

# ***FTTS REQUIREMENTS OVERVIEW***

***FTTS INDUSTRY DAY  
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*E Pluribus Unum*



# Truck Facts



The first motor truck was built in 1896 by Gottlieb Daimler

Pre-WWI the Army's opinion was that wheeled motor vehicles had their place but nothing could or would replace the horse.

227,000 + trucks were produced by more than 290 manufacturers for the Army in WWI

In 1924, horses outnumbered trucks in the US by more than 3 million

Today there are over 240,00 trucks in service

***“ We must not be misled to our own detriment to assume that the untried machine can displace the proved and tried horse”***

**Major General John K. Herr, 1938**

# Global Threats

**Afghanistan and Future Actions ???**

System	Paradigm
Cold War:	Built around Mass "The Big eat the small"
Globalization:	Built around Speed "The Fast eat the slow"

**Cold War**

1947-1991

**Vietnam War**

1965-1973

**Korean War**

1950-1953

1939-1945

1995 - 1996



Jan-Feb 1991

1999



**Desert Storm**

**Joint Endeavor**

**Noble Anvil**

SEP 11 2001



*"Defending our Nation against its enemies is the first and fundamental commitment of the Federal Government."*  
The National Security Strategy of the United States of America  
September 2002

**Asynchronous**

**Chemical**

**Biological**

**Nuclear**

**Conventional**





# Distribution Based Logistics



## CURRENT COMMERCIAL PRACTICES

- INTEGRATED SUPPLY CHAIN MANAGEMENT
- VENDOR-MANAGED INVENTORIES
- AUTOMATIC IDENTIFICATION
- DIRECT VENDOR DELIVERY
- LOAD OPTIMIZATION
- SMART SIMPLE DESIGN
- THIRD PARTY LOGISTICS
- INTERMODAL
- INFORMATION MANAGEMENT
- DISTRIBUTION BASED

Leverage  
Commercial  
Best  
Business  
Practices

## STATED MILITARY OBJECTIVES

- VELOCITY MANAGEMENT
- VALUE CHAIN
- INTEGRATED INFORMATION SYSTEM
- MONITOR / MANAGE UNIT READINESS
- REAL TIME DISTRIBUTION & ASSET MANAGEMENT
- DYNAMIC MATERIEL FLOWS
- TWO-WAY INFORMATION FLOW
- ANTICIPATORY LOGISTICS



**RIGHT SUPPLIES TO THE RIGHT LOCATION AT THE RIGHT TIME**

*Support Starts Here!*

# Maneuver Sustainment Concept



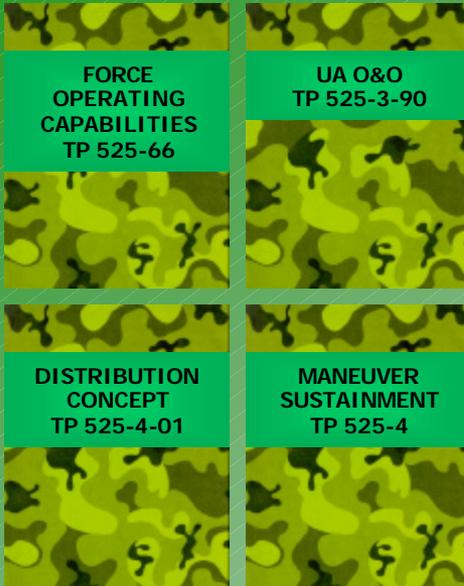
## Distribution Examples

- Internal sustainment delivers to the warfighter's sustainment section (1&2)
- Precision Aerial Resupply (3)
- External sustainment unit delivers to the warfighter's sustainment section (4)
- External sustainment unit meets with internal warfighter and sustainment sections (5)
- Combinations of the above

Support Starts Here!



# Overarching Need



- Self-Sustainable for 3 days High Optempo / 7 days Low Optempo without mission failure
- Operate within 1000 k x 1000 k Operational Area (Traverse 750 k without refuel)
- Operate over unsecured Lines of Communication (routes)
- Provide direct resupply to the warfighter / Informational command and control and support

- Operate at same speeds over same terrain as the warfighter
- Close a Brigade size element within 96 hours
- Self Protect / NBC Survivable



**DOCTRINE REQUIRES FTTS**

*Support Starts Here!*



# Requirements Agility

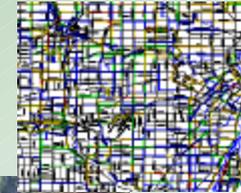
## % of Terrain Crossed Over Time

Primary 33% / Secondary 33% / Cross Country 34%

## Fording Capability

48" (T) / 60" (O) without kit (MSV)

40" (T) / 60" (O) without kits (UV)



## Operational Environmental Range

All Environment Capable in Ambient Air Temperatures -  
25°F to 120°F & -50°F to 120°F with a kit (T)



**MAINTAIN PACE WITH THE WARFIGHTER /  
OPERATE WITHIN SAME ENVIRONMENT**

*Support Starts Here!*



# Requirements Deployability

## Air – all without waiver

C-130 - 6 ST load and not exceeding 16 ST allowable cabin load (MSV);

Three in a C-130 (UV)

C-17 - Four with payload / Two with payload and trailer with payload (MSV)

C-5 - Eight with payload / Four with payload and trailer with payload (MSV)

CH-47/UH-60/CH-53/MV-22 Externally Air Transportable (UV)

## Rail

Meet all rail diagrams worldwide



## Ship

Roll-on/Roll-off with payload and trailer with payload

## Land

By trailer with load without over-weight/over dimension permits

**CLOSE THE BRIGADE WITHIN 96 HOURS**

*Support Starts Here!*



# Requirements Sustainability



## Diagnostics / Prognostics

**Prognostic Capability: Detect 45% System Abort (Mission Critical) failures at 90% accuracy rate**

**Diagnostic Capability: Have 95% truck subsystems covered with sensors with detection error rate less than 3 %**

## Reliability

**Mean Miles Between Operational Mission Failure (MMBOMF) of not less than 5,500 miles of operation**

## Two-level Maintenance

**60% field maintenance actions done by Operator**

**Maintenance Ratio = For every 100 operating hours, no more than 2.5 maintenance hours (.025)**

**CONSISTENT RELIABILITY**

*Support Starts Here!*



# *Requirements Survivability*



## NBC

Protect crew in NBC environment for 6 hours (T) / 12 hours (O)

## Armor

Operable against 7.62 mm AP Ball /Survivable against 14.5 mm AP ball ammo (T)

Operate over a 12 pound mine blast (T) / Survivable over a double stacked 18 pound mine blast (O)

Armor mountable in 15 minutes (T) /dismountable in 30 minutes (T) by no more than 2 soldiers (T) integrated armor (O)

**PROTECT THE SOLDIER**



# Requirements Versatility



## Smart Distribution

### Seamless Distribution Pipeline w/o use of MHE:

- Integrated LHS System
- Inter-modal Modular Platform System
- Vehicle Alignment System
- Smart Tie-Down
- Configured Load Building Software
- Robotic Trailer

## On Board Generation

Power:  $\pm 60\text{kW}$  -  $\pm 200\text{kW}$  (MSV);  $\pm 5\text{ kW}$  -  $\pm 30\text{kW}$  (UV)

Water generation

## On Board Systems

>10 common tools on board (T) / Zero (O)

**REDUCE HANDLING TIME AND LOGISTICS FOOTPRINT**

*Support Starts Here!*



# *Requirements Responsiveness*



## Range

600 Miles (T) / 900 Miles (O)

## C4I

Integrated C4I space and power claims / Integrate with the warfighter's information system / Real Time Visibility

***OPERATE OVER EXTENDED DISTANCES  
MAINTAIN COMMUNICATION WITH THE WARFIGHTER***

***Support Starts Here!***



# *Requirements Lethality*



## Self Defense

**Mount MK-19, M2, SAW, M240 (T) / Objective Crew Served  
Weapon (O)**

## Aerial Support

**Unmanned Aerial System (UV and MSV)**

***ENSURE DECISIVE VICTORY***

***Support Starts Here!***



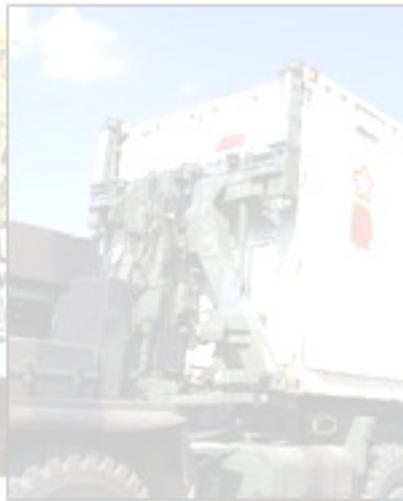
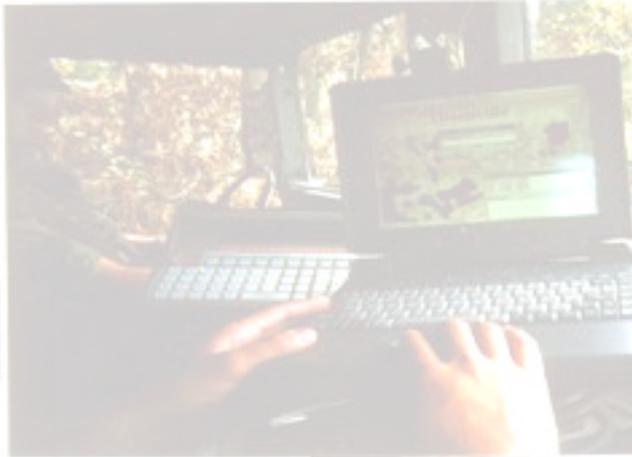
# *Industry Participation*



- ✓ Need Industry's comments on Emerging Desired Capabilities for both the FTTS-MSV and the FTTS-UV
- ✓ Collect comments by 3 January 2003
- ✓ Collect comments via downloadable comment matrix at [www.cascom.army.mil/transportation/FTTS](http://www.cascom.army.mil/transportation/FTTS)
- ✓ Send Comment Matrix via email to [jay.abernathy@us.army.mil](mailto:jay.abernathy@us.army.mil) and include in the subject line "FTTS EDC comments"

***REMINDER: REVIEW OF UPDATED  
DOCUMENT AT MONTEREY***





# QUESTIONS ???



*Support Starts Here!*