF
 - 1 Improved mine and obstacle avoidance capability from line of departure, through the beach exit zone

TECHNICAL APPROACH:

- Blue-green LIDAR (grazing incidence) for detection and localization of floating obstacles and submerged objects
 - Builds upon Navy Phase I/II SBIR program
 - Leverages ONR developed technology for ALMDS, AQS-20(A)
- Adapt technology for integration in EFV
 - Includes multiple platform integration initiatives
- Demonstrate prototype system in open ocean environment
 - Mature technology to TRL 6-7 to support MS C decision

PERFORMERS: Arete Associates, EFV DPRM, MARCORSSCOM TTO, EFV Prime (GD)

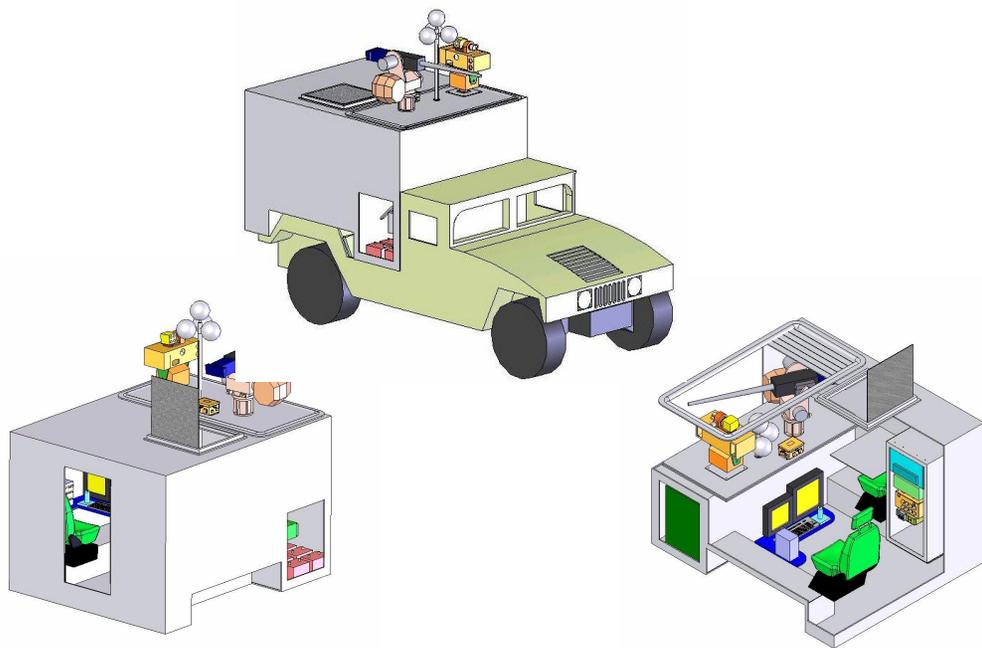
SCHEDULE:

Tasks/Milestones	FY03	FY04	FY05
TRADE STUDY	△—△	SRR	
DESIGN / FABRICATION	PDR △	—△	CDR
INTEGRATION		△—△	TRR
DEMONSTRATION	△—△	SBIR	△—△
AAAV MS C DECISION			△

TRANSITION: DRPM EFV



GUNSLINGER Hostile Fire Detection and Counter Fire System



OBJECTIVE:

- Multiple spiral development objective pathway to modular, open architecture fire detection and counter-fire capability for transition to robotic applications

PAYOFF:

- Increased tempo of operations, lethality and survivability in the battlespace.
- Increased Force Protection
- Effort is designed to focus on complementary systems which will be synergistic in nature, and serve as force multipliers

TECHNICAL APPROACH:

- Multi-spiral development effort
- Continual spiral evaluation through operational experimentation
- Each successive spiral developmental path provides improved capability
- Culminates in an open architecture, modular system which can be adapted to various platforms

• Spiral I will integrate DARPA/BBN Boomerang acoustic sensor, NSWC Louisville MK-45 Gun Mount and OVERWATCH ACTD STARE FLIR sensor on MCWL HMMWV...Delivery to PACOM Sep 04

PERFORMERS: NSWCDD, NSWCLV, MCWL, ARL, RADIANCE, AAI, SMDC

SPIRAL I SCHEDULE:

Tasks / Milestones	FY 04	FY 05	FY 06	FY 07
Lessons Learned and Industry/capability gap analysis	▲			
Spiral I Detailed Design	—▲			
Spiral System Integration	▲—▲			
Spiral I Delivery to PACOM		▲		
Spiral 2 thru 4 => UMG MPM		▲	—————	▲

TRANSITION: Robotic Systems JPO, Huntsville, AL



Mine Clearing Line Charge (MICLIC) Mine Clearance System (MCS)



OBJECTIVE:

- 1 Achieve total IM compliance and system certification IAW with MIL-STD-2105C
- 1 Advise Joint Services Insensitive Munitions Technical Panel of risk mitigation strategies in order to receive waiver to employ MCS for calendar year 2005

PAYOFF:

- Improve functional reliability of existing Mine Clearance System
- Improve Insensitive Munition characteristics of M59 and ML 25 Linear Demolition Charge
- Assault Breacher Vehicle compatible

TECHNICAL APPROACH:

- Multi-path system-of-system redesign using MICLIC as baseline
- Examine manufacturing techniques, energetics, and employment CONOPS'/TTP's
- Combined industry and Naval Lab cooperative leveraging manufacturing, energetic and packaging technologies

PERFORMERS: NSWCIH, NSWCDD, Milan Army Ammunition Plant

SCHEDULE:

Tasks / Milestones	FY 05	FY 06	FY 07
Component Level IM Improvement	△—————△		
System Level IM Improvement	△—————△		△
System Integration		△—————△	
System Qualification Testing and Evaluation			△

TRANSITION: MARCORPSYSCOM, PM AMMO