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Human - Centered Engineering

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Collaborative Critical Thinking

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A UNIQUE FOCUS ON HUMAN-CENTERED ENGINEERING

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- I. Objectives
- II. Expected Final Products/Tools being developed
 - I. Theory and measures
 - I. Theory
 - II. Measures
 - III. Potential fit/contribution to Knowledge Building or Collaborative Processes
 - II. CENTER Tool
 - III. Training
- III. Experiments conducted and empirical findings
- IV. Planned demonstrations/validations of technology developed
- V. Publications
- VI. Lessons Learned

I. Objectives

■ Overall Objective

- Effective collaboration through improved collaborative critical thinking (CCT)

■ Objectives for this year

- Update / revise / improve
 - CCT tool (CENTER)
 - CCT Training
- Perform lab-based validation study
 - USF
- Prepare for and perform Field validation study
 - NWC DDD Lab
- Prepare for fielding of tool (non DDD)
 - NETWARCOM
 - FORCEnet

II. Final Products

- CCT Theory and Measures
- CCT Collaboration Tool (CENTER)
- CCT Training

Potential impact

- Both process and products
 - Improved collaboration
 - Better team decisions
- Measures of CCT

Applications

- Any distributed, synchronous team working together to find a solution.

In the beginning, there was theory...

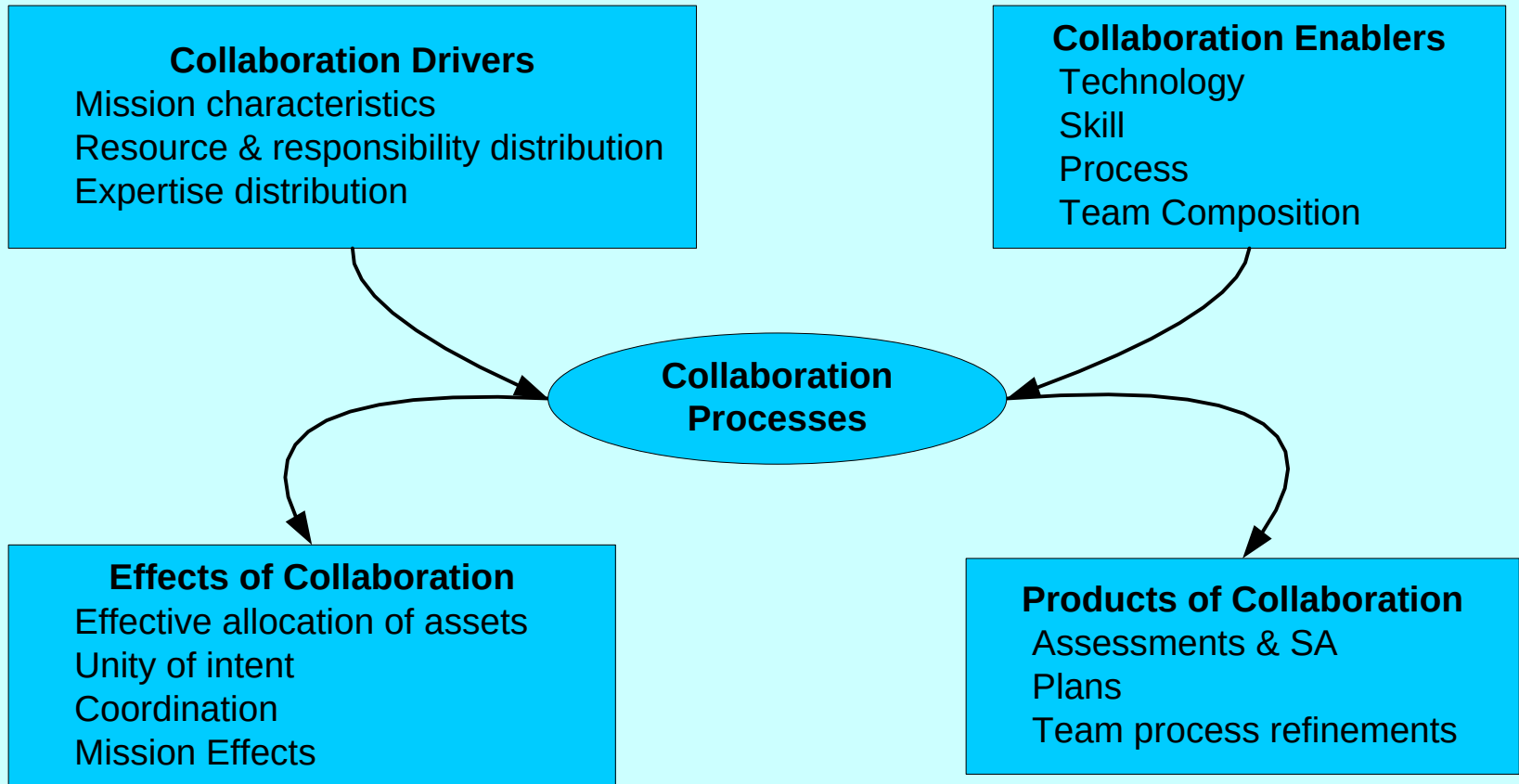
- Information age warfare
 - Teams are distributed, ad hoc, multi-disciplinary, mission-critical
 - Teams require coordination & collaboration
 - Manage forces & information
 - Achieve effects
 - Supporting coordination & collaboration requires measurement
- Coordination & collaboration processes can be measured
- Collaboration often involves critical thinking. For individuals, CT...
 - Is found in transcripts of planning
 - Can be trained
 - Improves mission performance in Air Defense scenarios
- Alberts, Garstka, Hayes, and Signori (2001)
- Letsky et al. (2003)
- Macmillan, et al., 2001
- Miller, Price, Entin, & Rubineau, 2001
- Moon, et al., 2000
- Cohen, Freeman, and Thompson, 1998
- Cohen and Freeman, 1997

Contribution to collaboration technology

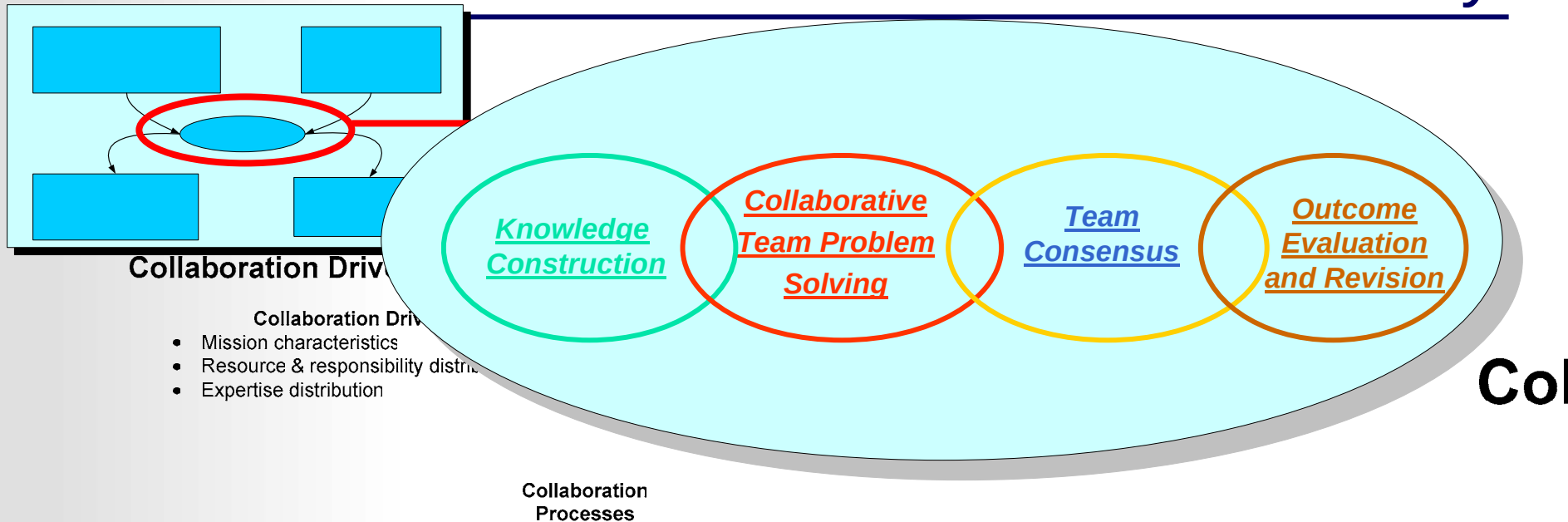
- Expand (individual) critical thinking to (team) collaboration
 - Collaborative critical thinking is teamwork behavior that identifies and reduces uncertainty concerning technical problems and team process.
- Research-based tool
 - Collaboration
 - Team processes
 - Critical thinking
- Tool that is pro-active and prescriptive to improve team collaboration in real-time

CCT: Theory & Measures (Fit to Collaboration Model)

Collaboration Drivers, Enablers, Processes, Products & Effects



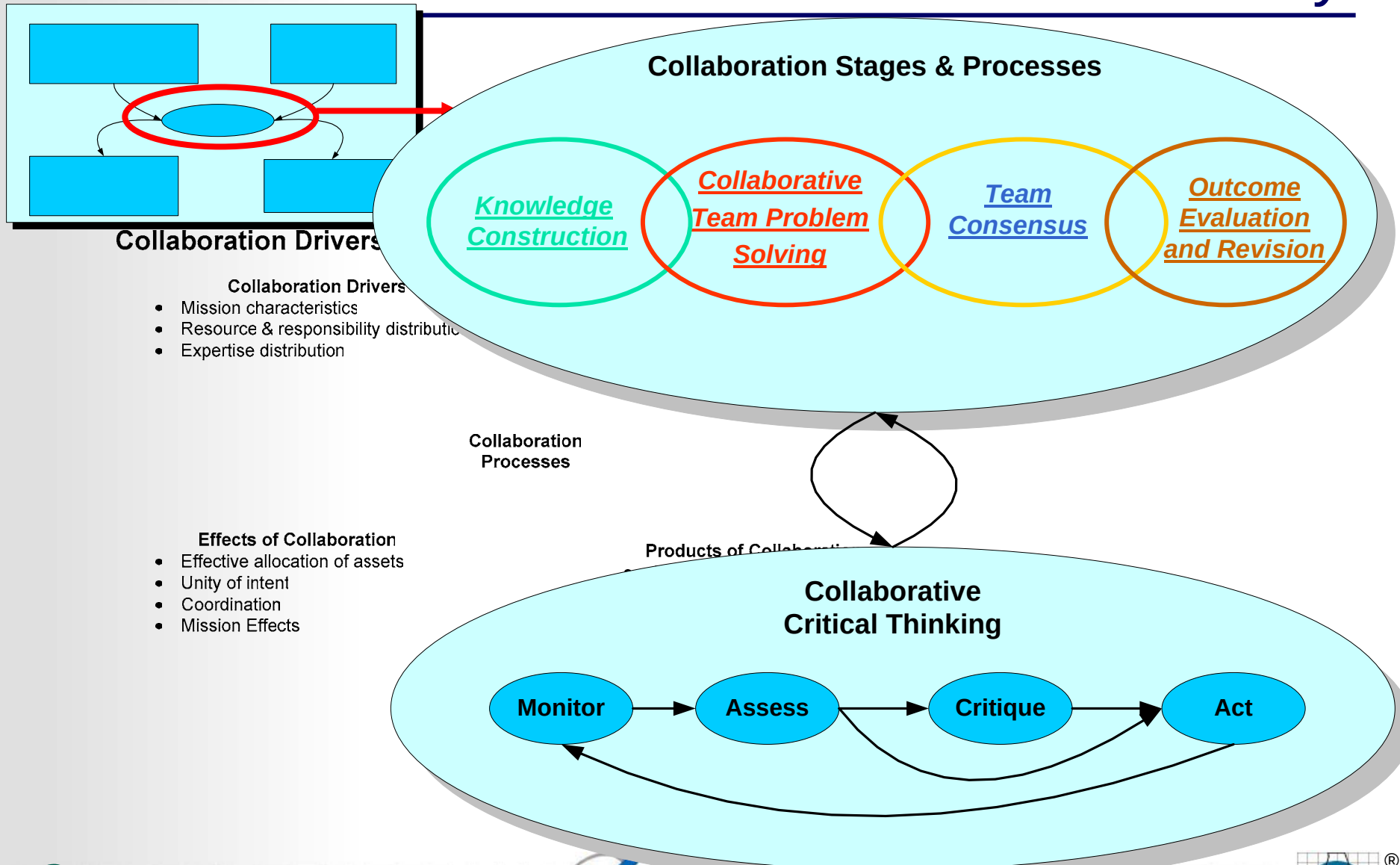
CCT Theory



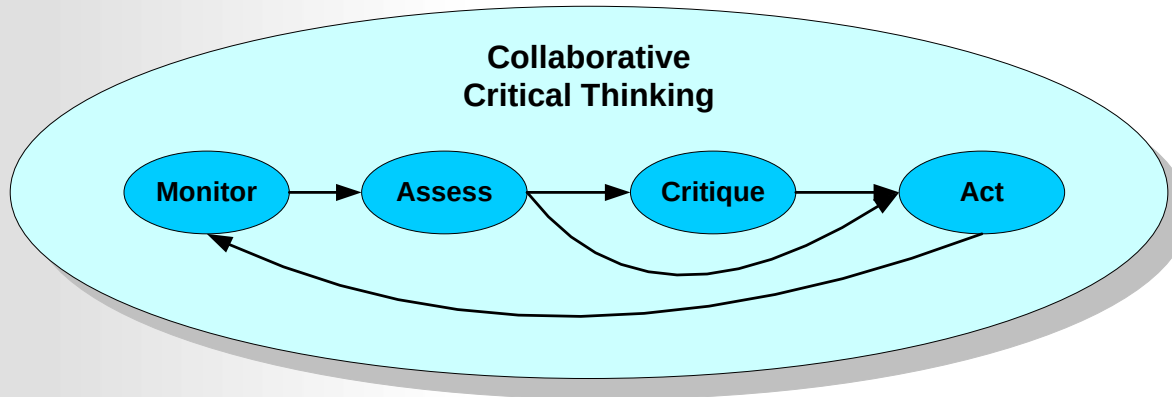
- Effects of Collaboration**
- Effective allocation of assets
 - Unity of intent
 - Coordination
 - Mission Effects

- Products of Collaboration**
- Assessments & SA
 - Plans
 - Team process refinements

CCT Theory



A Definition



■ Collaborative Critical Thinking consists of

■ Interactions¹ to

- *monitor* for uncertainty,
- assess the risk it presents & the opportunity to address it,
- conduct *critiques* that identify sources of uncertainty, and
- devise *actions* that reduce uncertainty & risks or insure against

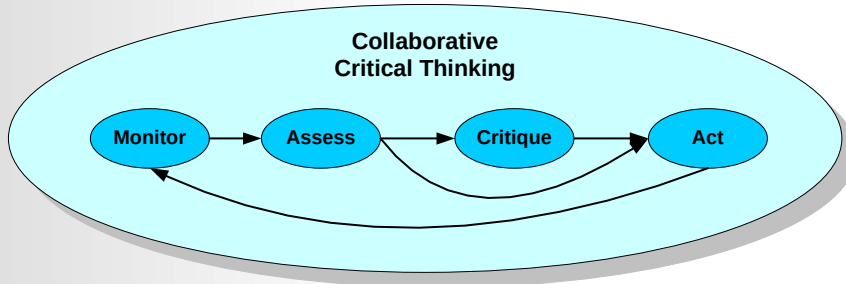
■ Effects on

- *the mission* at hand
 - more accurate & precise assessments
 - more effective & robust plans
- *team processes* for executing that mission

Behaviors

Objects

CCT Behaviors



- *monitoring* interactions
 - that alert other team members to the existence of uncertainty
- *assessment* interactions
 - in which team members evaluate the opportunity (e.g., available time) and need (e.g., priority or stakes) to resolve the uncertainty
- *critiquing* interactions in which team members
 - identify *gaps*,
 - *untested assumptions*, &
 - *conflicting interpretations*
- *actions* reduce uncertainty, at best, or confirm that it cannot be immediately reduced.

- Team products
 - Assessments
 - Plans
- Team processes
 - Goals – Common intent, Complementary objectives
 - Plans –
 - Task allocation & schedules
 - Asset allocation
 - Tasks – Task execution strategies

Measuring CCT: Objectives

- Help team leaders & team members
 - Monitor for the need to apply CCT to products & processes
 - Assess whether to engage in CCT
 - Critique weaknesses in products & processes
 - Take action to strengthen them
- Assess the effects of CCT on
 - The mission
 - The team

CCT Measures: Products & Processes

	Objects of CCT				
	Team products		Team processes		
CCT Behavior	Assessment	COA/Plan	Goals	Plans	Tasks
Monitoring	<i>Measures</i>				
Assessment					
Critiquing for gaps					
Critiquing for assumptions					
Critiquing for ambiguity					
Action					

- Team members rate status of products & processes wrt CCT behaviors during mission execution
 - Short to minimize distraction from tasks
 - Customized to the mission to enhance relevancy
 - Time sensitive to enhance relevancy
 - Numerically scaled (6=Agree ... 1=Disagree, Don't know) to facilitate summarization
 - Optional text comments to deepen meaning
- Present to team leader
 - Aggregated quantitative results
 - Comments
 - Guidance

CCT Measures: Products & Processes

	Objects of CCT				
	Team products		Team processes		
CCT Behavior	Assessment	COA/Plan	Goals	Plans	Tasks
Monitoring	<i>A1</i>				<i>T1</i>
Assessment		<i>C2</i>			
Critiquing for gaps					<i>T3</i>
Critiquing for assumptions				<i>P4</i>	
Critiquing for ambiguity					<i>T5</i>
Action	<i>A6</i>		<i>G6</i>		

- A1: The team's assessment [of ____] is correct.
- A6: The team is taking actions to resolve problems with the assessment [concerning ____]
- C2: The team has time to critique and refine the plan [regarding ____]
- P4: The team has identified key assumptions that have yet to be tested concerning its strategy [for ____].
- G6: The actions of team members are consistent with the mission goals [concerning ____].
- T1: Team members seek feedback on their tasks [concerning ____].
- T3: The team is completing all tasks [concerning ____].
- T5: Team members seek to resolve ambiguity in task assignments.

CCT Measures: Feedback

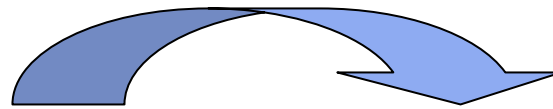
- Probe: ***The team has considered plausible, alternative plans.***
- High agreement (mean rating), little dissent (low variability in ratings)
 - Consider how much effort was expended considering alternative plans.
 - If little effort was expended, team members may be in agreement concerning a hastily generated and incorrect plan. Perhaps team members should expend more effort considering alternative plans. Ask them, “Have you exhausted all plausible alternative plans?”
 - If considerable effort was expended, then ask: “Do you have more time to consider alternative plans?” If yes, then ask: “Are there any plausible, alternative plans that you overlooked?” Probe for lone dissenters and check in with the dissenter.
- Average agreement and lots of variability in responses
 - If little effort was expended, then suggest, “Spend more time working on this task to identify alternative plans.”
 - If considerable effort has been expended, ask, “Do you have more time to consider alternative plans?” If yes, then team members should expend more effort to consider plausible alternative plans

CCT Measures: Effects

Mnemonic	Measure	Example
Who	The fit of team members to mission tasks	Team optimization (Levchuk, et al., 1997-2003)
What	Situational awareness	Situation reconstruction (Endsley & Garland, 2000); Relational knowledge (Cooke, et al., 2000)
Where	Coordination in space	n.a.
When	Synchronization	Asset synchronization (Stacy, Freeman, et al., 2005; Levchuk, et al., 1997-2003)
Why	Unity of intent	tbd...(Aptima, Cooke)
How	The fit of tactics (tasks) to objectives: simplicity, power, observability, vulnerability	Power appropriateness (Levchuk, et al., 1997-2003); tbd

CCT Technology: CENTER Collaboration for ENhanced TEAm Reasoning

Team leader/
facilitator



Probes re:
problem
& process



Ratings &
Comments

Distributed
team members



for a Team Facilitator or a Leader's Aid

- Facilitator configures CENTER:
Customize CENTER questions to the mission at hand:
 - Problem: **Is there a plausible assessment of *enemy intent* that the team has not considered?**
 - Process: **Are your team members appropriately tasked to *complete the assessment in two hours*?**
- CENTER automatically queries team members



- CENTER pops a question in small “probe” window atop current application.
- Member
 - Responds with rating
 - Optionally comments



74 CENTER Probe Window

The team has the information it needs to plan.

☐ ☐ ☐ ☐ ☐ ☐ ☐

Strongly Disagree Disagree Somewhat Disagree Somewhat Agree Agree Strongly Agree Don't Know/ Does Not Apply

for a Team Facilitator or a Leader's Aid

- CENTER compiles team members' responses
- CENTER presents facilitator with
 - Summary of ratings for at-a-glance assessment of team
 - Comments by members
 - Suggested actions
- Facilitator adjusts the team's course



“Synergistic” Technology

- There are distributed collaboration platforms available
 - Infrastructure from many vendors, for example
 - Microsoft (Sharepoint)
 - IBM (Lotus Notes)
 - Groove Networks
 - Sitescape
 - The infrastructure targets convenience and speed in collaboration.
- The CENTER tool
 - Operates “on top of” existing infrastructure.
 - Supplements those offerings by targeting the quality of collaboration.

- Collaboration tools (email, telecons, Word versioning) help create products
 - CENTER helps team evaluate products & process
- Training helps teams learn new processes
 - CENTER ensures they use new processes
- Group decision-ware (voting tools) replace standard tools
 - CENTER complements standard tools
- CENTER
 - Python programming language.
 - An interpreted, interactive, object-oriented programming language
 - Comparable to TCL, Perl, Scheme, or Java.
 - Can run in any operating system.
 - The CCT tool has a client/server architecture and uses MySQL for the back-end database.
 - The tool is designed to run over the Internet.
 - The users of the tool do not have to be using the same operating system when the tool is running.
 - i.e some users can be in Windows and some can be in Linux and still communicate and pass information seamlessly.

Aptima[®] Current state and future vision: Center Tool

Human - Centered Engineering

	Designed and implemented	Designed and yet to be implemented	To be designed and implemented
Participant	Unobtrusive pop-up window		
	Radio buttons with anchors for rating		
	Questions are on a timer; they blank out and the window minimizes when time is up	Instead of blanking out, the window will say “waiting for the next probe”	There will be a count down until the window closes
	Comment capability (currently “commented out”)		
Facilitator / Authoring	Click and send probes	“Auto send” probes based on timer	
	Real-time results from probe	Feedback based on participant’s responses to probes	Ability to review meeting with screen shots by specifying time period
	Real-time probe authoring		Create authoring mode
		“Roll over” graph labels	
			Probe organization scheme with more probes “in storage”
Other	Linux installation package	Windows executable installation package	
		Test plan (begin with fictitious (i.e., programmed) participants; then do with real people)	
	Capabilities for spatially distributed team		Truly asynchronous capabilities (separation in time and space)

Current state and future vision: Center Tool

	Designed and implemented	Designed and yet to be implemented	To be designed and implemented
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74 CENTER Probe Window

The team has the information it needs to plan.

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Current state and future vision: Center Tool

	Designed and implemented	Designed and yet to be implemented	To be designed and implemented
Facilitator / Authoring	Click and send probes	"Auto send" probes based on timer	
	Real-time probe authoring		Create authoring mode

Probes

Graphs

Comments

Select a probe from the following list, then click Send

Probes

In your opinion, is the team's assessment of the current situation correct?

Does your team have all of the critical information needed to solve the problem?

Has the team addressed the plausible alternatives for solving the problem?

In your opinion, are the team members working toward the same goal?

To what extent have the advantages and disadvantages of the solution been discussed?

In your opinion, have all feasible solutions been considered?

How realistic is the time line for the plan?

How appropriately is responsibility allocated among team members?

How much are team members communicating about the task at hand?

How successful have team members been with their roles?

Send

New probe:

Add

Add & Send

Elapsed Time:

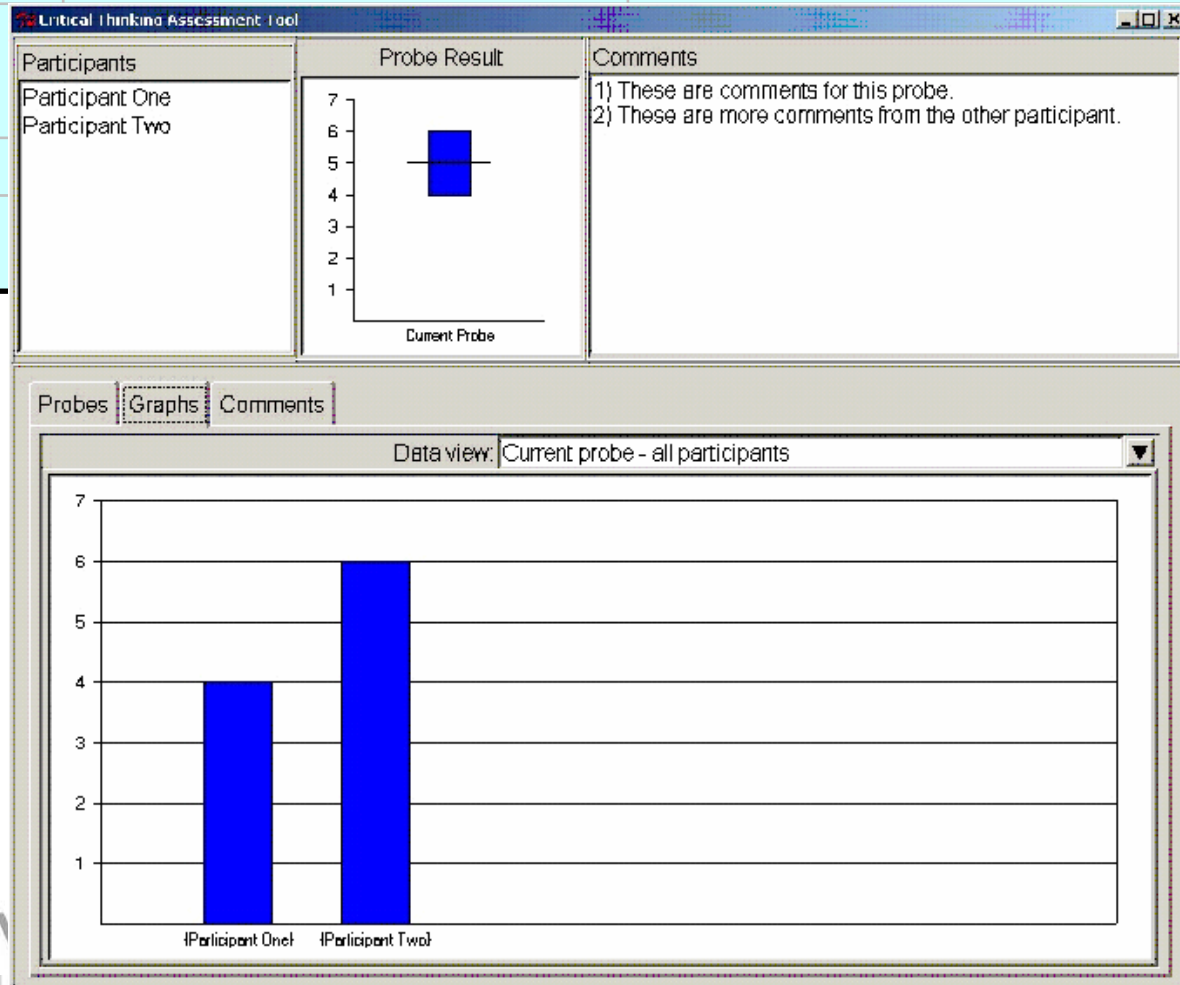
Probe Response Timeout:

(seconds)

Send

Current state and future vision: Center Tool

	Designed and implemented	Designed and yet to be implemented	To be designed and implemented
Facilitator / Authoring	Click and send probes	"Auto send" probes based on timer	
	Real-time probe authoring		Create authoring mode
	Real-time results from probe		



Current state and future vision: Center Tool

	Designed and implemented	Designed and yet to be implemented	To be designed and implemented
Facilitator / Authoring	Click and send probes	"Auto send" probes based on timer	
	Real-time probe authoring		Create authoring mode
	Real-time results from probe	Feedback based on participant's responses to probes	Ability to review meeting with screen shots by specifying time period
		"Roll over" graph labels	
			Probe organization scheme with more probes "in storage"

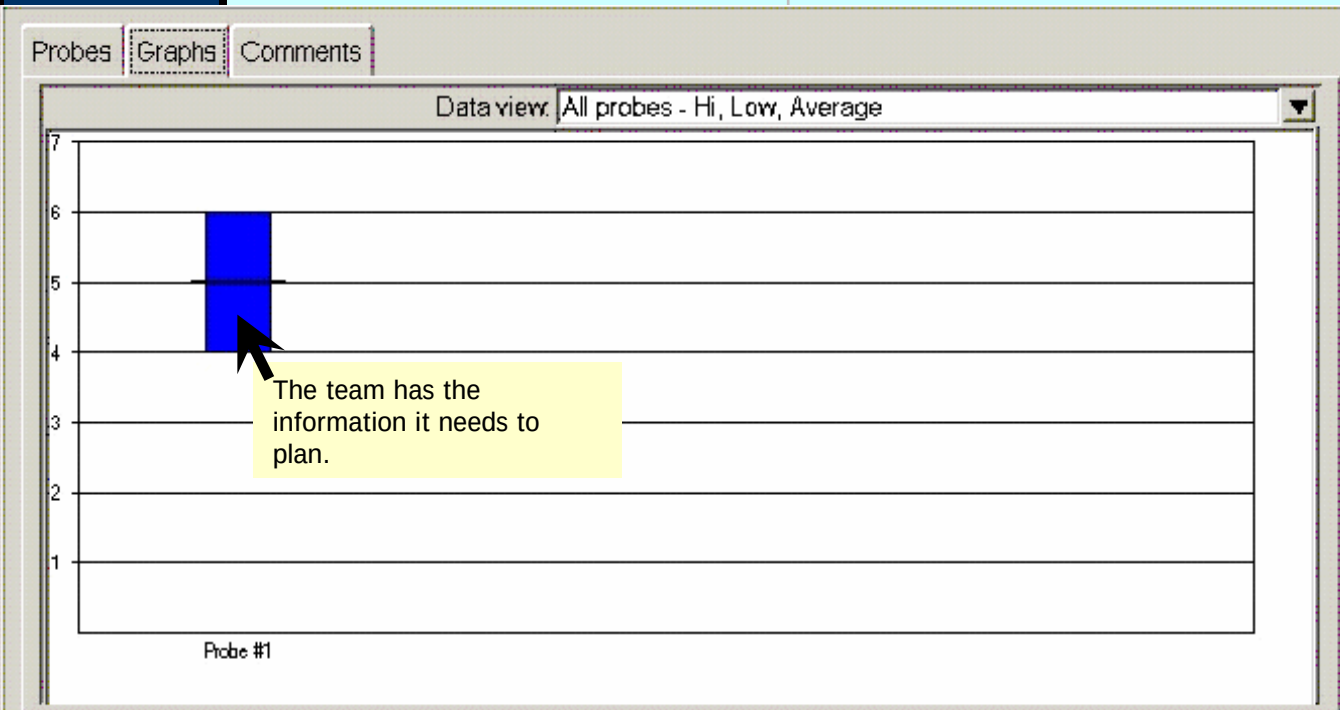
Probe: The team has the information it needs to plan.

Analyses reveal: Mean is average and Variance is high

Feedback to facilitator: If lots of time has been spent, seek to understand why there is so little consensus. Perhaps team members need to revisit prior decisions and then revisit the current problem. Ask, do you understand the information?

Current state and future vision: Center Tool

	Designed and implemented	Designed and yet to be implemented	To be designed and implemented
Facilitator / Authoring	Click and send probes	"Auto send" probes based on timer	
	Real-time probe authoring		Create authoring mode
	Real-time results from probe	Feedback based on participant's responses to probes	Ability to review meeting with screen shots by specifying time period
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Current state and future vision: Center Tool

	Designed and implemented	Designed and yet to be implemented	To be designed and implemented
Other	Linux installation package	Windows executable installation package	
		Test plan (begin with fictitious (i.e., programmed) participants; then do with real people)	
	Capabilities for spatially distributed team		Truly asynchronous capabilities (separation in time and space)



Current state and future vision: Training and Validation

	Completed	Designed and in progress	To be designed (option task)
Development	Studies to better understand CCT		
	Study to investigate possible cognitive and affective components of CCT for training development		
	CCT training and facilitator training	Improve CCT training based on results of experiment	Improve CCT training to make more appropriate for military / expert teams
Usability	Usability studies with pop-up window		
	Initial usability studies with facilitator window		
Lab Validation	Study to validate CCT probes		
	Initial validation evidence for training	Initial validation evidence for tool	
Field validation and use			Field validity evidence (Option task)
			Use in field setting

III. Experiments

■ Completed Studies

- Studies to better understand CCT
 - We were able to get examples of CCT to guide definition and framework development
- Studies to test possible impact of cognition and affect to guide training development
 - Neither the cognitive nor the affective training made an impact in CCT performance; thus, they were not included in the training
- Usability studies
 - Guided improvements to the user pop-up window and the facilitator workspace
- Initial study to validate critical thinking probes
 - Probes were at the correct level for the target population
 - Participants felt that probes helped them execute planning tasks
- Validation Study at USF
 - Behaviorally-based CCT training resulted in improved task performance

Most Recent Experiment

- Still on-going at USF
- Objective:
 - Collect validity evidence for CENTER tool and training

■ Method:

- Each of 2 team members
 - No training
 - CCT Training
 - Or control training
- Teams plan for completion
 - With CENTER tool
 - Or not
- Teams execute Search

•Content

•Content

•Basic Steps to Survival

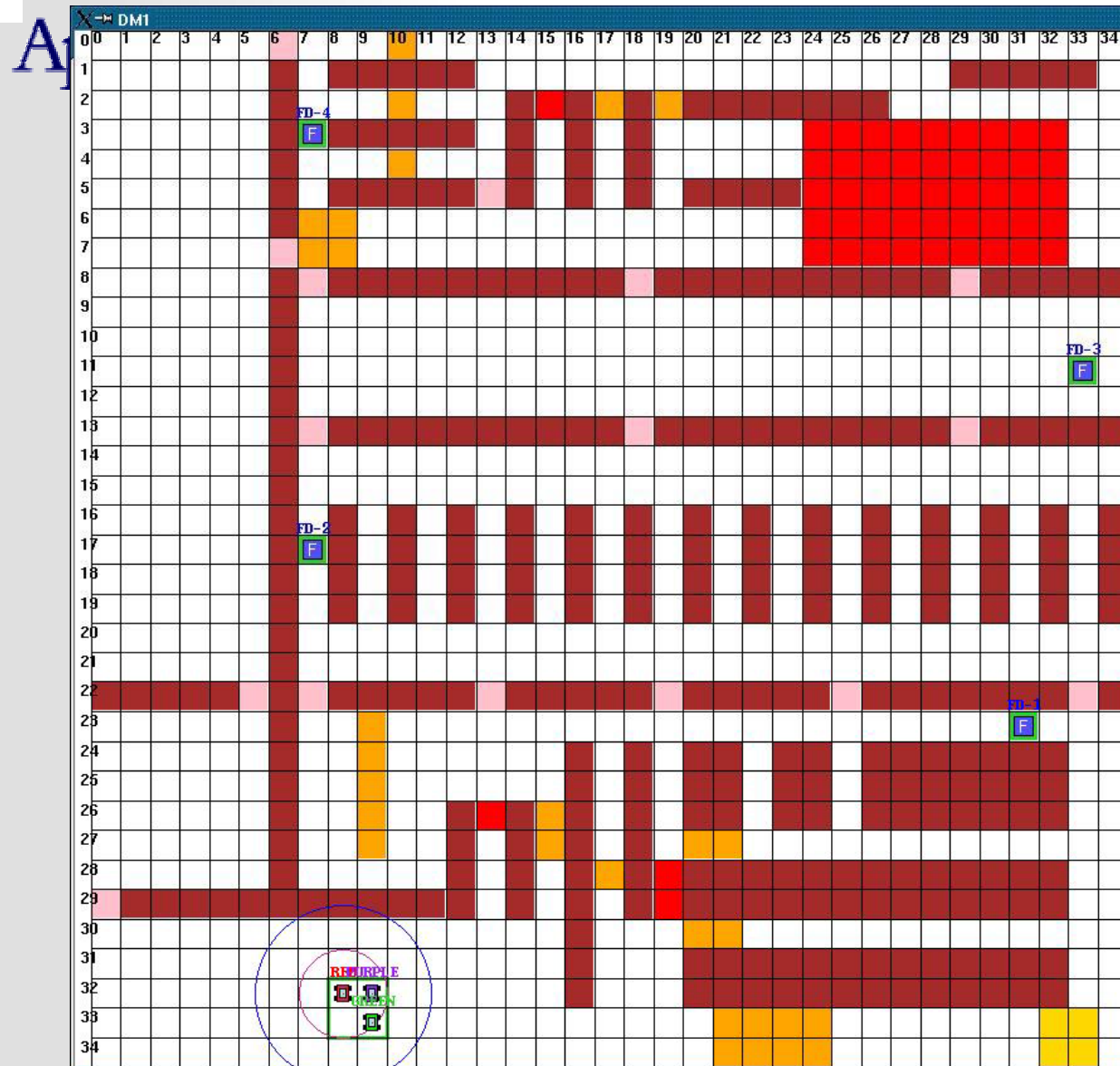
- S – Size up the Situation
- U – Use all Your Senses, Undue Haste Makes Waste
- R – Remember Where You Are
- V – Vanguish Fear and Panic
- I – Improvise
- V – Value Living
- A – Act Like the Natives
- L – Live by Your Wits, but for Now, Learn Basic Skills

•f

te •Process (“hands-on” task)

•(•Content

- Ensure shared understanding of the basic steps to survival



Search and Rescue Scenario

Aptima 2001

RED: 

Clock: 0:00

Team

Score 0

60
30
0

Refresh Cancel Zoom In Zoom Out
Legend Arrow + Arrow -

Send Message...

Status	Rating	Subject	From	Time
--------	--------	---------	------	------

This is the report window.

This is the confirmation window.

This is the prompt window



■ Experimental Design:

- 5 conditions

Conditions	No CCT probes	CCT probes
No training	X	
Survival training (control)	X	X
CCT training	X	X

- Performance measures collected through the DDD

■ Measures

- Used by tool to gauge CCT
 - Probes
 - Analyses done in real time
- Used to validate CCT training
 - DDD Performance
 - Number of clues / UGS processed correctly
 - Time to find lost party / antenna
 - Debrief Questions
 - Did the probes make you think differently about the problems or how the team needed to perform?
 - How influential were the probes in your thinking?

■ Analyses

- Evaluate impact of training
- Test hypothesis that teams participating in CCT training perform better on the DDD
- Hierarchical analyses to investigate contributions of individual characteristics

Findings*

- Both CCT Training and the Survival training improved the team performance over no training
- The effects of the CCT Training and the Survival training on performance was statistically the same.
 - Two different methods to increase team performance
 - One focused more on critical thinking and context free decision making
 - One focused on decision making in a naturalistic environment similar to the actual task environment
- Some individual differences traits are relevant to the group dynamic:
 - CCT is enhanced with
 - Increasing agreeableness of team members
 - Increasing assertiveness of team members,
 - IQ

*Note: CENTER tool validity is in the process of being tested

IV. Future Validation

- USF CENTER Tool validation
 - Teams plan for DDD computer simulation
 - With CENTER tool
 - Or not
- Field
 - Field validation study
 - NWC DDD Lab
 - Non-DDD fielding of tool
 - NETWARCOM
 - FORCEnet

V. Publications planned, technical contributions

- Society for Industrial and Organizational Psychologists 2005 Academic Practitioner Forum
- Freeman, J. and Hess, K. (2003). Collaborative critical thinking. Proceedings of the 8th International Command and Control Research and Technology Symposium. Washington, DC.
- Freeman, J. and Serfaty, J. (2002). Team critical thinking. Proceedings of the 7th International Command and Control Research and Technology Symposium. Monterey, CA.

VI. Lessons Learned

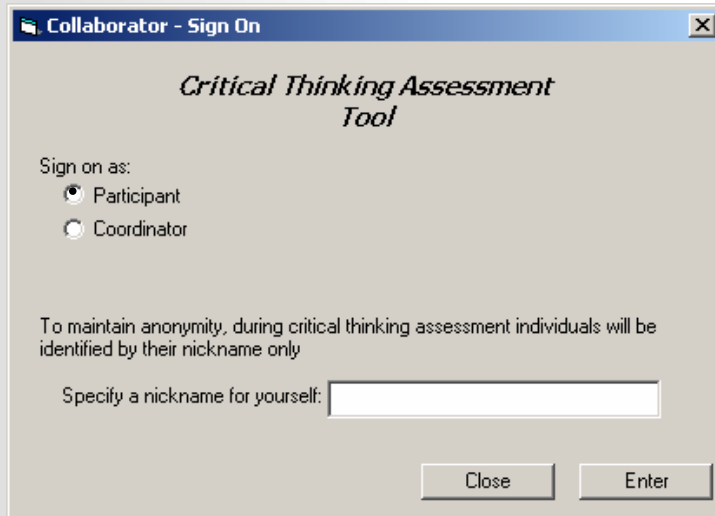
- When working with others you take the good with the bad
- Sometimes participants learn from the “control” training
- Nothing ever goes the way it is planned.

Project Summary

- Title: Collaborative Critical Thinking (CCT)
- Jared Freeman, Ph.D., P.I.
 - Aptima, 1030 15th Street NW, Washington, DC 20005
 - 202-842-1548 x316
 - freeman@aptima.com
- Kathleen Hess, Ph.D., P.M.
 - Aptima, 12 Gill St. Suite 1400, Woburn, MA 01801
 - 781-935-3966X219
 - khess@aptima.com
- Objectives
 - Better understand CCT
 - Develop validated training and tools to improve CCT
 - Improve the process and products of collaboration through improved CCT
- Research Questions
 - Can CCT behaviors and their effects be reliably measured in a semi- or fully-automated fashion?
 - Can we promote CCT behaviors with training and job aids?
 - Does improved CCT result in improved collaboration?
 - Can we field the CENTER tool?
- Project Status
 - Initial validation studies have been run
 - Tool and training are being revised based on the study results
 - Field validation studies are being planned

Supplemental Material

Sign on dialog



Collaborator - Sign On

Critical Thinking Assessment Tool

Sign on as:

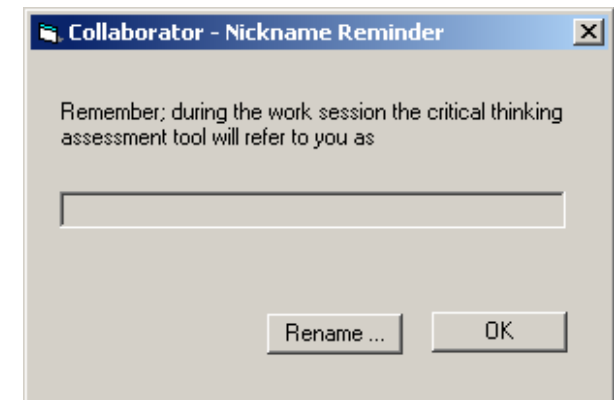
- ☒ Participant
- ☐ Coordinator

To maintain anonymity, during critical thinking assessment individuals will be identified by their nickname only

Specify a nickname for yourself:

Close Enter

Note; When signing on to the CCT Tool the participants are already logged onto the collaborative application.



Collaborator - Nickname Reminder

Remember; during the work session the critical thinking assessment tool will refer to you as

Rename ... OK

Coordinator's Configuration Interfaces

Collaborator - Critical Thinking Assessment Set Up

Work Session | Probes | Participants

Name:

Date: Time:

Location:

Objective:

Notes:

Save

Collaborator - Critical Thinking Assessment Set Up

Work Session | Probes | Participants

Compose probe:

Probe list:

Probe #	Probe content	Presentation Time
1	Probe number 1	15
2	Probe number 2	30
3	Probe number 3	45

Probe presentation sequence:

5	15	30	45	60	Time from start >
	1	2	3		Probe #

* To change the presentation time of a probe slide it to the desired time

Save

- Configure (clockwise)
 - Work session
 - Probes & schedule
 - Participants

Collaborator - Critical Thinking Assessment Set Up

Work Session | Probes | Participants

Participants in the critical thinking assessment:

☐ Anastasi Donna
☐ Bailey Adam
☐ Baker Keith
☐ Chopra Kari
☐ Hight Heather
☐ Levchuk Yuri
☐ Miller Diane

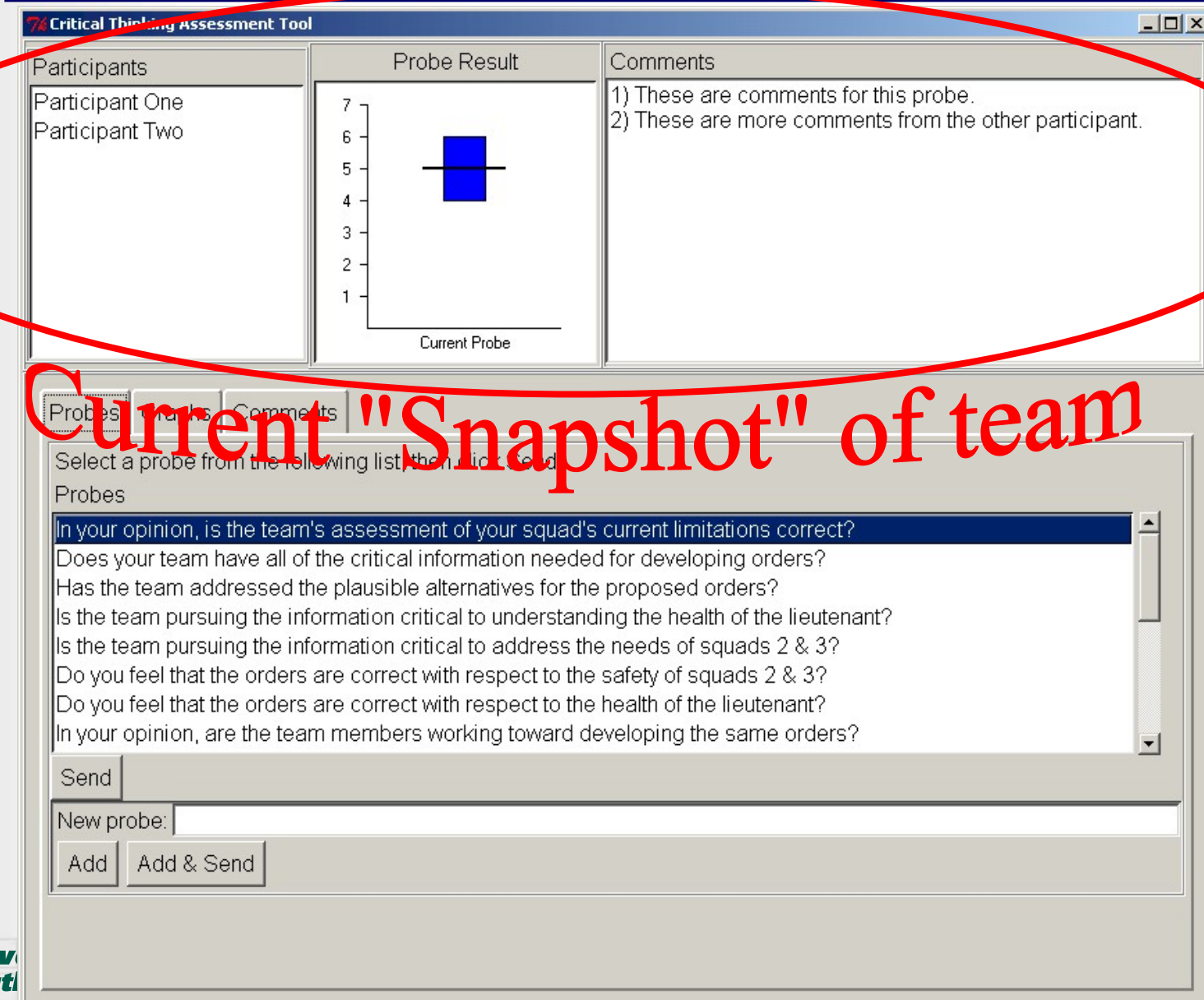
* Not all participants in the work session need to participate in the critical thinking assessment

Coordinator of critical thinking assessment:

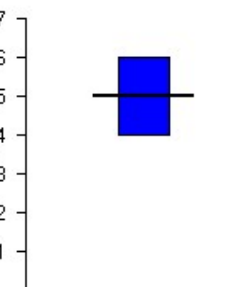
Leader of work session:

Save

Facilitator Screenshot



Critical Thinking Assessment Tool

Participants	Probe Result	Comments
Participant One Participant Two	7 6 5 4 3 2 1  Current Probe	1) These are comments for this probe. 2) These are more comments from the other participant.

Current "Snapshot" of team

Select a probe from the following list, then click Send.

Probes

- In your opinion, is the team's assessment of your squad's current limitations correct?
- Does your team have all of the critical information needed for developing orders?
- Has the team addressed the plausible alternatives for the proposed orders?
- Is the team pursuing the information critical to understanding the health of the lieutenant?
- Is the team pursuing the information critical to address the needs of squads 2 & 3?
- Do you feel that the orders are correct with respect to the safety of squads 2 & 3?
- Do you feel that the orders are correct with respect to the health of the lieutenant?
- In your opinion, are the team members working toward developing the same orders?

Send

New probe:

Add Add & Send

Facilitator Screenshot

Critical Thinking Assessment Tool

Participants	Probe Result	Comments
Participant One Participant Two	7 6 5 4 3 2 1 Current Probe	1) These are comments for this probe. 2) These are more comments from the other participant.

Probes Graphs Comments

Select a probe from the following list, then click Send

Probes

- In your opinion, is the team's assessment of your squad's current limitations correct?
- Does your team have all of the critical information needed for developing orders?
- Has the team addressed the plausible alternatives for the proposed orders?
- Is the team pursuing the information critical to understanding the health of the lieutenant?
- Is the team pursuing the information critical to address the needs of squads 2 & 3?
- Do you feel that the orders are correct with respect to the safety of squads 2 & 3?
- Do you feel that the orders are correct with respect to the health of the lieutenant?
- In your opinion, are the team members working toward developing the same orders?

Send

New probe: Add Add & Send

List of probes available to send

Facilitator Screenshot

The screenshot displays the 'Critical Thinking Assessment Tool' interface. It is divided into three main sections at the top: 'Participants', 'Probe Result', and 'Comments'. The 'Participants' section lists 'Participant One' and 'Participant Two'. The 'Probe Result' section shows a graph with a vertical axis from 1 to 7 and a horizontal axis labeled 'Current Probe'. A blue square is plotted at the value 5 on the vertical axis. The 'Comments' section contains two lines of text: '1) These are comments for this probe.' and '2) These are more comments from the other participant.'

Below these sections are three tabs: 'Probes', 'Graphs', and 'Comments'. The 'Probes' tab is active, showing a list of probes. The first probe is highlighted: 'In your opinion, is the team's assessment of your squad's current limitations correct?'. Other probes include: 'Does your team have all of the critical information needed for developing orders?', 'Has the team addressed the plausible alternatives for the proposed orders?', 'Is the team pursuing the information critical to understanding the health of the lieutenant?', 'Is the team pursuing the information critical to address the needs of squads 2 & 3?', 'Do you feel that the orders are correct with respect to the safety of squads 2 & 3?', 'Do you feel that the orders are correct with respect to the health of the lieutenant?', and 'In your opinion, are the team members working toward developing the same orders?'. Below the list is a 'Send' button. At the bottom, there is a 'New probe:' text box, an 'Add' button, and an 'Add & Send' button. A red oval highlights the 'New probe:' text box and the 'Add' and 'Add & Send' buttons.

Add new probes "on the fly"

Facilitator Screenshot

The screenshot shows a software interface with three tabs at the top: "Probes", "Graphs", and "Comments". The "Probes" tab is active. Below the tabs, there is a text area containing a list of probes. A "Send" button is located below the list. Below the "Send" button is a text input field labeled "New probe:". Below the input field are two buttons: "Add" and "Add & Send". At the bottom of the interface, there is a status bar with the following elements: "Elapsed Time: 00:00:00", "Probe Response Timeout: [pink box] (seconds)", and a "Send" button. A red circle is drawn around the bottom status bar.

Select a probe from the following list, then click Send

Probes

In your opinion, is the team's assessment of the current situation correct?
Does your team have all of the critical information needed to solve the problem?
Has the team addressed the plausible alternatives for solving the problem?
In your opinion, are the team members working toward the same goal?
To what extent have the advantages and disadvantages of the solution been discussed?
In your opinion, have all feasible solutions been considered?
How realistic is the time line for the plan?
How appropriately is responsibility allocated among team members?
How much are team members communicating about the task at hand?
How successful have team members been with their roles?

Send

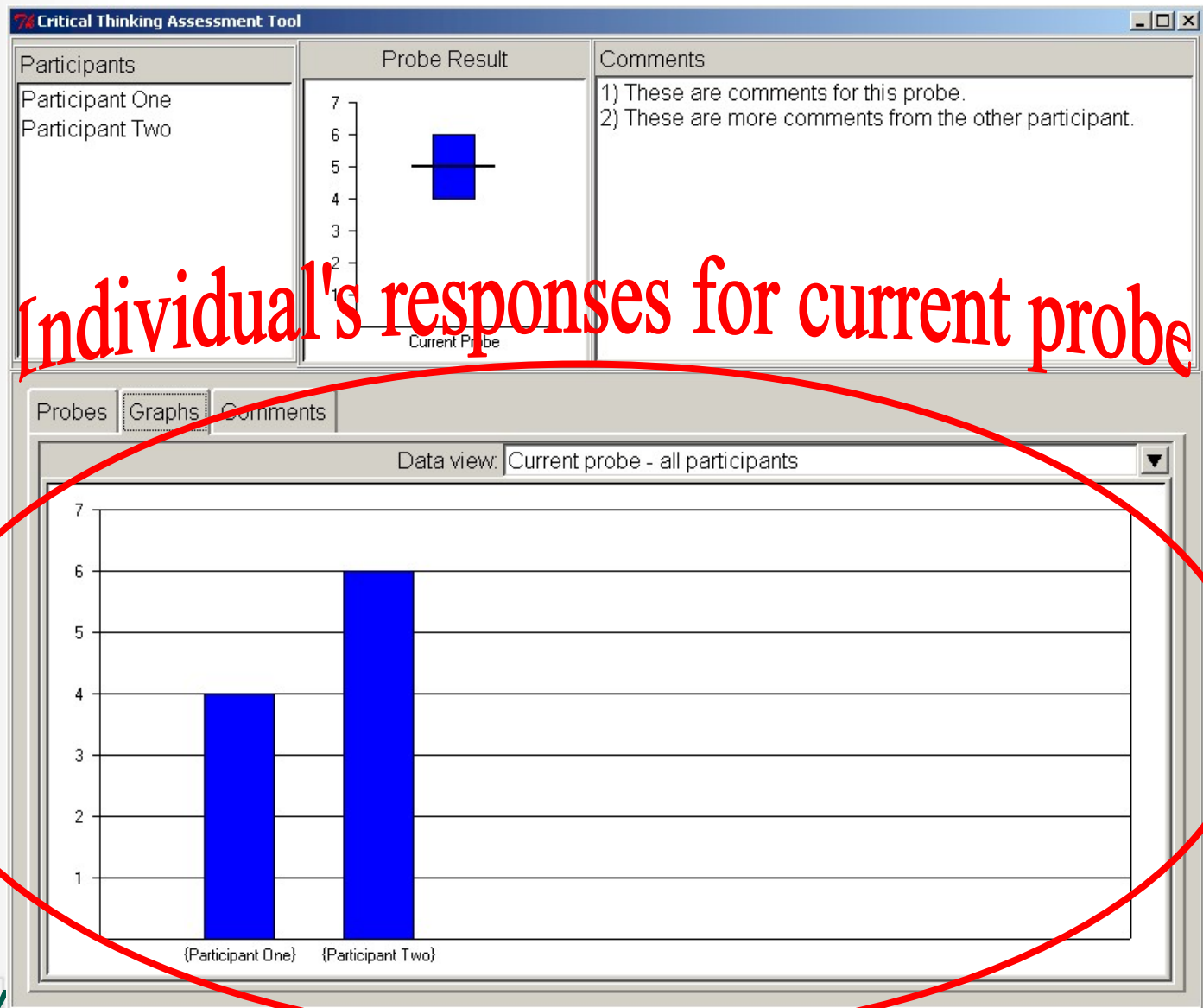
New probe:

Add Add & Send

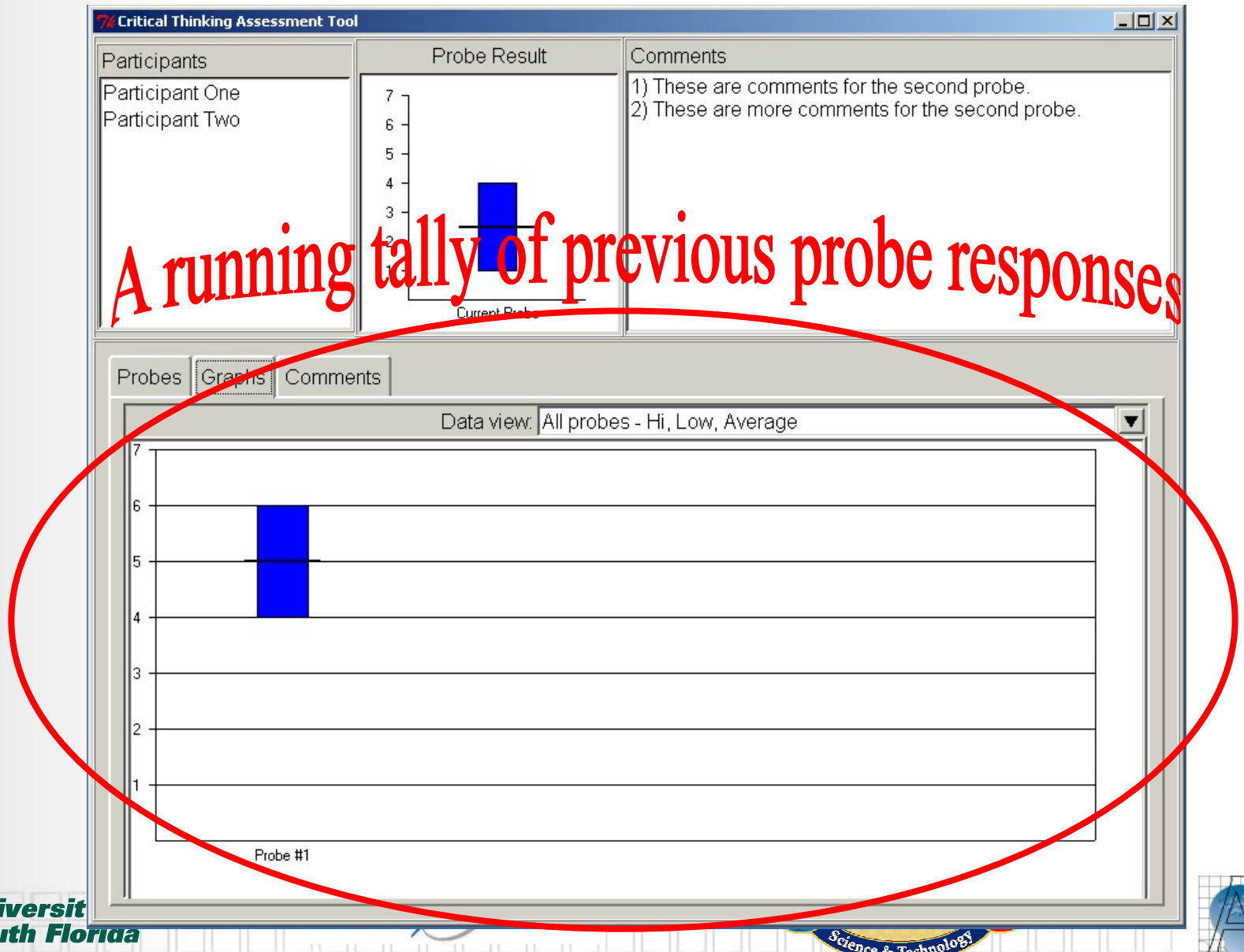
Elapsed Time: 00:00:00 Probe Response Timeout: (seconds) Send

Keep track of time and specify probe "time out"

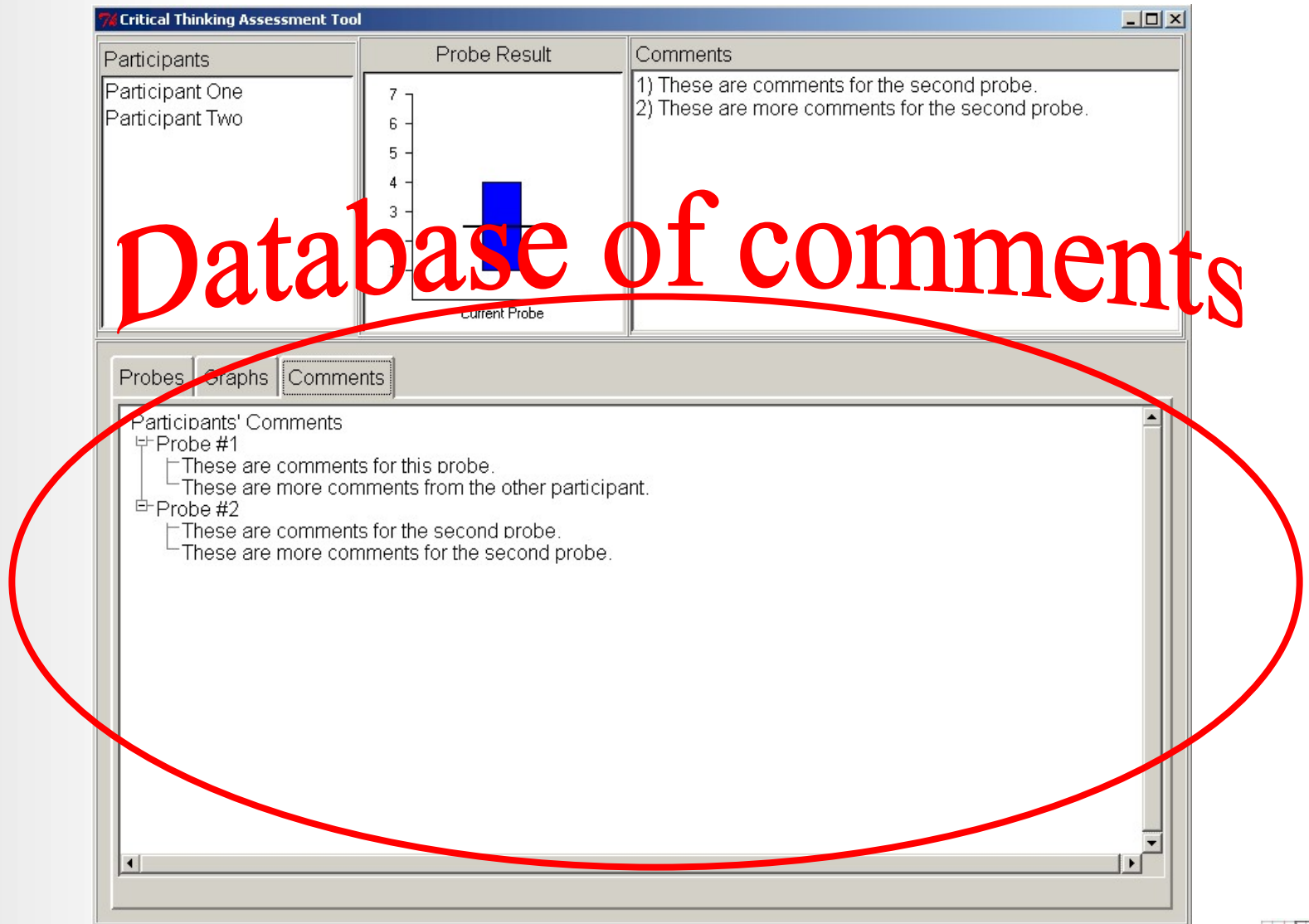
Facilitator Screenshot



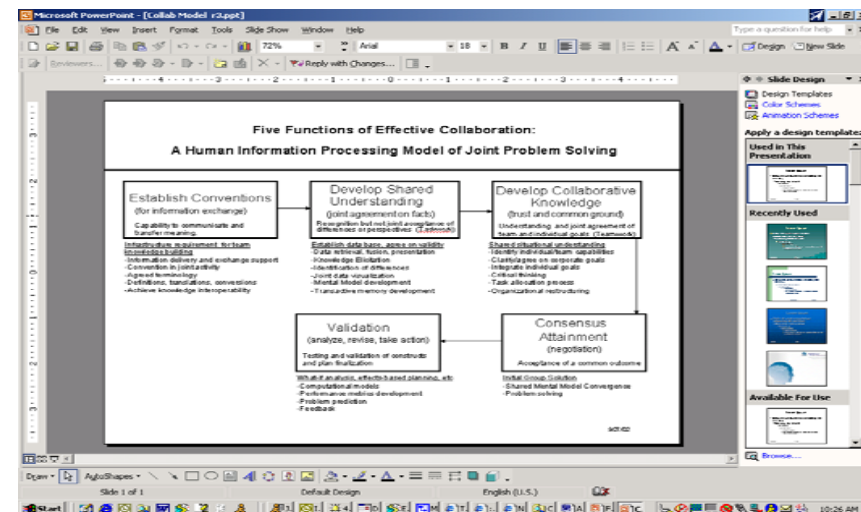
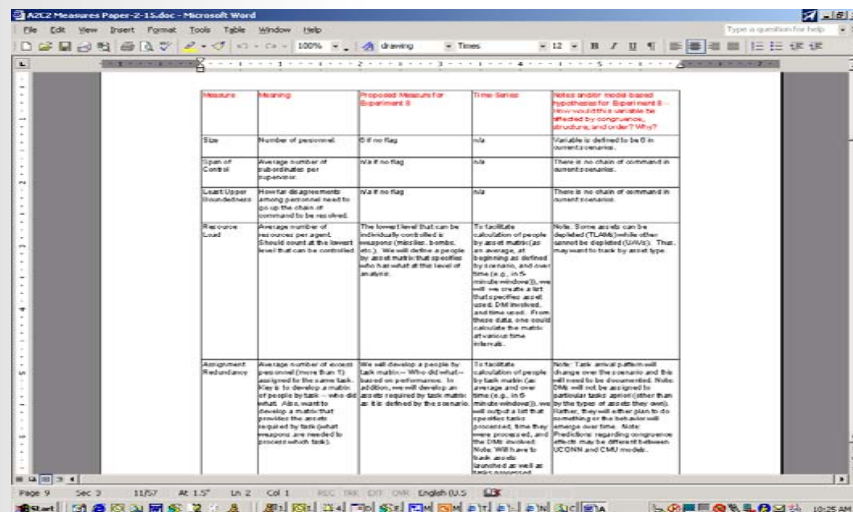
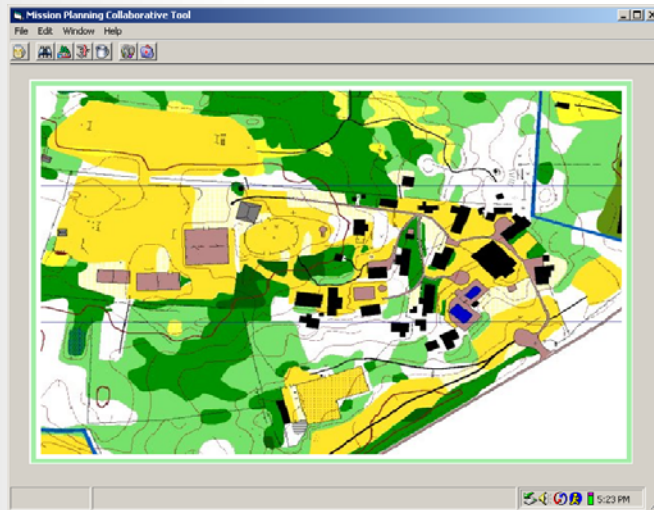
Facilitator Screenshot



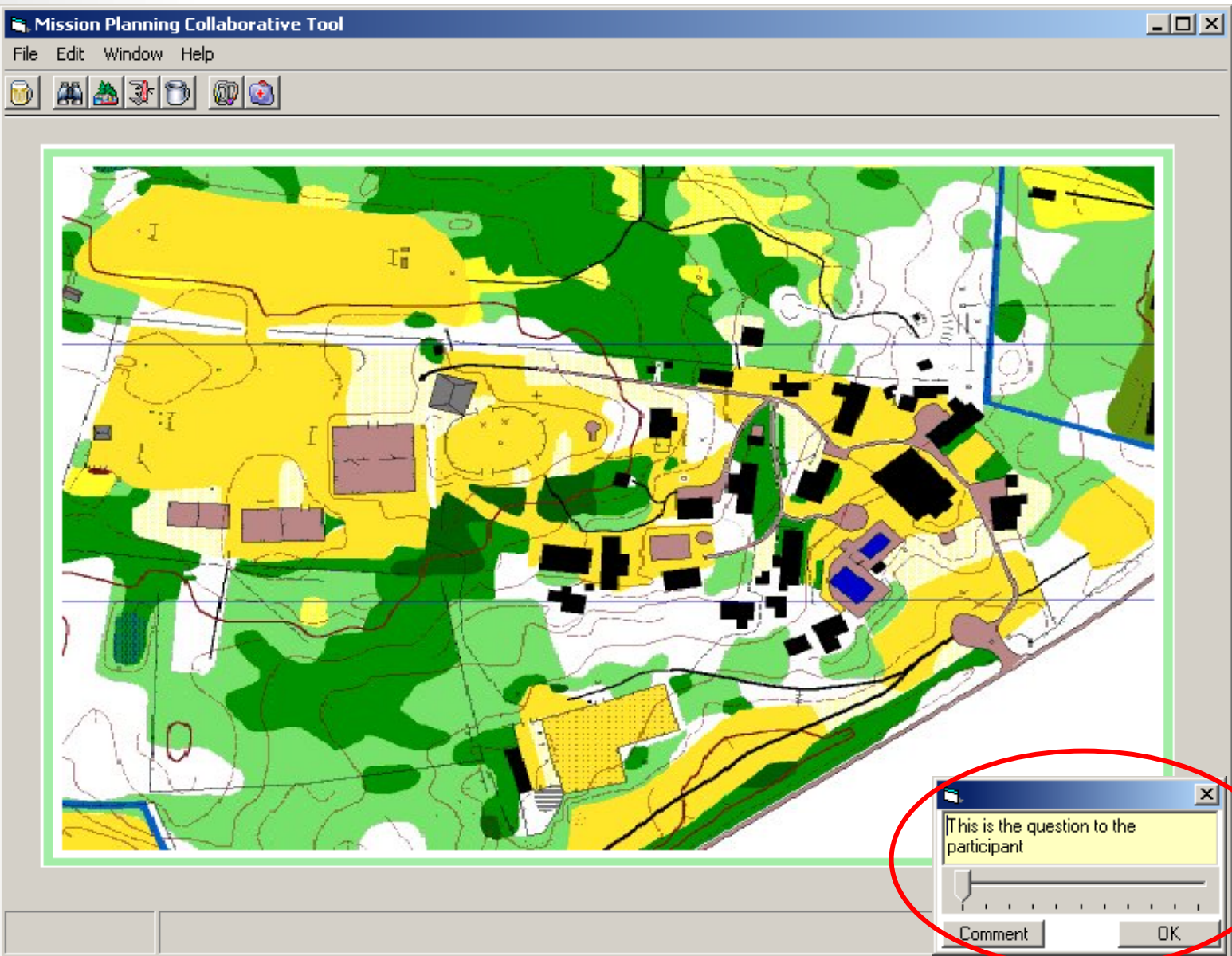
Facilitator Screenshot



Workspaces in a Distributed Team



Team Member Screenshot



Opportunity to Rate and Comment

