



Briefing To NDIA

LTC(P) Greene

Full Spectrum Engineers – Force for Change

Agenda

- **Assured Mobility**
- **System Priorities**
 - **Legacy**
 - **Interim**
 - **Objective**
- **Road to the Future**
 - **Demolitions**
 - **Mines/Munitions**
- **Questions**

ASSURED MOBILITY

Actions that guarantee the force commander the ability to deploy, move, and maneuver where and when he desires without interruption or delay to achieve his intent



THE FUTURE THREAT

Low- to Mid-Intensity Environment

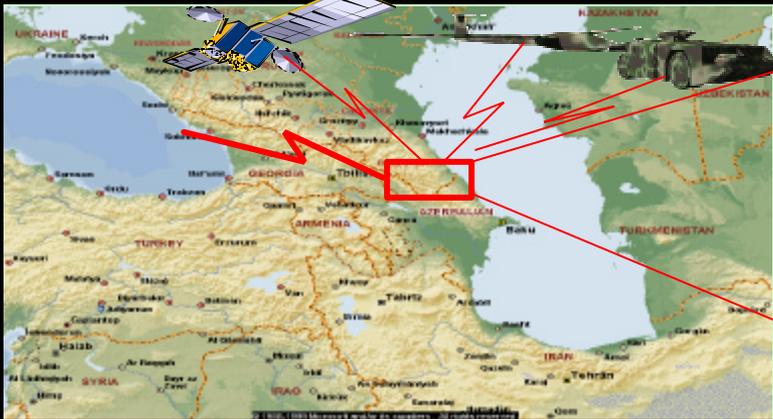
- Asymmetric tactics in complex and urban terrain
- Fight dispersed – seek sanctuaries – use non-combatants
- Delay and disrupt US entry – extend the conflict
- Attack US vulnerabilities – isolated forces, LOCs, C2
- Quickly mass effects against high payoff targets, rapidly disperse
- Create US casualties early and often – publicize with TV and photos
- Leverage niche technologies to counter US technological advantage
- Avoid predictable patterns
- Leverage obstacles – natural, man-made, population centers
- Nuke/chem/bio capability
- Infiltrate/manipulate civilian population

High Intensity Environment

- Larger organized formation – dismounted, motorized, armored
- More sophisticated capabilities – comparable technologies – C4I, sensors, precision weapons
- Seek quick success before US can react – disperse...deny entry...inflict casualties
- Attack US vulnerabilities

Dismounted...Armor...and Mixed With Non-Combatants

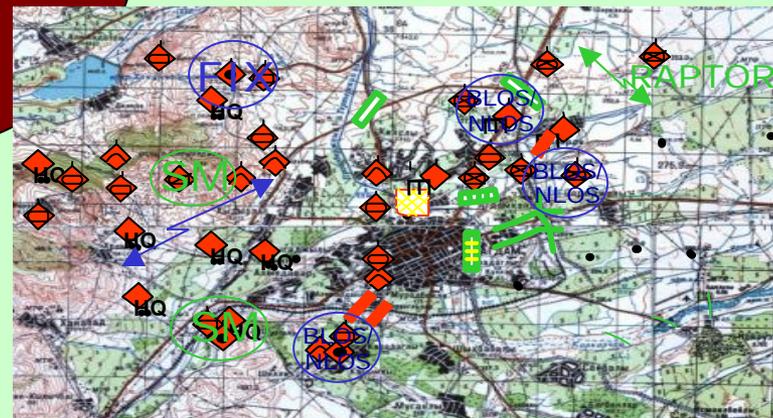
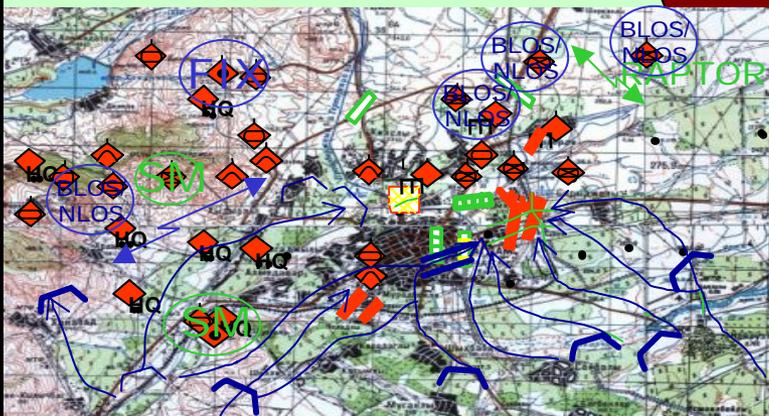
SEE FIRST



**Develop Mobility
COP**

**Select, establish, & maintain
Operating Areas**

ASSURED MOBILITY



**Maintain mobility and
momentum**

**Attack enemy's ability to
influence Operating Areas**

ACT FIRST

FINISH DECISIVELY

UNDERSTAND FIRST

ASSESSMENT

- **Traditional Mine warfare and employment of “dumb” mines have limited utility on the evolving Objective Force battlefield**
- **Current technology is rapidly providing the capability to link sensors, C2, software and versatile munitions into an intelligent and dynamic Integrated Mine System (IMS) that will provide an effective weapon for the Objective Force commander**
 - **Autonomous employment...act as Intelligent Combat Outpost (ICO)**
 - **See/sense**
 - **Selectively engage – stand-off top and side attack**
 - **Report**
 - **Lethal and non-lethal engagement**
 - **Discriminating (positive ID of enemy, friendly, civilians)**
 - **Adjustable (pre-armed-armed-disarmed-rearmed)**
 - **Smaller and lighter**
 - **Recoverable**
 - **Delivery by multiple means**
 - **MITL or in accordance with the commander’s intent**
 - **Self-destruct at pre-set time or on command**

ASSESSMENT (CONT'D.)

- **The roles traditionally played by mines in Battlefield Shaping and Force Protection have not been eliminated from modern warfare – new technologies have enabled IMS to perform these roles more effectively and efficiently at reduced risk to non-combatants**
- **While Battlefield Shaping and Force Protection requirements can be met by other forces and capabilities available to the Objective Force commander, IMS provide several unique benefits:**
 - **Free maneuver forces for other combat operations**
 - **Permit friendly maneuver on command, while precluding enemy maneuver**
 - **Reduce logistical impact**
 - **Avoid fratricide and non-combatant casualties**
 - **Difficult to breach...self-adjusting...dynamic**
 - **Responsive and able to cover relatively large areas**

ASSESSMENT (CONT'D.)

- **IMS contributions to battlefield shaping:**
 - Enhance friendly maneuver
 - Isolate enemy forces and aid in defeating them in detail
 - Respond rapidly to detected enemy maneuver
 - Deny terrain to the enemy
 - Attack from stand-off – top and side attack – precision engagements
 - Confuse enemy as to location and extent of munitions
- **IMS contributions to Force Protection:**
 - Contribute to situational understanding and COP
 - Provide early warning
 - Provide autonomous intelligent combat outpost
 - Execute surprise/ambush attacks
 - Protect flanks
 - Prevent/disrupt penetration of defenses and aid in targeting for other fires
 - Provide security for cleared areas in urban terrain

1-n LEGACY LIST

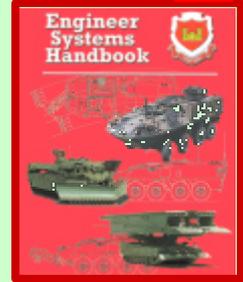
2001

1. GRIZZLY
2. WOLVERINE
3. DTSS
4. MCS-ENG
5. EN BRADLEY FIGHTING VEHICLE
6. RAPTOR (HORNET AND ADVANCED HORNET)
 - STANDOFF MINE DETECTION (ASTAMIDS, GSTAMIDS, AND HSTAMIDS)
8. BRIDGING SUITE (DSB, IRB, LOCB, COMMON BRIDGE TRANSPORTER)
9. IMPROVED COUNTERMINE CAPABILITY
10. CONSTRUCTION EQUIPMENT (ALL CONSTRUCTION PROGRAMS)

2002

1. WOLVERINE
2. STANDOFF MINE DETECTION (ASTAMIDS, GSTAMIDS, AND HSTAMIDS)
3. DTSS
4. MCS-ENG
5. RAPTOR (HORNET AND ADVANCED HORNET)
 - EN BRADLEY FIGHTING VEHICLE
 - MONGOOSE
8. BRIDGING SUITE (DSB, IRB, LOCB, COMMON BRIDGE TRANSPORTER)
9. COUNTERMINE ROBOTICS
10. CONSTRUCTION EQUIPMENT (ALL CONSTRUCTION PROGRAMS)

DTLOMS



1-n INTERIM LIST

2002

1. DTSS
2. ENGINEER SQUAD VEHICLE
3. STANDOFF MINE DETECTION (ASTAMIDS, GSTAMIDS, AND HSTAMIDS)
4. MONGOOSE
5. REBS
6. COUNTERMINE ROBOTICS
7. RAPTOR/ADVANCED HORNET
8. DEMO MODERNIZATION
9. HMEE
10. LIGHT CONSTRUCTION SUITE
11. BRIDGING SUITE
12. MCS-ENG
13. VOLCANO/APL-A



1-n OBJECTIVE LIST

2002

- MOBILITY INFORMATION SYSTEM
- STANDOFF MINE DETECTION (ASTAMIDS, GSTAMIDS, AND HSTAMIDS)
- STANDOFF MINE NEUTRALIZATION
- BRILLIANT SENSOR - MUNITION
- 5. FCS – MOBILITY VARIANT
- 6. MANEUVER SUPPORT BRIDGING SUITE
- 7. RAPIDLY DEPLOYABLE CONSTRUCTION EQUIPMENT
- 8. TERRAIN SHAPING MUNITION
- 9. DEMOLITION MODERNIZATION
- INFRASTRUCTURE CONSTRUCTION EQUIPMENT



DEMOLITIONS TRANSFORMATION



DEMOLITION TRANSFORMATION

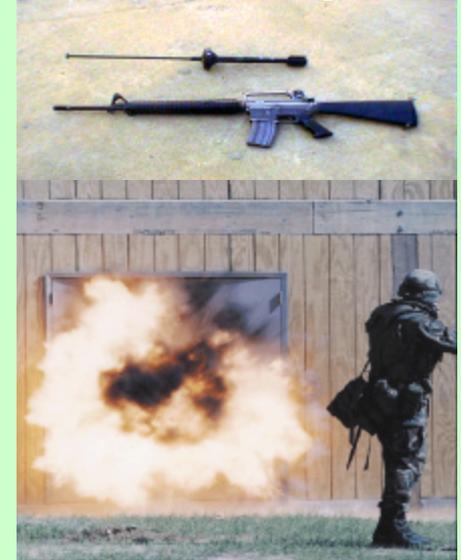
MDI



RAMS W SHOCK TUBE INITIATOR



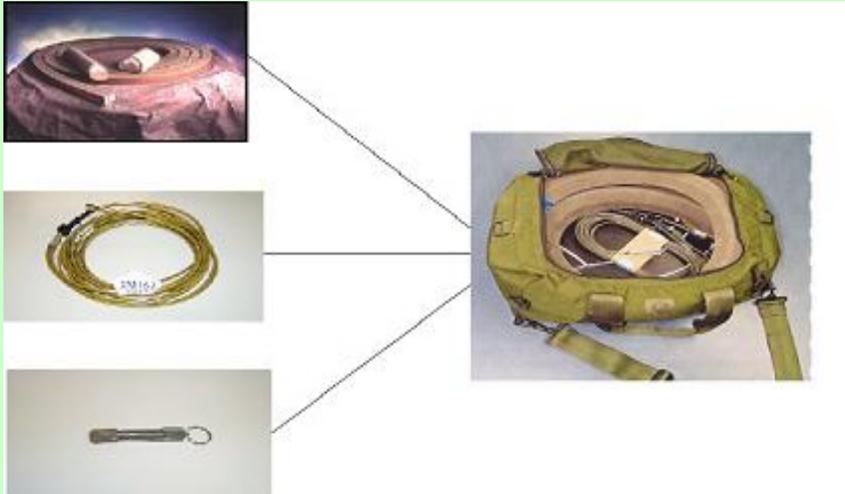
Rifle Launched Entry Munition



IMPROVED MDI



RAPID LIGHTWEIGHT WALL BREACHING



ADVANCED SINGLE STAGE CRATERING



DEMOLITIONS TRANSFORMATION

TODAY

**Demolitions
Kit Bag**

Close-In

FUTURE

**Demolitions
Kit Bag**

Stand-Off

- Bulky
- Stovepipe
- Logistic Challenges
- Complicated
- Reliability Questions
- No C2
- 12B Operators

- Lightweight
- Interoperable
- Modular
- Simple to Operate
- Versatile/Multi-Functional
- Integrated into FCS
- Objective Force Soldier Operated

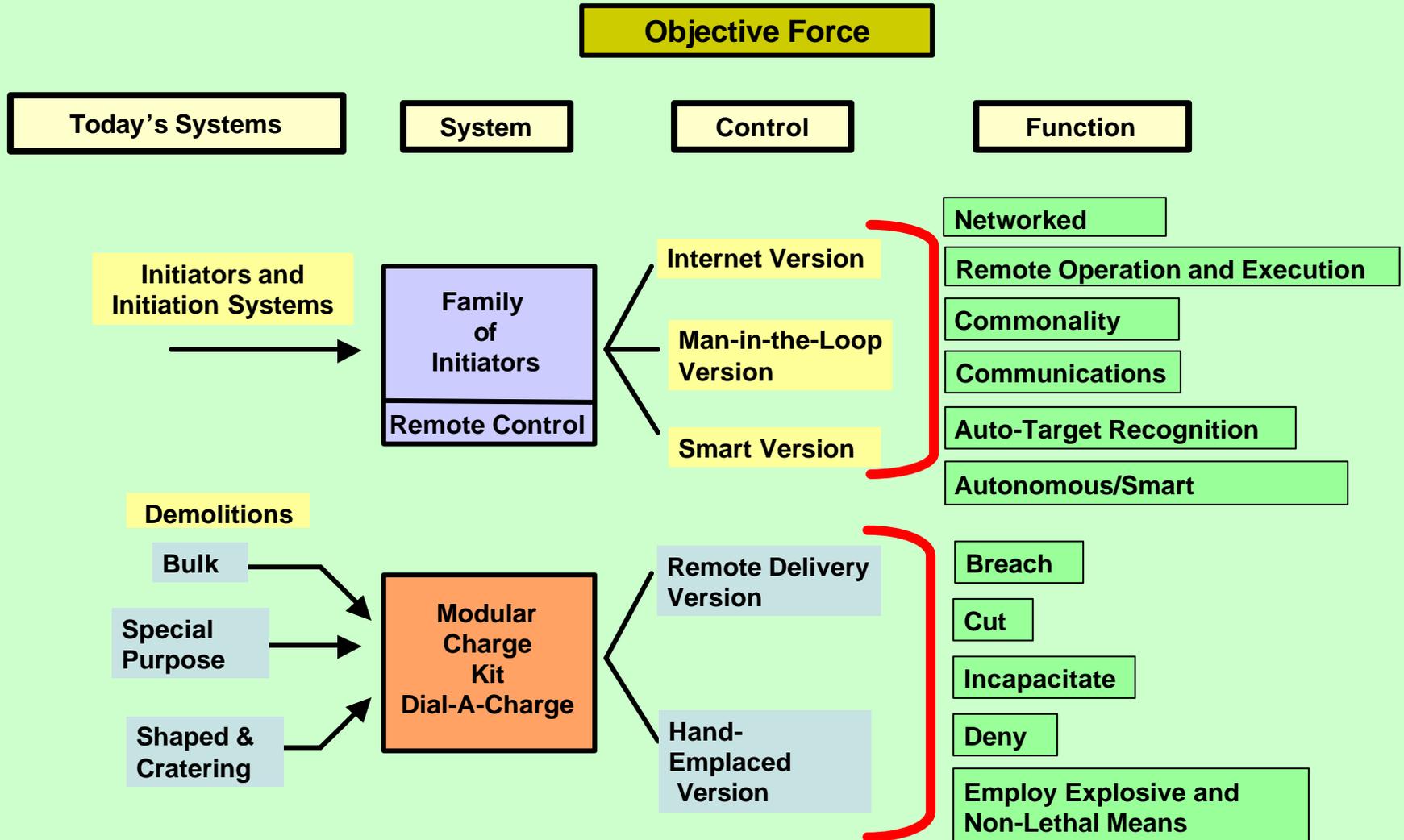
~20 Systems to support 100's of tasks

- Breaching
- Cutting
- Digging

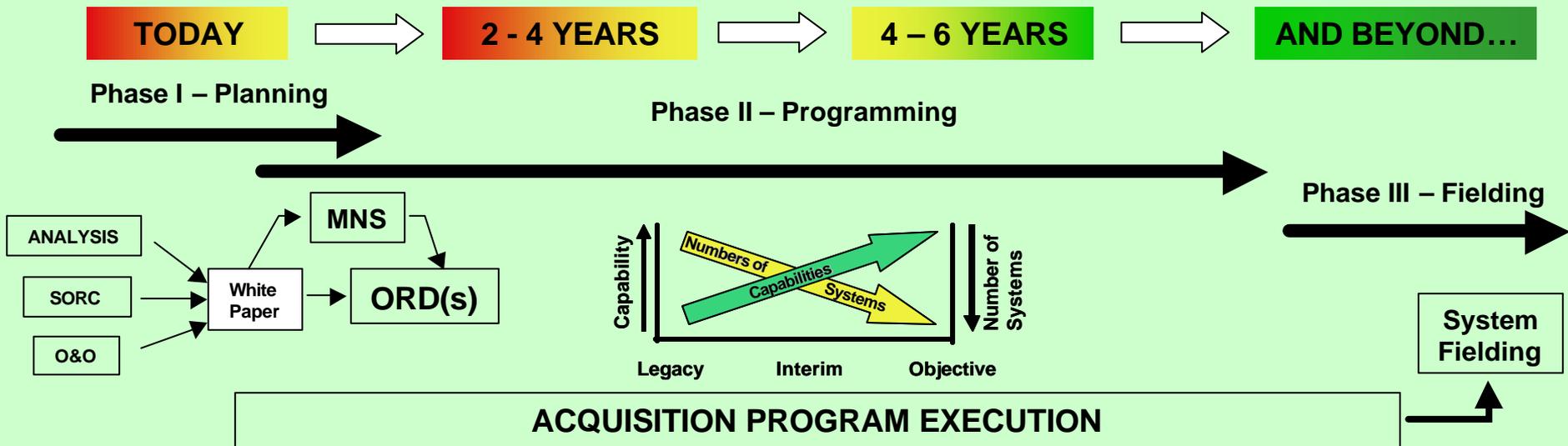
Few systems to support dozens of tasks

- Breaching
- Cutting
- Digging
- Communicating/Planning

DEMOLITIONS MODERNIZATION ROADMAP



DEMOLITIONS PATH FORWARD

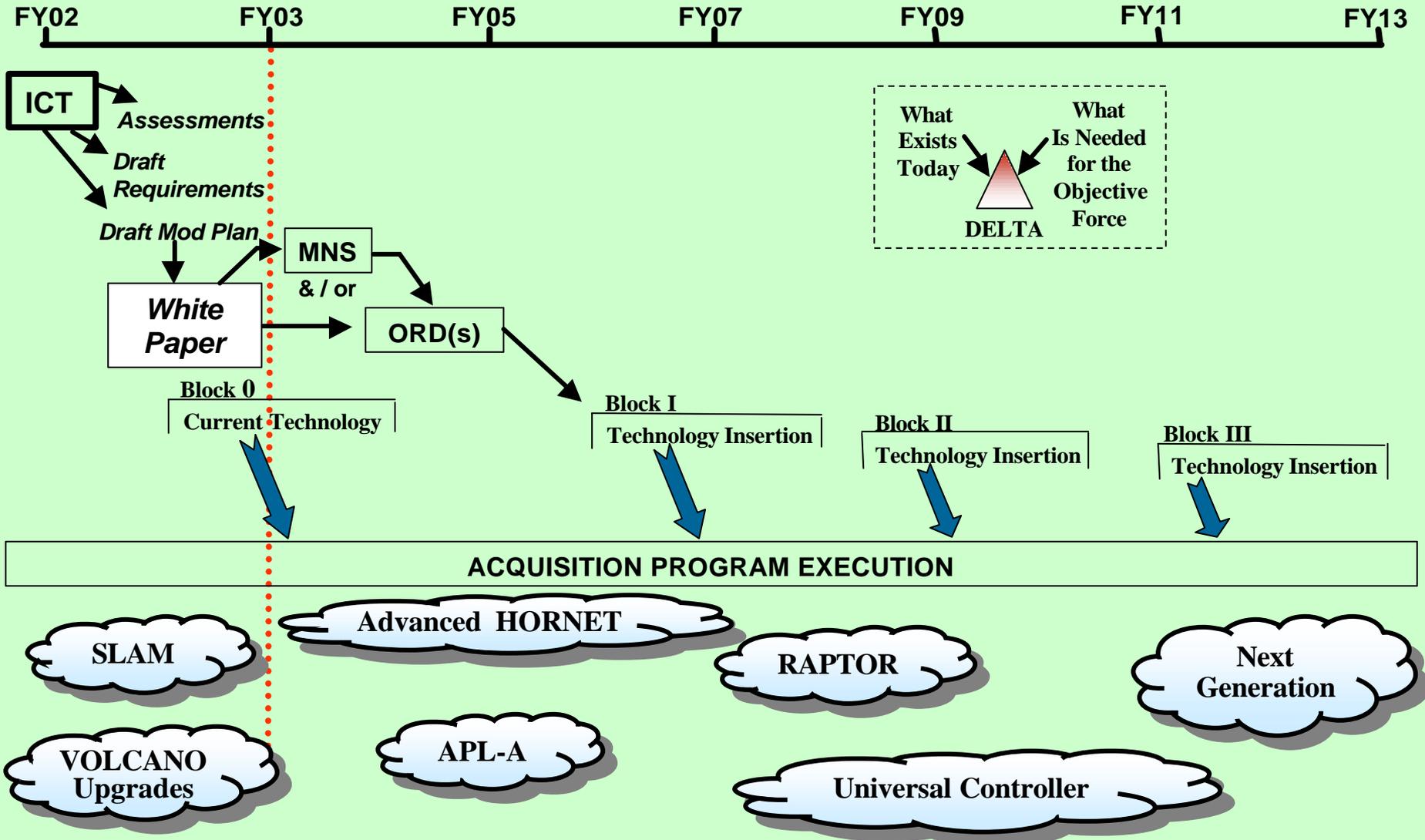


MINE WARFARE CONCEPT EVOLUTION

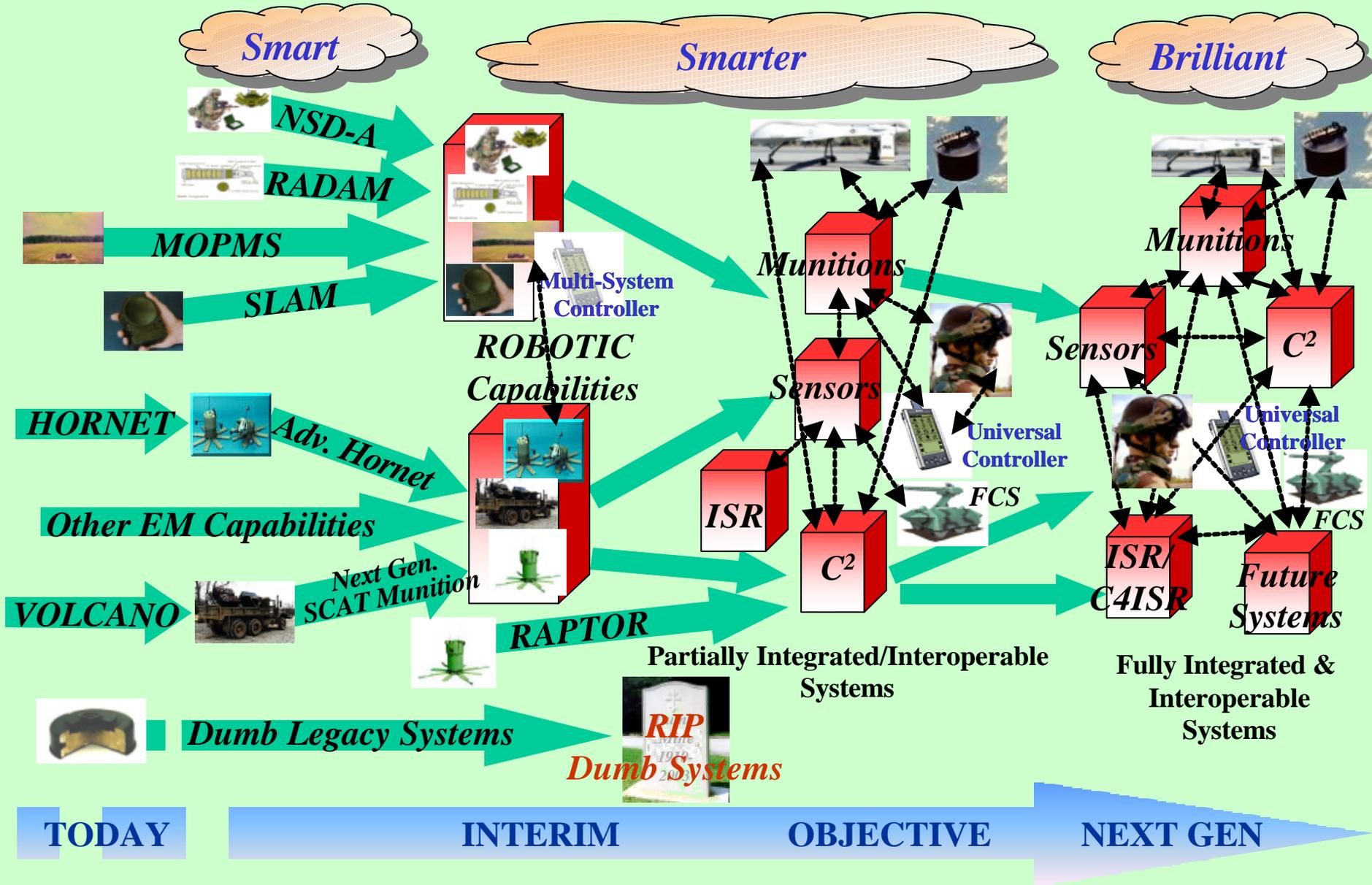
Today	Evolving	Possible
<p><u>FM 20-32 (1998)</u> Function: Kill, destroy or incapacitate enemy personnel, vehicles and equipment</p> <ul style="list-style-type: none"> • Produce a vulnerability in enemy maneuver • Inflict damage to enemy personnel and equipment • Exploit capabilities of other weapon systems • Protect friendly forces • Cause the enemy to piecemeal his forces • Interfere with enemy C2 	<p><u>NSD-A and Raptor ORDs (2000/02)</u> Function: Force protection and battlefield shaping</p> <ul style="list-style-type: none"> • Destroy, delay, disrupt, block and/or turn enemy into EAs • Reinforce/enhance friendly effects • Facilitate precision engagements • Protect friendly forces • Occupy gaps • Avoid lethal hazard to friendly forces and innocent civilians • Reduce log impact • Increase situational understanding 	<p><u>Objective Force</u> Function: Force protection and battlefield shaping</p> <ul style="list-style-type: none"> • See, sense and report enemy maneuver • Selectively engage IAW Cdr's intent and concept • Isolate enemy forces • Maximize effects of friendly fires • Prevent enemy maneuver from interfering with the Cdr's concept

Objective Force Systems Must Support Fast Paced Offensive Operations

ENGINEER MUNITIONS MODERNIZATION PLAN

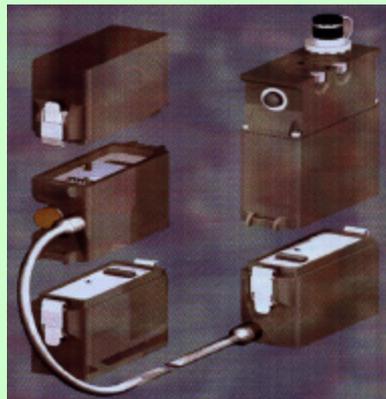
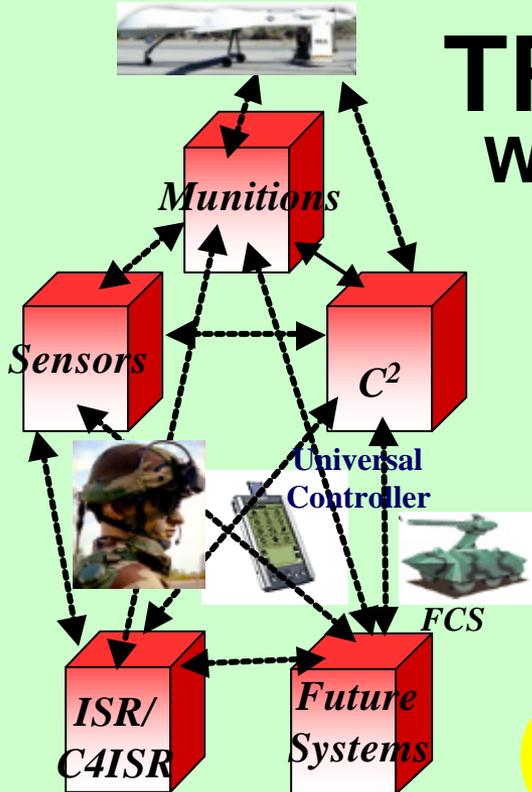


ENGINEER MUNITIONS SYSTEM OF SYSTEMS EVOLUTION



TRANSFORMATION

Will Require Fully Integrated & Interoperable Systems



QUESTIONS

