Captains Career Course Military Decision Making Process
Battle Staff Simulation Meeting Notes

You have been asked to provide guidance on the following situation. The 442nd Signal Battalion at Ft. Gordon, GA is updating the Officer Training Strategy, including the Signal Captains’ Career Course, to meet the needs of the Army's shift to a modular force. The current training strategy includes both TRADOC Common Core instruction and classes for the specific training of an S6 Signal Officer. The CG has mandated that a number of new signal topics must be trained to meet the changing role of the S6 in the COE; however, the overall length of the SCCC may not change. The SCCC senior small group leader is developing alternative courses of action to accommodate the new signal course material without eliminating any of the TRADOC Common Core instruction by shifting the training on the Military Decision Making Process to a distributed learning environment. They have requested guidance from - HQ, TRADOC on whether this delivery strategy will work. What is your guidance?

Working with the SCCC small group leaders, the HQ, TRADOC design team has collected the following background information:

1. The number of students enrolled in the SCCC is generally 32. The overall goal of the TRADOC Common Core MDMP course is to “familiarize” these students with MDMP by providing them with an authentic experience conducting MDMP. Specific training as a battle staff S6 is provided throughout the SCCC signal-relevant classes.

2. The current training consists of 3 days of general knowledge and 5 days of a CAC exercise in which students are: 1) Assigned to the various battle staff roles in small groups; 2) Provided with an authentic OPORD; and 3) Complete the seven-step MDMP process on paper. SCCC small group leaders provide guidance and feedback during the CAC exercise. The general knowledge instruction and CAC exercise requires three full time faculty.

3. The MDMP process is foundational to the Army's way of solving problems. As such, the content of the MDMP Common Core course does not change very often, perhaps once every 10 years.

4. It is important that students complete the MDMP Common Core course quickly so that they can move on to complete the other TRADOC-mandated courses (some of which are offered online) and begin to prepare for the signal-specific courses.

5. In addition to training active component SCCC students on the MDMP, the 442nd BN also provides training for the reserve component officers (SCCC-RC) through both non-individual duty and individual duty training time between ADT phases. There are approximately 300 reservists nationwide ho need to take the training.
This IMDP is fictitious. Although the people and places and delivery order contract are fictional, the content and the proposed IMI design is real.
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PREFACE

dL Courseware Conversion, LLP (dLCC) has been tasked with the design and development of distributed learning courseware for the Captains Career Course (C3) in the Military Decision Making Process (C3MDMP) offered by various U.S. Army TRADOC schools. The course will be used in conjunction with other C3 courses throughout the TRADOC school system. The courseware will be developed for delivery over the Internet and delivered via Compact Disc (CD).

The C3MDMP Battle Staff Simulation courseware will consist of ten lessons and a final assessment that train and evaluate Soldiers in each of the seven steps of the MDMP process and a capstone simulation exercise that integrates the complete MDMP process.

This Instructional Media Design Package (IMDP), prepared for HQ TRADOC, consists of the design strategy and the flow diagrams that support development of the simulation courseware for the MDMP course. Included in the design strategy are lesson topic information, learning objectives, audio/video production requirements, screen conventions, performance standards, and computer-managed instruction features. This IMDP was developed in accordance with (IAW) Prime Contract ABCD123-456-789, Statement of Work (SOW), Section X, Paragraphs X.X.X and, Delivery Order #123, Paragraph X.X.X, Training and Doctrine Command (TRADOC) Regulation 350-70, Army Training And Education Development: Management, Processes, Products, And Delivery TRADOC Pamphlet 350-70-2, Multimedia Courseware Development Guide, TRADOC Pamphlet 350-70-12, Distributed Learning - Managing Courseware Production and Implementation, Data Item Description (DID) DI-ILSS-81520, and other applicable specifications.
# ACRONYMS AND ABBREVIATIONS

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VoIP

TTP

TRADOC

TOC

TLO

TADLP

TACSOP

TACSAT

STP

SOW

SOP

SIPR

C3MDMP

SA TRUNK

SA

RFS

RETRANS

RFI

REG

PAM

PACE

NAPS

NETOPS

NIPR

OAKOC

OPORD

MOS

MDMP

JTF

JNN

IP

IMI

Interactive Multimedia Instruction

Inter Maritime Satellite Telephone

Internet Protocol

Joint Network Node

Joint Task Force

Learning Management System

Military Decision Making Process

Military Occupational Specialty

North American Public Sector

Network Operations

Nonsecure Internet Protocol Router

Observation Avenues Key Obstacles Cover

Operations Order

Primary, Alternate, Contingency, Emergency

Pamphlet

Random Access Memory

Regulation

retransmission

Request for Information

Request for Service

Satellite Access Trunk

Secret Internet Protocol Router Network

Standard Operating Procedure

Statement of Work

Soldier Training Publication

Tactical Satellite

Tactical Standing Operating Procedure

The Army Distance Learning Program

Terminal Learning Objective

Tactical Operations Center

Training and Doctrine Command

Tactics, Techniques, and Procedures

United States

U. S. Army Signal Center & Fort Gordon

Voice-Over Internet Protocol

video teleconferencing systems

Wide Area Network
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SECTION 1 - ABSTRACT FOR TRAINING

The C3MDMP Battle Staff Simulation courseware is developed in accordance with (IAW) Prime Contract ABCD123-456-789, Statement of Work (SOW), Section X, Paragraphs X.X.X and, Delivery Order #123, Paragraph X.X.X, Training and Doctrine Command (TRADOC) Regulation 350-70, Army Training And Education Development: Management, Processes, Products, And Delivery TRADOC Pamphlet 350-70-2, Multimedia Courseware Development Guide, TRADOC Pamphlet 350-70-12, Distributed Learning - Managing Courseware Production and Implementation, Data Item Description (DID) DI-ILSS-81520, and other applicable specifications. Three subject matter experts in the area of MDMP were interviewed using cognitive task analysis to elicit the knowledge necessary to design the course. The course design uses allows students to engage with the MDMP using real world scenarios. Lessons, demonstration simulations, partial and full practice exercises and feedback will be embedded within the courseware system that is designed using the latest approved multimedia technology that are applicable to the learning situation. Simulations integrate animations, graphics, text, audio and videos throughout the courseware. The Battle Staff courseware can be used for training or review of MDMP. This courseware will be developed for delivery over the Internet and for delivery via Compact Disc (CD).

This simulation courseware will be comprised of ten lessons and a final, whole-task assessment. The lessons include instruction, simulated demonstrations of each procedure followed by interactive student practice of the procedure and immediate feedback on performance and review of the lesson. There are two modes of interaction with the courseware program: 1.) in training mode where the student must pass each lesson in MDMP to move on to the next or 2.) in the review mode allowing the user to practice specific steps of MDMP. Once proving mastery of each of the lessons within the simulation, the student will be able to engage in the whole task MDMP practice. The whole task exercise requires students to demonstrate their understanding of the entire MDMP process from beginning to end. The capstone is intended to evaluate mastery of skills and knowledge associated with the MDMP. The C3MDMP courseware will be developed from Government Furnished Information (GFI) including Soldier Training Publications (STPs), Field Manuals (FMs) and the Guided Experiential Learning (GEL) course lesson plan for MDMP.

The primary audience for the C3MDMP courseware is active Army junior officers enrolled in the Captain’s Career Course (CCC). The simulation is intended for use as training for CCC students who are expecting assignments involving work with Command and/or Battle Staff. The courseware uses real world scenarios to aid student transfer of learning from the MDMP lessons to the actual environments where officers are expected to carry the process.

MDMP is the Army’s primary method for planning operations, problem solving, and decision-making. The military decision making process is a planning model that establishes procedures for analyzing a mission, developing, analyzing, and comparing courses of action against criteria of success and each other, selecting the optimum course of action, and producing a plan or order. The MDMP applies across the spectrum of conflict and range of military operations.

The contractor will deliver two equivalent versions of the simulation courseware: (1) The contractor will develop one version of courseware media to be played as a standalone version on CD; and (2) The contractor will develop one version of courseware media for delivery over the Internet.
Internet that uses the Microsoft Internet Explorer browser, version 7.x or higher. The CD and Internet versions of the courseware will be equivalent in course structure and simulated practice.
SECTION 2 - COURSE DESIGN STRATEGY

2.1 TITLE AND DESCRIPTION

Course Title: C3MDMP Battle Staff Simulation

The purpose of the C3MDMP Battle Staff Simulation courseware is to train Soldiers in a Battle Staff role that will allow them to engage in simulated scenarios intended to evaluate mastery of MDMP knowledge and skills required as a Battle Staff Officer. The lesson material is extremely complex and involves more frequent use of varied practice using multiple operations orders (OPORDs) and scenarios. All OPORDs used in demonstrations, practice and assessment are authentic OPORDs used in Army operations this is to promote the transfer of learning. The C3MDMP courseware is classified as Level 3 interactive multimedia (IMI).

TRADOC 350-70-2 defines Level 3 IMI as involving “… the recall of more complex information … and allows the user an increased level of control over the lesson scenario.” All subtasks are analyzed and presented with full, on-screen interaction and feedback generated through an artificial intelligence tutor that provides individualized attention. This level usually involves application of information learned to solving a problem or producing results. Complicated operation and maintenance procedures are normally practiced with Level 3, and involve all of the elements of Levels 1 and 2 plus a high degree of interactivity, extensive branching (three or more levels).

The following summarizes the lesson organization employed in the design and development of the Staff Simulation courseware. The Battle Staff role assigned to the student during practice exercises is the S3.

When the student enters the C3MDMP Battle Staff Simulation courseware, they will be provided with an introduction of the course as follows:

2.2 COURSE INTRODUCTION

2.2.1 Terminal Learning Objective

We will provide the following TLO in words that all students understand:

Given an operations order and initial planning guidance from higher headquarters, you will conduct all the necessary stages of MDMP to produce three Courses of Action (COA) within one-third of the mission start time according to specifications in the higher headquarters OPORD and the commander’s intent in a job environment, such as a forward operating base in the field within a specified time frame.

2.2.2 Reasons for the Course

We will provide the following reason for the course in language all students will understand:

As an Army leader you will be faced with a variety of problems and your knowledge of MDMP can help you in making difficult decisions and solving challenging situations. The MDMP allows for logical decisions to be made based on analyses of facts and evaluation of situations even in stressful or time-constrained environments.
While an understanding of the MDMP provides the cornerstone of success for any operation, failure to apply MDMP can result in loss of life or failure of the mission. We will provide a video vignette demonstrating the failure of Battle Staff to properly implement the MDMP for a critical mission and the results of not applying the MDMP.

As an officer with some leadership experience, you can appreciate how important planning is to executing successful missions. You may already have some experience with the notion of MDMP. In this course, you will learn the Army’s formal method of problem solving and decision-making at the Battle Staff level.

### 2.2.3 Lesson Outline

We will provide students with the following outline of the course:

The course is divided into ten lessons and one whole-task practice assessment:

- Lesson 1: Introduction to MDMP
- Lesson 2: Receipt of Mission
- Lesson 3: Mission Analysis
- Lesson 4: Course of Action Development
- Lesson 5: Course of Action Analysis
- Lesson 6: Course of Action Comparison
- Lesson 7: Course of Action Approval
- Lesson 8: MDMP Review
- Lesson 9: Whole-Task Practice 1
- Lesson 10: Whole-Task Practice 2
- Assessment: Final Whole-Task Practice

MDMP is sequentially structured (refer to 2.2.4 – MDMP Graphic Model) and performed in the exact order as in the graphic model. Students will gain knowledge of the various concepts, processes, steps, inputs and outputs of the entire MDMP. Beginning with Receipt of Mission followed by Mission Analysis, COA Development, COA Analysis, COA Comparison, COA Approval and finally Orders Production.

Early in the course (refer to 2.2.5 – Course Schematic) students will learn how to read an operational order, create an operational timeline for a mission, identify and confirm areas of interest to the mission on maps, use a decision matrix and determine initial intelligence, surveillance, and reconnaissance for planning. Later, students will learn how to bring these factors together in developing different courses of action and how to decide which course of action is the best option to bring to the Commander’s attention.
2.2.4 MDMP Graphic Mode

Step 1: Receipt of Mission

1. Receive Mission and Review Mission Parameters
2. Create Initial Operational Timeline

Step 2: Mission Analysis

Step 3: COA Development

Step 4: COA Analysis

Step 5: COA Comparison

Step 6: COA Approval

Step 7: Orders Production
2.2.5 Course Schematic

LESSON 1: INTRO TO MDMP

LESSON 2: RECEIPT OF MISSION

LESSON 3: MISSION ANALYSIS

LESSON 4: COA DEVELOPMENT

LESSON 5: COA ANALYSIS

LESSON 6: COA COMPARISON

LESSON 7: COA APPROVAL

LESSON 8: MDMP REVIEW

LESSON 9: WHOLE-TASK PRACTICE 1

LESSON 10: WHOLE-TASK PRACTICE 2

ASSESSMENT: MDMP

2.3 CURRICULUM REFERENCES

Table 2-1 lists the reference materials, which may be used in the design and development of the C3MDMP IMI courseware.
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</tr>
<tr>
<td>Practice Document</td>
<td>Annex M, Rear Area and Base Security (OPORD 7834-05)</td>
</tr>
<tr>
<td>Practice Document</td>
<td>Annex O, Army Airspace Command and Control (OPORD 7834-05)</td>
</tr>
<tr>
<td>Practice Document</td>
<td>Annex P, Information Operations (OPORD 7834-05)</td>
</tr>
<tr>
<td>Practice Document</td>
<td>Annex Q, Civil Military Operations (OPORD 7834-05)</td>
</tr>
<tr>
<td>Practice Document</td>
<td>Maps: 1:50,000. Series CDRG: IRAQ50K</td>
</tr>
<tr>
<td>Practice Document</td>
<td>Maps: Series CDRG Item IZ100K</td>
</tr>
<tr>
<td>Practice Document</td>
<td>Maps: Series TCD Item DTED133, Item DTED134</td>
</tr>
</tbody>
</table>
SECTION 3 - LESSON DESIGN STRATEGY

3.1 DESCRIPTION OF THE LESSONS

All lessons in the C3MDMP courseware will share the same general training structure. Each lesson will contain the following components in this sequence: All training will replicate the authentic job environment.

Learning Objectives: Each lesson starts by stating the learning objective of the lesson, which tells students what they will be able to do, under what conditions they will be able to do it, and to what standard when they finish the lesson.

Reasons: Next students are given a reason for the lesson that explains to them why learning this lesson/procedure is important to them and what risks may be avoided if they do learn it.

Overview: An overview with a graphic aid of the course design will be shown to let students see where they are in the course.

Activate Prior Knowledge: Students’ prior knowledge is activated by relating the content of MDMP to what they already know, pointing out how they may have used elements of MDMP in some of their own decision making or planning and what is new or different about the MDMP then what they already know.

Concepts and Processes: Students are next taught specific prerequisite knowledge - the concepts and processes that will enable them to understand and perform the necessary procedures during practices.

Demonstration of Procedure: A demonstration is shown using a model similar to or respected by the students. Job aids provide summaries of action and decision steps.

Practice the Procedure: Students practice problem solving using the learned procedures and the job aids. Simpler problems are given first and then more complex and varied problems later. Guidance is faded out as the student becomes more familiar with the procedure.

Review Practice and Feedback: Student practice is checked against a list of action and decision steps from the cognitive task analysis. Students receive feedback on their practice that focuses first on what they did correctly and then if they need to adjust their procedure in order to meet their learning goals. Feedback on mistakes is focused on correcting the procedure used, not on the ability of the student.

3.2 LESSON INTRODUCTION

As a sample lesson, the following is the design for Lesson 2: Receipt of Mission.

3.2.1 Learning Objectives

Lesson Title: Step 2: Receipt of Mission.

Students will be provided the following TLO and enabling ELOs in language they can understand.
TLO: Complete Step 1 of MDMP—Receipt of Mission.

Given an Operations Order (OPORD), initial planning guidance, appropriate field manuals (FM 5-0), job aids and appropriate supplies and/or office productivity software, you will be able to determine which sections of the base order and which annexes are pertinent to your role on the Battle Staff; identify the objectives and priorities of a specific mission and produce an initial operational timeline that allows sufficient time for planning, preparing, and executing all components of the mission in a setting, such as a forward operating base. All planning events in the operational timeline must be completed within the first 1/3 of time available between receipt of mission and start date/time of operation.

ELO 1: Determine which sections of the base order and which annexes are pertinent to your role as S3 the Battle Staff.

Upon completion of this lesson and given a MDMP graphic organizer, MDMP job aids, FM 5-0, a practice OPORD, and a computer with access to the C3MDMP Battle Staff Simulation, you will be able to correctly match at least 70% of annexes with the types of Battle Staff officers who must read them during MDMP.

ELO 2: Produce an operational timeline.

Given an MDMP graphic organizer, MDMP job aids, FM 5-0, a practice OPORD, and a computer with access to the C3MDMP Battle Staff Simulation, you will be able to create an operational timeline. The timeline must have two columns and include the planning and observational events stated in the OPORD. All planning events in the operational timeline must be completed within the first 1/3 of time available between receipt of mission and start date/time of operation.

3.2.2 Reasons for the Lesson (to be provided to students)

You already know that an operations order can be an extremely large and complicated document. Understanding what parts of an OPORD to read that are associated with your role in Battle Staff decreases the overall production time for this step, and avoids duplication of effort within the Battle Staff and wasted time that may effect completion of the MDMP.

Creating timelines aids developing a plan as soon as possible and ensures the staff maximizes the time that subordinate units have to prepare for the operation. Setting the timeline helps the staff in making a sound plan within the time frame available and identifies when a shortened MDMP may be necessary.

If the staff is not aware of timelines for mission planning, the failure of time management may cause the staff to exceed the time available for planning. This will impede the Commander’s ability to make optimal decisions for executing a mission and may cause the staff to omit or poorly perform critical steps in the planning process.

A video vignette is played showing Battle Staff’s failure to following protocol for Receipt of Mission and the consequences.
3.2.3 Lesson Overview

The MDMP Design Course Outline Model is displayed for students and Step 2: Receipt of Mission is highlighted as a brief explanation is given for that step. Explain what students can expect during demonstration, practice, feedback, and review.

Figure 1: Course Outline Model

Students will use the MDMP graphic organizer, MDMP job aids, FM 5-0, a practice OPORD, and a computer with access to the C3MDMP Battle Staff Simulation throughout this lesson.

Their prior knowledge is then activated by asking students to remember a time when they may have planned an event or had to solve a problem. They are then given several common real examples of event planning and problem solving. These experiences are used to relate back to Receipt of Mission. Students are then taught the concepts necessary for this lesson. Next, students are instructed to follow along in their job aids for Receipt of Mission as video demonstrations of each procedure is shown. After each demonstration, students will be asked to practice the procedure and be given feedback. When students have successfully completed both partial-task practice procedures with feedback, they will be given a whole-task practice with feedback. All instruction and practice should be able to be completed within 60 minutes.
When students can successfully complete the whole-task practice to the specified set standards they will move on to the next lesson of MDMP – Mission Analysis.

### 3.2.4 Activate Background Knowledge

Students will be asked to remember a time when they have encountered or utilized some kind of problem solving or planning process. Some common real-life examples are given such as planning a party or moving to a new place by a particular date and related back to how these experiences are similar to the Receipt of Mission. This will help to connect students’ previous encounters with planning and problem solving to the current lesson. Next it is explain how this step in MDMP is different then moving or planning a party- there are multiple courses of action, evaluation of best courses of action, approval from a Commander to proceed, and working with Battle Staff.

### 3.2.5 Concepts and Processes

**Concepts**: Basic concepts of MDMP are taught prior to MDMP Receipt of Mission lesson. Where practical, the explanation of concepts will be included in the demonstration of the procedure. Examples from actual Battle Staff job settings will be given.

Key concepts and terminology specific to Receipt of Mission will be shown on the computer screen. Each new term or concept is paired with an example; for instance, the definition for the Operational Timeline will be shown and explained along with a graphic of an actual operational timeline (see Appendix E) or for Backwards Planning a definition and a written example are shown. Non-examples are given; for instance, loosely planning what to do with a day off if you had no schedule you had to keep and no place you had to be. After a student is finished with the concepts section of this lesson they will then practice identifying examples and non-examples of key terms by matching terms to the correct examples and leaving non-examples unmatched. If a student does not get at least 70% in the practice exercise, then program will ask the student to review the key concepts again.

1. **Operational Timeline**: a representation of the times and dates that events occur between the receipt of the mission and its expected completion. Stages of MDMP are indicated on it, as well as the start date and time of the operation and any other critical events that are identified during the planning process.

2. **Backwards Planning**: involves starting with the envisioned end state and working backward in time toward the present.

   **Examples**: Begin allocating time for the MDMP Mission Analysis Brief by working backwards in time from the scheduled time at which the brief will be delivered to the commanding officer. Determine the amount of time necessary to practice the briefing, then determine the amount of time necessary to complete the briefing slides. Next, determine the amount of time necessary to produce the information that must be listed on the slides, and so on, until all tasks are accounted for on the timeline.

3. **S-1**: battalion or brigade personnel staff officer

4. **S-2**: battalion or brigade intelligence staff officer
5. **S-3**: battalion or brigade operations staff officer
6. **S-4**: battalion or brigade logistics staff officer
7. **S-5**: battalion or brigade civil-military operations staff officer
8. **S-6**: battalion or brigade communications staff officer
9. **S-7**: battalion or brigade information operations staff officer

10. **1/3-2/3 rule**: Determine the amount of time between mission receipt and the estimated mission execution. Divide this time by three to determine the amount of time that should be used for planning. This allows subordinate units 2/3 of the available time to plan and rehearse the mission.

**Processes:**

**Receipt of Mission:** The MDMP consists of 7 steps (Receipt of Mission, Mission Analysis, COA Development, COA Analysis, COA Comparison, COA Approval, and Orders Production). Full descriptions of all MDMP steps are provided in FM 5-0, pp. 3-11 – 3-56. The figures in FM 5-0 are helpful for understanding progressions within and between phases and specific products generated during each phase: 3-3, 3-11, 3-12, 3-16, 3-29, 3-43, and 3-54.

This process knowledge is necessary for all seven steps of MDMP.

The MDMP Graphic Model is displayed and the first step of MDMP Receipt of Mission is highlighted as inputs and outputs for Receipt of Mission are described (See Appendix D for inputs and outputs), as well as the conditions under which the MDMP is modified or shortened. Next it is explained that there are two phases to Step 1 of MDMP: Phase 1: Receive Mission and Review Mission Parameters and Phase 2: Create Initial Operational Time Line. The necessary steps to complete each phase is described (for example screen see Appendix B). It is explained that each phase must be finished in order for the next step to begin. A review of major concepts and is given before the student practices identifying key inputs and outputs of the Receipt of Mission. Students are required to complete the blanks of the visual graphic of the practical exercise of Receipt of Mission and steps within each phase before continuing.

**3.2.6 Demonstration**

Procedure 1: A video demonstration based on cognitive task analysis (see Appendix F) of the first procedure, Review Mission Parameters, is shown. Each section of the OPORD is shown paired with the appropriate Battle Staff Officer. Students then practice the Review Mission Parameters procedure and receive feedback.
Procedure 2: Students are asked to follow along as a video demonstration of the second procedure, Creating an Operational Timeline, is shown. Students then practice the procedure using their job aid and receive feedback.

Figure 3: Procedure 2 Demo
3.2.7 Practice, Feedback and Assessment

Before each practice procedure, students will be asked to access their MDMP job aid and review the procedural steps. They will then be given an OPORD. All OPORDs used in demonstrations, practice and assessment are authentic OPORDs used in Army operations. Using actual OPORDs is important for the transfer of learning. Following each practice students will be provided with feedback that presents information on the results of their practice and feedback on incorrect use of strategies.

Procedure 1 - Part-practice: Students will practice categorizing base order and annexes in the OPORD as an S3 Staff Officer. Students will be given an OPORD and list of Battle Staff and asked to match the sections of the OPORD to the S3 position. Feedback will be given in the form of green highlight confirming correct answers and a popup cue for wrong answers with suggestions to look back on their job aid for the correct step in the procedure. This is done until all the appropriate annexes are matched to the S3.

Procedure 2: Part-practice: Students will practice creating an initial operational timeline:
Students are prompted to review the definitions of: 1.) Operational Timeline, 2.) Backwards Planning, and 3.) 1/3 – 2/3 Rule in the electronic dictionary provided in the C3MDMP for this module.

After review students are then prompted to begin using the interactive timeline. A two-column matrix is shown with the left column as time and right column as event. The matrix is partially filled out. There is a list of other times and events on the bottom of the screen – some of them are relevant and some of them are not relevant to the mission. Students are prompted to place the correct times and events in the appropriate positions along the timeline. Feedback is given in the form of green highlighted text for correct placement and hints for wrong answers with suggestions to look back on their job aid for assistance. This is done until the student puts all elements of the timeline in the correct order.

Full-Task Practice: When students have successfully completed both partial task practice procedures, they will then be given two different, increasingly difficult and complex whole task practices. The student is asked to divide up the OPORD according to their Battle Staff role as S3. The first whole task practice will have: 1.) terrain features that are easy to navigate with most Army vehicles and equipment 2.) access to all necessary resources for the mission 3.) fair weather conditions 4.) sound intelligence for the region.. For the second whole task practice, the student again is asked to divide up the OPORD according to their Battle Staff role as S3, and will then be given Initial Planning Guidance (IPG) that contains some changes in constraints and objectives to the OPORD, for example: 1.) terrain features that are problematic for some Army vehicles to navigate. 2.) limited resources 3.) possible rain conditions 4.) Intel that indicates several bombings in the area. The student is then given an interactive timeline that is blank except for empty slots where they can fill in appropriate times and events. Feedback for the first two full-task practices will be given in the form of review specific to each stage of practice. Review of the full-task practice is given to the student showing what was done correctly and then the areas where the student needs to focus and adjust their actions to meet the standards set.

Assessment: Students will be given a whole task of similar difficulty to the last whole task practice. That is the student will be assigned the position of S3 and given an authentic OPORD and asked to select the appropriate annexes for their Staff role. They will then be
given the IPG with complex objectives and constraints where they will have to identify pertinent operation objectives and prioritize within the time limits set by the mission OPORD and/or IPG, before completing a timeline based on these objectives and times.

For the assessed practice, feedback will be given in the form of a grade with a review of what the student got correct and then the areas where the student needs to focus and adjust their actions to meet the standards set. If at least 70% of annexes were not matched correctly to the S3 or 70% of the planning events within the timeline are not matched correctly and within the first 1/3 of time available between receipt of mission and start date/time of operation, then students have the opportunity to review feedback and lesson material and take the test again with a different OPORD that is at the same level of difficulty as the original whole task assessment. When the individual can successfully complete the assessed whole task to the specified set standards, they will be allowed to move on to the next step of MDMP, Mission Analysis.

Figure 4: Timeline Practice
SECTION 4 – DESIGN FEATURES AND CONTROLS

4.1 Screen Design
The interface is used to support the courseware mechanisms during lessons, demonstrations, and practices and includes the lesson space and main menus with Battle Staff role assignment, interactive tools, resource access, specific lesson materials, help and exit. Design standards are established and will be maintained throughout the Staff Simulation courseware to ensure consistency and enhance the presentation of instruction.

4.1.1 Standard Text Conventions
Standard text conventions for menus, information (instructional text), headings, direction, and hypertext (hints or cues) used in the Staff Simulation courseware are shown in Table 4.1. These text conventions will be consistent throughout the courseware. However, in some instances it may be necessary to make adjustments when the standard color or font size would conflict with a particular graphic.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MENUS</th>
<th>LESSON CONTENT</th>
<th>LESSON TITLE</th>
<th>HEADINGS</th>
<th>HYPER TEXT WORDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Font</td>
<td>Arial</td>
<td>Arial</td>
<td>Arial</td>
<td>Arial</td>
<td>Arial</td>
</tr>
<tr>
<td>Size</td>
<td>8 pt Caps</td>
<td>12 pt Initial Caps</td>
<td>16 pt Initial Caps</td>
<td>14 pt Initial Caps</td>
<td>12 pt Initial Caps</td>
</tr>
<tr>
<td>Text Color</td>
<td>Text will appear in an overlay box being placed close to what it is describing. Menu items will be White when inactive and Yellow when active. Depending on the location in the simulation the overlay boxes will be: Black on White or White on Black and for CC Black on Yellow.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2 NAVIGATION AND CONTROLS
Users have the ability to control their movement and actions within the courseware via menu driven actions, specific links and buttons, and through input devices such as a mouse or keyboard.
4.2.1 Main Menu

Allows for navigation through the lessons of the course. When a student passes one lesson in MDMP they will have access to materials and resources for the next lesson and not before. These additional resources and materials will show up in the menu space. A menu will be used to select basic program operations and options such as opening, program settings, previous lessons and materials help menu, resources and tools and saving output materials or places in the simulation. Menus will use short descriptive text and bullets to facilitate student selections. The menu system is controlled by the Learning Management System (LMS).

4.2.2 Links/Buttons

The courseware interface includes icon elements and hyperlinks, which allow the students to access specific tools and information and perform various functions that allow them to control the pacing of the lesson and the demonstration as well as interact with elements within each lesson. Lesson specific or context dependant buttons appear within frames to provide additional information beyond the actual training content or provide the student with progress tracing and replay abilities, when applicable. Table 4-2 describes the links/buttons used in the Staff Simulation courseware.
<table>
<thead>
<tr>
<th>LINK/ICON/BUTTON</th>
<th>DESCRIPTION</th>
<th>ILLUSTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed Caption Button</td>
<td>Popup yellow text box will appear on the screen with written explanations of any narrations and or audio events.</td>
<td><img src="image" alt="Closed Caption" /></td>
</tr>
<tr>
<td>Resource Button</td>
<td>Opens a popup resource area that contains various tools that can be used in multiple lessons such as the MDMP Dictionary, the electronic highlighter, notepad, satellite imaging capabilities, necessary FMs and references. Resources will accumulate as required by various lessons.</td>
<td><img src="image" alt="Resources" /></td>
</tr>
<tr>
<td>Lesson Button</td>
<td>Opens a separate window providing a list of current task and lesson specific information including Job Aids with step-by-step instructions, OPORDs, IPGs, Commander’s guidance, intelligence reports, staff estimate updates, maps and overlays, and lesson specific tools.</td>
<td><img src="image" alt="Lessons" /></td>
</tr>
<tr>
<td>Trace Step Button</td>
<td>Activates a pop-up chart that displays the lessons and practices that you have already finished in color and displays lessons and practices that you have not completed yet in black and white. The chart also contains two time displays - one showing how long the student took to complete various parts of a lesson and the other showing the standard estimated time to complete the each task.</td>
<td><img src="image" alt="Trace Step" /></td>
</tr>
<tr>
<td>Review Practice Button</td>
<td>Displays the Practice Report.</td>
<td><img src="image" alt="Review Practice" /></td>
</tr>
<tr>
<td>LINK/ICON/BUTTON</td>
<td>DESCRIPTION</td>
<td>ILLUSTRATION</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| Rewind, Pause, Replay         | Rewinds, Pauses and Replays current animation or video.| ![Rewind, Pause, Replay](image)
| Control Buttons               |                                                       |              |
| Page Turner Button            | Advances or returns lesson screens.                    | ![Page Turner](image)
|                               | Yellow arrow indicates action.                         |              |
| Home                          | Takes you back to the main page.                       | ![Home](image) |
| Help                          | Takes you to the help page.                            | ![Help](image) |
| Exit Button                   | Exits wherever you are in the simulation and asks if you| ![Exit](image)  
|                               | would like to save your program.                       |              |

### 4.2.3 Input Devices

Both the mouse and the keyboard will be the primary input device for navigating through the courseware. The keyboard will also be used for student registration (log-in), entering information in certain exercises or questions, and specific responses during a tutorial that requires alphanumeric input.

### 4.3 VISUALS AND AUDIO

#### 4.3.1 Graphics, Animations and Video

The Staff Simulation courseware is a simulation that makes heavy use of video and animation when demonstrating tasks where tangible examples are necessary; however, other media are used where appropriate. Various media will be dictated by the procedure or task at hand. Still graphics, photographs and video may be used whenever “real life” displays are appropriate to aid learning or demonstrate a particular process. Some segments of lessons use animated highlights to point out to students particularly important concepts, words or sequencing of tasks, steps or lessons while others use animated text that pop up next to graphics, photos, or within video to identify what the student is viewing (see Appendix C).

#### 4.3.1.1 Image Source

Images used in the C3MDMP IMI courseware will come from multiple sources. The majority will be specifically designed and will be computer-generated. Some images may come from a commercial image library. All images will be compiled and developed for export to the Internet. Copyrights will be obtained where required. Written documentation with copyright permissions and source code will be provided.
4.3.2 Audio

Audio, in the form of narration, Battle Staff role interaction or other sound effects may be used as appropriate in training, demonstrations, and simulations. Audio will be recorded in accordance with TRADOC PAM 350-70-2 audio guidelines and stored in digital format.

4.3.2.1 Narration

The lesson introductions, lessons, demonstration, practices and feedback will include various forms of narration from characters within the Staff Simulation such as the Commander and various members of Battle Staff. Narration timing is synchronized with graphics appearance. All narration will use real human voice with a standard accent and not computer generated.
SECTION 5 - Characteristics of the Courseware Simulation

5.1 SIMULATION IN TRAINING
The C3MDMP Staff Simulation courseware creates a MDMP training simulation with practice that involves real-world scenarios. The student is engaged in simulations that reflect the authentic work situation.

5.2 FEATURES OF THE COURSEWARE

5.2.1 Flexibility
There is some flexibility and control built into the courseware. The simulation can be set to differing modes of engagement (training or review of materials). In this way, the courseware may be used as a resource for a MDMP refresher or on an independent learning basis. In training mode the student must complete the lessons in order and may not skip ahead; however, they may review and practice any current or earlier lesson. This is to ensure that students receive full training and practice in each step of the MDMP. The review mode will only allow students access to areas they are currently using or have completed. Students completing all the lessons have full access to the lessons, demonstrations and practices for review.

5.2.2 Pace
The student has the ability to stop and start videos and animations, and access all prior and current learning materials. Each lesson, practice and assessment is designed to fill an estimated period of time. Students can check the time it took for them to complete each part of a lesson, practice and/or assessment by clicking the “trace steps button.” The trace steps button activates a pop-up chart that displays the lessons and practices that the student has already finished in color and displays lessons and practices that they have not yet completed in black and white. The chart also contains two time displays - one showing how long the student took to complete various parts of a lesson and the other showing the standard time it should take them to complete each task. Students do not have the ability to control lesson sequencing or video and animation pacing. For example they cannot fast-forward video and animation demonstration and they must perform the lesson activities in the sequence they are presented and may not skip ahead or skip lessons. Each lesson includes a recommended time in which the lesson should be able to be completed. Each assessment should be completed within the specified time limit.

5.2.3 Portability
Portability of this simulation is dependent upon the hardware platform and configuration of the system being used. The minimum hardware platform is specified by the following:

Hardware:
- CPU - Pentium 4 or equivalent
- 2.4 GHz or higher speed
- Random Access Memory (RAM) – 1.5 GB required
- Hard Drive – 2 GB required
• CD Reader
• Graphics accelerator card with 128MB of available video memory required
• Sound Blaster compatible sound card
• Network Card and/or modem (56k)
• Screen resolution 1024 x 768

Software:
• The most current version of software shall be used IAW the ATSC web site, http://www.atsc.army.mil/itsd/imi/browsers.asp, dated 7/20/08.
• Microsoft Windows XP and Microsoft Internet Explorer 7.x is compatible with usage.

NOTE: Graphics developed for the C3MDMP Staff Simulation courseware will be created in 24-bit color format using different color palettes. In order to minimize the computer processing time, and palette shifts that may occur when the authoring system displays the graphics, it is important that each system running the C3MDMP STAFF SIMULATION courseware be configured to play 24-bit color depth.
Lessons 3–6 would have the same lesson flow.
APPENDIX B – Steps to Create Operational Timeline

<table>
<thead>
<tr>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Create operational timeline document</td>
</tr>
<tr>
<td>2. Enter event times and dates</td>
</tr>
<tr>
<td>3. Enter briefing times dates</td>
</tr>
<tr>
<td>4. Enter times/dates for briefing rehearsals</td>
</tr>
<tr>
<td>5. Enter times/dates for creating briefing slides</td>
</tr>
<tr>
<td>6. Check the operational timeline</td>
</tr>
</tbody>
</table>
APPENDIX C – Demo 1: Review Mission Parameters
APPENDIX D – Receipt of Mission Inputs & Outputs

**MDMP Process Step 1**

**Inputs**
- Mission from higher
- OPORD form higher

**Outputs**
- Cdr’s initial guidance
- Initial Operational Timeline
- Initial WARNO
- Higher Plan Order
- Higher IPB
- Updated Staff Estimates
APPENDIX E – Definition Sample: Operational Timeline

**Operational Timeline**

**Definition:** A representation of the times and dates that events occur between the receipt of the mission and its expected completion. Stages of MDMP are indicated on it, as well as the start date and time of the operation and any other critical events that are identified during the planning process.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0100, 3 April 2003</td>
<td>Mission Received</td>
</tr>
<tr>
<td>0115, 3 April 2003</td>
<td>Conduct Mission Analysis</td>
</tr>
<tr>
<td>0515, 3 April 2003</td>
<td>Generate Mission Analysis Briefing Slides</td>
</tr>
<tr>
<td>0600, 3 April 2003</td>
<td>Rehearse Mission Analysis Brief</td>
</tr>
<tr>
<td>0630, 3 April 2003</td>
<td>Deliver Mission Analysis Brief</td>
</tr>
<tr>
<td>0730, 3 April 2003</td>
<td>Generate COA Options</td>
</tr>
<tr>
<td>0830, 5 April 2003</td>
<td>Deliver COA Brief</td>
</tr>
<tr>
<td>0730, 6 April 2003</td>
<td>Conduct COA Analysis</td>
</tr>
</tbody>
</table>
APPENDIX F – Cognitive Task Analysis for Lesson 2: Receive Mission and Create Operational Timeline

Procedure and Steps

#1: Receive Mission and Review Mission Parameters

<table>
<thead>
<tr>
<th>Steps</th>
<th>Action or Decision (with criteria for selecting decision alternatives)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All members of battle staff locate and read the Base Order and Annexes C and E of the OPORD. S1 locates and reads Annex I, S2 locates and reads Annexes B, L and P, S3 locates and reads Annexes A, G, L, P, and R, S4 locates and reads Annex I, S7 locates and reads Annex F, S9 locates and reads Annex Q, and FSO locates and reads Annex D. (Note: OPORDs may exclude some Annexes if higher deems them unnecessary for mission.)</td>
</tr>
<tr>
<td>2</td>
<td>Affix all overlays from Annexes or otherwise accompanying OPORD to map</td>
</tr>
<tr>
<td>3</td>
<td>XO must contact commander to receive initial planning guidance (IPG)</td>
</tr>
<tr>
<td>4</td>
<td>IF IPG available as document or verbal briefing, THEN identify and list in notes any constraints and objectives for mission beyond those specified in order from higher command, number and characteristics of COAs requested by commander, MDMP time constraints, and additional priorities. IF IPG is not available, THEN request verbal or written IPG from higher command and repeat Step 4 upon receipt of IPG. (Note: Commander may not provide all of these in IPG)</td>
</tr>
</tbody>
</table>
#2: Create Initial Operational Timeline

Steps  Action or Decision (with criteria for selecting decision alternatives)

1  Create timeline as two-column matrix. Label left column as Time and right column as Event.

2  Locate predetermined event times/dates in base order and/or notes from IPG. Record events on timeline in sequence. Begin by entering the first time/date in column 1 of the first row in the matrix and the event in column 2 of the first row of the matrix. Enter the second time/date in column 1 of the second row and the second event in column 2 of the second row, and so on.

3  If the IPG specifies times/dates for Mission Analysis briefing, COA Briefing, or Decision Briefing, THEN enter the times/dates on the matrix. IF IPG does not specify times/dates for Mission Analysis briefing, COA Briefing, or Decision Briefing THEN XO requests these from commander and records them on timeline.

4  Record briefing rehearsals for time periods equal to the duration of each briefing prior to each respective briefing on timeline. Include additional time between rehearsal and briefing for corrections and revisions for which a need was discovered during the rehearsal.

5  Allot time on timeline for creation of briefing slides immediately prior to rehearsal time. XO estimates time necessary based on past experience and knowledge of skill and experience levels of battle staff members.