Joint RDT&E Pre-Milestone 0 & Concept
Exploration Program, 81mm Non-Lethal Mortar

# Joint Non-Lethal Weapons Program 1QFY01 Director's Reviews

# Joint RDT&E Pre-Milestone 0 & Concept Exploration Program 81mm Non-Lethal Mortar

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### System Description

Program Name: 81mm Non-Lethal Mortar

#### **System Description:**

- Joint NLWD TIP programs (USA, USMC)
- Composite Mortar, Electronic Fuze, Parachute(s) for NL impact; or combustible case
- Payload TBD
- Develop the most promising material technology
- Develop delivery technology

#### **Applications:**

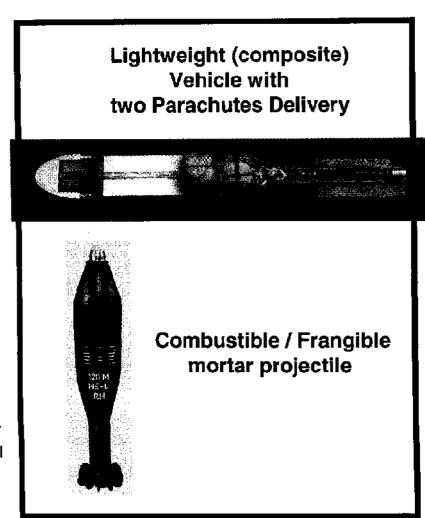
Deployable from Existing Mortar Platforms

Potential Variable Payloads

Long Range NL Capability

#### Concept of Operation: Produce a NL Mortar

<u>Munition</u> using non-traditional materials, to limit collateral damage from residual fragmentation of the projectile. A major challenge will be to come up with a cartridge that can meet all applicable weapon Requirements without exceeding non-lethal Kinetic Energy Criteria. All approaches, weight reduction, combustible cartridge, velocity mitigation, etc will be explored.



### Joint Service Interests

#### **Service Supporting Documents:**

Name of Approving Organization Date of Signature

#### **Joint Service Team**

Name

Organization

Phone

Research Lab, Acquisition & Requirements POC's from Services

Schedule for potential event that might be of Joint Service interest

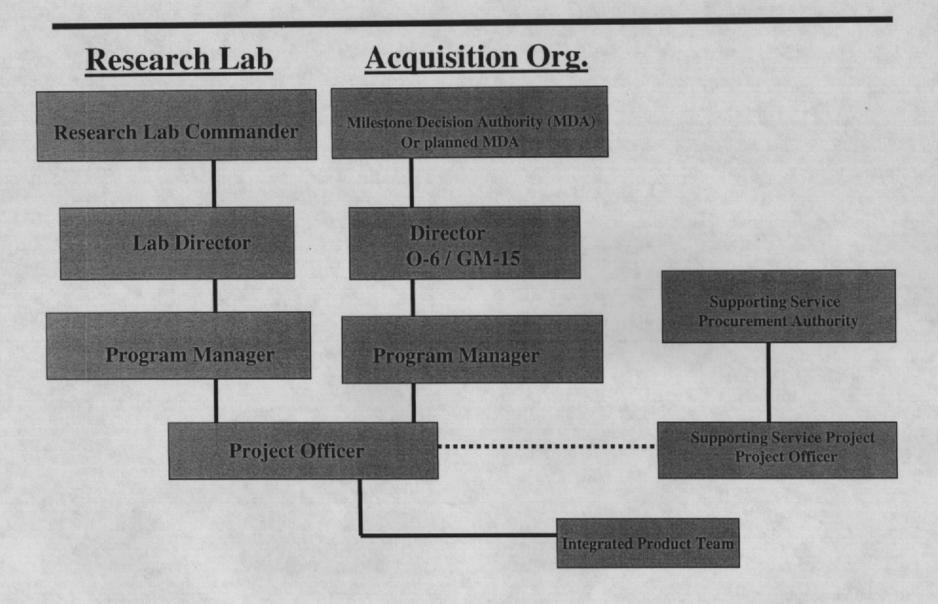
<u>Date</u>

**Event** 

Location

Add any Service unique Capstone Requirement Documents or Future Operational Capability Document

### Organizational Structure



### Technology Team

**Participating Laboratories** 

Lab/Office Code POC Phone (DSN)

ARDEC Ma

Matt Evangelisti

880-2851

**Requirements Generation** 

Command/Code POC Phone (DSN)

MP School

Eric Niver

880-

**Other Government Agencies** 

Agency/Code POC Phone (DSN)

ARL SBCCOM Dave Lyon, Ph.D Larry Bickford

410-278-7782

Prime and Major Sub-Contractors

Name/POC Address/Location Phone (COM)

M2 Technology Chris Morris

540-220-5003

West Hyannisport, Massachusetts

UDLP Minneapolis, MN Dr Johnson

612-572-6354

### Program Strategy

Review all TIP efforts to date

Establish Requirements

Review all applicable available Technology & past work

Best Tech Approach & Focus effort

Prepare Contracts Statement of Work

**Award Contracts** 

Initiate Technology Program

Model, Build Hardware & Conduct Lab Experiment

Transition Program to PM

Major Events Schedule

TVICTOI ESTOTICS STILL																			
	FY	Y99   FY00		FY01		FY02				FY03									
Major Event 1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
•TIP Kick-Off					¶ '			ı	 	 									 
•Design, Fab, Assemble, Test												Į.							 
•Firing Demo					4				! ! !				 						
•Initial Program Plan (TIP follow-on SOW's)						A									i 1 1 1 1 1 1 1				
•Program Plan (PM-Mortars: UDLP, ARL / M2 / UNH)			 					<u> </u> 				 	• • • • • • • • • • • • • • • • • • •						
•Best Tech Approach & Focu	s ef	fort	•		-		)           	4			]   			! : !	•  -  -  -  -  -  -	i	[ ] ] ] [	 	e
			! ! !														; ; ; ;		
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### Program Documentation

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Signed Program Docum	nentation:		
Document Title	Date Signed	(POC & Phone #)	Service Endorsements
List			
List			
List			
<b>Service Unique Docum</b>	entation:		
Document Title	Date Signed		POC & Phone #
List			
List			
Pending Program Doc	umentation:		
Document Title	Status	POC & Phone #	Est. Completion Date
List			
List			
List			
<b>Security Classification</b>	<b>Guidance (JNLWP</b>	& Service Unique)	
Document Title	Status		POC & Phone #
List			
List			

### M& S / Experimentation Applied or Planned

#### **Modeling & Simulation**



### Testing and Evaluation

**Completed Tests** 

Test Event Date Location

Proof of Concept Lightweight (composite) Vehicle with

**3rd FY00** 

Edgewood Arsenal, MD

two Parachutes Delivery

**Future Tests** 

Test Event Date Location

Follow on

Lightweight (composite) 2nd FY01

Vehicle with

two Parachutes Delivery

J EWA1

<u>ARL</u>

Joint "T&E" Team

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Name	Organization	Phone
ARL UDLP	Dave Lyon, Ph.D Dr. Dick Johnson	410-278-7782 612-572-6354
Lig	htweight (composi with two Parachutes D	
		Control Services

### Funding Profile

RDT&	E	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
Curren	it Budget							:	
	In-House	222k							
	OGA	68k			 		<u> </u>		
	Contracts	360k							
	Total	750k	500k						
Ţ	JFRs Submitted					[			İ
Tot	Total Requirement								
		į.	1	I	ı		1		
<b>Procureme</b>	nt Funds & Quantities	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
USA ———	Quantities Required by FY Unit Price								
<del></del>	Procurement Funding PON	I'd	<del> </del>	+					
USMC	Quantities Required by FY								
	Unit Price		1						
	Procurement Funding PON	/I'd							
Other Sources of Funding		FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
Source 1 Source 2	Plus up for Combustible casi	1g	1000k						

### Contracts

<b>Current Cor</b>	ıtrac	ts					
Contractor's N and City/State		Contracted Task	Deliverable	POC	& Phone	Contrac FY00	t Value: FY01
and City/State	•					F100	<u> </u>
M2 Technolog West Hyannisport,		Combustible Cartridge	coupon testing/study	Chris Morris	540-220-5003	300K	TBD
<b>UDLP</b> Minneapolis, MN	Lightw	eight (composite) Vehicle	Follow on POP test	Dr Johnson	612-572-6354	160K	TBD

#### **Future or Pending Contracts**

Contractor' Name and City/State	Contracted Task	Deliverable	Anticipated Award Date	Est. Contr FY00	act Value FY01
M2 Technology West Hyannisport, Mass.	Combustible/Frangible Cart	ridge	FY01		TBD
UDLP Minneapolis, MN	Lightweight (composite) Ve	ehicle	FY01		TBD

### Program Accomplishments

- UDLP and M2
  - •M2 / Lockheed-Martin Combustible Fiber Casing (Post TIP)
  - •UDLP / ARL / SBCCOM (Post TIP)
- IPT Team, kick-off
- Two contracts awarded (12 Sep 00)
  - UDLP
  - M2
- RIG brief submitted (11 Aug)
- Joint NL IPT approved FY 01 \$500k (7 Sep 00)
- Composite Modeling @ Stevens U
  - Modeling & Simulation is integral part of the NL Mortar Rd program
  - Life cycle cost estimating
- Mortar NL Rd program coordinated with OPM-Mortars
  - Use of Cross-functional IPT

# NL Mortar Rd Status / Plans

## TACOM-ARDEC Funded to Lead Subsequent Pre-Milestone 0 Efforts (New \$ 222k)

- Including Post TIP M2 / UDLP Efforts
- IPT Kick off Mtg. 6 Sept.
- Review all Technology & past work
- Best Tech Approach & Focus effort

#### UDLP Effort Completed June 00 (New \$ 160k) Contract awarded 8 Sept

- Proof of Concept Lightweight (composite) Vehicle with two Parachutes Delivery.
- 20 molded tailboom assemblies
- Study Mapleseed concept.
- (ARL to revisit proof of principle Firings and provide Tech support to IPT) (New \$ 68k)

#### M2 Effort completed Feb 00 (New \$ 300k) Contract awarded 8 Sept

#### Studies to Determine Feasibility of Combustible Cartridge

Continue Combustible & Adaptive Polymer Strip work

# NL Mortar Rd Status / Plans con't

### Requirements Definition ongoing

- Payload, Fuzing, Operational requirements
- Design loads & geometry constraints

#### IPT Team Staffing

TACOM-ARDEC, ARL subject matter experts brought on board

### Exit criteria currently being developed

Dependent on Potential Payloads & User Range

#### IPT Meeting

- Bi-weekly Concept Review
- Down Select to 2 Concepts accomplished early

### Issues for the Director

**Issues requiring the Director's attention or assistance** 

**Proposed Plan of Action for the Director**