Training the Crisis Action Planning Process Using the DSSCO Toolset

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Abstract

The primary purpose of ONR-funded project, Decision Support System for Coalition Operations (DSSCO), was to develop software tools to assist CINC-level crisis action planners in formulating effective plans for coalition operations involving military and civilian organizations. The DSSCO tools consist of a Planning Tool, a Task Visualization Module, and a Resource Database. The first two components incorporate detailed task protocols to guide mission planning and execution, while the Resource Database contains socio-cultural information about coalition participants that can assist planners in making appropriate task assignments. Together, these three DSSCO tools can facilitate developing crisis action plans for coalition operations. However, effective training in the use of the tools is a prerequisite for their most effective use. Because the DSSCO toolset is based on traditional Joint Operation Planning and Execution System (JOPES) Crisis Action Planning (CAP) doctrine, learning to use the toolset also provides instruction in the CAP process. Thus, the training program discussed here encompasses the concepts and procedures of crisis action planning as well as the specific components of the DSSCO toolset.

1. Introduction

Crisis action planning (CAP) is a complex information processing activity involving the collection, categorization, integration, and organization of many items of information by multiple planning personnel. This undertaking is complicated by the fact that planners are often geographically dispersed and work at different times. Real time (synchronous) collaboration among planners is therefore difficult, if not impossible. Consequently, there is a need to coordinate their actions in order to increase the efficiency and effectiveness of their planning efforts. The DSSCO tools were designed based on the CAP process with these operational requirements in mind.

Staff within the Operation Planning Team of USPACOM developed an Action Officer Course of Instructions to train the CAP process to military personnel. This training course has been used successfully since the mid 1990's. A major component of the course is a series of briefs that explain the phases of CAP. The DSSCO toolset was originally designed to operate in either a "mission" mode in which it operates as a real-time player in a distributed planning process, or in an interactive demonstration mode where its features can be used and demonstrated in a pre-planned scenario. The DSSCO tools were augmented to include a "Tutorial" mode in which the content of the training briefs could be presented and demonstrated within the interactive scenario.

2. Method and Approach

Based on consultation with experienced CAP personnel, a comprehensive description of the CAP process was formulated. This description served as the basis for development of a software toolset to facilitate CAP. This toolset consists of three primary components: a Planning Tool, a Task Visualization Module, and a Resource Database

Decision Support in DSSCO

The development of any decision support system is four-stage process in which critical information is first identified, then collected, then organized, and finally presented to the decision-maker. The DSSCO toolset provides three types of modules to perform these functions.

DSSCO Planning Tools

The DSSCO planning tools provide support for monitoring the development of a mission plan and tracking the progress that is being made at each stage of the planning process. The Planning Tool graphically depicts a crisis action planning and execution process for coalition operations. This process is based on the US Joint Operation Planning and Execution System (JOPES) Crisis Action Planning (CAP) processes.

The status of the components of crisis action planning is indicated by a color and shape-coding scheme. Planners can track the status of crisis action planning at all levels of the Planning Tool, as displayed in Figure 1. Access this legend by clicking on the 'Color Key' button at the lower left corner of the DSSCO Planning Tool screen.

Figure 1: Color key for DSSCO status indicators.

The Planning Tool guides planners through the crisis action planning process, providing procedures and assistance for coalition partners to plan and execute combined military operations in crisis situations. There are three levels in the Planning Tool:

Level 1: A flow diagram of the crisis action planning and execution process. This diagram is animated to show the status of specific objectives in each planning phase.

Level 2: Shows steps that planners can take to meet each of the level 1 objectives.

Level 3: Contains workspaces where planners can view and enter information used to develop a mission plan.

The Planning Tool is the "home base" for the DSSCO toolset. Other DSSCO tools are accessed through the Planning Tool. At present, the Planning Tool is interactive for activities of OPT (CINC-level) planners. However, crisis action planning extends from the national strategic to the tactical levels of military command. Points of interface between the OPT and both national strategic (NCA) and operational (CCTF) levels are shown; however, these are currently inactive and are for information only.

Level 1 of the DSSCO Planning Tool consists of a flow diagram of the entire crisis action planning and execution process, as depicted in Figure 2. This diagram enables planners to show the progress of a coalition planning effort. In terms of the CINC-level planning activities, which occupy the upper two-thirds of the screen, the various components of a crisis action plan are color-coded according to whether they have yet to be started, are underway or have been completed. Planners can therefore determine the overall progress of a mission plan by inspecting this diagram and taking note of the color-coding of particular activities.

The shaded box in the lower left of Figure 2 shows Information Blocks, which contain current summaries of information that can be useful to planners as they work through the planning process. By clicking on its 'Links' button, this box will display Links to additional tools in the DSSCO toolset, which may be needed during mission planning.

The lowermost part Figure 2 (shaded rectangle labeled CCTF) shows the crisis action planning event sequence for the CCTF-level planners. It is inactive in the current implementation of the DSSCO Planning Tool. However, it has been included so that CINC-level planners can understand how their efforts relate to CCTF planning activities.
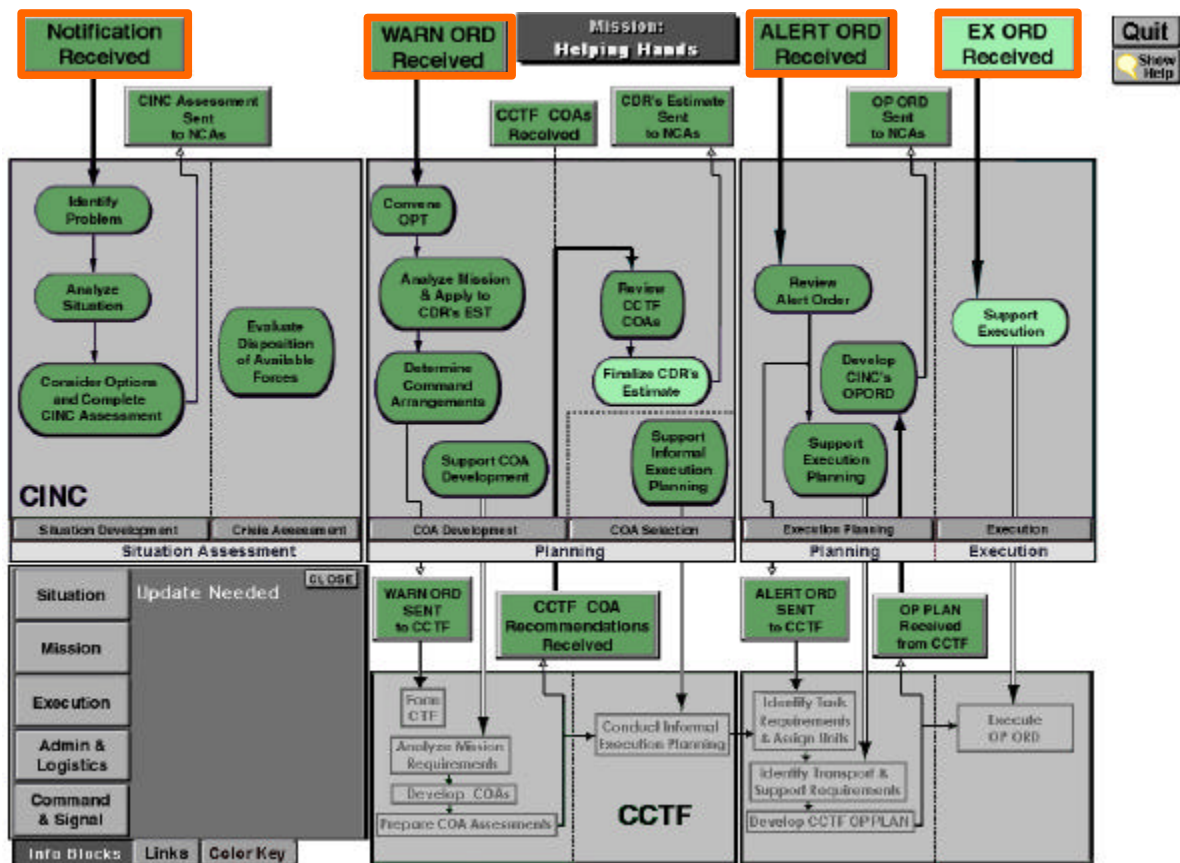

Figure 2: The outermost level of the DSSCO Planning tool showing triggers and products of each planning stage and the status of planning objectives.

Trigger: An event that initiates the next objective or phase of crisis action planning for the CINC-level planners. Triggers may be world events or they may be standardized message documents that the NCA sends to CINC-level planners during the planning process. Triggers are shown in the top row of Figure 3.

Planning Products: standardized message documents created during CAP. Formal communications between CINC-level field command and higher-level commands at the Joint Chiefs of Staff and the National Command Authorities.

DSSCO shows six planning products, three generated by CINC-level planners: the CINC Assessment, Commander's Estimate, and Operations Order (orange boxes) and three generated at the JCS/NCA level: the Warning Order, Alert Order, and Execute Order. Planning products that travel up to the NCA are shown in the second row of Figure 3. Products that travel between the CINC and the CCTF are shown between the CINC and CCTF diagrams in Figure 3.
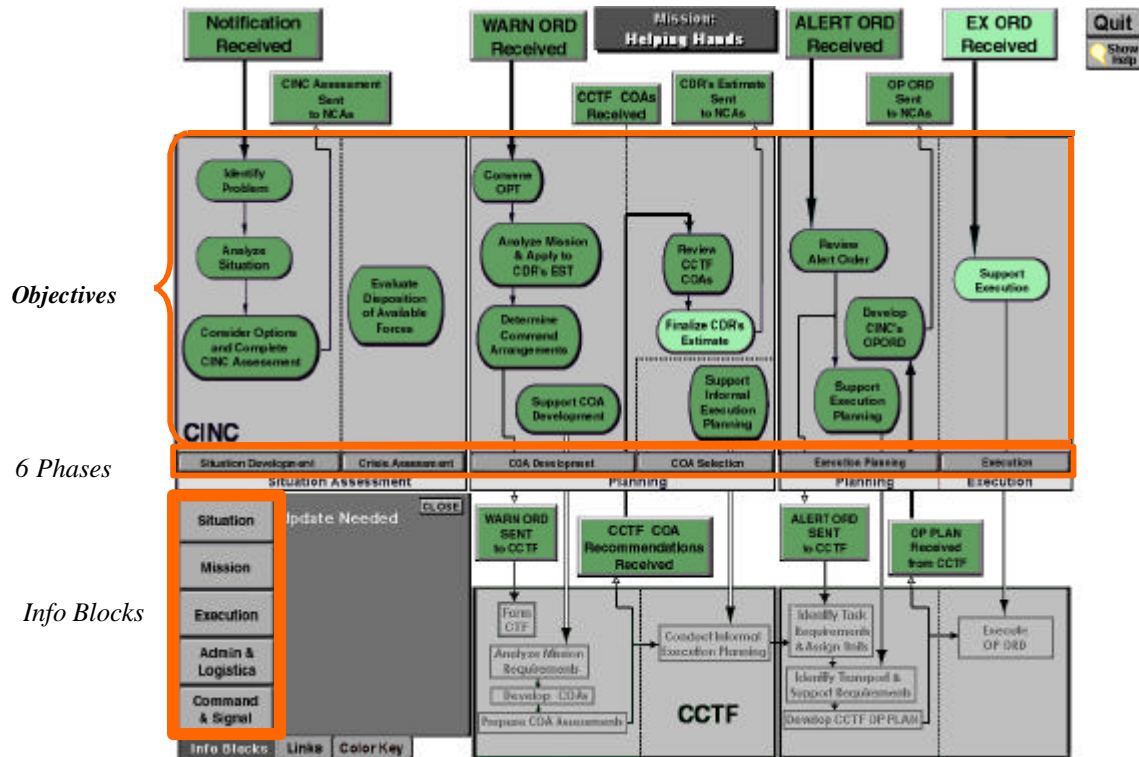

Figure 3: Objectives that can be met in order to create the planning products for each phase in the planning process

Objectives
Goals that should be accomplished by the planners as the Crisis Action Planning process progresses through its various phases. Each objective is composed of steps that are described at Level 2 of the Planning Tool.

Phases:
The Crisis Action Planning (CAP) process is comprised of six doctrinally defined phases. There are specific goals and activities associated with each phase.

- **Phase I,** Situation Development, begins when an event and/or intelligence indicators occur that have possible national security implications for any of the coalition partners and ends when the event is reported to respective coalition NCA/national headquarters and the military representatives' assessment is submitted to the NCAs.

- **Phase II,** Crisis Assessment, begins when the NCAs receive the military representatives' assessment and ends with a decision by the NCAs to return to the pre-crisis situation or to have military options developed for their consideration.

- **Phase III,** COA Development, begins when the coalition NCAs issue a Coalition Warning Order and ends when the supported commander submits a Coalition Commander's Estimate with courses of action to the coalition NCAs.

- **Phase IV,** COA Selection, begins when the COAs are presented to the NCAs and ends when the Coalition NCAs select a COA and issue the selected COA in an Alert Order or Planning Order.

- **Phase V,** Execution Planning, begins when the supported commander receives an Alert Order or a Planning Order. An executable Operations Order (OPORD) is developed. The phase ends when the NCAs decide to execute, place on hold, or cancel the OPORD.

- **Phase VI,** Execution, begins when the Coalition NCAs, in consultation, decide to execute the OPORD, and ends when the crisis is satisfactorily resolved.

Information Blocks
An up-to-date compilation of information organized by the following topical areas:
Situation, Mission, Execution, Administration & Logistics, and Command & Signal. Each Information Block (outlined in orange in Figure 4) is divided into sub-topics that describe specific aspects of mission planning and execution. The Information Blocks afford easy access to the latest mission planning information before it is distributed through the Planning Tool Level 3 workspaces and the Planning Products.

The Links button in the lower left corner of the Planning Tool display, provides access to five additional components of the DSSCO toolset:

DSSCO Database: this database contains information in three domains for supporting crisis action planners: Countries, Organizations, and Mission Contingents.

Planned Tasks: this button gives access to the TaskSelector, which can be used to select or deselect tasks to be used during a mission. Resources can be assigned to tasks and points of contact specified. The Task Selector suggests groups of tasks and sub-tasks that can be performed to meet specific mission objectives based on the situation that is being monitored.

DSSCO TVM: The Task Visualization Module (TVM) schedules the tasks that have been selected for a mission in the TaskSelector. Start and end dates and duration can be set for each task.

Planning Guide: the coalition planning guide contains both general and specific information that is useful for forming multinational coalitions, especially when coalition members have little or no experience working together.

Tutorial: the tutorial provides both beginning and advanced instruction in the use of the DSSCO toolset, and an introduction to crisis action planning.

Web Planner: the Web Planner is a non-implemented link to a collaborative mission planning tool, Adaptive Course of Action (ACOA).
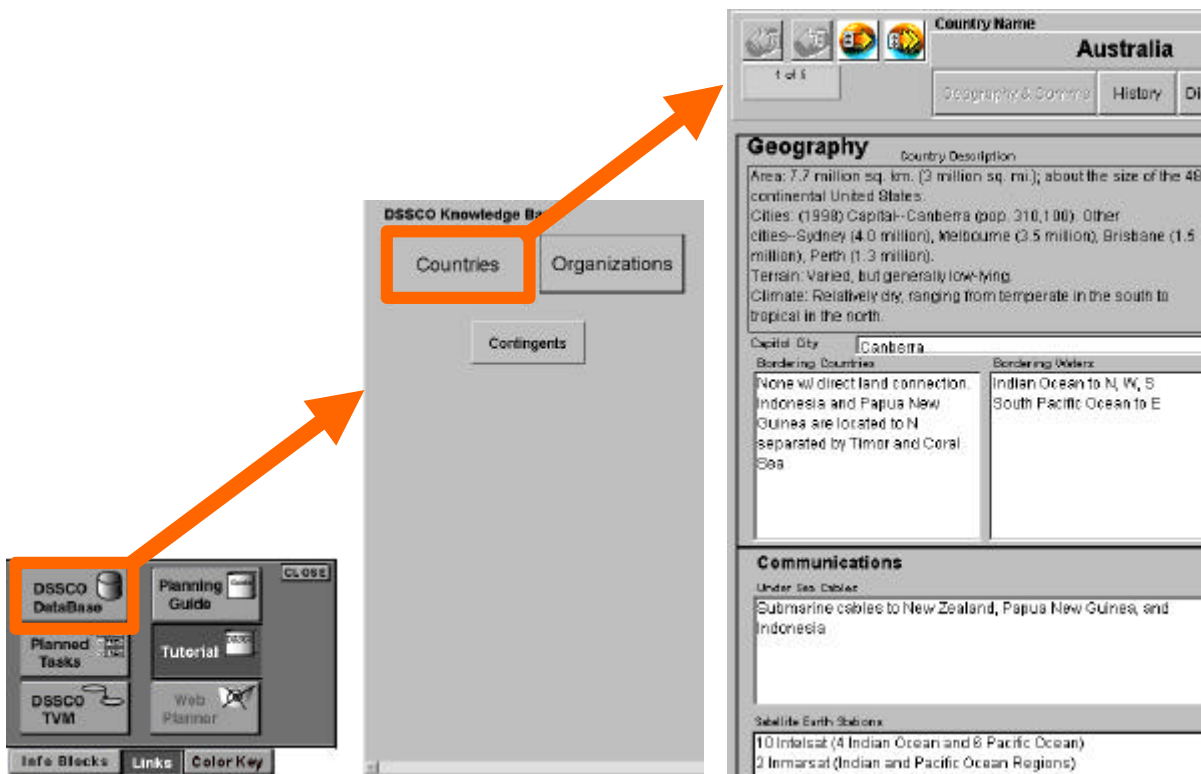

Figure 4: Links to other modules

Level 2 displays the individual steps that comprise each Level 1 objective. These steps can be followed by planners when developing a mission plan. They provide a systematic way to meet the information and activity requirements necessary to accomplish each objective. Often, completing a step involves gathering information needed by one of the Planning Products. Figure 5 shows the Level 2 display for the objective, 'Identify Problem.' Individual steps are outlined in orange, step summaries are outlined in blue, and the history of information additions and modifications to each step is outlined in yellow.

In addition to the individual steps for an objective, Level 2 displays the following:

Summary Box (outlined in blue): a summary of work completed on each step to that point in time.

History Box (outlined in yellow): a log history that records the identity of each planner who entered information for each step and the date and time of each entry.

Notes: user comments that are entered by a planner that provide amplifying or clarifying comments. In Figure 5, history is shown instead of notes, which can be toggled on by clicking the 'Show Notes' button.

Taken together, the contents of Level 2 constitute a comprehensive and well-documented account of the information used to generate and execute a mission plan.
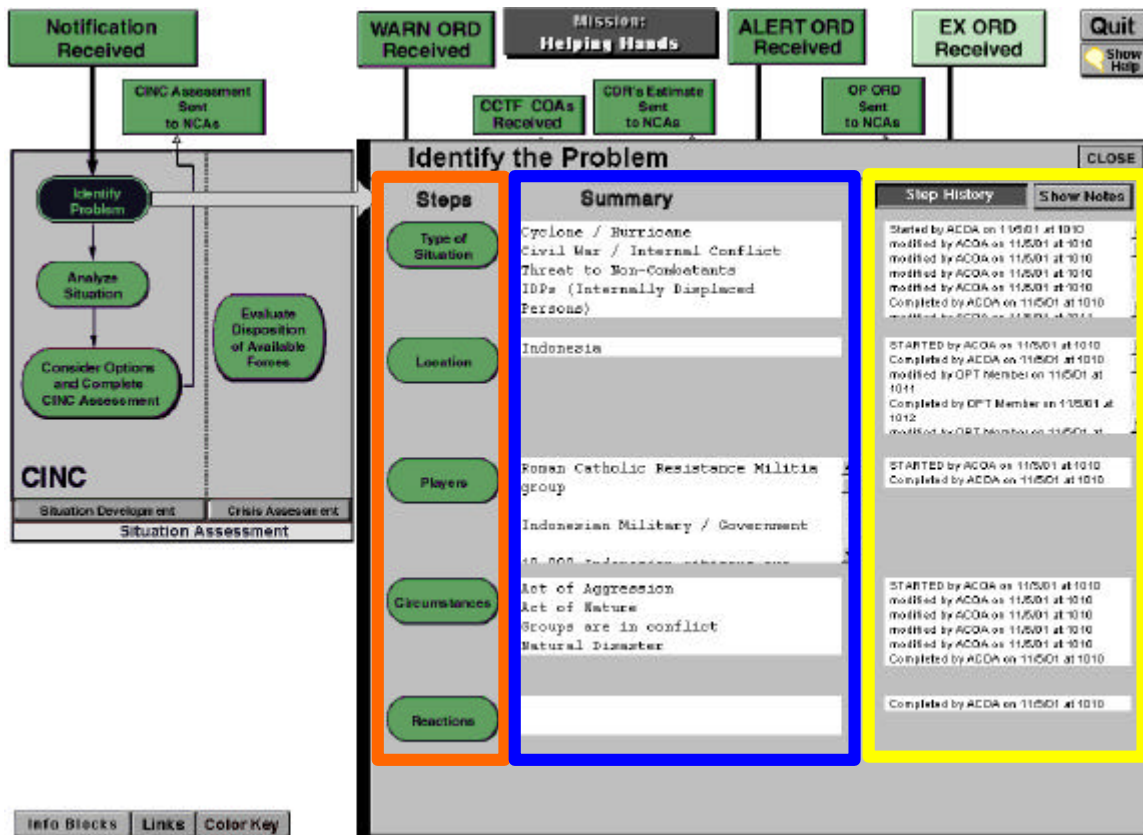

Figure 5. Level 2 steps, summaries, and step histories for a Level 1 objective.

Level 3 of the DSSCO Planning Tool contains the workspaces that are used to enter and store information for the individual steps shown in Level 2. Level 3 is where planners can view or enter information into the planning system that will be needed to develop a mission plan. The Level 3 workspace for the third step of the 'Analyze Situation objective is shown in Figure 6.

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Workspace instructions (outlined in orange)**:** gives general guidance for completing the step are located near the top of the workspace.

Sub-topic buttons (outlined in brown): these buttons provide access to workspaces on the indicated topics, which can then be viewed or edited.

Information entry space (outlined in blue)**:** gives planners a place to enter and store information needed to complete the step. In Figure 6, the entry space is a text box. Other workspaces use either a text box or a checklist format.

Notes box (outlined in yellow)**:** allows a planner to enter comments that will help other planners understand the information that has been entered.
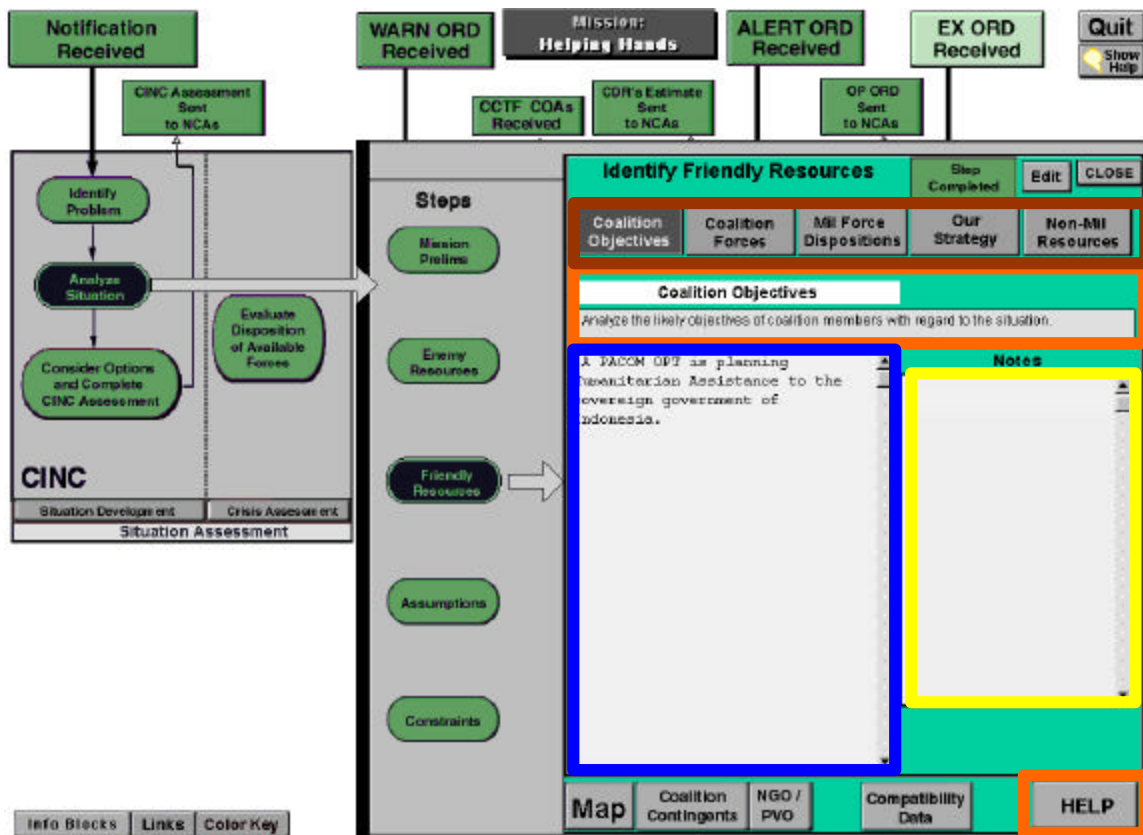

Figure 6. Level 3 workspace for a Level 2 step.

Help (outlined in violet)**:** gives access to more detailed instructions and supporting information from the *Coalition Planning Guide*, a DSSCO resource that contains guidance for planning and executing coalition operations.

The Coalition Planning Guide defines a CAP process for coalition members to follow when there is no established working relationship among those members. The Guide typically will be most useful when coalition members have little or no experience working together. It is accessible from the shaded box in the lower left corner of the

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Planning Tool and from most Level 3 help menus. One part of the Guide features general information on coalition planning that is organized into six sections:

Section 1: Foundations of Coalition Operations
Section 2: Command and Control
Section 3: Crisis Action Sequence (CAS): Overview
Section 4: Crisis Action Sequence (CAS): Detail
Section 5: Success Factors
Section 6: Integration Strategies

The example shown in Figure 7 displays Section 1 of the Guide as accessed from the Level 3 workspace for the step, "Detail Execution," which is part of the objective, "Develop CINC's OP ORD." It discusses fundamental aspects of coalition operations.
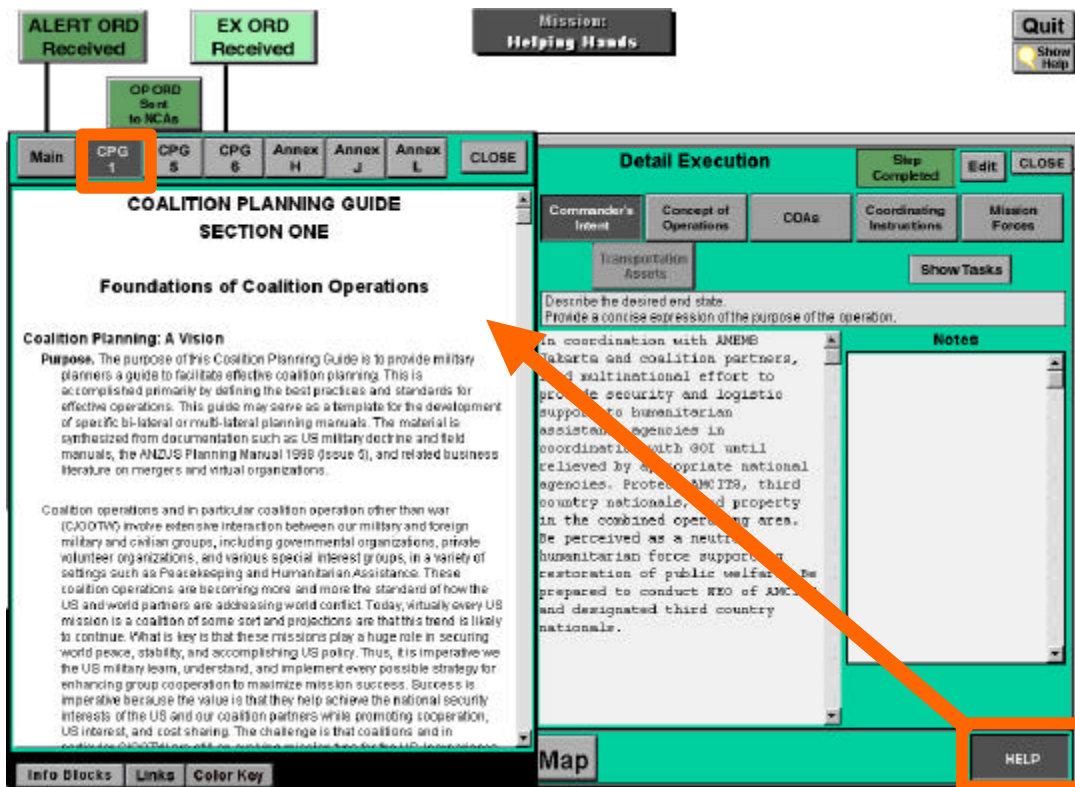

Figure 7. Level 3 online help showing the Coalition Planning Guide.

In addition to the general information found in its six primary sections, the Guide contains more specific, detailed information about various topics in its 15 annexes: One of these annexes, Annex H, Liaison Teams to the Supported Commander, is shown in Figure 8.

    Annex A: CINC Assessment (template)
    Annex B: Coalition Warning Order (template)
    Annex C: Coalition Commander's Estimate (template)
    Annex D: Coalition Planning Order (template)

Annex E: Coalition Alert Order (template)

Annex F: Coalition Operation Order (template)

Annex G: Coalition Execute Order (template)

Annex H: Liaison Teams to Supported Commander

Annex I: USPACOM Designated Contingency Combined Task Force Commanders

Annex J: Procedures and Suggested Doctrinal Areas for Combined Operations

Annex K: Planning and Management for Combined Communications

Annex L: Planning and Management for Intelligence Support for Combined Operations

Annex M: Planning and Management for Administration and Logistics Support for Combined Operations

Annex N: Planning and Management for Combined Exercises

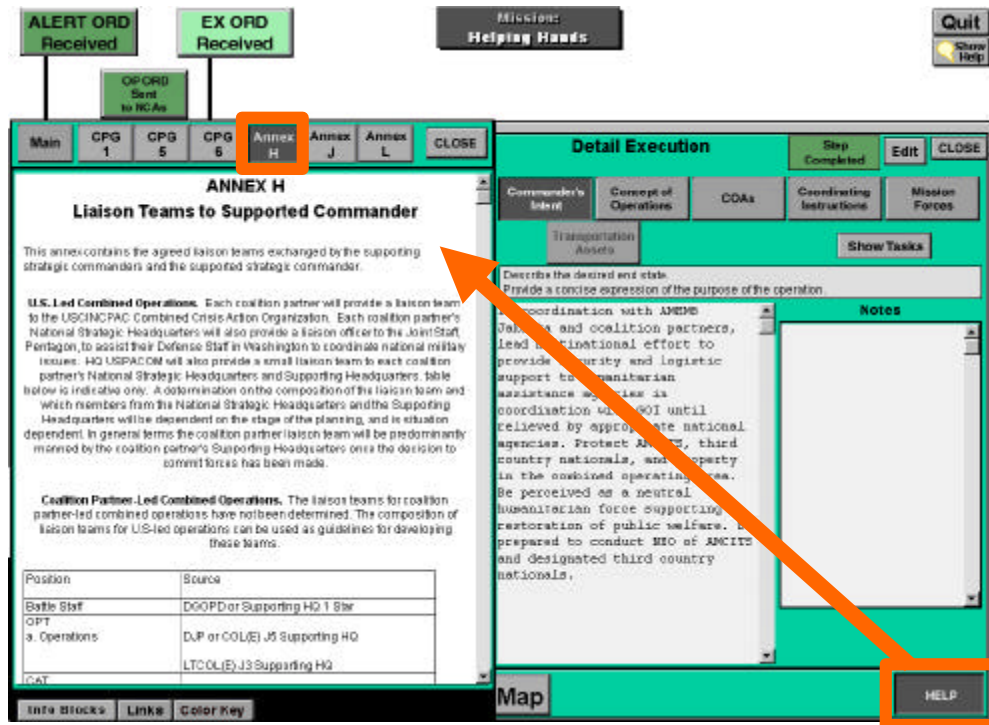**Annex O: Definitions, Acronyms & Abbreviations**

Figure 8. Level 3 online help showing an information annex, which contains specialized information for mission planning.

Resource Links in many Level 3 workspaces (outlined in orange in Figure 9) bring up detailed reports on issues related to information in the workspace. These reports are a well-organized distillation of information, (some of it from the DSSCO Resource Database) in a single convenient location. The reports also provide a structure for planners to input information that is not available in the DSSCO Resource Database.

Map: A map of the region affected by the crisis and surrounding areas.

Coalition Military Contingents. A structured summary of information on coalition military forces in terms of their resources, capabilities, and prior mission experience. Provides drill down to more detailed information.

Enemy Military Contingents. Parallel information on enemy military forces to that provided for Coalition Military Contingents.

Treaties. A listing of bilateral treaties that are currently in force among the countries involved in the crisis and the coalition mission.

NGO/PVO Data. Descriptions of the resources, capabilities, and prior experience of the NGOs and/or PVOs that are available to serve during the crisis.
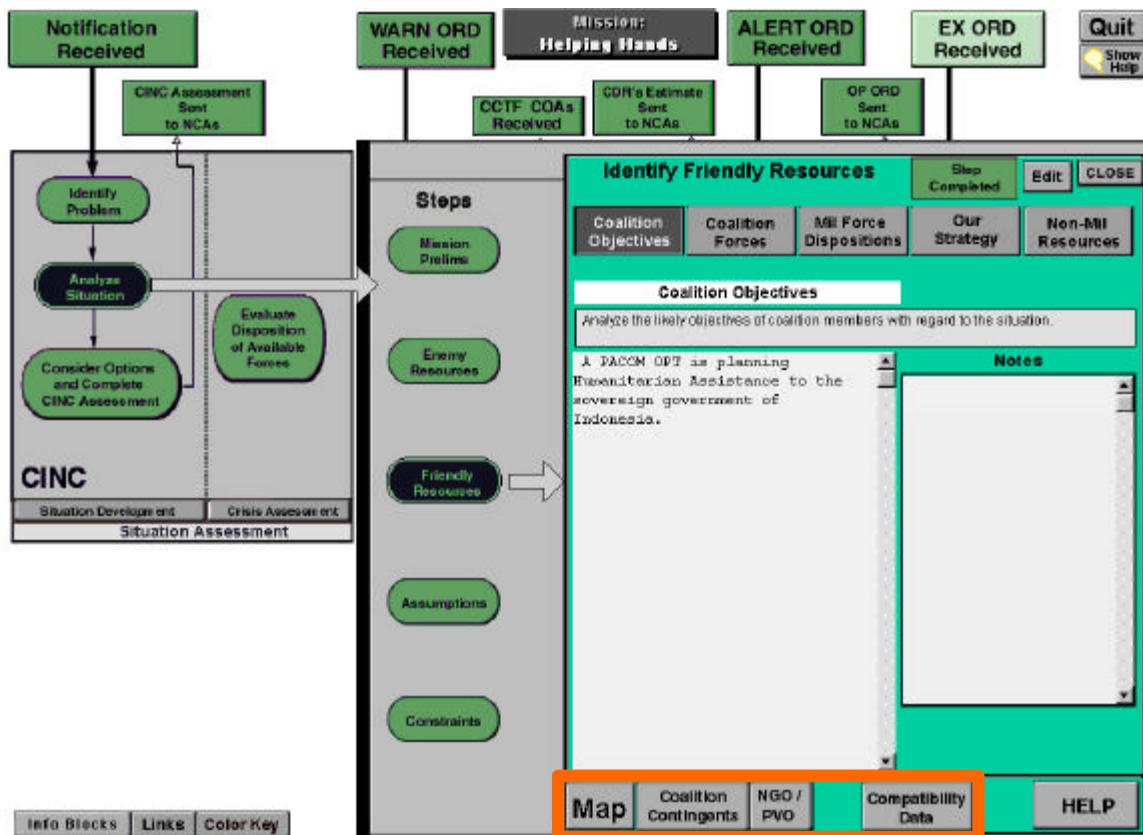

Figure 9. Resource links provide specific, detailed information in Level 3.

Country Compatibility Data. An organized distillation of information about the characteristics of coalition countries according to culture, diplomacy, international disputes, and societal issues/taboos. Provides drill down to more detailed information.

DSSCO Training Enhancements

Working with USPACOM staff, an enhancement to the training course was prepared, utilizing the DSSCO toolset to demonstrate and reinforce aspects of the process. Training was provided to military personnel who would be participating in the Ulchi Focus Lens (UFL) exercise in June 2001. For this enhanced training course, DSSCO workspaces were identified that would reinforce the material presented on the slides. The DSSCO program was modified to pause at these points, and the instructor would direct the trainees' attention to alternate screens—one showing the slide and the other showing the DSSCO screen shot.

Training planners to use the DSSCO tools was an important part of the DSSCO project. . To be successfully used, however, training must be provided that gives mission planners the necessary background to understand the CAP process. Due to the success of DSSCO as a training tool for UFL, a self-paced tutorial was also developed that could be accessed upon entry into the DSSCO Planning Module, as shown in Figure 10.
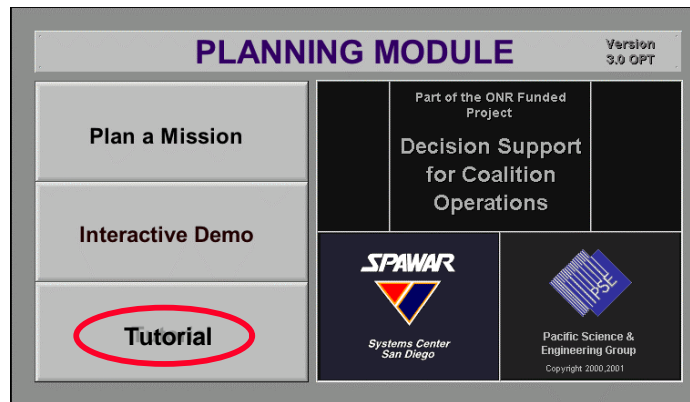

Figure 10. Planning Module opening screen provides access to online tutorial.

The training package consisted of tutorials on the use of the planning tools, descriptions of the products generated by the planning process, and general background information on CAP. This training package gave the trainers and DSSCO toolset users the instruction needed to use the toolset to their maximum benefit. The tutorial consisted of descriptions of the six phases that comprise CAP, planning products generated during CAP, basic features of the DSSCO toolset, and more advanced aspects of toolset use.

The DSSCO tutorial highlighted each CINC-level planning product, including its content and organization. The tutorial was integrated with the toolset so that a student could branch back and forth between the tutorial and the toolset to try out concepts in a planning environment.

Table 1. Training enhancements added to the DSSCO toolset.

DSSCO TOOL	FEATURE	ENHANCEMENTS
DSSCO DATABASE	Order Templates	Usage Demonstration
	Contingent Reports	Explanation of use
	Coalition Planning Guide	Expanded
PLANNING MODULE	Process Map	Incorporates both three and six stage planning doctrine
	Planning Objectives and steps to meet them	Suggestions and advice added
	Information Blocks	Organized around "5 paragraphs" of OPORD
	Rollover help	Provided for all buttons
	Context Help	Provided for most fields
	General Help	Direct links from each workspace to relevant sections of the Coalition Planning Guide

Tutorials were also produced that used the DSSCO toolset to explain the flow of information through the planning process and the format and content of the triggers and products that are produced in each phase of a planning effort. Linked tutorials within the DSSCO toolset were provided for:

An Overview of the Crisis Action Planning process (CAP)
DSSCO Planning Tool Features
NCA/JCS documents:
    Warning Order
    Alert Order
    Execute Order
CINC's Planning Products
    Commander's Estimate
    CINC's Assessment
    OPORD

These tutorials were combined with a demonstration scenario that was run by the instructor to show how templates for each document would be filled in during a demonstration mission and what information to look for and collect during each phase of the planning process.

Students were initially led through the development of a plan by an instructor who could pause the demonstration to explain what was happening and how the information was being organized and collected. At the end of the course, students were given a fully

working interactive version of the DSSCO toolset that could be used to refresh their recall of the lesson material or interacted with to create their own version of the planning products for the demonstration scenario.

3. Results

The enhanced training afforded by the UFL exercise was successful in achieving training goals. In addition, it was enthusiastically received by trainers and trainees. The tutorial module that was added to allow personnel to study the CAP process at their own pace and at their individual workstations has recently been released for distribution by USPACOM staff. Initial feedback has been very positive.

Based on this experience, future training program development will include a set of self-paced exercises where students will interact directly with the DSSCO toolset to prepare planning products and identify the types of information relevant to specific steps and phases in CAP.

4. Discussion

Although comprehensive in topics covered; the tutorial did not include any exercises that provided the trainees with the opportunity to actually use the DSSCO toolset to achieve specific learning objectives. A free play mode of operation is built into the toolset so that users can experience all phases of the CAP process; however, it was recognized that directed exercises could be developed that would reinforce key points of the process. Toward that end, plans have been drafted to extend the current training capabilities to include dynamic exercises that will allow trainees to demonstrate their understanding of the CAP process. These exercises will be similar in design and scope to exercises now included in the Action Officer Course of Instructions.

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