

# **The 22nd Annual National Test & Evaluation Forum**

**Sponsored by the National Defense Industrial  
Association Test & Evaluation Division**

**March 7, 2006**

**Modeling the FCS Brigade Combat Team in a  
Stability and Reconstruction Operations Mission  
– Implications for T&E Planning**

**Held at The Hyatt Regency Jacksonville,  
Jacksonville, FL, 6-9 March, 2006.**

**LTC (R) Britt E. Bray  
Dynamics Research Corp.  
[bbray@drc.com](mailto:bbray@drc.com)**

# **Agenda: Tuesday, 7 March, 2006**

## **Modeling the FCS Brigade Combat Team in a Stability and Reconstruction Operations Mission – Implications for T&E Planning**

- **Premise**
- **Background**
- **Applying the Framework to Generate Questions**
- **Notional Scenario Description and Mission Statement**
- **Front End Planning Products**
- **Implications for T&E Planning**
- **S&RO Challenges for T&E**
- **Summary and Conclusion**

# Premise

- **Recent experience shows dramatic need for Army organizations to provide capability to succeed in Phase IV, Stability and Reconstruction Operations.**
- **Planning for T&E of FCS BCT should ensure Effectiveness, Suitability and Survivability of FCS BCT and its components conducting S&RO missions under realistic and relevant scenario driven conditions.**
- **Application of MMF principles to front end T&E planning can help to ensure that the right questions are asked and answered in the design and execution of the T&E plan.**

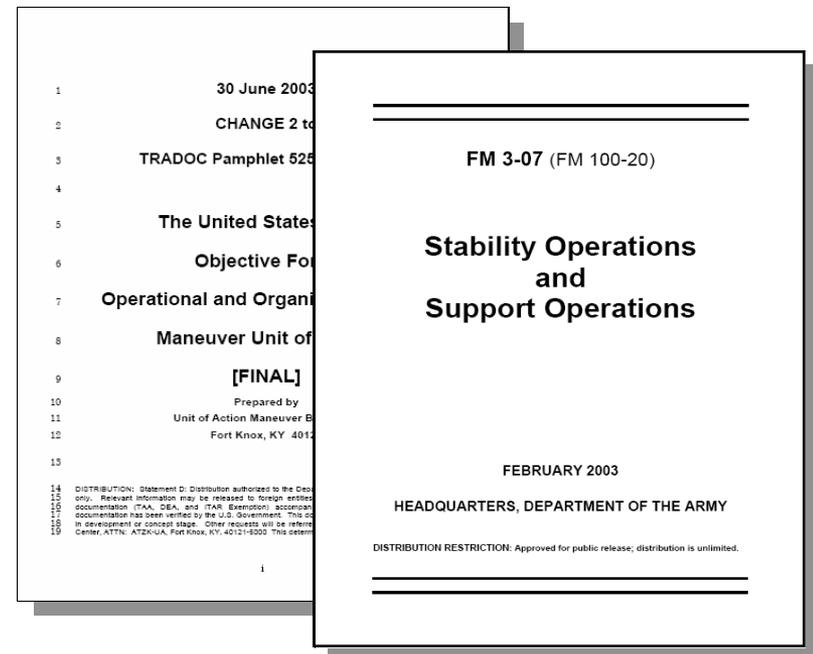
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# S&RO – A Quick Review

- **FM 3.07 provides Tier 1 doctrine for Stability and Support Operations**
- **FCS O&O identifies the following Stability, Support and Security Missions for the F-BCT:**
  - **Peace Operations**
  - **Foreign Internal Defense**
  - **Security**
  - **Combating Terrorism**
  - **Arms Control**
  - **Show of Force**
  - **Area Security**
  - **Local Security**



# **S&RO – A quick review**

## **Potential S&RO Mission Types for F-BCT**

- Secure a Route**
- Conduct Airmobile Raid**
- Secure a Site (FOB)**
- Conduct Cordon and Search**
- Escort a Convoy**
- Execute a TCP**
- Recon MSR**
- Border Surveillance**

# **FCS BCT O&O Overview**

- **Qualities/Overarching Capabilities**
  - **Quality of Firsts**
  - **Modes of Operation**
  - **Air Ground Integration**
  - **Ground Manned and Unmanned teaming**
  - **Lethal and Nonlethal Effects**
  - **Networked Fires**
  - **Maneuver Support Imperatives**
  - **Maneuver Sustainment in S&RO environment**

# FCS BCT Organization

Increment 1 Objective

## Unit of Action Design



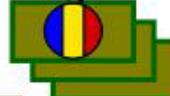
2950 @ 14846.19 STONs



142



93



3 x 597



410



193



321

FCS (Manned):

- 102 ICV
- 49 C2V
- 30 R&SV
- 60 MCS
- 24 NLOS Mortar
- 18 NLOS Cannon
- 10 MV-T
- 19 MV-E
- 14 FRMV

FCS (Unmanned):

- 27 ARV-RSTA
- 18 ARV A (L)
- 18 ARV-Assault
- 54 MULE-T
- 60 NLOS LS
- 81 SUGV
- 6 Multi-Mission Radar (MMR)
- 10 Lightweight Counter Mortar Radar
- 6 MULE-CM
- 6 MULE-RT

Trucks:

- 111 FTTS-C2
- 139 FTTS-SPT
- 7 FTTS-Knight
- 232 FTTS-MS
- 4 FTTS-RMV
- 6 FTTS-AMB
- 2 FTTS-T (Treatment)
- 67 FTTS-MS Trailers

UAVs:

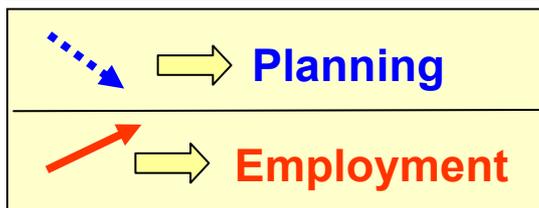
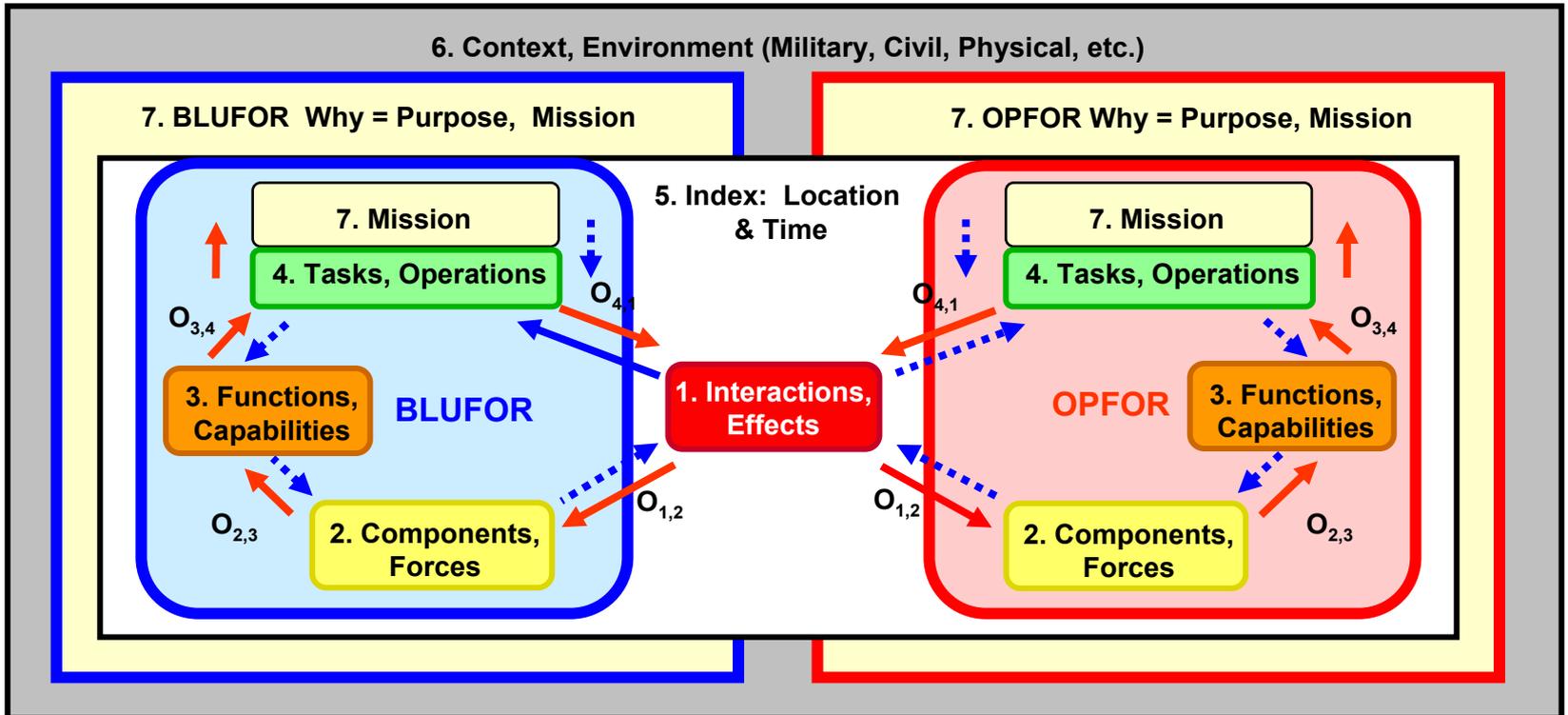
- 55 UAV CL I L/C Units
- 110 UAV CL I Aerial Vehicles
- 36 UAV CL II L/C Units
- 36 UAV CL II Aerial Vehicles
- 12 UAV CL III L/C Units
- 48 UAV CL III Aerial Vehicles
- 2 UAV CL IVa L/C Units
- 8 UAV CL IVa Aerial Vehicles
- 8 UAV CL IVb L/C Units
- 16 UAV CL IVb Aerial Vehicles

Other:

- 12 81-mm Mortar
- 20 ARH
- 8 AAFARS
- 2 HTARS
- 3 Camels
- 6 POL racks

# MMF – A quick review

11 Fundamental Elements: 7 levels, 4 operators



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# Applying the Framework to generate questions about the Mission ...

Framework Level	Level Description in Terms of Military Operations	Questions related to Test and Evaluation
<b>Level 7:</b> Mission, Purpose	What is the Mission Task, Purpose, and Endstate for Friendly and threat forces?	What is the Mission Task, Purpose, and Endstate for friendly and threat forces? What operational scenario is to be used for the test?
<b>Level 6:</b> Context, Environment	What are the conditions under which the mission is to be performed?	What are the environmental factors that will impact on the mission? How do we replicate the appropriate environmental factors?
<b>Level 5:</b> Index, Location/Time	When, in terms of current or future time period and where, in terms of geographic location does the mission occur?	When and where is the mission to take place? What events (Road to War) led to this point? When and where will the test activities take place?

# And the Means that lead to...

Framework Level	Level Description in Terms of Military Operations	Questions related to Test and Evaluation
<b>Level 4:</b> Tasks, Operations	What operations and tasks must be performed to accomplish the mission	What types of operations and what tasks must the organization under test perform in order to accomplish the mission? What is purpose for each operation and task? What are the associated MOEs and MOPs? What conditions are in place that could affect task performance?
<b>Level 3:</b> Functions, Capabilities	What functions and capabilities are required to enable successful accomplishment of task purpose?	What functions and capabilities and capabilities are required to enable successful performance of the operations and tasks under identified conditions?
<b>Level 2:</b> Components, Forces	What equipment, personnel and forces are available to provide required functions and capabilities	What components and forces are available to perform the mission and what functions and capabilities do they provide?
<b>Level 1:</b> Interactions, Effects	What interactions must occur to create the desired effect.	What interactions/events must be stimulated/simulated?

# **T&E Planning and Coordination Questions**

- **Does a suitable scenario exist or will one have to be generated?**
- **What are the most important capabilities to test and evaluate? Under what conditions?**
- **What operations and tasks require the identified capabilities?**
- **What components and forces of the System under test deliver and/or employ the capabilities identified above?**
- **What kind of LVC environment is required to adequately support observation and evaluation of the identified components/forces performing the identified tasks?**
- **Do resources and facilities currently exist to provide the required LVC environment or will some have to be developed?**

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# Notional Scenario Situation

- FCS BCT Operating as part of Ground Component of a Joint Force conducting offensive operations in Orangeland.
- FCS BCT Operating as part of Ground Component of a Joint Force conducting offensive operations in Orangeland.

# Notional Scenario Mission Statement

- FCS BCT Mission as a supporting effort is to occupy Objective Hula in order to secure the MSR running from north to south through the objective and initiate stabilization and reconstruction of the urban areas in Objective Hula.

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# Notional Mission to Task Analysis

**Mission:** (U)Establish the Forward Operating Base (98 task(s))

FCS 17-6-C1001 Conduct Continuous Risk Management

FCS 17-6-C1202 Operate in a JIM Environment

FCS 17-6-S1003 Gain and maintain situational understanding (e.g., the COP) of the battle space as it applies to JIM elements

FCS 17-6-S1013 Employ Collaborative Networked Fires

FCS 17-6-S1204 Conduct a Tactical Road March

FCS 17-6-S1402 Employ Army and Joint ISR

FCS 17-6-S1406 Integrate Contract/Contractor Support Personnel Into UA Sustainment Operations

FCS 17-6-S2608 Transition to Changes in Focus and Mission in a JIM Environment

FCS 17-6-U1004 Facilitate Exchange of Information With JIM Units, Agencies and Representatives at Appropriate Level using WMI

FCS 17-6-U1005 Coordinate and Perform Intelligence, Surveillance and Reconnaissance (ISR) in a JIM environment

FCS 17-6-U1006 Coordinate and Maintain Relevant JIM War Fighter Networks (Warrior Machine Interface)

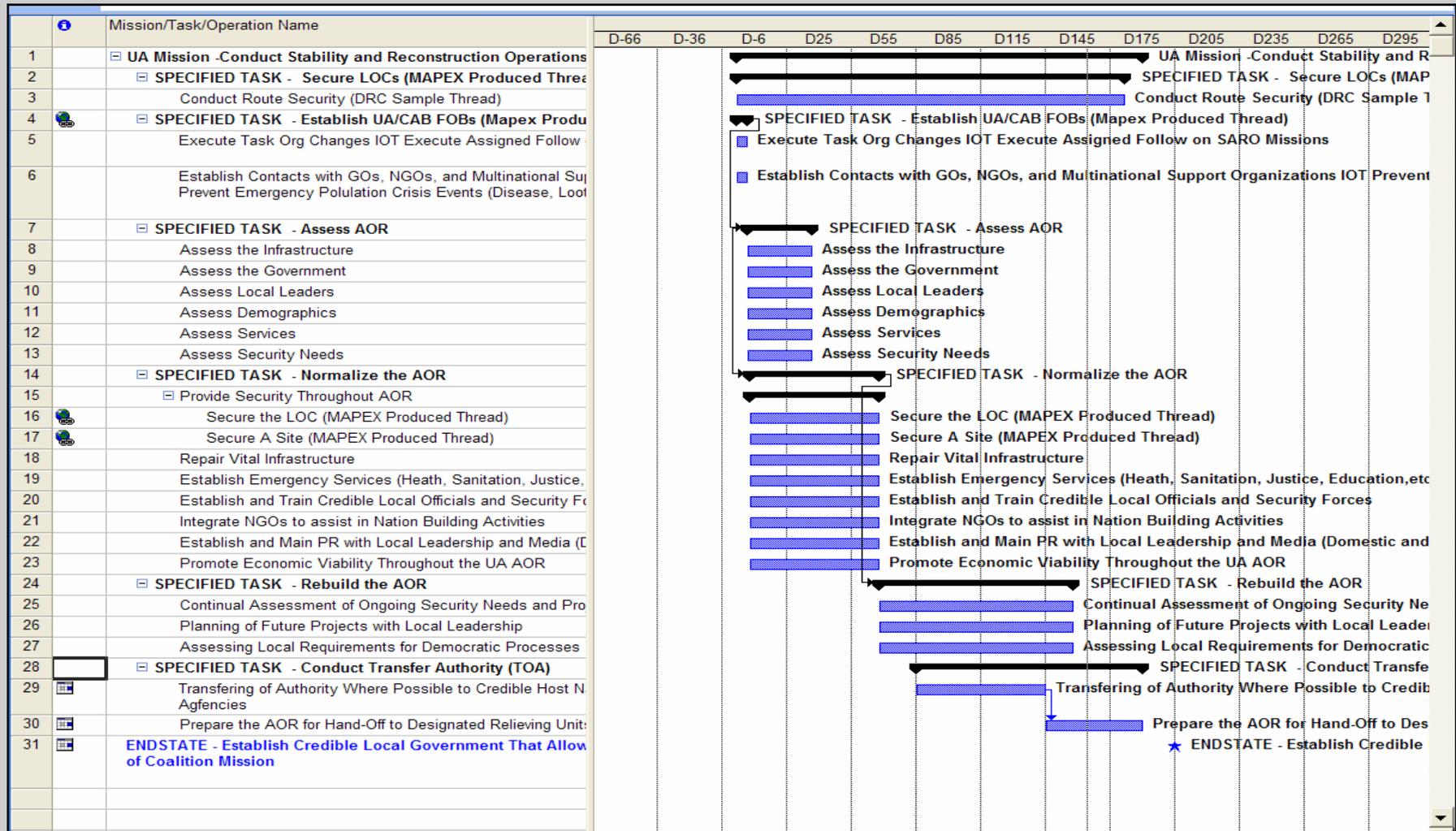
FCS 17-6-U1012 Participate in Joint and Multinational Air Space Management

FCS 20-2-S6203 Control Checkpoint (SOSO)

# Notional FCS BCT Organization for Combat

- HQ's BCT (FOB A)
  - 3<sup>rd</sup> CAB
  - HHC BCT
  - BICC
  - NLOS BN (-)
  - FSB (-)
- Group Tiger (FOB B)
  - 1<sup>st</sup> CAB
  - 2<sup>nd</sup> CAB
  - Team C, NLOS BN
  - Team C, FSB
- RSTA SQDN (FOB C)

# Sample Mission Thread(s) for selected vignettes





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# Implications for T&E planning

- **Need to develop cross-walk of capabilities to tasks to sharpen focus of observation/data collection plan.**
- **Need to develop cross-walk of selected tasks to executors of tasks.**
- **Need to determine interactions needed to trigger execution of tasks.**
- **Need to maintain coherent mission thread for vignette being run in order to determine and trace mission impact of task success or failure (i.e. establish an audit trail).**
- **Need to determine minimum level of granularity required for meaningful execution (test) and evaluation.**
- **Need to structure test support plan to enable execution, observation and data collection of test events at the required level of granularity.**

# S&RO challenges

- **How do you determine mission success?**
- **How do you determine and document the impact of a single task on the mission?**
- **What are the unique combinations of capabilities, tasks and F-BCT components that must be tested and evaluated to determine ESS of the F-BCT in performing S&RO versus other kinds of missions?**
- **How do you factor in augmentation from Echelons above F-BCT, Joint, Coalition and other capability providers to the T&E plan?**
- **How do you replicate the Operating Environment for the S&RO Scenario?**
  - **Examples of S&RO unique conditions**
    - **Forward Operating Base (FOB) based operations in or near urban built up areas**
    - **Joint, Interagency, Multinational (JIM) environment**
    - **Non-linear, Guerrilla-style threat**
    - **Fleeting indirect fire threat**
    - **Primarily small unit (platoon/company) size operations**

# Summary and Conclusion

- **S&RO missions pose unique and challenging issues to consider for T&E planning**
- **Application of MMF to front end analysis enhances ability to:**
  - **Understand all aspects of the problem space and their interrelationships**
  - **Bring together stakeholder communities early for productive and effective input, coordination and review.**
  - **Identify T&E capability gaps early.**

Questions/Discussion?