**U.S. Army Research Institute
for the Behavioral and Social Sciences**

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**Augmented performance environment for enhancing
interagency coordination in stability, security,
transition, and reconstruction (SSTR) operations:
Phase II**

Anna T. Cianciolo
Command Performance Research, Inc.

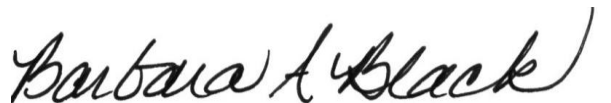**Arwen Hunter DeCostanza**
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14. ABSTRACT *(Maximum 200 words)*:
Report development under a Small Business Innovative Research Program, Phase II. Phase I research explored the implications of organizational culture for planning interagency stability, security, transition, and reconstruction operations at the field level. Specifically, planning deficits were identified, their roots in organizational differences investigated, and a proof of concept training system prototype was developed. In Phase II, effort was devoted to refining the design and fully implementing the concept in a deployable prototype training system, called the Interagency Consensus Forum (ICF). The ICF Phase II prototype is an instructorless web-based training system designed to foster the development of the foundational consensus building knowledge and skills necessary for successful, integrated civil-military planning. To the extent possible given limited access to the ICF target user audience, all training was designed and implemented via an iterative design-test-refine process. A key design challenge was the development of distributed, collaborative multiparty negotiation role-play exercises, which represent the first of their kind in Army training. The ICF training complements related ARI-supported efforts to promote generalizable interpersonal knowledge and skill, including leader influence and negotiation. Further research and development will enhance the ICF's outreach and training effectiveness.

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SBIR Phase II Report, Interagency coordination, SSTR operations, negotiation, consensus building, computer-based training, collaboration

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Augmented Performance Environment for Enhancing Interagency Coordination in Stability, Security, Transition, and Reconstruction (SSTR) Operations: Phase II

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AUGMENTED PERFORMANCE ENVIRONMENT FOR ENHANCING INTERAGENCY COORDINATION IN STABILITY, SECURITY, TRANSITION, AND RECONSTRUCTION (SSTR) OPERATIONS: PHASE II

EXECUTIVE SUMMARY

Research Requirement:

U.S. strategic interests are linked to the stability and modernization of other countries. That military and civilian agencies must work together to successfully conduct stability, security, transition, and reconstruction (SSTR) operations is clearly stated at the strategic level. However, the mechanics of interagency coordination at the field level are driven by the organizational and personal objectives of the participants involved. Although the biggest threats to interagency coordination include high-level structure and process issues, the individual and collective capability required to handle their impact at the field level falls within the sphere of influence of training and education. The purpose of this two-phase, Small Business Innovative Research (SBIR) effort was to specify this capability and to design computer-based instruction that could promote its growth.

Procedure:

The Phase I research explored the implications of organizational culture for interagency SSTR planning effectiveness at the field level. Specifically, planning deficits were identified and their roots in organizational differences investigated. A proof of concept training system prototype was developed to address the individual and collective capability necessary to effectively conduct integrated U.S. government planning. In Phase II, effort was devoted to refining the design and fully implementing the concept in a deployable prototype training system, called the Interagency Consensus Forum (ICF).

Findings:

The ICF Phase II prototype is an instructorless web-based training system designed to improve the foundational consensus building knowledge and skills necessary for integrated civil-military SSTR operations planning at the field level. The ICF presents users with phased, Crawl-Walk-Run access to learning content and anytime access to training support materials. Access to the ICF target user audience was used to design and implement the training via an iterative design-test-refine process. The prototype includes distributed, collaborative multiparty negotiation role-play exercises, which represent the first of their kind in Army training. Further research and development will enhance the ICF's outreach and training effectiveness.

Utilization and Dissemination of Findings:

The ICF Phase II prototype addresses a critical gap in the Army's preparation of Soldiers to conduct SSTR operations and counterinsurgency. The ICF training compliments related ARI-

supported efforts to promote generalizable interpersonal knowledge and skill, including leader influence and one-on-one negotiation, and it provides Soldiers with an additional tool for achieving mission success. In its current state, the ICF may be used for foundational knowledge and skill development by small groups of learners, and represents a research and development effort that was responsive to lessons learned. The lessons learned documented in this effort could facilitate SBIR research and development efforts by other small businesses.

AUGMENTED PERFORMANCE ENVIRONMENT FOR ENHANCING INTERAGENCY COORDINATION IN STABILITY, SECURITY, TRANSITION, AND RECONSTRUCTION (SSTR) OPERATIONS: PHASE II

CONTENTS

LIST OF FIGURES

CONTENTS (continued)

LIST OF TABLES

Augmented Performance Environment for Enhancing Interagency Coordination in Stability, Security, Transition, and Reconstruction (SSTR) Operations: Phase II

Background

U.S. strategic interests have long been linked to the stability and modernization of other countries, with nation building being a prominent component of U.S. foreign policy since the aftermath of World War II (Aall, Miltenberger, & Weiss, 2000; Ekbladh, 2006). In the complex contingencies that characterize stability, security, transition, and reconstruction (SSTR) operations, U.S. government agencies (USGAs), inter-governmental organizations (IGOs), and non-government agencies (NGOs) provide humanitarian aid and governance support alongside combat operations. In turn, ensuring the well-being of host nation civilians in complex contingencies is seen by the military as a critical security objective (Chiarelli & Michaelis, 2005).

That military and civilian agencies must work together to successfully enact U.S. foreign policy is clearly stated at the strategic level. In the conduct of SSTR operations, the Secretary of State is bound by the National Security Presidential Directive (NSPD) 44 (2005) to ensure ―harmonization with any planned or ongoing U.S. military operations across the spectrum of conflict" (p. 2). Even so, accomplishing interagency coordination is as much a military imperative as it is a civilian one. The Department of Defense Directive (DODD) 3000.05 (*Military Support for SSTR Operations*; 2009), which formally recognizes stability operations as a core military mission, obligates the military to ―collaborate with other U.S. Government agencies...as appropriate to plan, prepare for, and conduct stability operations" (p. 2).

Recent counterinsurgency (COIN) training guidance issued by the former Commanding General of U.S. Forces in Afghanistan (McChrystal, 2009) reflects that the Army has taken the matter of interagency coordination seriously as an operational multiplier. In his guidance, General McChrystal appealed to military personnel to ―*Help me create unity of effort*" (p. 3, emphasis original). He went on to say: ―Leverage their [civilian agency personnel] considerable experience. Understand the tools that they use… that can assist all of us, both military and civilian, with providing a common view of the sources of instability" (p. 3). General McChrystal's guidance echoes direction found in Army's counterinsurgency field manual, which states:

> ―An insurgency's complex... context precludes military leaders from commanding all contributing organizations—and they should not try to do so. Interagency partners, NGOs, and private organizations have many interests and agendas that military forces cannot control... Nevertheless, *military leaders should make every effort to ensure that COIN actions are as well integrated as possible*." (FM 3-24, p. 2-4, emphasis added)

Because these directives and guidance specify civil-military coordination requirements at an abstract level, the mechanics of interagency coordination are often driven by the organizational and personal objectives of the participants involved. Ambiguity with regard to roles, responsibilities, and mission is commonly recognized as a barrier to successful team performance (e.g., Kozlowski & Ilgen, 2006), and challenges to effective interagency coordination at all levels of operation have been identified [e.g., Joint Center for Operational

Analysis (JCOA), 2006; Luck & Findlay, 2007; McNerney, 2005-2006; US House of Representatives Committee on Armed Services (HASC), 2008].

Although the biggest contributors to ineffective interagency coordination reflect high-level structure and process issues (e.g., vaguely defined mission objectives and measures of effectiveness, disunity of command, disorganized funding, staffing limitations; ASC, 2008; JCOA, 2006), the individual and collective capability required to handle their impact at the field level falls within the sphere of influence of training and education. The purpose of this two-phase, Small Business Innovative Research (SBIR) effort was to specify this capability and to design computer-based instruction that could promote its growth. This report documents the research conducted during the second phase of this effort (see Cianciolo, LaVoie, Foltz, & Pierce, 2009 for the Phase I report). In this report, we begin by summarizing the Phase I research findings. Then, the development of the ICF training product, including key design issues, is described. We conclude by summarizing lessons learned from technical challenges and by making recommendations for future research and development that will further the validation and design of the Phase II product. A companion document (Cianciolo & DeCostanza, in preparation) accompanies the Phase II Research Product and features its technical specification, including a detailed description of its features, system administration procedures, and installation. For this reason, the present report focuses on the applied research issues and not technical product information.

Summary of Phase I Behavioral Research

—Ithink the biggest challenge may have been the different cultures and traditions at the interagency coordination level. Each organization is so different and it's really hard to work that out." -- U.S. Navy Commander John Wade, Khowst Provincial Reconstruction Team Commander, 2006-2007 (Operational Leadership Experiences interview transcript, p. 17)

The Phase I research explored the implications of organizational culture for interagency SSTR planning effectiveness at the field level. We conducted an extensive literature review and interviewed military and civilian personnel who served on field-level interagency teams in Iraq or Afghanistan. Planning deficits were identified and their roots in organizational differences were investigated. The research suggested that planning deficits due to organizational culture dissonance substantively accounted for interagency coordination problems at the field level and could be resolved through training and education. Findings were used to design the architecture of a computer-based training system to address the individual and collective interpersonal skills required to overcome cultural differences and collaborate successfully. A proof of concept prototype of the training system was developed. In this section, we summarize the key Phase I behavioral research findings and provide an overview description of the training system concept (see Cianciolo et al., 2009).

The Interagency Planning Process

Phase I findings indicated that successful field-level interagency planning is a joint process by which a shared understanding and acceptance of who is doing what, where, when, and with what resources is achieved (see Figure 1). In contrast to planning for combat operations, we

found that interagency planning processes for SSTR operations were not precisely specified by doctrine. That is, although both civilian and military players bring organizational planning techniques to the field, no integrated planning products, no shared communications tools (e.g., common terms and graphics), and no one person with ultimate decision making authority were discovered. Interviews revealed that even a discrete planning event is not a typical occurrence. Rather, interagency SSTR planning is conducted over a long period of time (i.e., several months) through a series of face-to-face meetings. As much or more activity goes on behind the scenes to forge plans as compared to what occurs publicly.

INPUT	PROCESS	OUTPUT
Host Nation Government Policies and Objectives →	**Develop shared problem definition** • **Shared SSTR objectives** **Develop integrated model of the environment**	
Military Commanders' Intent →	• **Operations** • **Activities** • **People** • **Security** • **Resources**	**A shared understanding and acceptance of who is doing what, where, when and with what resources**
U.S. Government Agency Policies and Objectives →	**Develop an integrated set of SSTR priorities and activities**	
NGO Donor Policies And Objectives →	• **Prioritize tasks** • **Allocate resources to tasks** • **Allocate roles and responsibilities**	
Cultural Norms, Expectations, and Practices →	**Develop common measures of effectiveness**	

Figure 1. Conceptual representation of the interagency planning process for SSTR operations.

A critical characteristic of the interagency planning process is the diversity of its inputs. The stakeholders in the process include host nation government officials at the national, provincial, and local levels, U.S. government officials, multiple military organizations, representatives from a variety of USGAs, and a vast array of NGOs. U.S. stakeholders in this context represent different organizational cultures, leading to contrasting approaches to work, different preferred responses to situational conditions, diverse attributions of meaning to events and behavior, and even dissimilar judgments of emotion, language and nonverbal action (Cohen, 1997; DiStefano & Maznevski, 2000; Rubinstein, 2003). Importantly, each of these stakeholders reports to a different authority and generally is not held accountable for the success of a particular planning effort.

Our analysis indicated that achieving a unified approach in this context requires the development of (1) a shared definition of the problem at hand and objectives to be achieved; (2) an integrated picture of the operational environment; (3) a coordinated set of priorities and activities; and (4) common measures of effectiveness. Coordinating in this way (i.e., assembling diverse stakeholders into a horizontally structured group to reach agreement on a complex, ill-defined problem via formal and informal meetings) is consistent with the consensus building process typically used by city planners and local government officials (Innes & Booher, 1999).Thus, consensus building seems to be a more accurate characterization of the nature of SSTR planning than team coordination processes offered by the psychological research literature, which assumes that team members share goals and clearly assigned roles and responsibilities (Dziedzic & Seidl, 2005; Oliker, Kauzlarich, Dobbins, Basseuner, Sampler, McGinn, et al., 2004; Perito, 2005).

Consensus building is defined generally as a process of collaborative problem solving, interests-based negotiation, decision making, or dispute resolution in which all parties involved must agree to the solution (Susskind, McKearnan, & Thomas-Larmer, 1999). Consensus building differs from other forms of planning or decision making in that decision making authority is vested in the collective rather than in a ranking individual. It differs from other forms of negotiation in that it is not adversarial, but rather seeks an integrated, win-win solution by uncovering and addressing the reasons behind each participant's preferred approach. This collaborative problem solving process may also be seen as a form of collective, or distributed leadership, in which stakeholders must achieve ‒concretive action" to reach objectives of mutual interest (Denis, Lamothe, & Langley, 2001; Gronn, 2002).

Interagency Planning Deficits

Whether the performance deficits of culturally diverse groups, such as interagency teams, should be attributed to cultural differences is an open question. This doubt arises from the fact that disagreement is a necessary condition for engaging in negotiation. In groups involved in consensus building a history of conflict is often present (Poitras, Browne, & Byrne, 2003; though see Margerum, 2002), and failure to reach agreement can be attributed to multiple factors besides non-convergent cultural identities and orientations (Zartman, 1993). Although the means by which cultural differences could short-circuit interagency planning are many and diverse, Phase I research indicated that SSTR planning deficits have a general signature, which indicates that broader issues than culture are at play (Cianciolo et al., 2009). The typical indicators of poorly functioning interagency teams that we found included (1) disengagement of participants from part or all of the process; (2) information hoarding; (3) endless discussion of particulars; (4) withholding agreement (for the sake of disagreement and preventing forward progress); (5) misattribution of behavior (e.g., using stereotypes); and (6) heated, unproductive arguments (Cianciolo et al., 2009). Importantly, this behavior is not unique to unsuccessful interagency planners; it characterizes unsuccessful attempts by a variety of horizontally structured groups to achieve consensus on integrated plans, including plans for natural resource management, budgeting, and health care reform.

Strategies for Success

―‖all comes down to relationships.‖ – Commander Wade (p. 17, Operational Leadership Experiences interview transcript)

Consistent with the finding that unsuccessful interagency planning efforts could be characterized by a common set of planning deficits, the experienced interagency team members interviewed in Phase I reported adopting general (i.e., not culture-specific) strategies to achieve success at field-level civil-military planning. These strategies coincided with those generally recognized as best practice in the consensus building and negotiation literature (e.g., Avery, Auvine, Streibel, & Weiss, 1981; Burgess & Spangler, 2003; Innes & Booher, 1999; Godschalk, Parkham, Porter, Potapchuk, Schukraft, 1994; Susskind et al., 1999). Specifically, these strategies include setting the right conditions (e.g., ensuring that the appropriate stakeholder representatives have been identified, clearly defining roles and responsibilities), assessing one's readiness to collaborate, distinguishing between interests and positions, managing conflict in real time, and employing open communications (e.g., separating people from problems, defining problems as shared, and exposing hidden agendas with a win-win mindset).

In addition to these practices, Phase I interviewees unanimously emphasized the importance of spending time on relationship development prior to attempting integrated planning. They claimed that this time paid off by building trust, motivating participation, and smoothing interactions. The recollections of these subject matter experts suggested that prosocial orientation (i.e., valuing the well-being of others and of the collective) is a critical motivator to take the personal risks involved in successful consensus building, including sharing one's underlying concerns, exploring other people's concerns, accepting input, managing conflict, and postponing closure to achieve a win-win solution. Collective leadership concepts support this idea by highlighting the importance of reciprocal interpersonal influence and trust on concertive action (Gronn, 2002). Figure 2 depicts a reframing of the integrated U.S. government planning process as consensus building.

INPUT	PROCESS (Concertive Action)		OUTCOME
Horizontally structured group (separation of power), complex problem	**Prosocial Orientation**	**Consensus Building / Collaborative Problem Solving**	**Integrative Solution**

Personalized relationships (Reciprocal influence)

Individual Capability:
- **Awareness of stakeholders, culture, and social networks**
- **Self-awareness of readiness to collaborate**
- **Understanding of consensus building process and procedure**

Collective Capability:
- **Open communications**
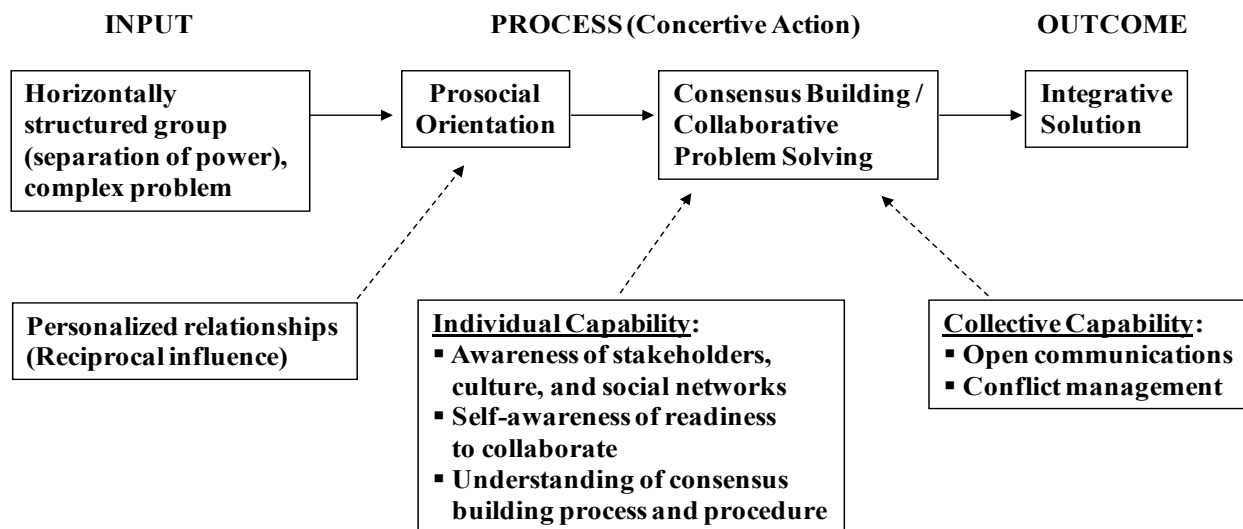- **Conflict management**

Figure 2. Integrated U.S. government planning as consensus building.

High-payoff Learning Objectives

On the basis of the Phase I findings, several high-payoff learning objectives that should be addressed by a training program aimed at enhancing consensus-building skills for SSTR operations were identified, including:

- Understand the Stakeholders Involved
- Assess Own Readiness to Collaborate
  ◦ Understand the Costs and Benefits of Collaboration
  ◦ Determine Willingness to Collaborate
  ◦ Distinguish Positions and Interests
  ◦ Test Assumptions About Others
- Build Personalized Relationships
- Manage Conflict
- Communicate Openly

A brief description of each high-payoff learning objective follows.

Understand the stakeholders involved. Understanding the stakeholders involved in consensus building is not a simple process. Stakeholders are not limited to those individuals or groups who will implement the collaborative solution, but also include the people who will be affected by the solution and who have the power to block implementation. Stakeholder representatives must be credible both to the other group members as well as to the organizations that sent them. The criteria used to determine credibility (e.g., age, sex, credentials, etc.) are determined by what a culture values, so the identification of stakeholders requires knowledge about the cultures involved in the collaborative process. Representatives without credibility do not have the authority to commit their organization to the consensual solution. Exclusion of stakeholders from collaborative problem solving prevents successful consensus building from having an impact (Godschalk et al., 1994; Levine & Lev, 2004).

Assess own readiness to collaborate. Reflecting on one's own readiness to collaborate reveals how well one understands the issues at hand, what one believes they can achieve by working with others, what level of openness one has to creative solutions, and what their assumptions and expectations for interpersonal interaction are (Burgess & Spangler, 2003; Coleman & Lim, 2001; Poitras et al., 2003). Reflecting on willingness to engage in consensus building must include the concrete identification of the best or most likely alternative to collaboration. If one's best or most likely alternative to collaboration is more satisfactory than working with others, disengagement from the consensus building process is the most practical action, and is adopted by many civilians and military personnel acting in overlapping areas of operations (e.g., Taw, Agmon, & Davis, 1997). Reflecting on assumptions and expectations must involve self-assessment of one's cultural knowledge and bias, willingness to attend to group process, attitudes, and collective skills, as well as trust in others (Avery et al., 1981; see also Kiffin-Petersen & Cordery, 2003). Making distinctions between values, interests, and positions is key to the consensus building process because such distinctions enable the creation of shared problems and novel solutions (e.g., Coleman & Lim, 2001; Innes & Booher, 1999).

Build personalized relationships. Phase I interviewees reported spending a great deal of time on relationship development prior to attempting to work together on operational plans. This

time paid off by building trust, motivating participation, and smoothing interactions, particularly between the military and NGOs and between Westerners and local nationals. In addition to helping behaviors, relationship development activities involved attending numerous face-to-face meetings and hosting social gatherings. The reported effectiveness of using contact to build relations is consistent with the social psychology literature in which it has been found that increased contact reduced bias against perceived out-groups (Horenczyk & Bekerman, 1997).

Manage conflict and communicate openly. Many consensus building and cross-cultural interaction guidelines apply to enhancing interaction in real-time response to the environment and to problems (Avery et al., 1981; Coleman & Lim, 2001). These guidelines address conflict management and open communication by recommending:

- Avoiding culturally biased attributions in the face of unexpected or negative behavior by others;
- Bringing hidden agendas (one's own and those of others) and conflicts out into the open and addressing them with a win/win mindset;
- Defining all problems as shared;
- Avoiding in-/out-group formations by balancing participation, focusing on central ideas, disagreeing with ideas not people, and preventing polarization of issues; and
- Knowing when temporary separation or structured resolution processes are the most effective way to handle conflict.

This list of success strategies is not exhaustive, and may apply differently in non-Western cultures. Additional learning objectives that could be addressed include condition-setting activities, such as defining clear roles and responsibilities, and group management tasks, such as representing data, managing information, and tracking consensus. We chose to focus on the above-listed learning objectives because they appeared to be either unique to consensus building and/or key determinants of consensus building success among Westerners.

The Interagency Consensus Forum (ICF)

Interagency Consensus Forum (ICF) is the name given to the instructorless training system designed in Phase I of this effort and developed into a prototype in Phase II. The ICF was designed for use by Army personnel selected to conduct SSTR missions that require close interagency coordination at the field level (i.e., Soldiers selected to serve on provincial reconstruction teams, security force assistance teams, embedded training teams, human terrain teams, etc.). Given its focus on general interpersonal skills development, the ICF is best suited to developing foundational skills prior to large-scale collective exercises (e.g., pre-deployment unit training or future concepts experimentation) and in the schoolhouse, particularly where interagency coordination is already a learning subject. It incorporates web-based access to phased (Crawl-Walk-Run) multimedia instruction and may be accessed by small groups of Soldiers conducting self-development or executing a practical exercise as part of a course requirement. The ICF also features a repository of electronic training reference materials (e.g., doctrine, professional writings, veteran interviews, etc.) and an extensive list of related links (e.g., relevant Battle Command Knowledge System discussion forums).

Crawl and Walk Phase

      Instruction. Each phase of the ICF addresses different high-payoff learning objectives identified in Phase I research. The learning objectives for the Crawl Phase are displayed in Table 1, and the learning objectives for the Walk Phase are displayed in Table 2. The Crawl and Walk Phases present individual, self-paced instruction. Each terminal learning objective (identified in Phase I research and described above) has its own instructional module, which has multiple enabling learning objectives and takes the Soldier approximately 30-45 minutes to complete.

Table 1.
Crawl Phase Terminal and Enabling Learning Objectives

Terminal Learning Objectives	Understand the Costs and Benefits of Collaboration	Determine Willingness to Collaborate	Distinguish Positions and Interests	Test Assumptions About Others
Enabling Learning Objectives	• List the costs and benefits of collaborative problem solving	• Specify what can be achieved by working with others • Describe how to identify the best or most likely alternatives to collaborative solution • Assess own level of openness to creative solutions	• Define position and define interest • Identify positions and interests in an ongoing conversation • Recognize why distinguishing between positions and interests is important • List techniques for uncovering interests	• Recognize the common dimensions people use to define themselves and others • Understand how differing personal identities can cause conflict

Table 2.
Walk Phase Terminal and Enabling Learning Objectives

Terminal Learning Objectives	Relationship Building	Conflict Management
Enabling Learning Objectives	• Identify the purpose of building personalized relationships • Identify practical methods for building personalized relationships with others • Identify the outcomes of building personalized relationships in a collaborative problem solving situation	• Identify practical methods for preventing a heated discussion from escalating • Identify practical methods for dealing with strong negative emotions • Distinguish between threatening and non-threatening conflict

The format of instruction in both the Crawl and Walk Phase modules is the same. Each include (1) a brief multimedia presentation on the concepts captured by the module's learning objective (see Figure 3 for example); (2) six "test-like" (i.e., multiple-choice and matching) Application Questions with explanatory feedback that enable Soldiers to assess and deepen their understanding of the concepts using simplistic, but representative situations (e.g., dialogue snippets, short vignettes; see example in Figure 4); and (3) text-based Scenario Exercises with canned (i.e., non-interactive) feedback designed to stimulate reflection on how the concepts apply to interagency operations (see an example of the explanatory feedback in Figure 5). The goal of this design was to promote an experiential learning process in which Soldiers reflect on experiences (i.e., the actions, outcomes, and feedback prompted by assessment activities) in order to glean transferable lessons learned (Lindsey & Berger, 2009). Although learners are on occasion asked to select the "best" response to Application Questions, the explanatory feedback was designed to provide additional considerations that might make other responses better in other situations.
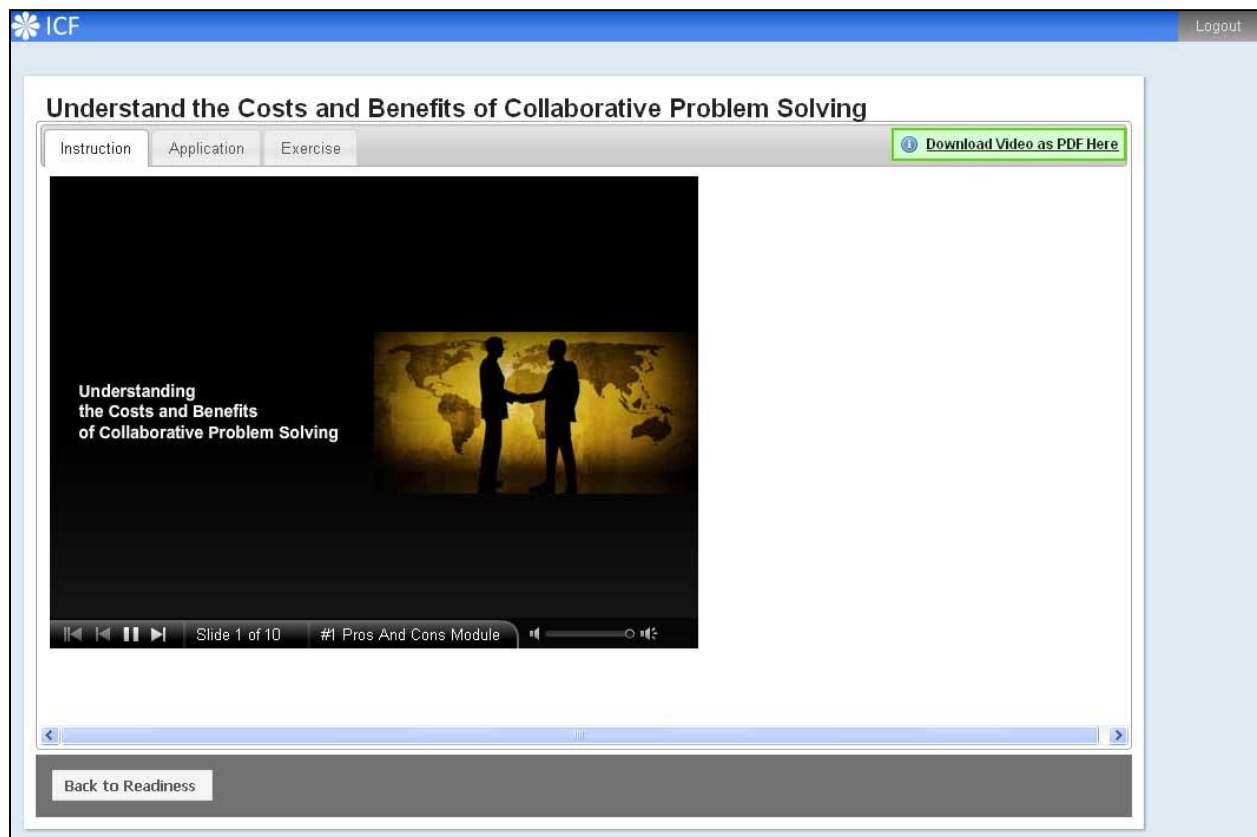

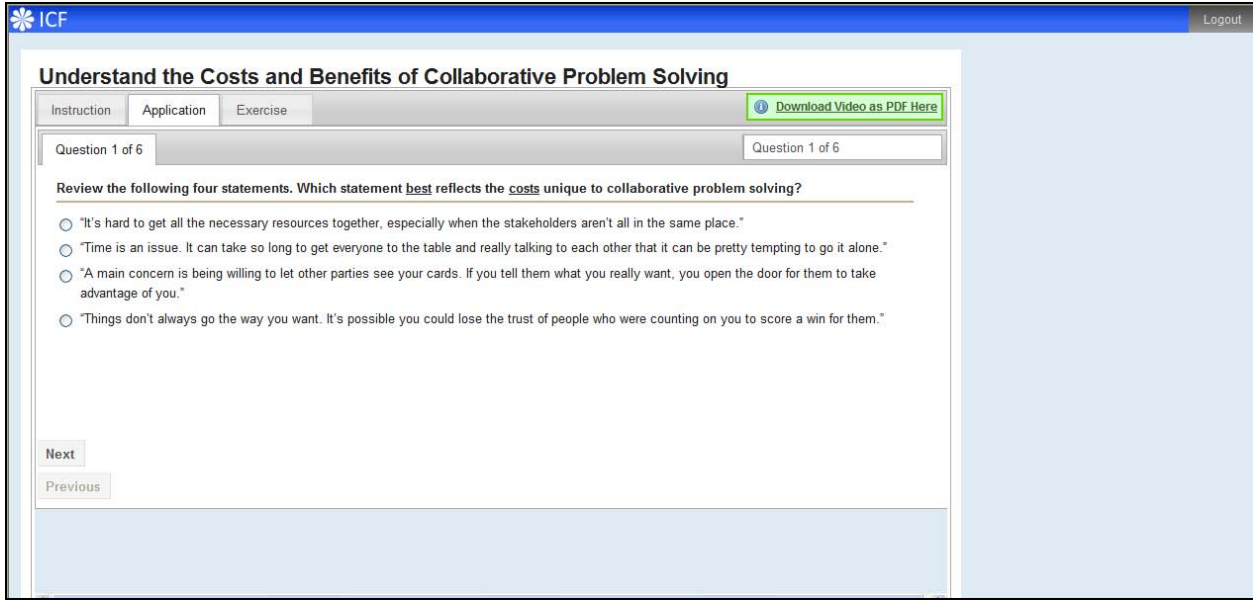*Figure 3*. Example Crawl/Walk Phase multimedia instruction.
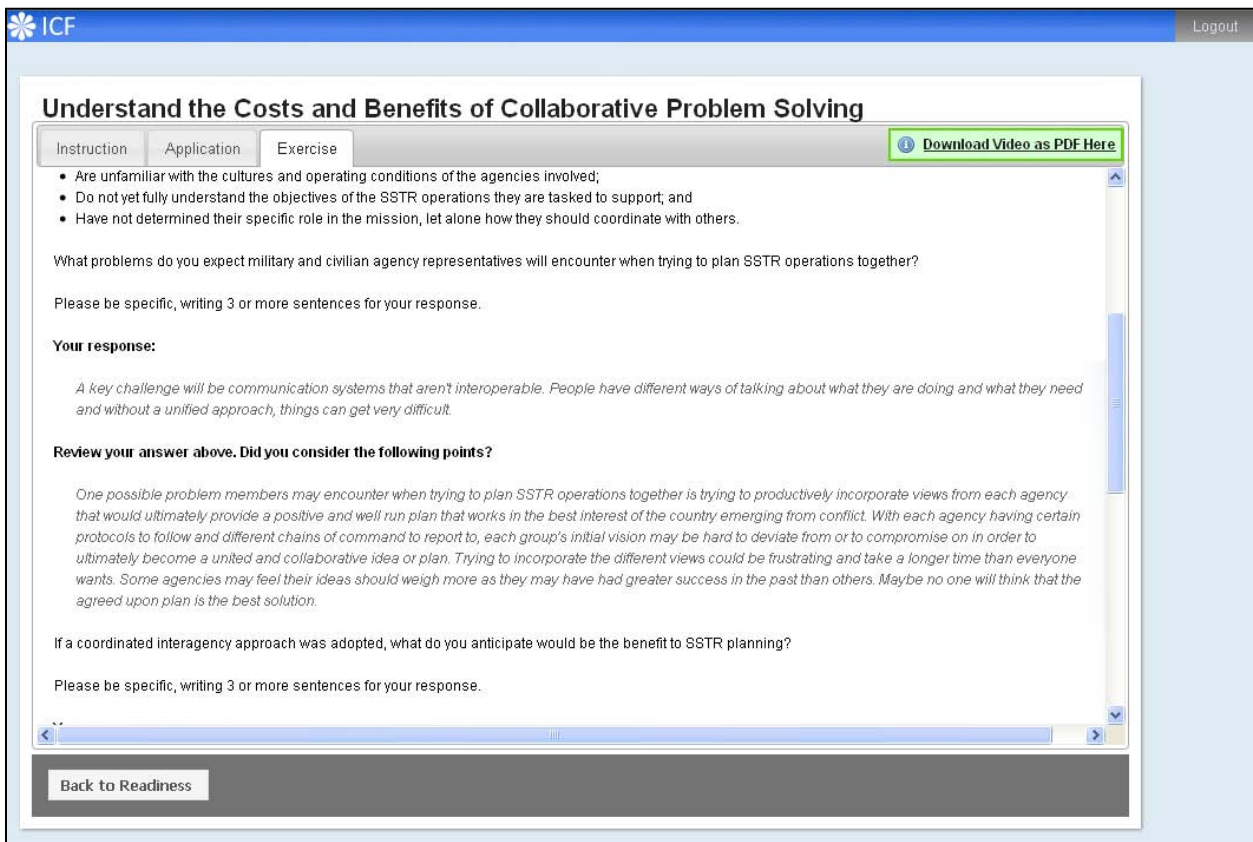
Figure 4. Example Crawl/Walk Phase assessment exercise.

Figure 5. Example Scenario Exercise with explanatory feedback.

Content Development. Access to representatives of the ICF's target audience enabled us to employ an iterative participatory design process for creating the Crawl and Walk Phase instructional content, including Application Questions and Scenario Exercises. In general, we first created the text basis (e.g., scripts) for all content, including performance feedback, and then tested it internally. Revised text was submitted to review by one or more military subject matter expert(s) and revised again based on their input. For multimedia instruction, the text was then used to generate audio or video files, and storyboards were used to support selection and integration of graphical content with audio. We made few changes to the multimedia once it was implemented. Changes to the text-based content (i.e., Application Questions and Scenario Exercises) occurred multiple times throughout product development based on Soldier input.

A challenge we encountered was determining how much to ―militarize" the Crawl and Walk Phase training content. Although the ICF target audience comprises Soldiers, our objective was to balance applicability with accessibility to a wide, civil-military target audience. Such a balance would enable (eventual) cost-effective adaptation of the ICF for training civilians selected to serve on interagency teams. Informal user testing suggested it would be appropriate to use a graded approach in which initial instruction (i.e., multimedia presentation and Application Questions) involved entirely domestic civilian examples and problems and later instruction (i.e., Scenario Exercises) featured civil-military SSTR situations. This process would familiarize Soldiers with civilian approaches to complex domestic problems that are similar in nature to those that must be solved overseas (e.g., designing a regional transportation system, multinational work team coordination issues, managing workplace conflict). Transitioning from general skills development to application to SSTR problems in particular would also promote transfer of training to a variety of contexts. For Soldiers resistant to generalized instruction, we also created short videos in which an Army veteran explicitly described the application of Crawl and Walk Phase skills to his mission success.

When developing Application Questions, a key concern was ensuring that the items sufficiently challenged Soldiers to think deeply about the concepts presented in the multimedia instruction. We also wanted the application process to prepare learners for providing open-ended responses to the Scenario Exercises and for communicating effectively during the Run Phase role-plays. Alignment between the Application Questions and Scenario Exercises was intended to promote rapid understanding of how the concepts could apply to SSTR operations. With these goals in mind, we designed questions that require Soldiers to make discriminations between ―naturalistic" stimuli (e.g., conversation snippets, opinion statements) or to anticipate the next sequence of events in a brief vignette. We ensured that each learning objective addressed by the Application Questions is tied to the Scenario Exercise vignettes and their associated reflection questions. To simplify the user experience and performance scoring, only multiple choice and matching type questions were used. Response options were designed to provide a set of equally plausible answers to the associated question. Selection of the best answer requires carefully reading the question to discern the context in which the response options are applied.

To keep Soldiers focused on self-development, explanatory feedback is provided on the Application Questions and Scenario Exercises immediately after an action is taken, and training status reflects progress instead of performance quality. As described above, the primary function of the learner activities is to promote reflection on consensus-building concepts and their

application in a complex and uncertain environment, rather than to evaluate performance. Feedback for Application Questions explicates the considerations that make one response better than another in a given context and was designed in collaboration with a subject matter expert. Target responses to the scenario reflection questions, used to provide canned feedback, were developed by aggregating the Scenario Exercise responses of several Army veterans recently re-deployed from Iraq and Afghanistan. In this light, feedback in response to each Soldier action is more analogous to a discussion with an educated, but potentially imperfect other. The learner may disagree, but there is no real cost associated with doing so; the benefit, however, is deeper thinking about the issues. This form of social learning experience is common among adult professionals, and is fostered in other leader development venues, such as Army professional forums (Cianciolo & Evans, in press).

Content implementation. Our primary considerations when implementing the Crawl and Walk Phases were scaleability and cost-effectiveness. Our intent was to create instruction that was simultaneously engaging and cost-effectively modifiable in the event that the government wished to make changes to the product or to adapt it for a broader, multiservice or interagency learner audience. To address these concerns, only instructional elements (i.e., the introduction to key concepts and the military veteran ―war stories") which must command learner attention in the context of limited learner interactivity were implemented as multimedia (see Abell, 2000). Content that was expected to change frequently was implemented as text and still images.

Another consideration was Soldier access. Although multimedia can be a more engaging and effective method for conveying some learning content, it is not of much use if it cannot be viewed due to internet connection problems. Moreover, multimedia instruction can place a greater demand on working memory (Reed, 2006), so some learners may prefer simpler, more self-paced ways to access the same information. For these reasons, the multimedia instruction was also implemented as a text-only PDF that learners could download and read at their leisure.

Run Phase

Instruction. The Run Phase requires Soldiers to apply what they learned in the first two phases of instruction to conducting three, 5-person role-play exercises in which they must negotiate consensus on notional interagency plans in a distributed, collaborative environment. The exercises are set in a notional province of Afghanistan that is in the midst of a complex contingency with civil-military SSTR operations underway. Each exercise requires role-players to negotiate a common, interagency plan for addressing the issues set forth in the exercise scenario. In a maximum 90-minute discussion, Soldiers must represent multiservice military and civilian personnel, and must build relationships and manage conflict in order to uncover others' interests, share their own interests, and reach a collaborative solution. An exercise begins when participants select roles to play, review their confidential role information, and start discussion on the issues at hand. An exercise ends when Soldiers reach unanimous agreement on a plan or when they fail to reach agreement after three votes prompted by the ICF. Figure 6 shows the flow of the Run Phase exercises.
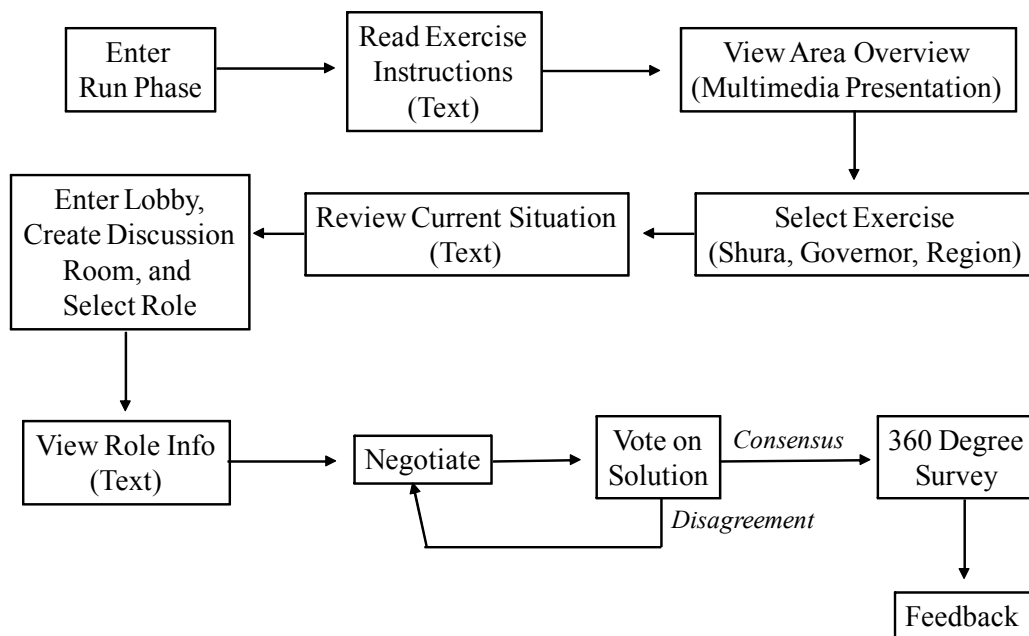
Figure 6. Run Phase flow chart.

Exercise design. Designing and implementing these exercises proved to be the most challenging and exciting aspect of the research. The first objective was to provide exercises that are sufficiently complex to promote substantial role-player engagement, but not so complex that Soldiers become bogged down in the details and their attention drawn away from the key learning points. Finding the appropriate balance was especially critical given that the exercises would be conducted using technology-mediated communications without requiring an instructor or moderator to be present. The second objective was to design a collaborative workspace that could present a complex set of exercises yet simultaneously be easy to use. Close collaboration with a recently returned Afghan police mentor who served on an interagency planning team helped to create the exercises and supporting materials, which were then informally tested with ten volunteers from a Civil Affairs Brigade.

Background materials. Background materials (shown in Figure 7) are used to set up an overarching context in which all three exercises are situated. Nesting all of the exercises in a single context reduces the overall amount of time required to conduct the exercises. Further, we limit the amount of detail provided in the background materials such that participants have enough information to become absorbed in the exercise, but not so much information that they become distracted by details unnecessary to solve the problems at hand. For instance, early in the scenario-development process we considered identifying the materials necessary to expose Soldiers to the integrated government planning process, such as provincial development plans, measures of effectiveness, and area studies. However, we determined that addressing both the planning process and collaborative problem solving knowledge and skill would overly confuse and fatigue the learner, potentially causing them to lose confidence and interest in using the ICF (Abell, 2000). The intent was to provide enough background to enable Soldiers to represent a

variety of military and civilian roles and to work together meaningfully toward the ICF learning objectives while also managing the complexity and duration of the exercise.
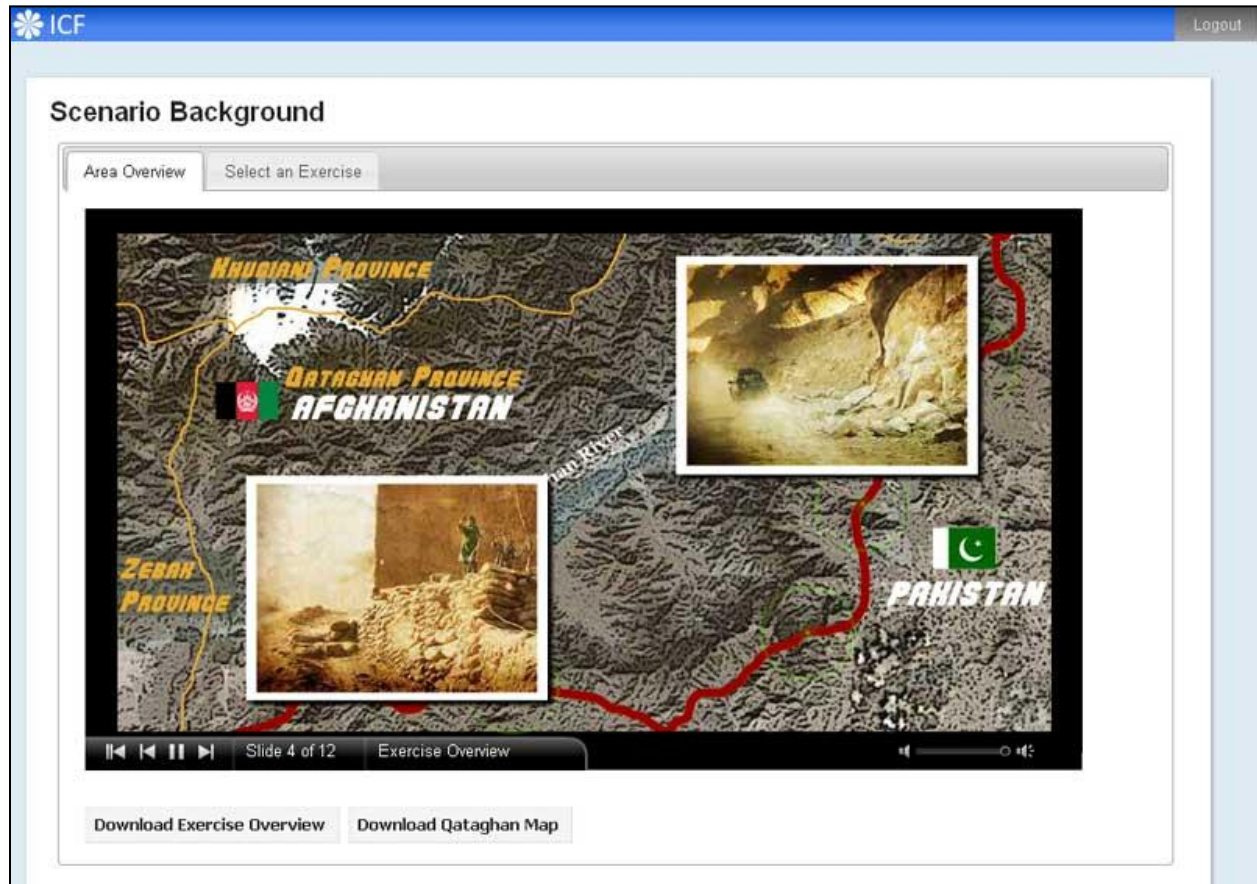
Figure 7. Run Phase background materials.

Although a notional province was created, a real country was selected in which to situate our exercises so as to engage Soldiers with a scenario they would find realistic. At the same time, an attempt was made to balance realism with generalities in order to maximize the likelihood of training transfer to ongoing and future operations. To achieve this balance, events and issues that were common across current and historical complex contingencies were included. Ethnic groups present in Afghanistan were retained, but wherever possible names of specific groups of people (e.g., the Taliban) were replaced with generalities.

Role-play scenarios. To generate productive conversation and problem solving, we recognized the need to create problems that would stimulate sufficiently different viewpoints such that disagreement would occur but not be intractable. Because the point of the Run Phase instruction is to provide opportunities to exercise interests-based negotiation skills in a group setting, we based our exercise format on that typically used to conduct face-to-face multiparty negotiation exercises. Such exercises are rarely implemented in computer-based format (though see Poole, Holmes, & DeSanctis, 1991; Wilkenfeld, Kraus, & Holley, 1998), and there were no published guidelines to use, so we developed our own process.

The process began with identification of operational planning situations that would require Soldiers representing military and civilian agency representatives to collaborate. Roles were then created to represent the parties involved. The situations had to realistically require the participation of all parties such that Soldiers would buy into the planning problem and would acquire accurate information about the involvement of various parties (especially civilian agency representatives) in integrated government planning. Importantly, the exercise scenarios had to require the participation of all roles so there would be reason to expect all Soldiers to have something to do during the exercise. For developing an interagency planning scenario, some situations clearly would not work because they did not have the above-described characteristics:

- Planning for an information briefing or other type of meeting in which the parties primarily listen and/or gather information (achieving a unified plan prior to such a meeting is not a pressing need)
- Planning for an event that involves primarily only one type of stakeholder or there is a clear imbalance of power (e.g., a combat operation – consensus building is not used for this type of planning)

For each selected problem, we then identified five issues that would be plausibly related to the situation at hand and on which the role-players would likely (and legitimately) disagree. Five issues were created so that the exercises would be sufficiently complex to enable ―horse-trading" (i.e., making concessions on lower-priority issues) in the effort to reach consensus. We relied heavily upon the professional literature on civil-military coordination [e.g., case studies (e.g., HASC, 2008; JCOA, 2006; McNerney, 2005-2006; Save the Children, 2004), lessons learned (e.g., Dziedzic & Seidl, 2005; Perito, 2005; U.S. Institute of Peace, 2002), archived interviews (i.e., U.S. Institute of Peace Oral Histories of Stability Operations Project interviews and Combat Studies Institute Operational Leadership Experiences interviews), and historical analyses (e.g., Oliker et al., 2004; Taw et al., 1997)] and current news articles (e.g., regular updates to U.S. Embassy websites for Iraq and Afghanistan, USAID project updates posted online, e.g., at http://www.usaid.gov/iraq/activities.html, and *New York Times* online World news stories) to create issues that would be differentially important to the roles in each exercise (e.g., security vs. agribusiness). Although not excluded, we avoided making personal priorities the primary driver of differing opinions on the issues because the goal of the exercises was to foster better collaboration in light of the common differences due to organizational culture.

Next, for each issue we developed three or more options. Each option represented at least one role's position on the issue. We required more than two options for each issue so that the parties involved could make concessions with regard to positions while still meeting their underlying interests (described next). All options had to be equally viable and to reflect the likely preferences of each role based on expertise and organizational background. It was important not to make any ―strawman" options that would either (1) allow Soldiers to discriminate against particular role players because they were simply wrong or just annoying; or (2) make it difficult for Soldiers to accept and play their role (especially if it is a civilian role) because it favors a fundamentally wrong solution.

For each role, and each issue, interests were created. Creating interests was the way to provide guidance to Soldiers on how to make concessions while simultaneously addressing their core concerns on each issue. Often times, positions, interests, and issues were created in concert in order to ensure a cohesive, realistic problem situation. These positions and interests comprised the confidential information delivered to each role player at the start of the exercise. In the confidential role information, help was provided to Soldiers for recognizing how to make concessions; all of the options for each issue were listed in order of the role's preference according to their interests. Our method of providing positions and interests deviated from typical multiparty negotiation exercises with the intent of better fostering deep processing of the distinction between positions and interests and how such a distinction promotes collaborative problem solving. Appendix B shows the issues and positions created for one of the exercises. Appendix C shows example confidential role information (i.e., interests) for one of the exercise roles.

Exercise scoring. A key design challenge for exercise scoring was finding a way to assess performance without requiring observers while still providing diagnostic feedback. We developed two methods to solve this problem. First, metrics were assigned to a variety of plan solutions that reflect (1) whether the group reached consensus (the group receives a score of 0 for failing to reach consensus and positive numeric value otherwise); and (2) how well particular individuals met the interests of their role (higher individual scores were earned for plans that met the role's more preferred options and higher group scores were earned for plans that reflected collaboration versus domination by a single role). To design the scoring rubric for each exercise, we used the following procedure:

1. For each role, weight the issues according to their importance to that role.
    a. Determine weights using information about what issues typically matter to the organization represented by the role (e.g., security-related issues would have greater weight for the military than for a foreign agricultural advisor)
    b. For simplicity, assign weights such that they sum to 100.
2. Within each issue, assign points to each option such that the sum of the points equals the weight for that issue. Options with more points are more highly preferred by the role.
    a. Determine relative point values using information about the approaches typically preferred by the organizations represented as roles in the scenario (e.g., an NGO may highly prefer an option that involves keeping military and humanitarian aid efforts separate).
3. Assign relative weights and option point values such that there is a cost associated with making concessions, and bigger concessions cost more.
    a. Try to avoid producing option point values that are highly correlated between roles across issues (i.e., such that no two roles have perfectly positively or negatively aligned positions and interests).
4. Assign relative weights and option point values such that a role-player can maximize his or her individual score by minimizing the number of concessions they make. This scoring method motivates role players to be judicious in making selections.
5. Assign an individual and a group score of 0 if the group fails to reach consensus. This scoring method counters self-interest by motivating role players to collaborate.

Individual scores may range from 0 to 100. Group scores may be 0 for failure to achieve consensus or range from 164 to 360, depending on the exercise. Participants are given general instructions that are consistent with the scoring procedure, but they are not given concrete values to try to manipulate. We opted not to present the exact scoring procedure as part of the exercise instructions so as to focus Soldiers on collaborative problem solving, rather than maximizing points. In this way, our exercise design deviates from general practice for multiparty negotiation exercises such as may be found online via the Harvard University Program on Negotiation (e.g., the Harborco exercise) and the Kellogg School of Management Dispute Resolution Research Center.

The second performance assessment method is a 360-degree survey. The 360-survey allows Soldiers to rate themselves and one another on various aspects of the collaborative problem solving process, as follows:

- Willingness to collaborate
- Communication of own interests
- Elicitation of others' interests
- Investigation of unexpected behavior
- Relationship building
- Conflict Management

The purpose of the survey is to provide Soldiers with feedback regarding how well they transferred the knowledge and skill taught in the Crawl and Walk Phases. It also enables an assessment of performance that is independent of how the exercise is scored. Questions are included in the survey that ask about factors that could relate to consensus building success in the exercise but that are unrelated to collaborative problem-solving skill (e.g., previous exposure to the kinds of problems presented in the exercise). The intent of these items is to provide learners with the full-spectrum of information about how the exercise went.

Exercise implementation. Numerous design challenges were overcome in order to implement the Run Phase. The fundamental challenges were (1) determining the proper flow of the exercise events such that Soldiers would not be confused as to where they were or what they were supposed to be doing; and (2) designing a collaborative space that would have sufficient functionality to enable distributed collaborative problem solving but would not be too complex to use easily. Published guidance to work from was minimal, so we implemented the Run Phase via making a series of smaller decisions about interface design and functionality.

These decisions were partially based on input from members of the target training audience. We conducted a face-to-face role-play exercise with ten volunteers from a Civil Affairs Brigade using one of our exercises in order to test workflow and process (e.g., where the trouble spots were, what elements of the exercise might need additional explanation, and what collaborative activities would be of particular value). This information shaped our decision making with regard to what instructions to present to Soldiers, how long the exercise should be permitted to take, the amount of time that should pass before role-players are first prompted to vote, and what unique features could be implemented to foster consensus.

Among the novel features we implemented is a digital —butcher block" (shown in Figure 8) to assist the role-play group leader in tracking and visualizing consensus. The Butcher Block is an interactive display that allows the group leader to drag role icons to the option on particular issues that they favor. Consensus on an issue is made readily visible when all role icons line up on the same option. In contrast to a blank white board or digital easel, the Butcher Block provides a structure that the user can easily understand how to use and is much simpler to implement computationally. This sort of visualization approach has been shown to facilitate collaborative problem solving in other settings (Morrow, Raquel, Schriver, Redenbo, Rozovski, & Weiss, 2008).
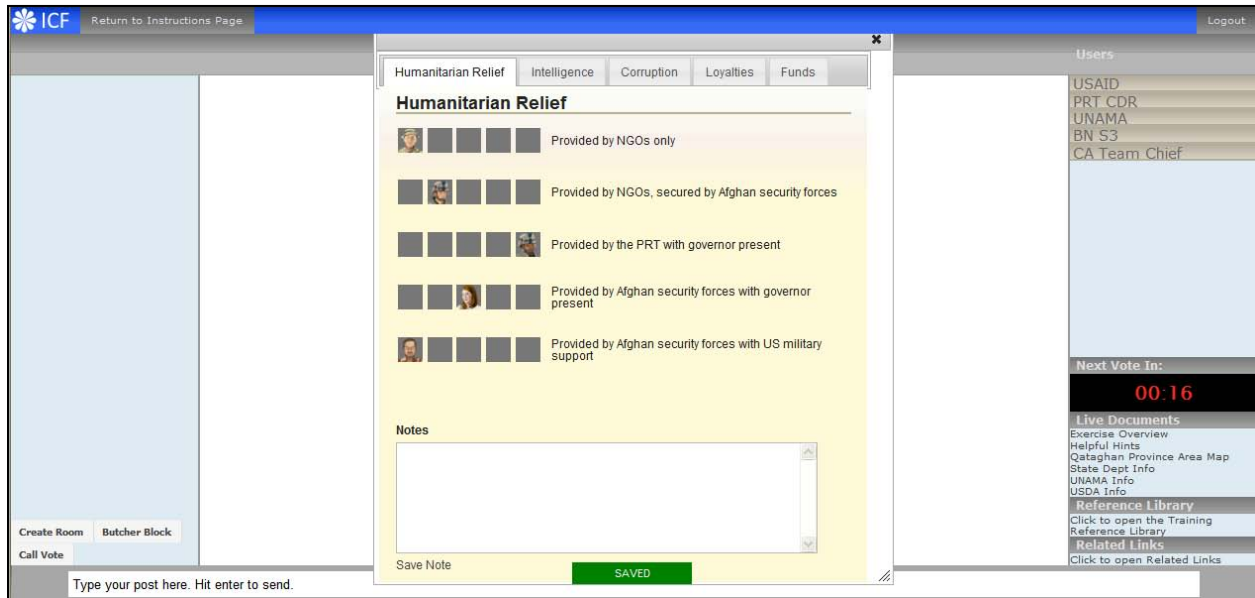
Figure 8. Butcher Block.

Training Reference Library and Related Links

Training support materials should help Soldiers to learn in more depth and promote their ability to transfer what they learned more readily to the operational environment. The two key concerns with regard to providing training support materials were (1) determining what content should be included; and (2) specifying how the content should be organized. We addressed these concerns in multiple ways.

First, we designed separate Training Reference Library and Related Links areas so that Soldiers have ready access to different types of information. The Training Reference Library was designed to provide resources that represent the products of analysis, integration, or reflection on various aspects of civil-military coordination in complex contingencies (e.g., doctrine, lessons learned summaries, professional articles, historical case studies, etc.). It also included general country information for Afghanistan and Iraq, the two theaters to which most deployed Soldiers are sent, and a —tactical clip art" library to facilitate the development of briefings and other communications. The Related Links area was designed to provide access to websites that provide up-to-date information on topics related to the ICF training content, including the U.S. Air Force

Negotiation Center of Excellence, the U.S. Institute of Peace, and the home pages of selected civilian government and non-government agencies. Rather than trying to include a comprehensive sample of the content from these sites in the library, it seemed more efficient and effective over the long-term to give learners access to these sites.

Second, we limited the inclusion of information that related specifically to theaters of operation. Because the ICF was not intended primarily as a pre-deployment training tool, it seemed unecessary and potentially counterproductive to feature a great deal of content of particular interest to deploying personnel. Limiting the content in this way (1) reduces the overall amount of information that users have to browse through; (2) avoids duplication of effort with highly expert training providers at the Army's combat training centers; and (3) increases the likelihood that Soldiers focus on the development of general collaborative problem solving skill versus theater-specific knowledge. Some reference information and links related to Afghanistan and Iraq are included, with the general intent to promote learner buy-in and to foster reflection on how the general skills learned transer to the operational environment (e.g., by providing materials on the United Nations Assistance Missions in Afghanistan and Iraq).

Third, the library documents and related links were organized into general categories so that Soldiers do not have to search through a large number of disorganized items to find what they need. At the same time, we limited the number of sub-categories so that users can access a particular item with a minimal number of clicks. Also, in collaboration with a graduate student at the University of Illinois, Urbana-Champaign, we explored the influence of social identity on knowledge structures. Our interest was to determine whether the Training Reference Library or the Related Links should be organized differently for military versus civilian ICF users. Specifically, we asked research participants to answer a questionnaire about aspects of social identity along which military and civilian agency members involved in complex contingencies tend to differ (tightness, time orientation, and pacifism; see Cianciolo et al., 2009) and to rate the relatedness of several information sources on U.S. operations in Afghanistan. Using multidimensional scaling, we explored whether group differences in how the information was organized could be found. Our findings did not have clear implications for how to organize the Training Reference Library or Related Links, so we applied our best judgment based on our experience with Army knowledge management portals (Cianciolo, Heiden, & Prevou, 2006). Specifically, we organized reference materials based on the type of organization or unit to which they applied (e.g., provincial reconstruction teams). More general content (e.g., doctrinal manuals) was organized into high-level categories (e.g., consensus building, counterinsurgency, etc.).

Account Administration

For the ICF Phase II prototype, system administrators may be information technology specialists, small group instructors, or ARI researchers. To design the interface by which system administrators can manage accounts, we first had to determine what management would be necessary. We made our determination on the basis of our own experience setting up accounts with the ICF and using the ICF to conduct occasional small-scale data collection events (i.e., with the 308th Civil Affairs Brigade personnel). Specifically, we identified three key management activities.

1. Setting up accounts with or without administrative permissions
2. Setting up accounts with or without lockstep enabled
3. Tracking learner progress through the ICF training

Allowing administrators to set up accounts with or without administrative permissions enables them to share the administrative load (e.g., by giving student team leads access to information on learner progress). The ability to disable lockstep enables administrators to individualize training for advanced learners and makes it easier to demonstrate the ICF features to interested parties. A simple interface for tracking how many modules an individual user has completed permits administrators to identify after quick review the progress of a group of students and make decisions accordingly (e.g., whether to remind them to begin or complete the training).

Future Research, Development, Implementation, and Lessons Learned

Training Effectiveness Evaluation

Future research involving the ICF should investigate its training effectiveness. A training effectiveness evaluation not only would validate the utility of the Phase II prototype for immediate adoption in Soldier training, it also would reveal areas where the instruction could be strengthened. Such evaluation could be conducted using a quasi-experimental design by which the negotiation performance of ICF users is compared to that of a control group and, perhaps, a group of Soldiers who have received some other form of interests-based negotiation instruction that is currently available to deploying personnel. It would be possible to conduct this evaluation by comparing performance across groups on the Run Phase exercises or by using an independent, external criterion, such as a face-to-face multiparty negotiation exercise.

Integration with Related ARI-Supported Research

The critical importance of civil-military coordination in today's operational environment has stimulated other ARI-supported research investigating leader influence and negotiation knowledge, skills, abilities, and other characteristics (KSAOs) that are closely related to those addressed by the ICF. For instance, Wisecarver, Schneider, Foldes, Cullen, and Zbylut (2010) explored the KSAOs underlying a leader's ability to influence others to change their action and/or attitude/opinion. Influence, seen as the physical expression of a leader's power, is particularly important in crisis situations where rapid compliance with a leader's wishes is necessary to solve the immediate problem. Durlach, Wansbury, and Wilkinson (2008) investigated the employment of game-based techniques for developing one-on-one, win-win negotiation skills with Iraqi citizens.

Key similarities. Our Phase I research did not present a comprehensive list of KSAOs for consensus building as did Wisecarver at al. (2010). Rather, our research focused on identifying the knowledge and the individual and collective skills *specific* to successful interagency planning in SSTR operations. In this way, our approach was similar to that adopted by Durlach et al. (2008), who focused on a specific application of negotiation skill. Review of

Wisecarver et al. nevertheless suggests that many of the leader influence KSAOs they identified would also predict success in collaborative problem solving. For example, both our research and that of Wisecarver et al. point to the importance of relationship building as a strategy for success. In the case of collaborative problem solving, relationship building fosters the prosocial orientation that underlies willingness to take on the hardship of collaboration. In the case of leader influence, the same technique enhances power (through increased social capital) and fosters lasting change in attitude and/or opinion (through more effective soft tactics). Durlach et al. also recognized relationship building as a critical negotiation skill.

Other KSAOs that explicitly overlap across Cianciolo et al. (2009) and Wisecarver et al. (2010) include conflict management, joint organization knowledge, knowledge of maladaptive perceptual biases, and knowledge of core cultural values (and their differences). A substantial number of the other KSAOs listed in Wisecarver et al., such as behavioral flexibility, perspective taking/frame changing, listening skill, possession of Army values, and general cognitive ability also could be considered applicable to consensus building (as well as to other aspects of leadership), although this applicability remains to be empirically tested. Similar to Durlach et al. (2008), who focused on negotiation with Iraqi citizens, our own research recognized cultural knowledge as important to reaching win-win solutions.

Key differences. A clear difference between influence and consensus building appears to be the unit of analysis (Gronn, 2002). Whereas the individual leader extends influence outward upon others, collaborative problem solving is an exercise of collective leadership, where the goal is not to control other people's actions but to involve their interests directly in a group problem solving process (Gronn, 2002). Situations that call for collaborative problem solving are sufficiently complex that they cannot be adequately defined or solved via the dominance of a single perspective. Moreover, the kinds of problems that must be solved collaboratively generally persist over long periods of time, requiring sustained interdependence and trust, which can be damaged if stakeholders perceive that influence tactics are being used in place of consensus building techniques.

For these reasons, there are some KSAOs that are unique to collaborative consensus building versus leader influence, chiefly knowledge specific to one approach versus the other (e.g., knowledge of influence tactics versus knowledge of the distinction between positions and interests), motivation to lead versus motivation to collaborate, and certain personality characteristics (dominance, narcissism, Machiavellianism, and action orientation versus tolerance for ambiguity and state orientation).

Along these lines, a key difference between the ICF and Durlach et al.'s (2008) negotiation training system (BiLAT) is that the ICF seeks to foster collective capability (i.e., concertive action, through multiparty role-play exercises), whereas BiLAT focuses on individual capability, such as negotiation preparation and planning. BiLAT also provides very specific cultural training, such as gestures and other basic conduct, whereas the ICF does not.

Suggested integration. The clear overlap in KSAOs required for leader influence, one-on-one win-win negotiation, and collaborative problem solving suggests that a unified training system could foster substantial foundational development of leader interpersonal skill. The

KSAOs unique to each approach could then be addressed by separate components of the system, with their distinct roles but essential interplay highlighted as part of a complete leader ‒toolkit." For instance, an important issue not addressed by the ICF is what a leader should do in the event that he or she is willing to collaborate, and possesses sufficient consensus building skills, but is working in the context of another (or others) who is unwilling. It is likely in this situation that the leader would need to employ influence tactics in order to change commitment to the collaborative problem solving process or at least to foster compliance. Possibly, the leader would be forced to abandon consensus building when collective leadership failed and adopt influence tactics in order to move his or her personal agenda forward. It should also be noted that successful participation in collaborative problem solving has intangible benefits such as enhanced social capital (Innes & Booher, 1999), which would increase a leader's power and ability to influence, when necessary. With some content modification, the negotiation preparation training provided in the BiLAT system would address an important determinant of successful consensus building. A unified training system would eliminate the need to develop duplicate stage-setting skills training.

Recommendations for Future Development

There are several areas where extensions of the ICF Phase II prototype could be of value to the Army. In general, advancements in product capability should increase the product's training effectiveness, outreach, and maintainability.

Enhanced training effectiveness. A first step in enhancing the training effectiveness of the ICF involves formal evaluation of the learner assessment items used in all phases of instruction. For the Crawl and Walk Phase Application Questions, it would be of particular interest to ensure that assessment items (1) distinguish between Soldiers with and without interests-based negotiation training or experience; (2) produce average scores that are neither at floor or ceiling; (3) feature distracter items that are representative of the complexities of collaborative problem solving yet not overly alluring or too easily rejected; (4) promote productive reflection on the conditions that make some answers more or less ‒right" than others; and (5) capture learner behavior that transfers to other situations (e.g., actual interests-based negotiations).

Also in the Crawl and Walk Phases, a scoring rubric for each Exercise Scenario should be formally developed and validated in order to provide more comprehensive, diagnostic target responses to learners. Developing such a rubric would require collecting scenario responses from members of the ICF target audience (i.e., novices) and from recognized experts in integrated US government planning at the field level. Aggregate responses from these two samples could form the anchors of the rubric's rating scale. The rubric could then be used for learner self-scoring of the essay responses (Lussier & Shadrick, 2004), for developing automated scoring algorithms, or simply for providing enhanced canned feedback. In the latter case, feedback could be augmented with reflection questions to stimulate deeper thinking about the issues presented in each scenario.

In the Run Phase, where assessment is driven primarily by 360-degree survey, it is important to determine whether self- and other-ratings are reflective of independent measures of collaborative problem solving skill (e.g., performance on the Crawl and Walk Phase assessment

22

activities or Run Phase exercise observer checklist scores) and relate to collaborative problem solving skill outside of the ICF context. The architecture used to generate scores for each Run Phase exercise should be assessed to determine whether role players must employ effective collaborative problem-solving skills in order to earn high scores.

Finally, expert involvement could be beneficial for training effectiveness. It may be difficult for ICF users to maximize the benefits of the Run Phase exercises without the presence of a discussion facilitator or expert moderator. Such an individual could ensure that derailed conversations are brought back on track and used as teachable moments. However, the ICF currently restricts exercise discussion room access to role-players. A moderator role would need to be added to open up discussion rooms to participants other than those directly involved in the exercise.

Increased outreach. Foremost, providing greater ease of Army access to the ICF is paramount. An ARI Research Product accompanies this report that provides installation information and installation software for the ICF. Ultimately, however, we would like to provide CAC-enabled usability of the ICF for Army-wide access to interested parties. The U.S. Army Research Institute is currently pursuing certification of networthiness for the ICF, but this goal has not been achieved at the time of publication of this report.

Secondly, the current ICF use case assumes that the target audience consists primarily of small groups of Soldiers who collectively decide to engage in collaborative problem solving skill development (e.g., because they are members of the same class or unit). Alternative target audiences may include Army personnel who are widely geographically distributed and strangers to one another. To support a diffuse network of users, the ICF would need several additional features to promote social learning, for example a user directory with biographical information, asynchronous chat message boards associated with the Crawl and Walk phases of instruction, and collaborative modification of reference content (i.e., user additions to the Training Reference Library and Related Links). The ICF would also need advanced administration features to enable validation of user registration applications, vetting of user contributions, and large-scale content management, among other things.

Finally, to enable true interagency coordination training, the ICF must be effective for, and accessible to, people besides Army personnel. The expanded target audience should include personnel from the other military services as well as from civilian government agencies. To support an expanded target audience, it would be necessary to conduct user testing of the ICF with representative samples from that audience and to document the specific areas where content and interface design inadvertently act to exclude non-Army personnel from the learning process. The documentation should then be used to draw up use cases for interagency adoption of the ICF, which would serve as the basis for additional development.

Improved maintainability. Currently, there is no way for an ICF user who is not also a software developer to modify content in the training system. However, it can readily be imagined that a small-group instructor or expert user may wish to manage the contents of the Training Reference Library and Related Links site or to add Run Phase role-play exercises. The ICF was intentionally designed to enable cost-effective management of content, but additional

administrative and/or authoring features must be added to enable its average users to participate in the content-management process.

Technical Challenges and Lessons Learned

The lessons learned from this effort center on the product design challenges posed by the nature of SBIR projects, which call for simultaneous product development and marketing. The ideal product development effort begins with a specific target audience in mind and involves an iterative, participatory design process with representatives of that target audience. In contrast, SBIR projects often do not begin with a specific target audience identified; interim stages of product development--designed without target audience participation--must be used to recruit representatives of that target audience to invest in testing the product and providing input to refine or tailor the design. In our experience on this project, recruiting members of a target audience that had numerous other demands on their time--including requests for input from other product developers--required demonstrating a nearly completed product that already met their needs and expectations. Developing a demonstrable product without end user input required making potentially costly wrong decisions regarding functionality and multimedia content. It also increased the likelihood that substantive changes in response to end user input could not be made within the contract period of performance. Although the third phase of the SBIR program supports commercialization of the product for a particular target audience, in our case participation of the target audience was absolutely necessary to develop key elements of the ICF's functionality: automated scenario response scoring and networthiness certifiability.

Automated Text Analysis. We initially proposed to use latent semantic analysis (LSA) as the backbone for the ICF, allowing the scores derived from automated text analysis to serve as the primary performance assessment technique. LSA scores would (1) drive the feedback provided to learners in response to training performance and (2) link ICF users to additional learning resources and to each other. The assumption that we would use LSA for performance assessment dictated several choices we made initially with regard to the design of learner interactivity with the ICF. Specifically, we adopted a scenario-based approach to assessment in the Crawl and Walk Phases of instruction and designed our Run Phase collaborative workspace to be primarily chat driven (i.e., as opposed to using voice over internet protocol for role player communications).

Our LSA-based system architecture presumed that we would have access to a substantial representative sample of the ICF target audience (approximately 100 people), which was required in order to develop effective scoring algorithms. From large samples of text data, LSA statistically derives a ―semantic centroid,‖ which is used as a target response or rubric against which to compare learner performance. It was very difficult to recruit individuals who could provide candidate scenario responses, and it was impossible to recruit a sufficient number of groups to provide candidate chat archives for role-play exercises. Adding to the general difficulty of recruiting volunteers was the challenge of identifying representative participants. At the time we began our research, a relatively small number of Army personnel had served on interagency, civil-military teams, and most of these people were in the Reserves and widely geographically distributed. Collecting data from these personnel could not be accomplished via troop support weeks or other methods that bring researchers and Soldiers together.

We responded adaptively to these lessons learned by modifying the nature of learner interactivity with the ICF such that instructorless scoring and feedback could be provided in the absence of automated text analysis. First, using the process described above, we drafted canned feedback to the Scenario Exercise reflection questions. The feedback was based on the rubrics used as a starting point for LSA development and could present learners the expert considerations associated with answering each question. Second, we developed the Crawl and Walk Phase Application Questions as an additional method for stimulating in-depth thinking and reflection. In future efforts, it will be necessary to carefully consider the data requirements of any proposed modeling technique in light of the possibilities for data collection. An informed understanding (to the extent possible) of the constraints will help ensure that instructional design specifications do not overreach the capability of the supporting technology.

Networthiness Certification. This effort highlighted that it is not a simple matter to deliver a web-based application to the Army. Before the application can be accepted, it must pass a rigorous networthiness certification process led by the agency that receives it. Certification requires a significant amount of time and expertise on the part of the receiving agency, with the following implications:

1. The receiving agency must feel very strongly that the application will meet critical warfighter training requirements immediately.
2. The receiving agency must have personnel knowledgeable about the networthiness certification process, and these personnel must have time available to conduct the necessary tests of the application they are receiving.

Anything that SBIR contractors can do to determine the requirements for certification will help them ensure that the application they develop will pass and become immediately usable to the Army. Investigating these requirements demonstrates a good faith effort on the part of the contractor to manage risk in the research and development process. However, obtaining information about networthiness standards requires either past experience with the certification process, which is unlikely for many small businesses that win SBIR awards, or close coordination with a receiving agency. The willingness of the receiving agency to share information about networthiness and invest in certification is driven by the degree to which the application meets the needs of the end users they represent. Due to the challenges described above, it can be quite difficult to produce such an application because the necessary design input from the target audience is not forthcoming.

The lesson we learned from our exposure to the networthiness certification conundrum was that the exact definition of the contract requirement to —deliver a software prototype" must be carefully specified for SBIR projects that involve the development of web-based applications. If delivery requires passing networthiness certification, a separate line item in the project proposal for dealing with the process is likely necessary, and the scope of technical development must be reduced in order to allow sufficient time to complete the certification process within the contract period of performance. In such cases it also would be best to propose applications for which a target audience can be readily identified and accessed very early on in the research and development effort.

Conclusions

The research and development of the ICF Phase II prototype represents the novel application of instructional technology to fostering the consensus building skill of military personnel. This report documents the basis of our design decisions made in the absence of scholarly literature specifically addressing this task and the presence of technical challenges typically associated with SBIR projects. The feedback we received from informal testing with members of the target user audience indicates that the ICF Phase II prototype addresses a critical gap in the Army's preparation of Soldiers to conduct SSTR operations and counterinsurgency. Although a great deal of effort has been expended on developing theater-specific cultural awareness and negotiation skills, relatively little investment has been made in ensuring that Soldiers have the capability to collaboratively develop a united American approach to the complex contingencies that require integrated government planning. The ICF training compliments related ARI-supported efforts to promote generalizable interpersonal knowledge and skill, including leader influence and one-on-one negotiation, and potentially provides Soldiers with an additional tool for achieving mission success. In its current state, the ICF may be used for foundational knowledge and skill development by small groups of learners, and represents a research and development effort that was responsive to lessons learned. Further research and development will enhance the product's outreach and training effectiveness.

References

Aall, P., Miltenberger, D., & Weiss, T. G. (2000). *Guide to IGOs, NGOs, and the military in peace and relief operations*. Washington, DC: U.S. Institute of Peace Press.

Abell, M. (2000). Soldiers as distance learners: What Army trainers need to know. *Proceedings of the Interservice/Industry Training, Education, & Simulation Conference*. Orlando, FL.

Avery, M., Auvine, B., Streibel, B., & Weiss, L. (1981). *Building united judgment: A handbook for consensus decision making*. Madison, WI: The Center for Conflict Resolution.

Burgess H., & Spangler, B. (2003). *Consensus Building*. A Beyond Intractability.org knowledge base essay. Available at: http://www.beyondintractability.org/essay/consensus_building/.

Chiarelli, P. W., & Michaelis, P. R. (2005). Winning the peace: The requirement for full-spectrum operations. *Military Review, 85*(4), 4-17.

Cianciolo, A. T., & Evans, K. M. (in press). Distributed communities of practice. To appear in *The Oxford Handbook of Cognitive Engineering*.

Cianciolo, A. T., Heiden, C. G., & Prevou, M. I. (2006). *Assessing Army professional forums: Metrics for effectiveness and impact* (Research Report No. 1862). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Cianciolo, A. T., & Decostanza, A. (2010). Interagency Consensus Forum (ICF) technical specification. (U.S. Army Research Institute report in preparation).

Cianciolo, A. T., LaVoie, N., Foltz, P., & Pierce, L. G. (2009). *Augmented performance environment for enhancing interagency coordination in stability, security, transition, and reconstruction (SSTR) operations* (Tech. Rep. 1246). Arlington, VA: U. S. Army Research Institute for the Behavioral and Social Sciences.

Cohen, R. (1997). *Negotiating across cultures* (Revised edition). Washington, DC: U.S. Institute of Peace Press.

Coleman, P. T., & Lim, Y. Y. J. (2001). A systematic approach to evaluating the effects of collaborative negotiation training on individuals and groups. *Negotiation Journal, 17*(4), 363-392.

Denis, J.-L., Lamothe, L., & Langley, A. (2001). The dynamics of collective leadership and strategic change in pluralistic organizations. *Academy of Management Journal, 44*(4), 809–837.

DiStefano, J. J., & Maznevski, M. L. (2000). Creating value with diverse teams in global management. *Organizational Dynamics, 29*(1), 45-63.

Durlach, P. J., Wansbury, T. G., & Wilkinson, J. G. (2008). Cultural awareness and negotiation skills training: Evaluation of a prototype semi-immersive system. *Proceedings of the 27th Army Science Conference*. Orlando, FL.

Dziedzic, M. J., & Seidl, M. K. (2005). *Provincial reconstruction teams and military relations with international and nongovernmental organizations in Afghanistan*. Washington, DC: United States Institute of Peace. Available at: http://www.usip.org/pubs/specialreports/sr147.html.

Ekbladh, D. (2006). From consensus to crisis: The postwar career of nation-building in U. S. foreign relations. In F. Fukuyama (Ed.), *Nation building: Beyond Afghanistan and Iraq* (pp. 19-41). Baltimore, MD: Johns Hopkins University Press.

Godschalk, D. R., Parkham, D. W., Porter, D. R., Potapchuk, W. R., Schukraft, S. W. (1994). *Pulling together: A planning and development consensus-building manual*. Washington, DC: Urban Land Institute.

Gronn, P. (2002). Distributed leadership as a unit of analysis. *The Leadership Quarterly, 13*(4), 423-451.

Horenczyk, G. & Bekerman, Z. (1997). The effects of intercultural acquaintance and structured intergroup interaction on in-group, out-group and reflected in-group stereotypes. *International Journal of Intercultural Relations, 21*(1), 71-83.

Innes, J. E., & Booher, D. E. (1999). Consensus building and complex adaptive systems: A framework for evaluating collaborative planning. *Journal of the American Planning Association, 65*(4), 412-423.

Joint Center for Operational Analysis. (2006). *Provincial reconstruction teams in Afghanistan: An interagency assessment.* Suffolk, VA: Joint Center for Operational Analysis.

Kiffin-Petersen, S. A., Cordery, J. L. (2003). Trust, individualism, and job characteristics as predictors of employee preference for teamwork. *International Journal of Human Resource Management, 14*(1), 93-116.

Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest, 7*(3), 77-124.

Levine, H., & Lev, A. (2004). *Mediating from a "war of olives and pines" to agreements about a park: Consensus-based land use planning in a multicultural setting*. Boston: Program on Negotiation at Harvard Law School. Available at: http://www.pon.org/catalog/product_info.php?products_id=362.

Lindsey, L., & Berger, N. (2009). Experiential approach to instruction. In C.M. Reigeluth & A. Carr- Chellman (Eds.), *Instructional-design theories and models: Building a common knowledge base* (pp. 117-142). New York: Taylor & Francis.

Luck, G. & Findlay, M. (2007). *Interagency, intergovernmental, and nongovernmental coordination: A joint force operational perspective*. U.S. Joint Forces Command, Joint Warfighting Center. Available at http://jko.cmil.org/file/109/view.

Lussier, J. W., & Shadrick, S. (2004). How to train deployed Soldiers: New advances in interactive multimedia instruction. *Proceedings of the Interservice/Industry Training, Education, & Simulation Conference*. Orlando, FL.

Margerum, R. D. (2002). Collaborative planning: Building consensus and building a distinct model for practice. *Journal of Planning Education and Research, 21*(3), 237-253.

McChrystal, S. A. (2009). *Memorandum: Counterinsurgency (COIN) training guidance*. Kabul, Afghanistan: Headquarters U.S. Forces-Afghanistan/International Security Assistance Force.

McNerney, M. J. (2005-2006). Stabilization and reconstruction in Afghanistan: Are PRTs a model or a muddle? *Parameters, 34*(4), 32-46.

Morrow, D., Raquel, L., Schriver, A., Redenbo, S., Rozovski, D., & Weiss, G. (2008). External support for collaborative problem solving in a simulated provider/patient medication scheduling task. *Journal of Experimental Psychology: Applied, 14*(3), 288-297.

Oliker, O., Kauzlarich, R., Dobbins, J., Basseuner, K. W., Sampler, D. L., McGinn, J. G., et al. (2004). *Aid during conflict: Interaction between military and civilian assistance providers in Afghanistan, September 2001 – June 2002*. Santa Monica, CA: RAND Corporation. Available at: http://www.rand.org/pubs/monographs/2004/RAND_MG212.pdf.

Perito, R. M. (2005). *The U.S. Experience with provincial reconstruction teams in Afghanistan: Lessons identified*. Washington, DC: United States Institute of Peace. Available at: http://www.usip.org/pubs/specialreports/sr152.html.

Poitras, J., Browne, R. E., & Byrne, S. (2003). Bringing horses to water? Overcoming bad relationships in the pre-negotiation stage of consensus building. *Negotiation Journal, 19*(3), 251-263.

Poole, M. S., Holmes, M., & DeSanctis, G. (1991, August). Conflict management in a computer-supported meeting environment. *Management Science, 37*(8), 926-953.

Reed, S. K. (2006). Cognitive architectures for multimedia learning. *Educational Psychologist, 41*(2), 87-98.

Rubinstein, R. A. (2003). Cross-cultural considerations in complex peace operations. *Negotiation Journal, 19*(1), 29-49.

Save the Children. (2004). *Provincial reconstruction teams and humanitarian–military elations in Afghanistan*. London, UK. Available at:

http://www.humanitarianinfo.org/darfur/uploads/military/Military%20PRTs%20in%20Afghanistan_Sep04%20by%20SCUK.pdf.

Susskind, L., McKearnan, S., & Thomas-Larmer, J. (1999). *The consensus building handbook: A comprehensive guide to reaching agreement*. Thousand Oaks, CA: Sage.

Taw, J. M., Agmon, M., & Davis, L. M. (1997). *Interagency coordination in military operations other than war: Implications for the U.S. Army*. Santa Monica, CA: RAND Corporation.

The White House. (2005). *National Security Presidential Directive (NSPD) 44: Management of interagency efforts concerning reconstruction and stabilization*. Washington, DC.

U.S. House of Representatives Committee on Armed Services. (2008). *Agency Stovepipes vs. Strategies Agility: Lessons We Need to Learn from Provincial Reconstruction Teams in Iraq and Afghanistan.* Washington, DC.

U.S. Department of the Army. (2006). *FM 3-24: Counterinsurgency.* Washington, DC.

U.S. Department of Defense. (2009). *Directive 3000.05: Military support for SSTR operations*. Washington, DC.

U.S. Institute of Peace. (2002). Good practices: Information sharing in complex emergencies (Virtual Diplomacy Report No. 11). Washington, D.C. Available at: http://www.usip.org/virtualdiplomacy/publications/reports/11.html.

Wade, J. (2008). *Operational leadership experiences in the Global War on Terrorism* (interview transcript). Fort Leavenworth, KS: Combat Studies Institute.

Wilkenfeld, J., Kraus, S., & Holley, K. M. (1998). The negotiation training model. *Simulation & Gaming*, *29*(1), 31-43.

Wisecarver, M., Schneider, R., Foldes, H., Cullen, M., & Zbylut, M. R. (2010). *Identifying knowledge, skills, and abilities for military leader influence*. (Army Research Institute Research Report in preparation).

Zartman, I. W. (1993). A skeptic's view. In G. O. Faure & J. Z. Rubin (Eds.), *Culture and negotiation* (pp. 17-21). Thousand Oaks, CA: Sage Publications.

APPENDIX A. ACRONYMS

ARI	U.S. Army Research Institute
ASC	U.S. Armed Services Committee
COIN	counterinsurgency
DODD	Department of Defense Directive
ICF	Interagency Consensus Forum
IGO	inter-governmental organization
JCOA	Joint Center for Operational Analysis
KSAO	knowledge, skills, abilities, and other characteristics
NGO	non-governmental organization
NSPD	National Security Presidential Directive
SSTR	stability, security, transition, and reconstruction
USGA	U.S. government agency

Plan for a Shura

Current Situation

A critical barrier to achieving stability and security in Qataghan is the lack of development of its transportation infrastructure. Bridges across the Qataghan River would link the isolated southeastern regions of the province to economic opportunities and government services on the northwestern side of the river. In addition, road construction would link isolated rural areas on the northwestern side of the river to the provincial capital and economic center as well as to markets in larger cities. Two-way traffic along these roads would make legitimate agricultural products from rural areas more commercially viable and would facilitate the movement of government officials and services to remote areas. At least one of the border crossings into Pakistan could be improved – with corresponding paved roads on both sides of the border – to provide an effective commercial trade route between the countries. Work on roads and bridges would provide valuable employment opportunities for men who might otherwise turn to criminal or anti-coalition activities.

The development of Qataghan's transportation infrastructure is no small matter, however. At issue are the topics of:

- Prioritization of Construction Efforts: Bridges and roads will have different higher-order effects on the flow of goods and people, which has implications for economic development and law enforcement. What priority should bridges be given relative to roads?
- Resourcing Construction Efforts: There are numerous ―pots of money" available to develop the transportation infrastructure, but no one ―pot‖ is sufficient to ensure comprehensive, sustainable construction. Who should pay how much for the construction?
- Securing Construction Workers, Equipment, and Sites: Anti-government forces will try to halt construction efforts by terrorizing construction workers and destroying equipment. Who will provide security for construction workers and their families as well as the construction sites and equipment?
- Balancing Humanitarian Aid: There are more immediate needs for US intervention in Qataghan than transportation infrastructure. What balance should be achieved between long-term development and the delivery of short-term humanitarian aid?
- Information Operations: Key to achieving maximum impact is communicating what is accomplished. However, there will be many tasks accomplished by many different players. What (and who) should be the focus of a unified information operations strategy?

The key actors discussing these topics are:

- The Qataghan PRT Commander: CDR Jeff Davis (US Navy)
- A USAID contracts manager: Ms. Wendy Liu
- A Police Mentor Team (PMT) Chief: MAJ Fernand Soto (US Army Reserves)
- A maneuver Battalion operations officer (S3): MAJ Brian Dilley (US Marine Corps)
- A USDA representative: Dr. Hank Stall

Before the next shura, consensus must be achieved among these people so that US personnel can present a unified front and gather feedback from the locals that will be useful for advising Governor Ahmadi. Because travel throughout the province is so difficult, and because the several stakeholders are located in another province, the key actors have agreed to discuss the issues online.

The Issues

Prioritization of Construction Efforts

The development of bridges versus roads will have different higher-order effects on the province. Bridges connecting the northwestern and southeastern regions of the province would reduce cultural segregation and enhance the government's outreach to remote areas. Bridges also could create a wedge between anti-government insurgents and criminals. Criminals support bridge construction because bridges will facilitate smuggling into and out of Qataghan's interior. Roads would not address the cultural isolation of the southeastern region and consequently would not affect anti-government operations in the area. Roads would, however, open up economic opportunities for residents in the northwestern region, providing a means to more widely distribute agricultural products to the capital, Tantil, without simultaneously facilitating cross-border smuggling operations. Economic success in this region may strengthen the provincial government more quickly, setting the stage for unification with the southeastern region.

As of yet, neither local nationals nor government officials have expressed a preference for bridge versus road construction. They generally focus on more immediate humanitarian needs, such as food and medical aid. In the absence of this input, there are three options on the table for discussion:

- <u>Priority Option #1</u>: Prioritize bridge over road construction
- <u>Priority Option #2</u>: Equally prioritize bridge and road construction
- <u>Priority Option #3</u>: Prioritize road over bridge construction

Resourcing Construction Efforts

From beginning to end, the effective development of sustainable transportation infrastructure in Qataghan Province will cost tens of millions of dollars – much more than any one organization in the province can invest, including the government. This cost includes materials, equipment, and workers. Increased government investment comes with its own cost of increased US personnel time and resources to guide the government's spending.

The key actors must decide among the following options for getting the construction effort funded:

Resourcing Option	Government	USAID	PRT	Maneuver BN	USDA
#1	25%	35%	5%	15%	20%
#2	25%	20%	20%	30%	5%
#3	20%	45%	15%	5%	15%
#4	45%	25%	10%	10%	10%

Securing Construction Workers, Equipment, and Sites

Taliban insurgents see any infrastructure development as a threat to their influence by improving the lives of people in the area and positively representing the Afghan government. There is no doubt that they will attempt to threaten, kidnap, or kill local civilians (and their loved ones) involved in construction. They will also attempt to hamper efforts by destroying construction equipment, which further adds to intimidation of the workers. Moreover, success in promoting fear and slowing down construction efforts will win support for their cause, boost recruiting efforts, and attract negative media attention that will erode international support for US and international involvement in the area.

There are several options for securing construction efforts, which include the Afghan National Army (ANA), the Afghan National Police (ANP), US maneuver forces, PRT security personnel, and local militias. However, each of these forces has different limitations and contrasting priorities. Given limited troop availability but the importance of securing construction efforts, the following options are on the table for discussion:

- Security Option #1: A combination of ANP and ANA troops, with US assistance, are used to conduct regular patrols of the construction site and the residential areas where workers live.
- Security Option #2: ANP forces, with US mentor team assistance, are used to man checkpoints on roads leading to the construction site and to the residential areas where workers live.
- Security Option #3: Hire and train locals (under the supervision of the US maneuver battalion and ANA) to conduct security patrols.
- Security Option #4: PRT security personnel with reach back to a quick reaction force from the US maneuver battalion are used to provide convoy security to workers as they commute to and from the construction site.

Balancing Humanitarian Aid

Although transportation infrastructure is critical for establishing stability and national identity throughout the province, there are pressing humanitarian issues that trouble local nationals and their government officials. For instance, medical treatment is extremely limited throughout the province, although there is a hospital in Tantil. Life expectancy is very low and infant mortality is high, even in the capital city. Pashtuns living on the border seek medical treatment for serious cases among their tribesmen in neighboring Pakistan.

The importance of balancing these immediate humanitarian needs, which lend credibility to US and Afghan efforts, with longer term developmental objectives has led to the following options for discussion:

- Balance Option #1: Devote available resources to building clinics in remote areas of province
- Balance Option #2: Build transportation infrastructure around the capital city first so humanitarian aid can flow out to the more densely populated areas
- Balance Option #3: Have security forces provide humanitarian aid during patrols of the construction site and worker residential areas so both efforts are linked in the eyes of the people
- Balance Option #4: Set aside humanitarian aid money, but make it contingent upon government support for infrastructure development

Information Operations

Qataghan Province is seeing the beginnings of an independent media presence in and around the capital city. Local and government meetings held near the provincial capital, Tantil, are usually covered by budding journalists as well as international journalists embedded with the US brigade combat team (BCT) responsible for the area. It can be difficult, however, to coordinate media events to get the word out because so many different activities are going on in the province. As a result, opportunities to proactively conduct information operations are occasionally lost and sometimes organizations compete with each other for media attention.

In light of this situation, the following options are up for discussion:

- Information Operations Option #1: Each key actor should independently and opportunistically leverage events to get the positive word out
- Information Operations Option #2: New construction should be brought to the attention of local journalists, involving them in every phase of the process
- Information Operations Option #3: Local and government meetings should be prioritized as an opportunity for government officials to provide media updates on the construction effort

CONFIDENTIAL ROLE INFORMATION
Qataghan PRT Commander: CDR Jeff Davis (US Navy)

A wide variety of factors make it difficult to coordinate with other actors in your province, including (but not limited to):

- Personnel turnover due to differing deployment cycles
- Stove-piped ─pots" of money
- Difficulty traveling throughout the province for face-to-face meetings
- Different (sometimes contrasting) priorities among organizations operating in the area
- Lack of widely adopted information technology and incentive for systematically sharing information

You are relatively new to the province but have been in Qataghan long enough to know that lack of coordination has resulted in overlapping efforts and ─project fratricide." It has also promoted corruption by host nation government officials eager to ─double-dip" into US development funds. Informal conversations with others have revealed a general consensus that coordination is a problem. You are the one who took the initiative to suggest that this pre-shura planning meeting take place. You worked hard to find a time when everyone could be available to discuss the issues, even suggesting having an online meeting so all of the key stakeholders could be present. For these reasons, you will be the leader of today's discussion.

You have your own concerns about each of the issues up for discussion, as shown in the table on the next page (high-priority issues are bolded). As the group leader, you think you have a pretty good idea of the key challenges, and your goal is to ensure that your interests are met to the greatest extent possible. To do this, you may negotiate on any issue. Although your *position* on each issue is provided in the table, more than one option will meet your *interests*. The options for each issue are listed in the table in the order of how well they meet your interests. To maximize the group score with the smallest reduction to your individual score, you must reach a balance between your interests and those of others, without being overly eager to make compromises. Recall that if the group fails to reach consensus your individual score and the group score will be zero.

During this meeting, your group will be prompted three times to vote on a plan for moving forward with infrastructure development in the province. As the group leader, you may also call votes at any time during the meeting. The meeting is concluded when one of the following occurs:

- There is unanimous agreement on a vote
- 3 prompted votes have been cast without the group reaching unanimous agreement

To prepare for a vote, you must select an option for handling each issue addressed by the plan. Your selections should reflect what you think the group will agree to, based on the discussion. If you are uncertain what the group will agree to, you should select your preferred option(s). When

it's time to vote, you should not agree to a plan unless it satisfactorily meets *at least 3 of your interests.*

The Issue	Your Interests	Your Position	All Issue Options
Prioritization	You are under pressure from the task force commander (your boss, a full-bird colonel) to prioritize bridges. The task force commander feels strongly that bridge construction will enhance security by reducing the need for US airstrikes in the southeastern region of the province. Having dealt with the aftermath of missed air strikes firsthand, you strongly support reduced reliance on air power to root out insurgents.	Prioritize bridge over road construction	• Prioritize bridge over road construction • Equally prioritize bridge and road construction • Prioritize road over bridge construction
Resourcing	In an attempt to make efficient funding decisions, you have already committed much of the PRT's funds, so there isn't much available for new efforts, whether they are bridges or roads. The task force commander has CERP funds he'd be willing to allocate to bridge building, but these funds can't be used to pay people, which is a non-trivial proportion of the expense. You'd like to keep your financial commitment as low as possible.	PRT commits to 5% of the construction cost	• PRT commits 5% • PRT commits 10% • PRT commits 15% • PRT commits 20%
Security	You know the PRT doesn't have enough security personnel unless you ―repurpose" some of your Civil Affairs or Engineering personnel as infantry. Also, your boss sees the defense of construction efforts as an ANP problem. Putting the ANP in charge of defense gives them a chance to represent the Afghan government and doesn't require offensive operations, which they don't seem to conduct effectively yet. It would also provide the ANP with valuable training opportunities.	ANP forces, with US mentor team assistance, are used to man checkpoints	• ANP forces, with US mentor team assistance, man checkpoints • ANP and ANA troops, with US assistance, conduct regular patrols • Hire and train locals (under the supervision of the US maneuver battalion and ANA) to conduct security patrols • PRT security personnel with reach back to a [US] QRF provide convoy security
Balance	Government officials seem to focus a great deal on short-term humanitarian aid needs, especially if meeting those needs would benefit their social network. You think that making aid money contingent on support for infrastructure development would act as a ―carrot" for government officials reluctant to commit to longer-term goals. It would also help put an Afghan face on both the construction and humanitarian efforts because government officials must be directly involved.	Make humanitarian aid money available, but contingent upon government support	• Set aside humanitarian aid money, but make it contingent upon government support • Devote available resources to building clinics • Build transportation infrastructure around the capital city first • Have security forces provide humanitarian aid during patrols
Info Ops	You, as well as your boss, feel it is very important to put an Afghan face on every initiative in order to foster national identity and stability. Media coverage of government events would suffice to get the word out, but enable some government control over what gets covered.	Use local and government meetings as an opportunity…	• Local and government meetings should be prioritized • New construction should be brought to the attention of local journalists • Each key actor should independently and opportunistically leverage events