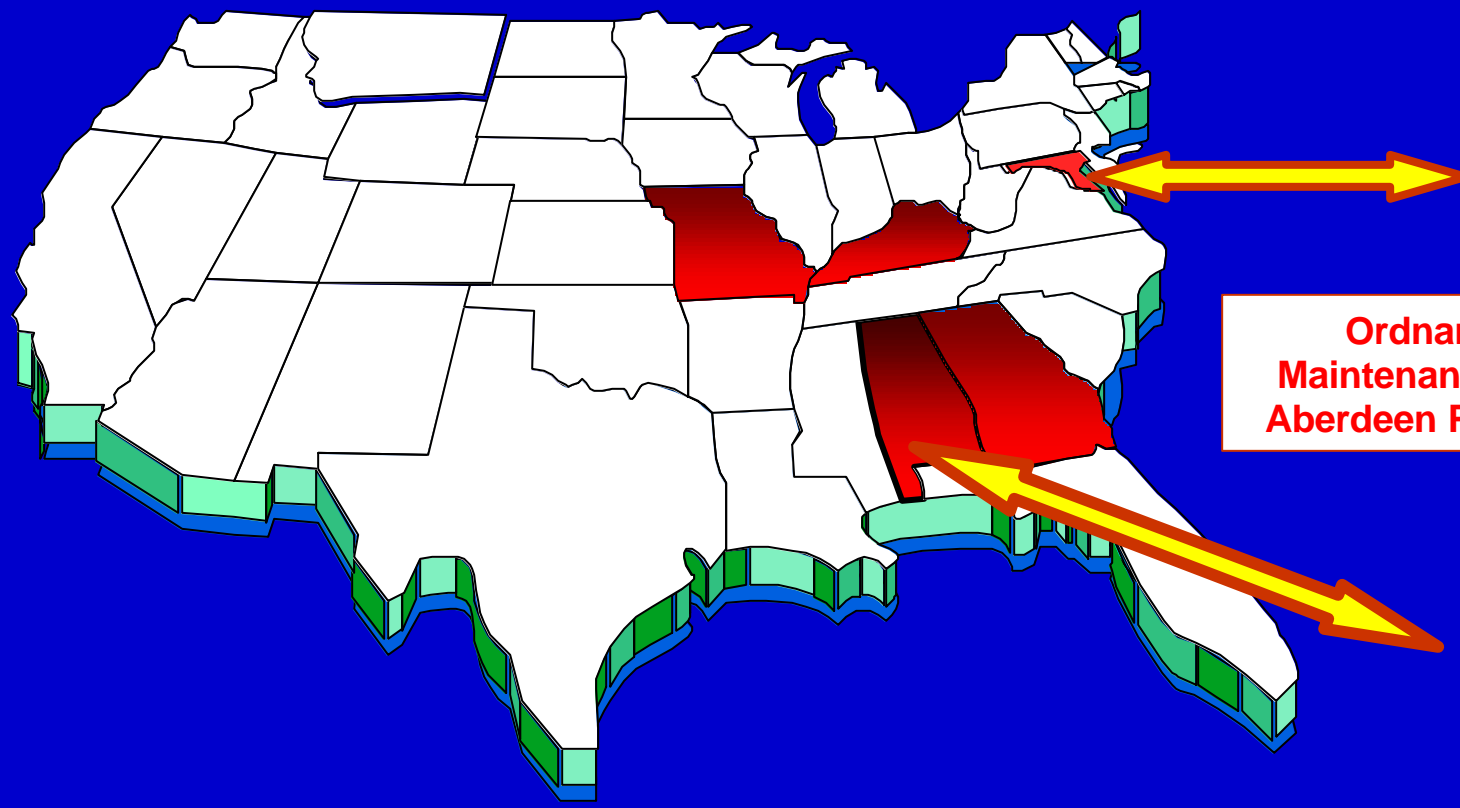




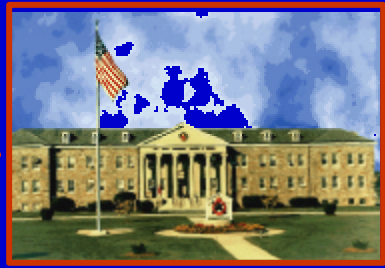
# NDIA Munitions Executive Summit

## "Innovations in Army Ammunition Support"

12 February 2003



**OMMS**



**Ordnance Mechanical Maintenance School (OMMS), Aberdeen Proving Ground, MD**

**RSA**

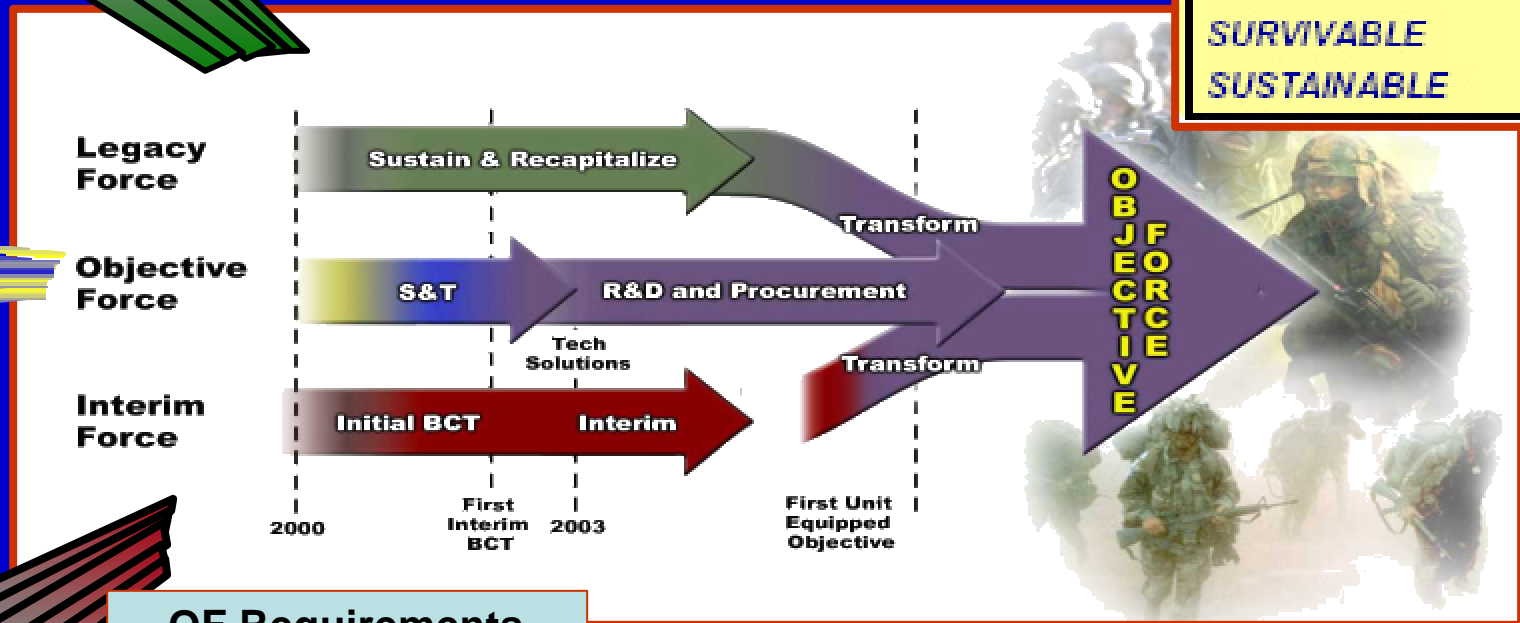


**Ordnance Munitions and Electronics Maintenance School (OMEMS), Redstone Arsenal, Huntsville AL.**

**Ordnance Center and Schools**

# Innovations in Army Ammunition Support

RESPONSIVE  
DEPLOYABLE  
AGILE  
VERSATILE  
LETHAL  
SURVIVABLE  
SUSTAINABLE



OF Requirements

Smart Distribution

Ammo Packaging

Diagnostics/Prognostics

Logistics Enablers

# *Documented Need in Objective Force*

## Force Operating Capabilities

- **TRADOC Pam 525-66 (Final Draft, 30 Jul 02)**
  - Innovative, multi-modal distribution concepts
  - Enable quick cross leveling of supplies between platforms and units in contact and on the move
  - Leverage pre-configured packaging and platform-embedded materiel handling and lift for rapid, accurate and agile resupply that minimizes demand on soldiers

## UE Concept

- **Objective Force UE Concept (Draft TP 525-3-92, 27 Sep 02)**
  - Flexible multi-modal sustainment
  - Refined procedures for accelerated throughput

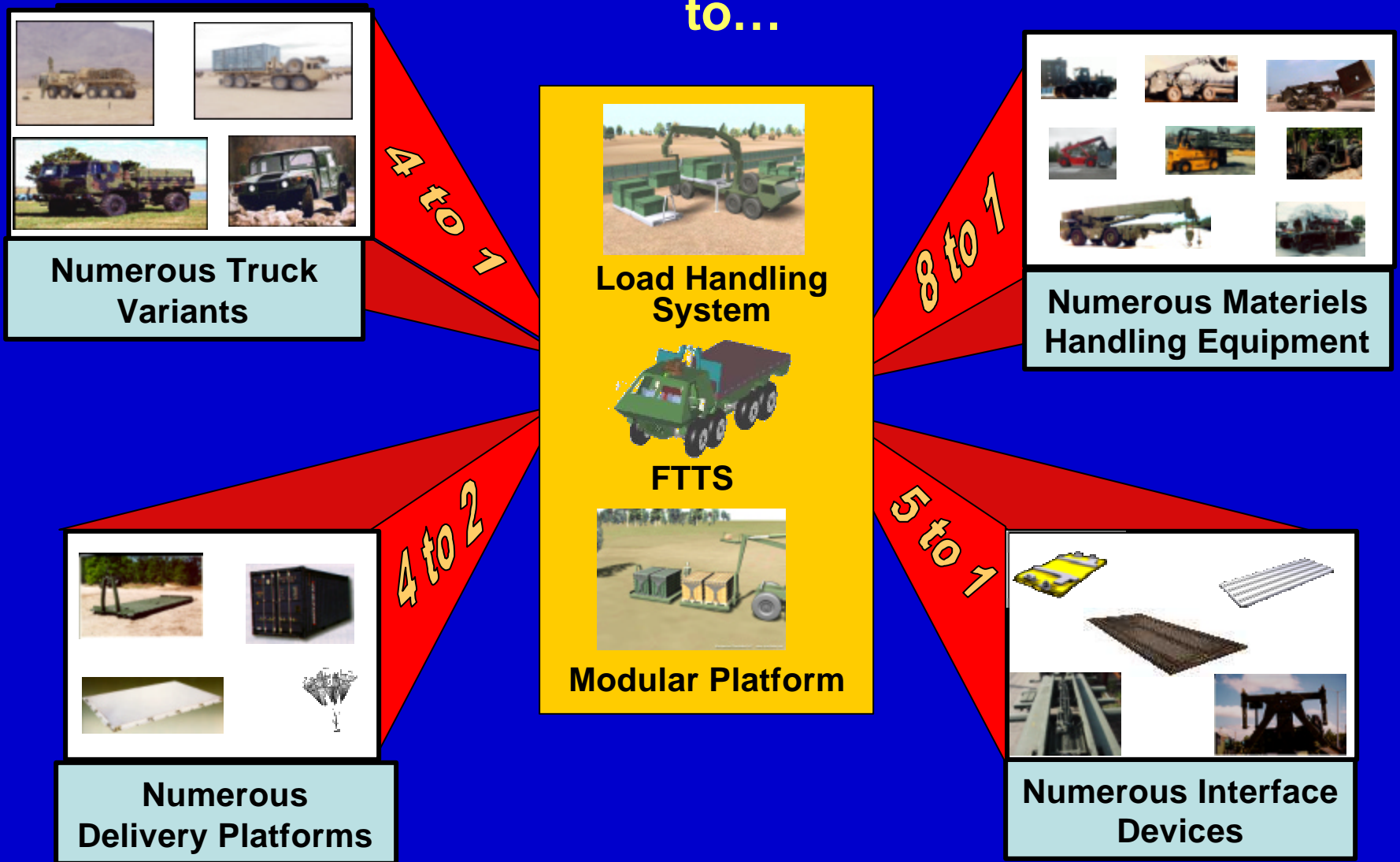
## UA O & O

- **Unit of Action O&O (Draft TP 525-3-90, 7 Nov 02)**
  - Configured loads capable of either ground or aerial delivery
  - Intermodal platforms and ground transport capabilities

## FCS ORD

- **FCS ORD (AROC Approved, 22 Jan 03)**
  - Self-sustained for three days of high tempo operations
  - Bulk packed and handled by organic MHE
  - Maintenance free ammunition

# Technology to transform the current cumbersome, and inefficient distribution system to...



*... a seamless intermodal Smart Distribution System*

# *Intelligent Load Handling System*

## Articulated Load Handling Arm

Robotic handling system:

- Loads modular containers and platforms on FTTS
- Configures modular packaged loads on platforms



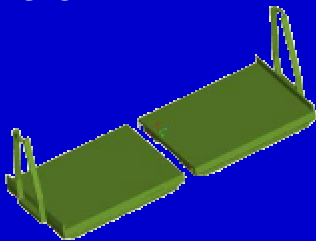
## Configured Load Building Software

- Interfaces with GCSS-Army supply module
- Enables battlespace reconfiguration of all classes of supply for optimal delivery within the UA

# ***Modular Platform System***

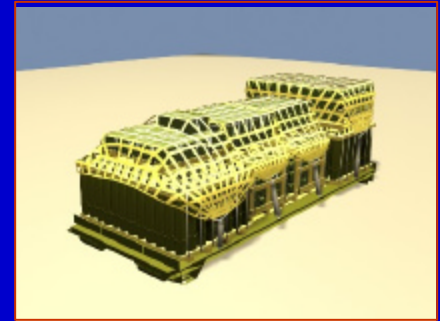
## **Modular Platform**

- Reconfigurable to meet user needs
- Intermodal platform:  
Air/Land/Sea/Airdrop/Slingload
- Lightweight materiel design
- Allows multiple deliveries with one vehicle



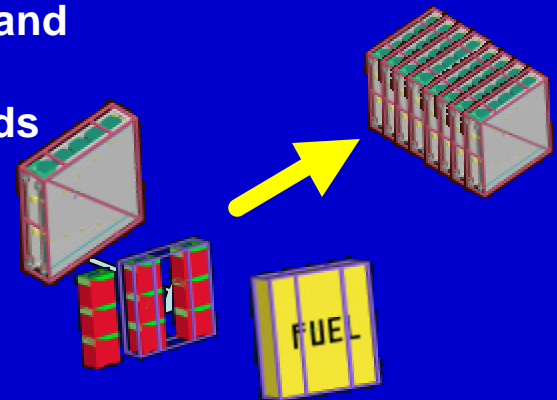
## **Smart Tiedown**

- Load conforming tie-down system
- Enables rapid securing of configured loads



## **Sustainment Modules**

- Compatible w/Modular Platform
- Interlocking concept for storage and transport of all classes of supply
- Reconfigurable to meet user needs
- Automation friendly
- Automatic identification technology
- Airdrop capability



# ***Ammunition Packaging and Distribution Integration***

## **System Integration**

- Integrates Intelligent Load Handling System and Modular Platform with:
  - FTTS
  - FMTV
  - HEMTT-LHS



Interfaces with:

- TSV, C-17, C-130, CH-47
- ISO Containers, Modular Platforms, CROP, CAIK

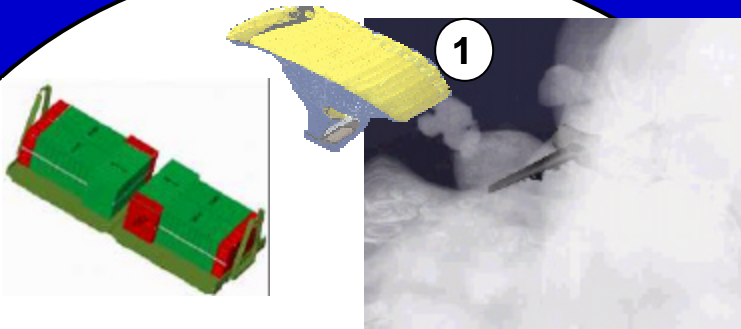
## **Vehicle Alignment System**

Enables rapid alignment of the FTTS with:

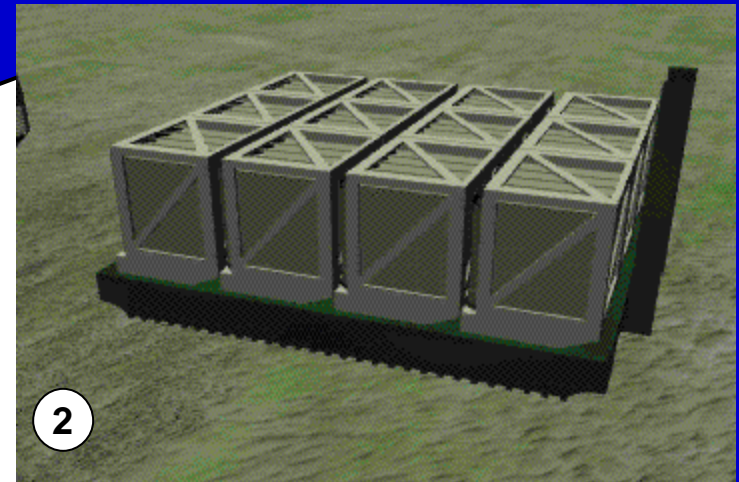
- Modular platforms
- Containers
- USAF K-loaders
- USAF aircraft
- Other trucks



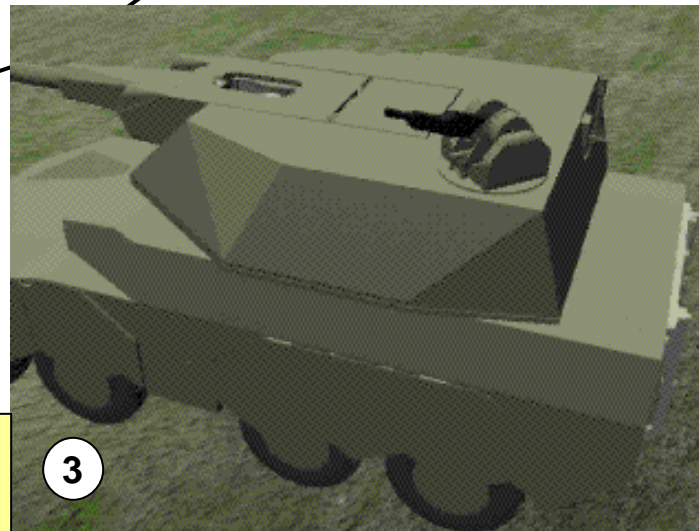
# Tactical Distribution Vision



- Interlocking concept for interface with inter-modal cargo platform
- Guided parafoils provide precision stand-off resupply



- 5 Round clip of lightweight composite materials
- Module mix is tailorable with 3 munitions: KE, MP-ERM & Smart Cargo
- 1 Clip ~ 35 gal fuel, water or food



- Family of 3 munition types
- Wt : 60-70 lbs
- Length: 900 mm

**Interface with FCS automated resupply capability**

*Rapid and Responsive Resupply*

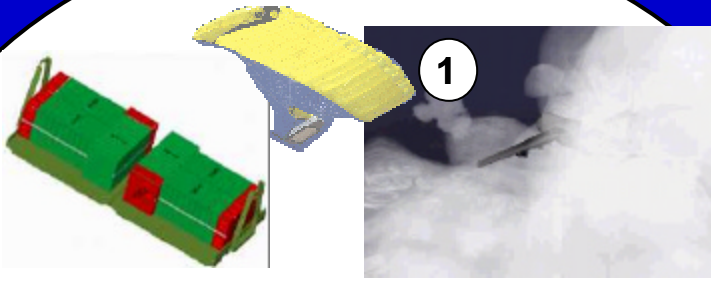


# PEGASYS VISION

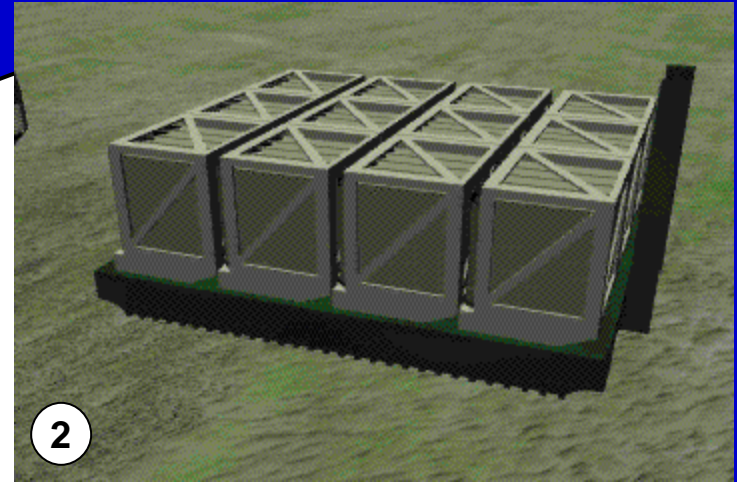
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# Tactical Distribution Vision

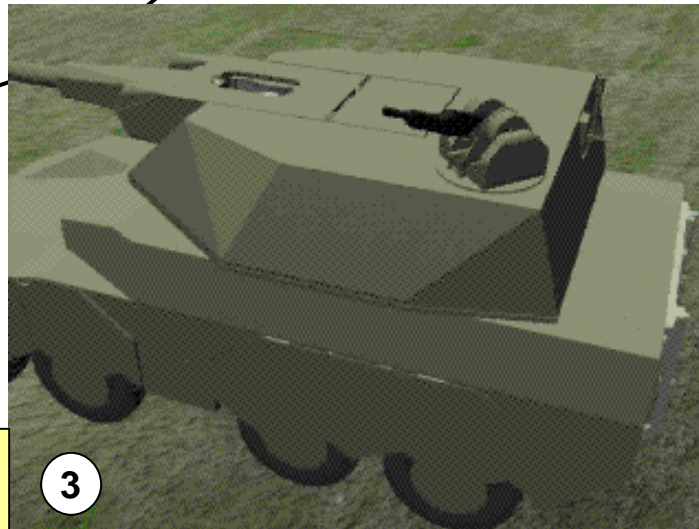


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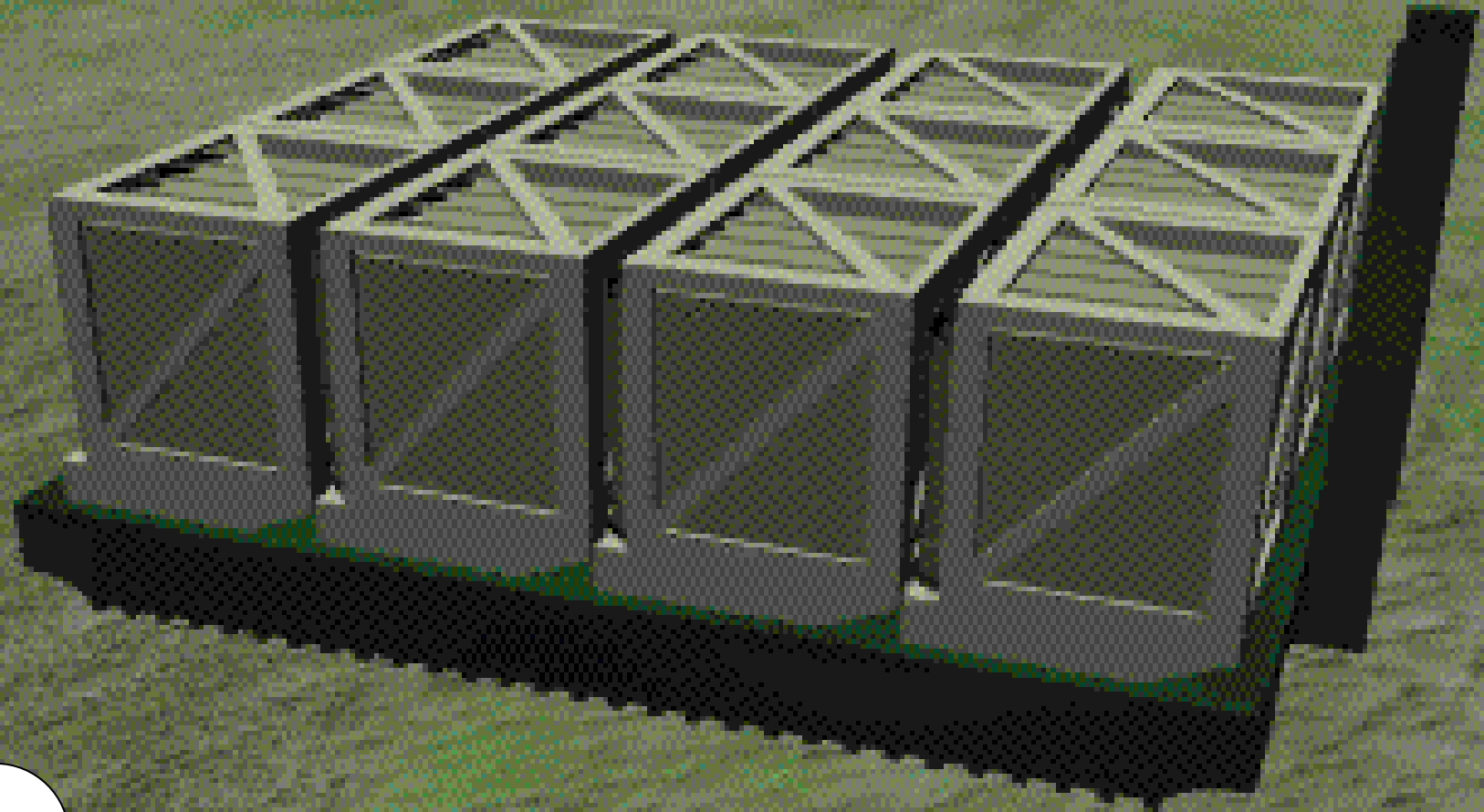
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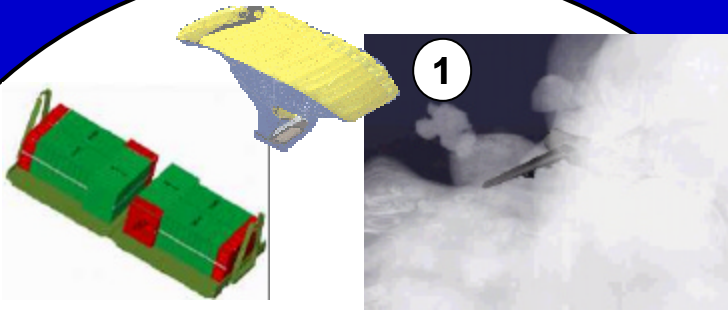
***Rapid and Responsive Resupply***

# FCS Automated Resupply

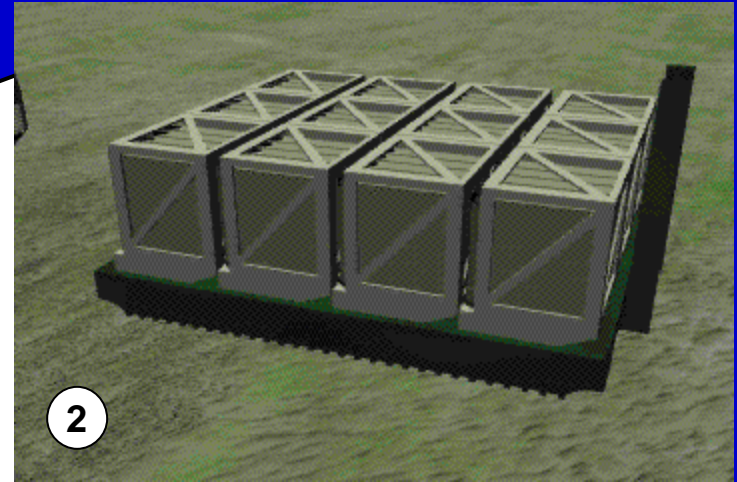


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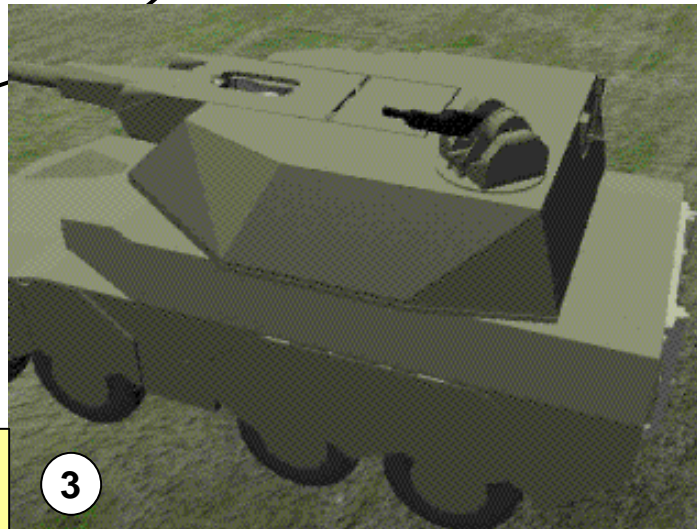
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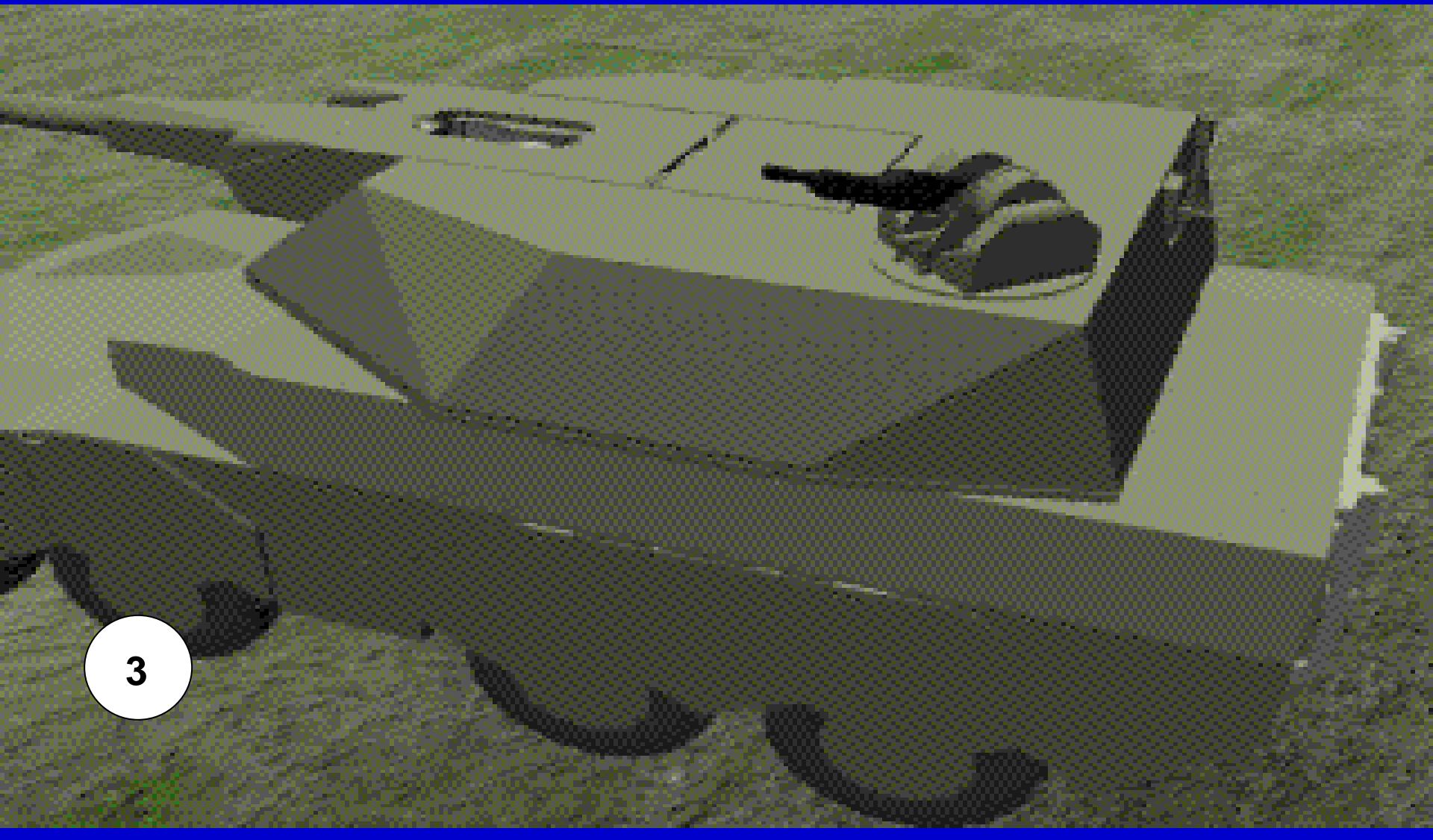


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Interface with FCS automated resupply capability

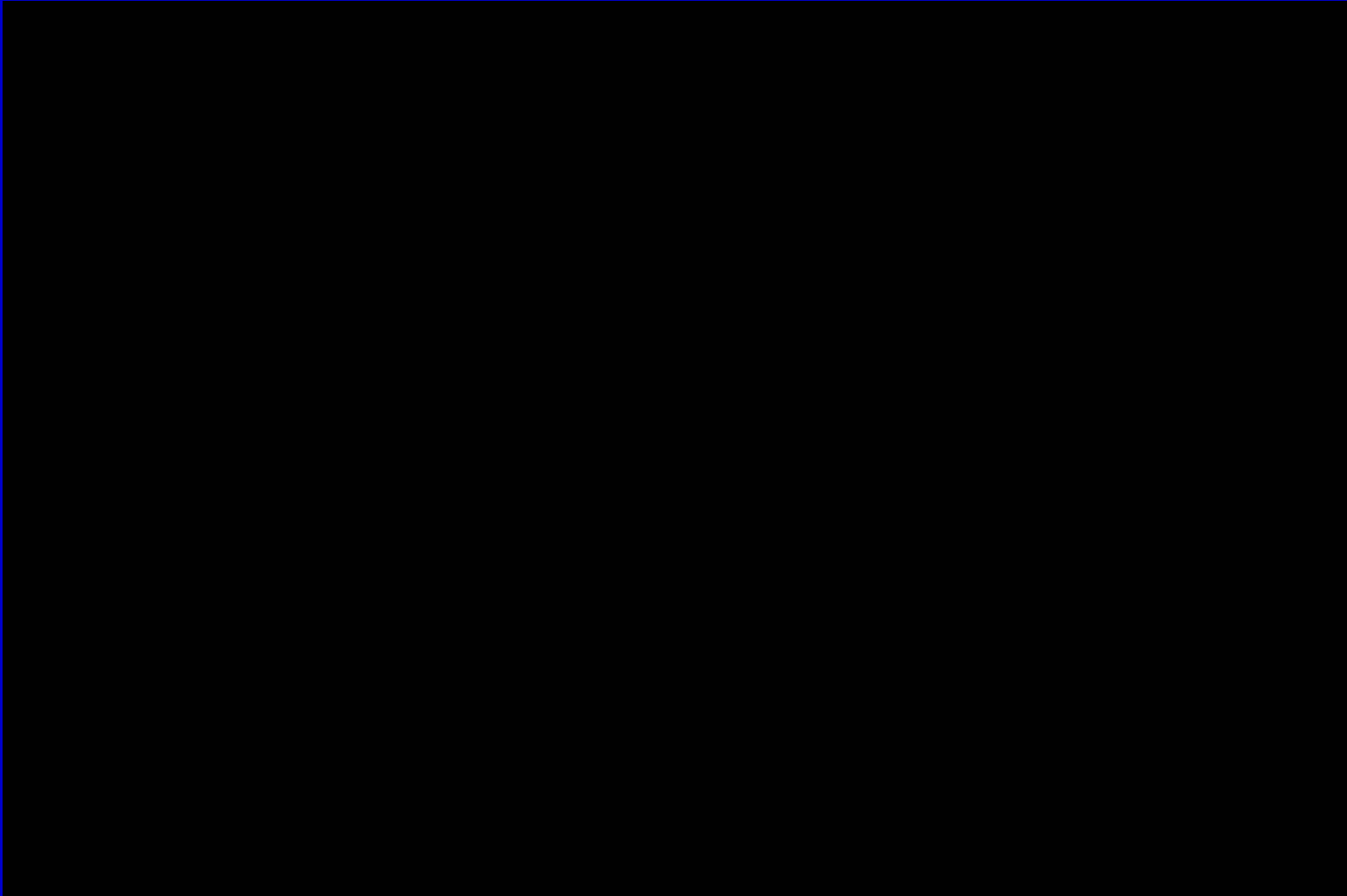
*Rapid and Responsive Resupply*

# FCS



3

# *Smart Distribution System Video*

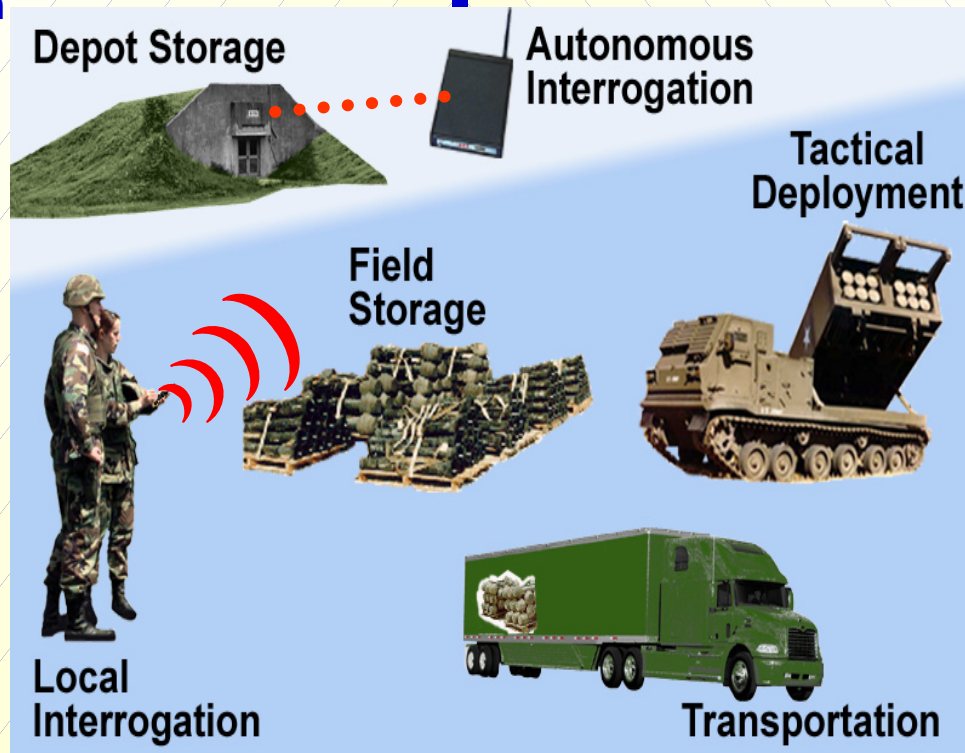




# RRAPDS Overview

## WARFIGHTER Needs

- Integrated System to Monitor Ammo Health/Condition
- Advanced Prognostics/Diagnostics
- Low Cost
- Transparent to the Warfighter



## TECHNOLOGY Required

- Sensors and Microchip Technology
- Minimum Size and Power Consumption
- Intelligent Power Management
- Advanced Communication Protocols

**Solution: Autonomous, Low Cost Health Monitoring**

# Objective Force Warfighter Payoffs

- **Combat power** - replenished with increased **speed** and **precision** – up to 60% quicker SRO
- **Agility** - able to respond to changing unit needs to maintain **battle rhythm** – up to 70% quicker reconfiguration of loads
- **Deployability** - reduction in MHE decreases **deployment footprint** by 100 tons/brigade or 6 C-130J lifts

