The purpose of Amendment #3 is to post the second section of the Industry Day presentation materials:

1) Attached to this amendment is the second part of the presentation materials from the Industry Day held on 27 NOV 2007.
BRIEFING TOPICS

• Sea Basing Background & Transformational Aspects
• Support of MAGTF Operations
  – Autonomic Logistics
  – Global Combat Support System
  – Marine Corps Planning Process
• Examples:
  – Maintenance execution
  – Battlefield fuel
• S&RL Architecture Span
• Joint Activities- Army

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The sea base is an inherently maneuverable, scalable aggregation of distributed, networked platforms that enable the global power projection of offensive and defensive forces from the sea, and includes the ability to assemble, equip, project, support, and sustain those forces without reliance on land bases within the Joint Operations Area.
GAP - Capability to Rapidly Close, assemble, employ and indefinitely sustain and repetitively reconstitute ground forces ashore without reliance on land bases

**METRICS**

**Close**... a Marine Expeditionary Brigade-sized force within 10-14 days

**Assemble**... a Marine Expeditionary Brigade-sized force within 24-72 Hours

**Employ**... one battalion vertically and one battalion via surface within 8-10 hours

**Sustain**... selected joint forces and up to two brigades operating up to 150 nm inland with minimal logistics footprint ashore

**Reconstitute**... forces for future operations within 30 days

**10-30-30 Strategy:** Deploy within 10 days, defeat an enemy in 30 and be ready to fight again in another 30
Sea Based Sense and Respond to Combat Operations Ashore

S&RL EC connects the Sea Base with the tactical operational picture thru integrated log/C2

Anticipated “demands” from combat operations ashore are dynamically supported from the Sea Base which is paced with the heartbeat of operations.

SB S&RL assimilates, prioritizes, synchronizes and de-conflicts to achieve a focused and tailored logistics response to tactical forces.

*The Sea Base is much more than an automated, floating, forward supply point*
Present EC’s address “how” supplies/materiel move to, move within and move from the Sea Base.

Sea Base Integrated Operations
Seabasing Tasks: Employ, Sustain

Sea Base Mobility and Interfaces
Seabasing Tasks: Employ, Sustain, Reconstitute

MEB Force Closure
Seabasing Task: Close

MPF(F) to Surface Connector Vehicle
Seabasing Tasks: Employ, Sustain, Reconstitute

SB S&RL is for the Sea Base to anticipate “what” to move “where” and “when” to forces at sea and ashore within Sea Based Constraints.

Sea Based Sense & Respond
Sea Basing Tasks: Close, Assemble, Employ, Sustain & Reconstitute

An S&RL EC will enable a Sea Base to anticipate and pro-actively responds to changing demands of combat forces ashore while maintaining high levels of operational readiness.

Throughput and speed

Accurate and anticipatory
The Sea Base must provide focused and tailored response to USMC forces ashore:

- The MAGTF is the customer
- Logistics provisions will need to be made down into the organization units at lower echelons
- Tailored loads of just the right amounts and types will have to be configured
- There will be many more direct deliveries to lower echelons directly from the Sea Base

Smooth Sea Based Operations should:

- keep pace with desired operational tempo (time)
- allow optimal tactical command decision (not compromise due to log)
- reduce load carriage of forces ashore (weight/volume)
- operate near- automatically (decrease cognitive workload)

Sea Based Operations should facilitate:

- extended penetration into the Area of Operations (duration, distance, and spatial distribution);
- commander’s choice of tactical options without undue concern for supply/support (optimal choice); and
- higher levels of operational tempo (speed)
To accomplish this, the sea base needs:

- constant, near-real time updates of status, condition and health of tactical equipment ashore (Autonomic logistics);
- indications of anticipated “demand” and change in demand from dynamic operations ashore (prognostics and commander’s intent); and
- understanding and comprehension of aggregated demand (intuitive common operating picture displays).

Tools are needed for commanders and logisticians to observe, orient, decide and act upon the most critical events arising from the tactical picture including:

- a means to account for the variability of consumption rates due to changing battlefield dynamics (esp. fuel, ammo);
- a way of predicting future needs for supply and support based upon commander’s intent and not conventional consumption factors; and
- a way of brokering between commander’s preferred COA’s and possible options available for sea based supply and support.
Example Force Structure
(for talking points)

Afloat

MEU Command Element
S-1, S-2, … S-6

S-4

LFOC

TACLOG

Demand

Ashore

Combat Operations Center/

Ground Combat Element
S-1, S-2, S-4, S-6

Logistics Combat Element
S-1, S-2, S-3, S-6

Demand

Response

Forward Operating Base Ashore

Key Supply Classes
Fuel, Ammo, Parts

Artillery Co. Howitzer 4-6 Guns

Weapons Co. Mortars

Adv. Amphibious Co.

Light Armored Recon

Vehicles

Vehicles (18-25)

Squad C2

TEAM 1

TEAM 2

TEAM 1

TEAM 2

TEAM 1

TEAM 2

Squad C2

"A" Command Group

Plt Cpt Plt NCO Rifleman Guide

"B" Command Group

Plt Sgt Rifleman Rifleman Corporal

Classes
Fuel, Ammo, Parts
Operational Concept: Marine Corps Warfighting Concepts require that Marine Air Ground Task Forces (MAGTFs) have a greater capability to generate focused and tailored logistics support to the maneuver elements within the Area of Operations (AO).

Operational Commanders and their staffs will require access to accurate, timely, mission critical information relating to the various elements and equipment of the MAGTF. This information will be used to ensure that units within the AO are optimally assigned, tasked and supported for maximum combat effectiveness.

AL reports and constantly updates the sea base with the real time operational status and health of forces ashore- it provides the basis for the “demand” in a Sea Based Sense and Respond system.
USMC has an established architecture and framework for transformed business processes of combat service support. (example: maintenance order fulfillment)
Autonomic Logistics in Support of the Marine Air-Ground Task Force (MAGTF)

Over the Horizon Comm

Sensors Report Status & Condition of Assets
- Fuel & Ammo Levels
- Platform Health
- Mobile Loads

Life Cycle Managers

MAGTF CE COC

Log Data Repository

LCE LOC

LCE Supply & Maintenance Units

LFOC

AAV

LAV

MTVR

FARP
Autonomic Logistics in Support of the Marine Air-Ground Task Force (MAGTF)

Reports From Platforms are Aggregated Up From the GCE into a Logistics Data Repository and Served to Multiple Users
Autonomic Logistics in Support of the Marine Air-Ground Task Force (MAGTF)

Over the Horizon Comm

Platform Status & Condition Provided to Command Control

Life Cycle Managers

LFOC

MAGTF CE COC

LCE LOC

GCE COC

Log Data Repository

LCE Supply & Maintenance Units

AAV

LAV

MTVR

FARP
Autonomic Logistics in Support of the Marine Air-Ground Task Force (MAGTF)

Logisticians view aggregated status and condition of the GCE and now anticipate “demand” for supplies and services from the LCE and plan for response.
Autonomic Logistics in Support of the Marine Air-Ground Task Force (MAGTF)

LCE executes focused and tailored response for supplies and services.
Autonomic Logistics in Support of the Marine Air-Ground Task Force (MAGTF)

Over the Horizon Comm

Aggregated platform health data available to Life Cycle Managers

Life Cycle Managers

MAGTF CE COC

GCE COC

Log Data Repository

Maint Team

Ammo Resupply

Fuel Resupply

FARP

MTVR

LAV

AAV

LFOC

MAGTF CE COC

LCE LOC

LCE Supply & Maintenance Units

LCE LOC
Autonomic Logistics Objectives

- *Shared Situational Awareness* to the Combatant Cmdr, logistician, staff.
- Transformational capability to collect, analyze mission critical data.
- Automatically generate, process, and transmit critical mission demand data from battlefield to remote stations for analysis and processing in near to real time.
- Provide relevant information to all stakeholders
Increased Shared Situational Awareness

- Commander’s “Intent” drives the force
- Time = “Speed of Command”
  - Provide Combatant Commander confidence to plan and execute on the fly.
  - CSS – to advise, plan, and execute logistic support at speed of command
- Logistic Support Systems –
  - Provide “Dynamic” vice Static ERP inputs
  - Anticipatory Support based on Operational Needs
  - Decision Support Tools that influence a weapon system from cradle to grave
AL uses a combination of onboard sensors, processors and transmitters that collect and forward critical logistic data (Equipment Health, Identification, Location, Fuel and Ammunition, Levels, and Mobile Loads) through the existing tactical communications architectures. Within the GCCS and GCSS environments, this data is processed for C2, CSS, and system life cycle support both internally and externally to the Operational Forces.

A typical AL Mission Profile works as follows: During employment of an AL enabled weapon system mission critical data is continually processed and recorded with in the embedded AL sensor network. As a system failure begins or pending logistic requirements are identified, the AL system will process the required data and send this information through the C2 and CSS tactical networks. In the C2 network the information can be used for operational planning and future forces deployment. In the CSS, users gain enhanced visibility of developing logistic requirements/requests prior to actual needs. Consistent with the tactical situation, CSS units can better position and posture themselves, assembling and dispatching Logistic Support Teams (LST), carrying the necessary logistic supplies, tools, repair parts, and request information to the site of the system thus delivering logistic support proactively.

This concept will dramatically decrease the operational down time of the equipment, reduce the potential of operational pauses, while optimizing the Marine Corps combat service support (CSS) resources, contributing to a smaller battlefield logistics footprint and uninterrupted operational availability.

AL will be required to transfer information through interface capability with external data networks and be compatible with existing/planned Marine Corps CSS/C4ISR through legacy and emerging communication systems.
Autonomic Logistics Supports The Marine Corps Planning Process

Marine Corps Planning Process (MCPP)

MAGTF COP
- Intel
- Maneuver
- Fires
- Force Protection
- Logistics

Data Source for Asset Visibility (AL)

LCE Distribution Element

Plan
Assess
Decide
Execute
Autonomic Logistics Supports PDEA Cycle and MCPP

COP C2 Use Case

MEB Commander tasks staff to develop 3 COAs (one air assault, one motorized assault and one mechanized attack).

Also provides Commander’s intent.
COP C2 Use Case

Staff evaluates COA’s.

Includes the ability of the CLR(-) to support COA requirements for fuel, ammo and maintenance.

Also, includes comparative assessment of the logistics status (fuel, ammo, water, system health/readiness) of 3 subordinate infantry battalions based on pre-established thresholds.
COP C2 Use Case

Logistics Section accesses AL data to determine status and health of equipment.

Logistics Section generates mission timelines and assesses capability of each platform to meet mission requirements for each COA.

Staff

AL Data

MEB Commander

Logistics Section accesses AL data to determine status and health of equipment.
Logistics Section develops prioritized list of Concepts of Support (COS) and then selects COS for each COA.

Logistics Section ranks COA’s based on CLR (-) ability to execute COS for each COA.

COP C2 Use Case

Staff

Logistics Section

AL Data

COA 1

COA 2

COA 3

COS 1.a

COS 1.b

COS 1.c

COS 2.a

COS 2.b

COS 2.c

COS 3.a

COS 3.b

COS 3.c

MEB Commander

Plan

Assess

Decide

Execute

Autonomic Logistics

MCPP
Commander selects COA 3.

Commander selects Bn X to execute mission.

Commander issues orders to Bn X and also to CLR (-) to execute COS to support Bn X.
Autonomic Logistics Improves the Planning Process

Provides near-real time, accurate status and condition of weapons systems and support systems – leads to rapid development of Concepts of Support (COS).

Improved operational availability gives Logisticians and Commanders more flexibility and options – enables COS’s and COA’s to be more fully developed.

Improved data accuracy gives Commanders and Logisticians greater confidence – leads to best choices of COS and COA.

Two Examples:
Maintenance and Repair Request Management
Fuel Management
#3 Battery has failed - passivation

Battery is healthy, but low charge

Battery is healthy

**Determination of State**
- State of Charge
- State of Health
- State of Life

**Feature determination:**
- Signal processing
- Models
- Automated reasoning

**Targeted Degraders**
- State of Charge
- Mechanical (short)
- Over Charge

**Sensors**
- Impedance sensor
Maintenance Execution- Request Management

**Battalion S4 (RM)**
- Work package for planetary wheel drive repair

**Order Manager (OM)**

**Log Status**

**Command & Control (C2)**
- Parts
- Transport
- Skills / Tools

**AL Demand Message**
Condition-based demand triggered by sensors on platform

**Platform**
- Autonomic Logistics On-Board

**Automated Demand Flow**
- Defines the information exchange
  Requirements between Supported and Supporting elements

**Focused & Tailored Response**

**EMSS**
- Mobile Contact Team (ME)
- Skills Parts Tools

**Distribution Capacity Manager (DCM)**

**Inventory Capacity Manager (ICM)**

**Maintenance Capacity Manager (MCM)**
Total Fuel in GCE and Rate of Consumption

Operational Pause

Replenishment

Vehicle: 599555 HMMWV M1045A2
Date: Sun Jun 17 01:42:05 2007 UTC
Value: 18.9
Message Type: Shutdown
Autonomic Logistics Fuel Monitoring - Impact to MAGTF

Actual versus Planned Quantity Day 1-3
Fuel Usage for LAV Co

- 3 DOS (Planned): 3585 gals
- 3 days actual usage: 1627 gal

Fuel DOS rules of thumb result in 47 – 74% unnecessary fuel replenishment. AL monitoring and reporting of fuel status results.

Actual versus Planned Quantity Day 1 thru 10
Fuel Usage LAV Co

- Planned (expected) Usage: 11950 gal
- Actual Usage: 2950 gal

Ref: USMC LOGISTICS MODERNIZATION (LOGMOD) SENSE AND RESPONSE LOGISTICS (S&RL): AUTONOMIC LOGISTICS STUDY ON FUEL QUANTITY MONITORING ON THE BATTLEFIELD, Col. Charles G. Chiarotti; Penn State USMC Fellow, June 2007
Theater COP

Common Operating Picture

LOG Decision Support Tools

AL “Services”

AL Data Source

Aggregated, Context-Based Information

Task Unit Organization

Platform Status and Health

Platform
Mapping to SB S&RL

Decision Support Tools
Information Fusion
Information Storage & Distribution
Data/Information Acquisition

MAGTF COP
- Intel
- Maneuver
- Fires
- Force Protection
- Logistics

Data Source for Asset Visibility (AL)

LCE Distribution Element
Joint Integration - Army

...must interoperate with Joint Logistics....

ARMY Integrated Logistics Architecture (ALIA)

KEY IDEAS - The Army in Joint Operations

- Operational Maneuver from Strategic Distances
- Concurrent and Subsequent Stability Operations
- Intragrand Operational Maneuver
- Shaping and Entry Operations
- Direct Attack of Decisive Points
- Simultaneous, Distributed Operations
- Continuous Operations; Controlled Optempo
- Distributed Support and Sustainment
SUPPORTING EXPEDITIONARY LOGISTICS

Major Mike Murchison, USMC
HQMC, Installations & Logistics Department (I&L)
Logistics Vision & Strategy Branch (LPV)
27 Nov 2007
“Expeditionary” describes the immediate ability to go where the enemy is, displace him, and operate from his terrain.

- Embracing austerity
- Adaptability to the environment at hand
- Innovation to ensure advantage
- Physical and psychological rigor

**Maneuver Warfare** is a concept for how Marines...

- Gain the advantage by rapidity of decision-making
- Seize the initiative
- Exploit fleeting opportunities
- Shatter the cohesion and will of the enemy

**Maneuver Warfare** is a philosophy of leadership that is based on trust and decentralized decision-making that enables Marines to thrive in the chaos and friction of combat.
CONCEPTS

• **Operational Maneuver From the Sea (OMFTS)**
  – Use the “sea” as maneuver space

• **Ship To Objective Maneuver (STOM)**
  – No more “see ‘ya on the beach” – days of Normandy are gone

• **Distributed Operations (DO)**
  – Increases the “nodes” that need support
  – Example … at Battalion-level … from 5 “nodes” to 27 “nodes”?

• **Seabasing**
  – Support from afloat – vice the beach...

• **Sense & Respond Logistics (S&RL)**
  – Logistics “response” to Seabasing & DO
Sense & Respond
Logistics Concept

- **Supply network is dynamic**
  - Supply doctrine anticipates reconfigurable supply nets
  - Emphasizes transportation flexibility over large inventories
- **Negotiation-based relationships**
  - Entities use commander’s intent and situation awareness to negotiate and synchronize
  - Roles and commitments of entities are dynamically defined
- **Networks are difficult to analyze and attack**
  - More robust to node failure
  - Adapts to real-time demand driven by unit signals
- **Supports a more logistically agile force**
  - Network adaptivity allows logistics decisions to be made early
“Sense and Respond” Key Ideas

- **Demand can be unpredictable**, so success depends on speed of pattern recognition and speed of response.
- Organizes Units and subunits into “**modular capabilities**” that negotiate with one another over commitments.
- **Networks “self-synchronize”** via a common environment and set of shared objectives.
- Uses IT for data sharing, “**knowing earlier,**” commitment tracking, and role reconfiguration.
- The **best supply chain** is no longer one that is highly optimized, but one that is **highly flexible**.
S&RL EC connects the Sea Base with the tactical operational picture by fusing information (e.g. Logistics, Maneuver, Fires, Intel, Force Protection & C2)

Anticipated “demands” from distributed operational forces ashore are dynamically supported from a **sea based Log/C2 system** that is paced with the heartbeat of operations.

The Sea Based Log/C2 center assimilates, prioritizes, synchronizes and de-conflicts to achieve a focused and tailored logistics response to tactical forces.

**The Sea Base is much more than an automated, floating, forward supply point**
Amount of “fight” left

Relevant Log Status

Use Intelligent Agents to:
- Planned vs. Actual
- Potential COAs

Common Operating Picture

LOG Decision Support Tools

Intelligent Agents “transform” data

AL “Services”

Sensors & Intelligent Agents

Platform

• Enables & Fuses Information
• What was planned
• What is being used
• “How” it’s being used
• Collect Data
• Determine “what” & “when” to transmit
How’d we get “HERE”…

What was the problem ???
Current Processes

Infantry Battalion

Operations (Ops)
- HQ Co
- A Co
- B Co
- C Co
- Wpns Co

Logistics (Log)
- S-4
- MMO
- Comm
- MT
- Engr
- Ord
- Supply
- Ammco
- MT

Requests
- ASP via Chain
- External Assets via Chain
- External Trans via Chain
- ELMACO
- MTM Co
- Engr Maint Co
- Ord Maint Co
- DSSC
- Local
- ISSA
- Rations Plt
- RCO/CIF
- Item Mgrs

External Log Requests
External Maint Requests
External Supply Requests
ISSUES...

• “Warfighter” is VERY involved in the process

• Hundreds of “STOVE-PIPED” logistics systems

• Many DON’T communicate/share data well...if at all!!!
How do we resolve….

- DEFINE THE PROCESS…
  - Looked at Industry … “Best of Breed”
  - Used SCOR Model to evaluate
  - “Green them up”
- Results =49 Functional Flows
  - Logistics Operational Architecture (Log OA)
- What “else” do we need
  - Combat Service Support Reorganization
  - Realignment of Maintenance (ROM)
  - Realignment of Supply (ROS)
  - MAGTF Distribution
  - Command & Control (of Logistics)
Logistics Modernization (LOG MOD)

- **Process**
  - So you have to know “WHAT” you want to do…

- **People**
  - And – “WHO” you want to do it…

- **Technology**
  - Before you buy the “SYSTEM” that support it…

The **TECHNOLOGY** enables the **PEOPLE** to perform the **PROCESS** …
PROCESS...

Example of a LOG OA Functional FLOW
Alignment Relationship Provides the IER

Demand Planning (Products & Services) (DEMPPLAN)

A111 Receive Warning Order

DEMPPLAN-1
Evaluate Customer Demand

DEMPPLAN-2
Select Customer Segments for Analysis

DEMPPLAN-3
Collect Consumption Data

DEMPPLAN-4
Collect "Expenditures" Data (e.g., pilferage, waste loss, obsolescence, rework / recycle, etc.)

DEMPPLAN-5
Collect Capital Asset (Historical) Data

A113 Develop Est of Spt

DEMPPLAN-6
Collect Ops and Training Planning Data

DEMPPLAN-7
Collect Variation Data (Seasonal, environmental, etc.)

DEMPPLAN-8
Identify Policies / Define Rules (incl. regulatory requirements)

DEMPPLAN-9
Associate Data with Rules

DEMPPLAN-10
Define and Setup Forecasting System

A121 Conduct Pre COA Analysis

DEMPPLAN-11
Generate Raw Forecast

A122 Generate Initial COA

DEMPPLAN-12
Review and Adjust Forecast

A131 Conduct COA Analysis

DEMPPLAN-13
Customize Forecast (region, customer segment, etc.)

A1131 Conduct COA Wargame

DEMPPLAN-14
Validate Forecast

DEMPPLAN-15
Issue Demand Forecast

DEMPPLAN-16
Replan
Future State

Infantry Bn

- Ops
  - HQ Co
  - A Co
  - B Co
  - C Co
  - Wpn Co

S-4 Request Manager
- Armory
- Supply
- Ammo
- MT

Order Manager

Supporting Unit

- MCM
  - MPM
- ICM
  - IPM
- DCM
  - DPM
  - DPM

Request

Logistics Operational Architecture (LOG OA) Where We Are Going …

Integrated, cross-functional, end-to-end processes
PEOPLE...
“OLD” FORCE SERVICE SUPPORT GROUP

Old FSSG Structure

FSSG

Brigade Service Support Group (BSSG)

HQ and Service BN
Supply BN
Maintenance BN
Transportation Support BN
Engineer Support BN
Medical BN
Dental BN
NOTIONAL LOG RELATIONSHIP (Fulfillment/ LCM)

Chain of Command vs Logistics Chain

- CLR (GS) -> CLR 25
- CLR (DS) -> CLR 2
- CLB -> CLB 2
- CLB -> CLB 6
- CLB -> CLB 8
- LOC
- LSA
- LCE
- MLG
- GCE
- 2D MARDIV
- 2D MARINES
- 6TH MARINES
- 8TH MARINES
TECHNOLOGY...

**GCSS-MC** will enable the **PEOPLE** to perform the **PROCESS**...
GLOBAL COMBAT SUPPORT SYSTEM MARINE CORPS
LOGISTICS CHAIN MANAGEMENT

BLOCK 1
- LOGISTICS CHAIN PLAN (CUSTOMER)
- DEMAND PLANNING
- INVENTORY PLANNING
- INVENTORY CONTROL (DEMAND SUPPLY)
- INVENTORY CAPACITY OPERATIONS
- MAINTENANCE CAPACITY PLANNING
- MAINTENANCE SCHEDULING
- DISTRIBUTION OPERATIONS MGMT
- MAINTENANCE OPERATIONS MGMT
- INVENTORY OPERATIONS MGMT
- ORDER MANAGEMENT
- REQUEST MANAGEMENT
- WAREHOUSE MGMT (INBOUND)
- MAINTENANCE FULFILLMENT
- PROCUREMENT FULFILLMENT

Future Capabilities
- LIFE CYCLE MGMT
- ROUTE CONFIGURATION PLANNING
- FLEET CONFIGURATION PLANNING
- MODE OPTIMIZATION PLANNING
- TRANSPORTATION ALLOCATION PLAN
- ROUTE AND SCHEDULE PLANNING
- DISTRIBUTION CAPACITY OPERATIONS
- MAINTENANCE ALLOCATION PLANNING
- MAINTENANCE CAPACITY OPERATIONS
- ENGINEERING CAPACITY MGMT
- ENGINEERING PRODUCTION MGMT
- WAREHOUSE MGMT (OUTBOUND)
- DISTRIBUTION FULFILLMENT
- CUSTOMER SERVICE MGMT
- NETWORK DESIGN
- LOGISTICS CHAIN PLAN (PROVIDER)
- FACILITY LOCATION CAPACITY PLANNING
- TRANSPORTATION CAPACITY PLANNING
- FACILITY RESOURCE PLANNING
- MODE PLANNING
- DISTRIBUTION CAPACITY PLANNING
- RETURNS PLANNING
- CUSTOMER SERVICE PLANNING
- PROCUREMENT PLANNING
- PROCUREMENT CAPACITY OPERATIONS
- HEALTH SERVICES CAPACITY MGMT
- GENERAL SERVICES CAPACITY MGMT
- PROCUREMENT OPERATIONS MGMT
- HEALTH SERVICES PRODUCTION MGMT
- GENERAL SERVICES PRODUCTION MGMT

INTERNET INFRASTRUCTURE  INTEGRATED DATABASE  AUTOMATIC IDENTIFICATION TECHNOLOGY  NCES  INFORMATION ASSURANCE

“Bridge Solution Functionality” highlighted in RED
GCSS-MC

the “M” in DOTMLPF

- Logistics Chain Mgt (LCM Block 1)
  - Tactical Focus
  - Replacement of Legacy Supply & Maint Systems
  - IOC = Oct 2008

- Future Blocks
  - Prioritizing & synchronizing requirements

- Bridge Technologies
  - What we have NOW …
  - Some get replaced, some get “rolled” in…
BRIDGE TECHNOLOGIES…

What are they ???

Providing “urgent” capabilities requested by operating forces in support of Global War on Terrorism
BRIDGE TECHNOLOGY DEFINITION

- Provides **Actionable** and **Decisionable Log Info**
  - Enables effective & timely logistics support to MAGTF

- Enables information sharing that:
  - Promotes process improvement
  - Supports structural and organizational changes

- Provides **User-Defined Operational Pictures** that allow logisticians to integrate actions from the strategic, operational, and tactical levels

- **Expected capabilities** to be fielded as part of future blocks of GCSS-MC or MAGTF C2
Where they fit...
MAGTF Common Operating Picture (COP)

TIER I

MAGTF COP

CAPABILITY TO VIEW CONSOLIDATED INFO ACROSS BATTLEFIELD FUNCTIONAL AREAS

TIER II

CAPABILITY FOR BFAs TO VIEW INFO SPECIFIC TO THEIR ENVIRONMENT TO AID: SA, PLANNING, DECISION-MAKING AND EXECUTION IN THEIR FUNCTIONAL AREA

Common INTEL Picture
Common FIRES Picture
Common MANUEVER Picture
Common LOG Picture
Common F.P. Picture

TIER III

FUNCTIONAL SYSTEMS & DATABASES WITH INPUT/OUTPUT FROM FRONT-LINE
USMC Bridge Solutions

- **Battle Command Sustainment Support System (BCS3)**
  - Functional Logistics Info/Roll-up Display

- **Warehouse to Warfighter (W2W)**
  - Last Tactical Mile In-Transit Visibility

- **Transportation Capacity Planning Tool (TCPT)**
  - Monitor Mission Execution & Analysis Tool

- **Common Logistics Command & Control System (CLC2S)**
  - Planning and Tasking Tool

- **Marine Equipment Readiness Information Tool (MERIT)**
  - Readiness information
BCS3 CAPABILITIES

• Roll-up of Functional Logistics Information
• ITV / Supply Pt Status / Log-related CCIRs
• Feeds include:
  – ITV / GTN / WPS / GATES / MERIT / MTS / IRIDIUM
• Scaleable, map-centric view in a User-Defined Operational Picture (UDOP)
Breaking News!!
Project Manager
Currently Transitioning To
Automated Manifesting System-
Tactical (AMS-TAC) centered solution as
LTM-ITV mobile kit software application
W2W CAPABILITIES

• “Sustainment in motion”
  – Vice current “nodal” capability
  – No longer tied to Interrogator Network

• Linking truck to contents on back

• Provides Confirmation of delivery
  – To Forward Operating Bases
  – Supported Unit
WHY THIS IS IMPORTANT TO US...

• Can actually measure LTM OST/CWT

• How fast am I making my “turns”
  – Where are the bottle-necks

• Better Plan and Allocate Resources

• Capacity Management
TCPT CAPABILITIES

• Logistics Commander’s “Digital Dashboard”
  – Roll-up of unit (CLB / CLR/ Functional Bn) Status Boards

• Web-based aid in the EXECUTION of CSS-centric missions
  – Commander’s EEIs and CCIRs
  – Rudimentary Shared Date Environment (SDE) for Logistics Info

• Monitor Mission Execution & Analysis Tool
  – Graphic Mission Tracker … Provide visual cues to mission execution
  – Electronic Watch Log
  – Transportation Capacity … What can I move right now?
  – Personnel … Can't move trucks without drivers
CLC2S Capabilities

• Provides Commander with capability to unify actions and events occurring within C2, Log OA, and LCM
• Allows Logistics Commanders to view & monitor assigned missions & tasks
• Supports logistics mission planning and estimates of supportability
• Injector into Common Operating Picture
Common Logistics Command & Control System (CLC2S) Component Relationships

Request/Task Focus

Logistics Functions

Logistics Capabilities

Capability Focus

Data Feeds

Execution Level Tool

Resource/Status Readiness

CSS Mission Planning Tools

Existing legacy applications

- MDSS II
- ATLASS
- ODSE
- ROLMS
- SASSY
- MIMMS
- UD/MIPS

C2PC

LOGP/E

ENGPE/E

ECS

C2P
MERIT CAPABILITIES

• Web-based equipment readiness reporting tool

• Graphic depiction of USMC readiness
  – User-defined view
  – Scalable from Enterprise to Battalion-level

• Drill-down capability
  – Legacy Supply & Maintenance data
### READING UNION FOR

**Org Level:** MEF = 3  
**Equip Level:** TAMCN = B2604

**As Of:** Fri, Nov 07 2003

<table>
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<tr>
<th>MEF</th>
<th>MSC</th>
<th>UNIT</th>
<th>PACE ITEM</th>
<th>TAMCN</th>
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THE FUTURE...

CAPABILITIES MIGRATION
BETWEEN
MAGTF C2 & GCSS-MC
LOC “5” Screens – Systems View

FBCB2

BIG BOARD (CLBs & CLRs)
OR
GRAYPHON / MONSTER /
SHAREPOINT/ (MLGs)

CLC2S

C2PC

BCS3
“5” Screens – Capabilities “Migration”

Ground Tracks Picture

Fused Picture of Tracks, Fires & Intel

Log Commander’s Digital Dashboard (Missions & Assessments)

Internal Tasking
Log Planning & Estimate

ITV Supply Pt Status Log CCIRs
# 2 “Screens”

<table>
<thead>
<tr>
<th>MAGTF COP</th>
<th>LOG CMDR’S DASH BOARD</th>
</tr>
</thead>
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## Log Injectors:
- Amount of “fight” left in platform / unit

## Log Services:
- ITV & Supply Pt Status

## Common Log Picture

### Assessments within GCSS-MC

### Info Exchange iot enable:
- Operational Planning
- Log COA Development
- Estimates of Supportability
2 “Screens” – Systems View

- **JTCW**
  - Tier I
  - Fused Battlefield
  - Functional Area Info

- **GCSS-MC**
  - Tier II
  - Log Decision
  - Support Tools
Why am I telling you this...  

The Reality...
The Global Reality

Proliferation of AQ copy-cat terrorist organization
Saudi funded proliferation of Salafist ideology
Humanitarian disasters at home and abroad
Gulf of Guinea instability
AQ in North Africa

Nuclear Proliferation Boldness (DPRK & Iran)
Regression of democracy in Russia
India, Pakistan Kashmir conflict
Domestic unrest in Pakistan
Georgian separatists

“Arc of Instability”
Darfur massacres
Mugabe flexing power in Africa
Socialist movement in South America
Colombian FARC insurgents & narcotic kingpins
Terror in Bali, Turkey, Madrid, London, North Africa

Sri Lanka terrorism
Pandemic influenza
Muslim insurgency in Thailand
Terrorist elements in Philippines
Chinese economic expansion and military modernization

…will demand a sustained forward presence
Operational View
Technology Leverage vs. Technology Reliance

We must guard against over-reliance on technology. Technology can enhance the ways and means of war by improving man's ability to wage it, but technology cannot and should not attempt to eliminate man from the process. Better doctrinal and tactical solutions must also be sought.

Source: U.S. Marine Corps Doctrinal Publication (MCDP-1), Warfighting
Marines on a staff should not chase data -- they should act upon the resulting information that the Intelligent Agents collect & present on a dedicated basis.

Source: Log Yoda
GAPS…

• For **AL**
  – Intelligent Agents on platform that control mvt of data / info “off”

• **AL Services**
  – Intelligent Agents & DST that transform data to info

• **MAGTF C2**
  – Amount of fight left in platform & Unit
  – Mulit-Level Security (MLS) – sharing info cross-domains
  – Blue Force Situational Awareness (BFSA) Convergence

• **GCSS – MC**
  – Intelligent Agents and Decision Support Tools
    • Planned v. Actual
    • Assessments – Am I doing things right & am I doing the RIGHT things
    • Log COA Development & Injection back into MCPP
Altering Initial Conditions: Proactive Support for Commander's Intent

S&RL cognitive processes supporting planning and development of logistics, operations, and maneuver COAs.

LOG Inputs from OPS

COA #1
COA #2
COA #3
COA #4
...

Enemy COA #A
Enemy COA #B
Enemy COA #C

COA #N
COA #L1
COA #L2

Enemy COA locked in

from INTEL

Logistics recommendations for operations and maneuver with reduced logistics risks

Friendly COA influenced by logistics-developed operations and maneuver COA recommendations that reduce the risk of uncertainty, increase the probability of success

Logistics inputs to friendly COA alter initial conditions
QUESTIONS ???