The Military Missions and Means Framework (MMF)

Dr. Paul H. Deitz, Technical Director
Army Materiel Systems Analysis Activity
phd@amsaa.army.mil; 410-278-6598

Mr. Jack H. Sheehan, PM Knowledge Intgr
DoD DOT&E/C3I & Strategic Systems
Jack.Sheehan@osd.mil; 703-998-0660 x448

COL(R) Bruce A. Harris, Dir Trng & Perf
Dynamics Research Corporation
bharris@drc.com; 978-475-9090 x1878

Mr. Alexander B. H. Wong, Ofc of Tech Dir
Army Materiel Systems Analysis Activity
awong@amsaa.army.mil; 410-278-6625

LTC(R) Britt E. Bray, Senior Analyst
Dynamics Research Corporation
bbray@drc.com; 913-758-0514

December 2003

Provide information on the Missions and Means Framework for warfare representation.
Agenda

- Purpose
- Overview of the MMF
- Application of the MMF
- Transformation Support
Purpose: Provide a framework for explicitly specifying the military mission and quantitatively evaluating the mission utility of alternative warfighting Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) services and products.

Objective: Provide a disciplined procedure to explicitly specify the mission, allocate means, and assess mission accomplishment by:

- Unifying the warfighter, engineer, and comptroller understanding of missions and means.
- Accounting for traditional testing and evaluation factors and traditional warfighter expertise factors that constitute mission success.
- Being sufficiently credible, timely, and affordable to make hard decisions that stay made.
- Being consistent, concise, repeatable, and scalable.
- Providing a disciplined process to implement the Defense Secretary’s transformation guidance and associated acquisition reform.
MMF Overview – The Framework

11 Fundamental Elements

- What & Why
- Under What Circumstances
- Where & When
- Do What (Playbook)
- How Well
- By Whom

Seven Levels/Four Operators

Systems

Reference Library (Assembly Perspective)

Reference Library (Stocking Perspective)

Transforms L-3 functional performance into L-4 task effectiveness

Transforms L-4 task sequences into L-1 interaction conditions

Transforms L-2 component states into L-3 functional performance

Transforms L-1 interaction specifications into L-2 component states

Effects that Operations have on Forces

Interactions, Effects

Seven Levels/Four Operators

Missions

Means

UN Security Council

UN

CAB

JFACC

JFLCC

JTF

NSC

COCOM

Wing

Air Div

JFACC

JFLCC

DoD

CJCSI 3170.01C

NCJ

DoD 5000.2

CJCSM 3500.04C

DoD 5000.2

CJCSI 3170.01C

CJCSM 3500.04C

DoD 5000.2

CJCSI 3170.01C

JCIDS

JMETLs

etc

etc
MMF Overview - Layered Decomposition

Strategic National
Strategic Theater
Operational
Tactical-Joint
Tactical-Service

Layered Decomposition by UJTL Levels of War & Echelons of Command

Universal Joint Task List (UJTL)
Army Universal Task List (AUTL)
ARTEP, MTPs, TTPs, STPs, FMs, TMs

UN Security Council

Allied Country NCA
US Pres. / Sec Def
Allied Country NCA

Co Cmd Supported
Coalition CTF

CJFLCC
CJFLCC
CJFLCC

Asn Bde
33d Div (M)
UE / UA
MMF Application - Situation

Road to War

- Legitimate, pro-Western Government of Orangeland is overthrown by radical elements and forced into exile.
- Radical elements form new government, seek to force recognition by UN as legitimate government.
- Majority of Orangeland’s conventional military forces are loyal to new government. Orangeland invades neighboring country of Blueland.
- United States and its coalition partners believe national interests and regional stability are threatened. They take military action to drive Orangeland forces from Blueland; remove rebel government from power; restore legitimate, pro-Western government; stabilize region; and protect U.S. and coalition vital interests.

Current Situation

- Coalition forces have commenced offensive ground operations in the region to drive Orangeland forces out of Blueland and continue attacking to isolate rebel government leadership inside capital of Orangeland.

Mission

- CJFLCC intends to isolate rebel government leadership in the capital by defeating majority of conventional forces well outside the capital and preventing them from reinforcing security forces protecting the rebel leadership inside the capital.
MMF Application – Key Tasks

JTF
1. Secure capital region in Orangeland
2. Destroy WMD capability
3. Secure key oil and gas pipelines and prod facilities
4. Defeat rebel forces

JFLCC
1. Secure capital region in Orangeland
2. Destroy WMD capability
3. Secure key oil and gas pipelines and prod facilities
4. Defeat rebel forces

UE
1. Attack to defeat rebel forces in zone
2. Conduct vertical maneuver to disrupt rebel forces
3. Secure key facilities

UA1
1. Secure key terrain vic OBJ CAMEL
2. Block enemy reinforcements from reaching capital

CAB2
1. Secure OBJ CAMEL in order to facilitate UA2 attack on OBJ BAT
2. Attack to defeat rebel forces attempting to return to capital on MSR
(SN) 4 Restore legitimate government in order to 7 Protect national interests
(ST) 4 Establish military and civil conditions to 7 Restore legitimate government
(OP) 4 Isolate rebel government to 7 Help establish desired conditions
(TA-Joint) 4 Prevent reinforcement of capital to 7 Help isolate rebel government
(TA-Service) 4 Block access on main route into capital to 7 Prevent reinforcement of capital

(SN) 4 Restore legitimate government in order to 7 Ensure survival of regime
(ST) 4 Establish military, civil and political conditions to 7 Deter use of force
(OP) 4 Conduct synchronous ops to 7 Help establish desired conditions
(TA-Joint) 4 Pre-position forces in key areas to 7 Enable synchronous ops
(TA-Service) 4 Occupy defensive positions to 7 Prevent enemy access to capital

(SN) SN 3 Employ forces, SN 5.2.4 Decide on need for military action
(ST) ST 1.3.6 Conduct Ops in depth
(OP) OP 1.2.5 Conduct offensive operations
(TA-Joint) ART 8.1.2 Conduct an attack
(TA-Service) ART 8.5.25 Seize an area (Objective)

Move, Sense, Communicate, Engage, Restore
Observe, Orient, Decide, Act

3. Functions, Capabilities

OWNFOR

SN: National Intel/Communications assets
ST: Joint Task Force
OP: Air, Ground, Maritime, SOF components
TA-Joint: FCS equipped Unit of Action (UA)
TA-Service: Combined Arms Battalion (CAB)

OPFOR

SN/ST: WMD, SOF forces
OP: Missile units, elite division w/ newer equipment
TA-Joint: Conventional brigades w/ old equipment
TA-Service: Infantry battalions w/ old equipment

4. Tasks, Operations

1. Interactions, Effects

2 Components, Forces

O1,2
O4,1
O3,4

O2,3

Move, Sense, Communicate, Engage, Restore
Observe, Orient, Decide, Act

3. Functions, Capabilities

5. Index: Location & Time

7. OWNFOR Why = Purpose, Mission

7. OPFOR Why = Purpose, Mission

6. Context, Environment (Physical, Military, Civil, etc.)
<table>
<thead>
<tr>
<th>JTF Commander</th>
<th>Establish conditions for restoration of legitimate Pro-Western Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic/Operational</td>
<td></td>
</tr>
<tr>
<td>JFLCC</td>
<td>Isolate capital</td>
</tr>
<tr>
<td>Operational</td>
<td></td>
</tr>
<tr>
<td>UE</td>
<td>Secure Objectives vicinity of capital (Surround) Defeat conventional opposing forces</td>
</tr>
<tr>
<td>Operational/Tactical</td>
<td></td>
</tr>
<tr>
<td>UA</td>
<td>Prevent rebel forces from returning to the capital</td>
</tr>
<tr>
<td>Tactical</td>
<td></td>
</tr>
<tr>
<td>CAB</td>
<td>Seize OBJ Camel in order to prevent rebel forces from crossing bridge</td>
</tr>
<tr>
<td>Tactical</td>
<td></td>
</tr>
</tbody>
</table>
## Desired Conditions

**Strategic MoEs:**
- Legitimate government restored to power
- Territorial security of Orangeland ensured

**Operational MoEs:**
- Enemy conventional capabilities defeated
- Leadership in capital isolated

**Tactical MoEs:**
- Security forces inside capital defeated
- Capital surrounded

**Attack MoE:**
- Conventional military forces blocked from reentering capital

## Not Desired Conditions

**Strategic MoEs:**
- Rebel government maintains claim to power from an undisclosed location
- Rebel leaders play up “unprovoked” West attack and gain support for their government through successful world media campaign

**Operational MoEs:**
- Capital Defense Corps Security Forces are able to secure rebel leaders and get them out of the capital

**Tactical MoEs:**
- Conventional forces delay coalition forces from taking key objectives inside the capital and engaging Security Forces from the Capital Defense Corps

**CAB2 Attack Results:**
- Conventional forces successfully reenter capital before main effort can reach its objective
Overlay what we have with what we need to do:
- COCOM IPLs
- Gap Analysis
- Risk Assessment

JCIDS Recommendation
Capability Needs
DOTMLPF Changes

Decision
And Action
The Military Missions and Means Framework (MMF)

Dr. Paul H. Deitz, Technical Director  
Army Materiel Systems Analysis Activity  
phd@amsaa.army.mil; 410-278-6598

Mr. Jack H. Sheehan, PM Knowledge Intgr  
DoD DOT&E/C3I & Strategic Systems  
Jack.Sheehan@osd.mil; 703-998-0660 x448

COL(R) Bruce A. Harris, Dir Trng & Perf  
Dynamics Research Corporation  
bharris@drc.com; 978-475-9090 x1878

Mr. Alexander B. H. Wong, Ofc of Tech Dir  
Army Materiel Systems Analysis Activity  
awong@amsaa.army.mil; 410-278-6625

LTC(R) Britt E. Bray, Senior Analyst  
Dynamics Research Corporation  
bbray@drc.com; 913-758-0514

December 2003

Back Up Slides
**MMF Application**

**Mission:** Answers the questions What, When, Where and most importantly, Why

**Tasks:** Derived from the UJTL, Service Task Lists (AUTL, NTTL, AFTL) or Mission Training Plans (MTPs) and associated OPLANs or OPORDs. Includes conditions and standards.

**1. Interaction, Effects**
- State of friendly units, personnel and equipment providing necessary capability to accomplish the selected operation
- Describes specific environmental and unit-specific conditions affecting OWNFOR force at point of interaction
- Describes specific environmental and unit-specific conditions affecting OPFOR force at point of interaction

**2. Components, Forces**
- O3,4
- O2,3
- O1,2

**3. Functions, Capabilities**
- O3,4
- O2,3
- O1,2

**4. Tasks, Operations**
- Tasks: Derived from the UJTL, Service Task Lists (AUTL, NTTL, AFTL) or Mission Training Plans (MTPs) and associated OPLANs or OPORDs. Includes conditions and standards.
- Tasks: As identified by established OPFOR doctrine, TTPs and associated task lists

**5. Index: Location & Time**
- OWNFOR
- OPFOR

**6. Context: Environment (Physical, Civil, Military, etc.)**
- OWNFOR Purpose: Why = Mission
- OPFOR Purpose: Why = Mission

**7. OWNFOR Purpose: Why = Mission**

**7. Mission**
- Answers the questions What, When, Where and most importantly, Why

**Employment**

**Synthesis**
## Transformation Support

**Mission Definition:** JCIDS requires formal statement of national security strategy, strategy and overall concept for accomplishing, and joint operational concepts

MMF records this in the multi-sided (OWNFOR / OPPFOR) specifications: L-7 Purpose/Mission referencing L-6 Context/Environment and L-5 Index/Location/Time

**Mission Analysis:** JCIDS terms FAA – JTS calls METL-based readiness requirements

MMF employs MDMP to derive specified / implied tasks, identify conditions, select measure, and assign standards

**Capability Assessment:** JCIDS requires a functional concepts decomposition (to do what)

MMF employs O₃,₄S synthesis operator to derive “catholically agnostic” decomposition of L-3 Functions/Capabilities based on L-4 Tasks/Operations

**Integrated Architectures:** JCIDS / DoD 5000.2 require integrated Operational, Systems, and Technical standards architecture views

MMF employs integrated architectures to provide concepts, rules, and technologies to assemble Stocking Perspective parts into Assembly Perspective packages

**Mission Evaluation:** JCIDS requires an FSA to determine degree to which alternative DOTMLPF solutions do / do not remove FNA-identified capability gaps

MMF conducts FSA as follows:
- O₁,₂E Employment operator provides the degraded (or enhanced) states generated by L-1 Effects packages on L-2 Component parts
- O₂,₃E Employment operator uses architectures to determine L-3 Capability package performance based on L-2 Component part states and appropriate architecture rules and constraints
“Serves as a common language and common reference system for joint force commanders, combat support agencies, operational planners, combat developers and trainers to communicate mission requirements. It is the basic language for the development of a joint mission essential task list (JMETL) or agency mission essential task list (AMETL) that identifies required capabilities for mission success.”

“The UJTL is a key element of the requirements based “mission to task” Joint Training System. In implementing this system all users conduct mission analysis, identify specified and implied tasks, use the UJTL to describe these tasks, apply guidance to determine essential tasks, select conditions that impact the tasks and select measures and criteria that form the basis for standards. They document these tasks, conditions and standards as their warfighting requirements in a JMETL/AMETL.”
A Two-Sided Missions & Means Framework

**Mission:** Answers the questions What, When, Where and most importantly, Why

**Tasks:** Derived from the UJTL, Service Task Lists (AUTL, NTTL, AFTL) or Mission Training Plans (MTPs) and associated OPLANs or OPORDs. Includes conditions and standards.

**7. BlueFor Purpose: Why = Mission**

Any action that creates a state change on an **BLUFOR** platform, system or SOS

**4. Mission**

Task, Operations

O\(^1\), O\(^2\), O\(^3\), O\(^4\)

**State of enemy units, personnel and equipment providing necessary capability to accomplish the selected operation**

**3. Functions, Capabilities**

Observe, Orient, Decide, Act

**2 Components, Forces**

O\(^2\), O\(^3\)

**1. Interaction, Effects**

Describes specific environmental and unit-specific conditions affecting **BLUFOR** force at point of interaction

Describes specific environmental and unit-specific conditions affecting **OPFOR** force at point of interaction

**OPFOR**

**BLUFOR**

**4. Mission**

Task, Operations

O\(^1\), O\(^2\), O\(^3\), O\(^4\)

**State of friendly units, personnel and equipment providing necessary capability to accomplish the selected operation**

**3. Functions, Capabilities**

Observe, Orient, Decide, Act

**2 Components, Forces**

O\(^2\), O\(^3\)

**7. OpFor Purpose: Why = Mission**

Any action that creates a state change on an **OPFOR** platform, system or SOS

**4. Mission**

Task, Operations

O\(^1\), O\(^2\), O\(^3\), O\(^4\)

**State of enemy units, personnel and equipment providing necessary capability to accomplish the selected operation**

**3. Functions, Capabilities**

Observe, Orient, Decide, Act

**2 Components, Forces**

O\(^2\), O\(^3\)

**1. Interaction, Effects**

Describes specific environmental and unit-specific conditions affecting **OPFOR** force at point of interaction

Describes specific environmental and unit-specific conditions affecting **BLUFOR** force at point of interaction

**Mission:** Answers the questions What, When, Where and most importantly, Why

**Tasks:** As identified by established OPFOR doctrine, TTPs and associated task lists
A Two-Sided Missions & Means Framework

6. Context: Environment (Physical, Civil, Military, etc.)

7. BlueFor Purpose: Why = Mission

Cdr’s Intent

Receive the Mission

Road to War

IPB Limits & Constraints

Msn Analysis: Specified Implied Essential Tasks

4. Mission Tasks

O3,4

O4,1

3. Capabilities

2. Components

BLUFOR

Synthesis

1. Interaction Conditions

4. Mission Tasks

O3,4

O4,1

1. Interaction Conditions

OPFOR

3. Capabilities

2. Components

COA Development

Task Organization / Req. for Spt

7. OpFor Purpose: Why = Mission
**Conduct Joint Mission Analysis**

- **Mission** is assigned to Commander. Concept of operations may include a number of operations.

- **Operations**, the building blocks of mission planning, are comprised of multiple tasks.

- **Tasks** are the fundamental building blocks of missions, and are executed by specific units or organizations.

  A military action that supports a mission and consists of tasks

Discrete event/action executed to accomplish a mission or operation

An assignment with a purpose and it consists of Operations
1. Establish multiple FOBs, on order conduct handover FOB security to 3d BN 504 PIR
2. Defeat rebel forces W/SW of capital
3. Secure OBJ CAMEL

1. Achieve air superiority
2. Destroy WMD capability
3. Facilitate control of energy centers
4. Destroy resisting rebel forces

1. Destroy WMD
2. Seize oil and gas pipelines and prod facilities
3. Seize the RHC facility of the IFP mil forces
4. Seize vital infrastructure with min collateral damage
5. Facilitate the transition of power
6. Destroy rebel forces in zone

1. Seize RHC FAC with min collateral damage
2. Defeat rebel forces W&S/W of capital
3. Conduct vertical maneuver to capital

1. Defeat enemy forces withdrawing to capital
2. Seize bridge vicinity OBJ BISHOP
3. Conduct air assault with 1 dismounted INF CO

1. Achieve air superiority
2. Destroy WMD capability
3. Facilitate control of energy centers
4. Destroy resisting rebel forces
Attack Operations Package

- Process Group 1a (MDMP) Corps
- OpPk 1b UA
- OpPk 1c CAB
- OpPk 4 Targeting Process
- OpPk 7 SEAD
- OpPk 8 JAAT
- OpPk 2a Vertical Move In.
- OpPk 3 C2/Battle Management/COP
- OpPk 4 Targeting Process
- OpPk 5 Intelligence/Information Gathering
- OpPk 6 Prepare for attack
- OpPk 2b Vertical Move Out
- OpPk 9 Engage Enemy
- OpPk 10 Recover from Attack
- OpPk 3 A2C2
- OpPk 1c CAB
- OpPk 5 Intelligence/Information Gathering
- OpPk 2b Vertical Move Out
- OpPk 1c CAB
MoE: Attack planning, coordination and execution is not adversely affected by inaccurate or outdated information concerning environmental conditions, friendly unit location and status or reported enemy activity, location, strength and intentions. (Y/N)

<table>
<thead>
<tr>
<th>Sequence #</th>
<th>Task #</th>
<th>Task Title</th>
<th>MoP</th>
<th>Unit</th>
</tr>
</thead>
</table>
| 3.8        | ART 7.3.2.3| Conduct risk management                        | 1) No offensive tasks executed that exceed maximum residual risk established by commander.  
2) No casualties as a result of failure to manage risk. | All                       |
| 3.9        | ART 7.6.3  | Make adjustments to resources, concept of ops or mission | Adjustments made to exploit opportunities or resolve problems occurring during execution effectively. (Y/N) | Commander                 |
| 3.10a      | ART 7.5.4  | Revise and refine the plan                     | Revision and refinements to the plan completed in less than one third of time available before execution. | Commander and Staff       |
| 3.10b      | ART 7.6.1.2| Adjust graphic control measures                 | 1) Adjustment of graphic control measures accurately reflected changes in METT-TC (w/in 100 meters).  
2) Lag time between operations and adjustment of graphic control measures (<5 minutes). | Operations and Intel Cell |
Start Operations Package 1a first.

OpPk 2 and OpPk 3 are continuous and feed into OpPk 1a, b, and c.

OpPk 1b, 4 and 5 begin during OpPk 1a.

OpPk’s 4, and 5 are continuous. OpPk 1c begins during OpPk 1b.

OpPk 6 follows OpPk 1c.

OpPk 1 and OpPk 3 begin when OpPk 6 ends and end when OpPk 10 begins.

OpPk 7 begins after OpPk 1 begins and before OpPk 2a begins and ends when OpPk 2b ends.

OpPk 2a and OpPk 8 begin during OpPk 7.

OpPk 9 begins after OpPk 2a.


OpPk 10 begins after OpPk 2b.

Attack Operations Package ends when OpPk 10 is complete.

MoE: Country of Interest conventional military forces prevented from re-entering capital and interfering with main effort.