NDIA Munitions Executive Summit
“Innovations in Army Ammunition Support”
12 February 2003

Ordnance Center
and Schools

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

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

OMMS
RSA
Innovations in Army Ammunition Support

Legacy Force
Objective Force
Interim Force

OF Requirements
Smart Distribution
Ammo Packaging
Diagnostics/Prognostics
Logistics Enablers

RESPONSIVE
DEPLOYABLE
AGILE
VERSATILE
LETHAL
SURVIVABLE
SUSTAINABLE


**Documented Need in Objective Force**

- **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

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

- **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 (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...

Numerous Truck Variants

Load Handling System

FTTS

Modular Platform

Numerous Delivery Platforms

Numerous Materials Handling Equipment

Numerous Interface Devices

... 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

Rapid and Responsive Resupply
Tactical Distribution Vision

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

1 • 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

2 Interface with FCS automated resupply capability

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

Rapid and Responsive Resupply
FCS Automated Resupply
Tactical Distribution Vision

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

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

Rapid and Responsive Resupply

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